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POSTERS (PO)

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SEXTA-FEIRA, 19 ABRIL de 2024 | 08:00-09:00

Área de Posters 1 | Sessão de Posters 01 - Intervenção não valvular

PO 1. LEFT ATRIAL APPENDAGE CLOSURE: DOES SHAPE MATTER?

Mariana Rodrigues Simões, Rafaela Fernandes, Gonçalo Ferraz Costa, Ana L. Silva, Tatiana Pereira dos Santos, Gonçalo Terleira Batista, Diogo Fernandes, Manuel Santos, José Luis Martins, Luís Paiva, Marco Costa, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: The left atrial appendage (LAA) is known for its thrombogenic features. It has a variety of shapes whose impact on procedures' results remains uncertain.
Methods: We conducted a retrospective study at one centre, reviewing all patients who underwent catheter based LAA closure between May 2010 and December 2020. Using SPSS software, we compare periprocedural results and outcomes by the end of follow-up in patients who had a specific LAA morphology: cactus.
Results: Across ten years, 156 patients underwent LAA closure, with an average follow-up of 898 (± 844) days. LAA morphology was described in 93 patients. Morphologically, there were 40 windsock, 18 cauliflower, 23 chicken wing, 9 cactus and 3 LAA with other shapes. The patients were split into two groups based on their LAA morphology: the cactus (C) group and the non-cactus (NC) group. The median age in the C group was 77 (ID = 10), while in the NC group, it was 75 (ID = 11), (p = 0.896). About 44,4% of patients in the C group were men compared to 66,6% in the NC group (p = 0.272). There were no differences in cardioembolic and hemorrhagic risk between the two groups, with similar median CHA_2DS_2VASC (4, p = 0.464) and HASBLED (3, p = 0.315) scores. All nine patients with the cactus morphology underwent successful LAA closure but one required a second attempt. Fluoroscopy time (in minutes) during procedure (C group: 30.30 (10.3) vs. NC group: 23 (9.6), p = 0.439) and contrast doses (in milliliters) (C group: 120 (148) vs. NC group: 104.5 (73), p = 0.194) were the same. In terms of in-hospital major cardiovascular adverse events, the C group showed a higher percentage of events 22,2% (2 cardiac tamponade) versus 3.5% (2 cardiac tamponade and 1 major bleeding), (p = 0.072). During follow-up, the cactus group had a higher percentage of cardiovascular adverse events: 1 stroke, 1 myocardial infarction and 1 cardiogenic shock (n = 3; 33.3%) compared to the NC group: 4 strokes and 1 cardiogenic shock (n = 5; 6,76%), showing a significant difference (p = 0.038, OR: 6,90(1.32-36.17)). Additionally, 56% of patients (n = 5) in C group died during follow up period, significantly higher than the 18% (n = 13) in the NC group (p = 0.021; OR:5,77 (1.37-24,47)). There were no differences observed between cardiovascular and non-cardiovascular deaths between groups (p = 0.095 and p = 0.103, respectively).
Conclusions: Patients presenting cactus morphology seem to be at a higher risk of in-hospital major cardiovascular adverse events. Besides, cactus LAA morphology was associated with more occurrences of cardiovascular adverse events and all-cause death during follow-up time.

PO 2. BALLOON PULMONARY ANGIOPLASTY FOR CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION: SAFETY AND PROCEDURAL TOLERANCE IN ELDERLY PATIENTS

Mariana Martinho, Rita Calé, Filipa Ferreira, Sofia Alegria, Débora Repolho, Bárbara Marques Ferreira, João Mirinha Luz, Sílvia Vitorino, Pedro Santos, Hélder Pereira

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Introduction: Balloon pulmonary angioplasty (BPA) represents an emerging therapeutic approach for chronic thromboembolic disease, with and without pulmonary hypertension (CTEPH and CTED). Nevertheless, it is a complex procedure, and with some risks that may be less well tolerated in older and frailer patients (pts).
Objectives: We aimed to determine the prevalence of complications and the rate of premature discontinuation of BPA program in pts aged ≥ 75 years, and compare it with younger pts.
Methods: Detailed procedural and technical aspects were collected for consecutive pts with inoperable or residual/recurrent CTEPH and CTED, undergoing BPA at a single institution from 2017-2023. Procedural complications were classified as the 6th World Symposium on Pulmonary Hypertension.
Results: A total of 129 BPA sessions in 28 pts were performed. Among these, 8 were aged ≥ 75 years (mean age 80.4 ± 3.8 years; 75.0% women; 100% CTEPH). There were no differences in the severity of pulmonary haemodynamics between groups: mean pulmonary artery pressure (mPAP) and pulmonary vascular resistance (PVR) before the first BPA session were 36.8 ± 10.4 mmHg and 5.3 ± 2.5 WU in elderly and 34.0 ± 12.8 mmHg and 4.9 ± 3.0 WU in the control group, respectively (p > 0.05). Femoral access was used for all pts. The mean number of vessels treated per procedure were 3.7 ± 2.2 in elderly versus 4.5 ± 1.8 in younger (p > 0.05). BPA was interrupted before achieving complete treatment in 4 elderly pts (50.0%): 2 due to inability to tolerate the duration and prolonged immobilization of the procedure and 2 due to procedure complications. The average time of fluoroscopy was 56.1 ± 14.2 minutes and the average volume of contrast used was 256.5 ± 73.5 mL per session. Procedure-related adverse events occurred in 19.4% of the interventions (36.0% in elderly vs. 15.4% in younger pts,

OR 3.09, 95%CI 1.17-8.20, p = 0.023, Table). Pulmonary artery (PA) vascular injury was noted in 7 BPA lesions (5.4% per procedure and 1.3% per vessel): hemoptysis in all, but perforation was only detected angiographically in 6 of them, 3 requiring embolization). We had 6 lung injuries, all grade 2. No pts experienced severe complications requiring mechanical ventilation, extracorporeal membrane oxygenation or peri-procedural death.

Table. BPA Complications according to the 6th World Symposium on Pulmonary Hypertension

Complications	Elderly ≥ 75 years N=25 sessions (8 pts)	Younger N=104 sessions (20 pts)	P value
During the procedure, n (%)			
Hemoptysis	3 (12.0%)	4 (3.8%)	0.132
Pulmonary artery perforation	3 (12.0%)	3 (2.9%)	0.087
Vascular dissection	2 (8.0%)	2 (1.9%)	0.169
Allergic reaction to contrast	0	1 (1.0%)	1.000
Adverse reaction to local anesthesia	0	1 (1.0%)	1.000
After the procedure, n (%)			
Lung injury	2 (8.0%)	4 (3.8%)	0.329
Contrast nephropathy	2 (8.0%)	2 (1.9%)	0.169
Access site complications	0	1 (1.0%)	1.000
Radiation injury	0	0	
Total occurrence of complications	9 (36.0%)	16 (15.4%)	0.026

Conclusions: BPA seems to be a safe procedure, without fatal or severe complications. However, elderly pts had a 3.1-fold increased risk of mild complications and a higher probability of interrupting the program before achieving complete treatment of all amenable lesions.

PO 3. SAME-DAY DISCHARGE AFTER ELECTIVE PERCUTANEOUS CLOSURE OF PATENT FORAMEN OVALE

Catarina Martins da Costa, Ana Filipa Amador, Roberto Pinto, Bruno Bragança, Carla Sousa, Rui André Rodrigues

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Percutaneous closure of patent foramen ovale (PFO) is increasingly performed in specific patients with cryptogenic stroke or clinical evidence of a paradoxical embolism. This study was performed to determine the safety of same-day discharge (SDD) following such procedures. This is a prospective, observational study of patients undergoing elective percutaneous PFO closure in a single tertiary centre in Portugal, between January 2020 and July 2023. Amplatzer™ devices (St. Jude Medical, St. Paul, MN, USA) and Nobblestich™ EL (HeartStitch, Inc., Fountain Valley, CA, USA) were used. After six months, the following events were looked: post-procedural paroxysmal atrial fibrillation, stroke, unplanned cardiac re-hospitalisation, urgent cardiac surgery, major vascular complications, pericardial effusions, device embolization and death. We studied 122 consecutive patients (52% female 68; 48 ± 12 years old) who had elective percutaneous closure with success and no complications (see the Table for more data). Forty nine (40%) had SDD. Amplatzer™ devices were used more frequently on the SDD group while Nobblestich™ EL was more common on the overnight group. During the overnight group's follow-up period, there was one non-cardiovascular death; there were no further events. SDD after elective percutaneous closure of PFO was shown to be a safe and successful patient management method, including on Nobblestich™, which we describe for the first time. Our results prove the safety of this same day discharge strategy. We hypothesize that in a near future, in selected cases, PFO closure might become an ambulatory procedure.

PO 4. CAROTID ARTERY STENTING: A DESCRIPTIVE ANALYSIS OF A TERTIARY HOSPITAL'S EXPERIENCE

Ana L. Silva, Tatiana Pereira dos Santos, Mariana Rodrigues Simões, Gonçalo Terleira Batista, Rafaela Fernandes, Vanessa Lopes, Joana Guimarães, Gonçalo Ferraz Costa, Diogo de Almeida Fernandes, José Luís Martins, Marco Costa, Lino Gonçalves

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Introduction: Carotid artery stenting (CAS) has emerged as an alternative to carotid endarterectomy for treating atherosclerotic carotid artery stenosis. It is a less invasive technique with several advantages in selected patients.
Objectives: The aim of this study was to conduct a comprehensive descriptive analysis of a population who underwent CAS in a tertiary hospital.
Methods: Single-center, retrospective study. Patients who underwent CAS from 2000 to 2023 were included. A descriptive evaluation of the population characteristics' and periprocedural outcomes was conducted. Statistical analysis was performed using SPSS 28.0.1.1 software.
Results: Of the 480 patients included (76.4% men, mean age 71.8 ± 8.3 years), a substantial proportion exhibited significant cardiovascular

Table 1. Patients' baseline characteristics

Variables – N (%)	Total 122 (100)	Overnight 73 (100)	SDD 49 (100)	P=
Female – N (%)	61 (52)	37 (51)	24 (49)	0.6
Age at repair, years - mean ± SD	48±12	45±12	50±11	0.1
BMI, kg/m^2 - median (IQR)	26 (5)	27 (6)	26 (3)	0.8
Smoking – N (%)	16 (13)	7 (9)	9 (18)	0.4
Diabetes Mellitus – N (%)	28 (22)	16 (21)	12 (24)	0.5
Dyslipidemia – N (%)	34 (28)	16 (22)	18 (37)	0.8
Hypertension – N (%)	30 (25)	18 (24)	12 (25)	0.5
Previous cryptogenic stroke	115 (95)	70 (86)	45 (91)	0.2
Previous paradoxical embolism	7 (5)	7 (9)	0 (0)	-
Amplazter™ device – N (%)	57 (46)	25 (34)	32 (65)	0.03
Noblestich™ EL device – N (%)	65 (53)	48 (65)	17 (35)	0.03
Venous access size, Fr - median (IQR)	7 (7)	8 (7)	7 (1)	0.01
Fluroscopy time, min - median (IQR)	10 (11)	12 (11)	5 (9)	0.01

BMI - body mass index; SD – standard deviation; SDD- same day discharge

Figure PO 3

risk factors: arterial hypertension (89.6%), dyslipidemia (78.1%), diabetes (33.2%), and a smoking history (28.3%). Over half had coronary artery disease (52.8%), and 21.5% had a history of previous myocardial infarction. Neurologically, 15.5% had experienced a transient ischemic attack (TIA)/amaurosis fugax, and 27.6% had a previous stroke. The indications for carotid intervention varied: 41.0% had neurological symptoms, 17.1% had asymptomatic severe stenosis, and 41.8% had it accomplished before cardiac surgery (27.8% before coronary artery bypass graft surgery, 14.0% before valvular surgery). Left and right carotid stenosis were present in 54.7% and 54.2% of patients, with 13.2% displaying bilateral disease. Type 1 aortic arch was the most common (60.6%). Distal filter embolic protection device (EPD) was utilized in 87.0% of cases, while 12.6% used proximal EPD. Concerning periprocedural complications, hematoma at the puncture site was identified in 2.4%. Acute myocardial infarction occurred in 0.9% of cases and TIA/stroke in 3.4% of cases within the first 24 hours following CAS. During the 30-day follow-up, the combined endpoint of stroke, MI, or death happened in 5.7% of patients. Rates for TIA/stroke, MI, and mortality were 3.7%, 0.9%, and 2.2%, respectively.
Conclusions: In experienced centers and feasible cases, carotid artery stenting may be an appropriate alternative to surgical endarterectomy to treat carotid artery stenosis.

PO 5. LEFT VENTRICULAR TRANSRADIAL ENDOMYOCARDIAL BIOPSY: A SAFE AND EFFECTIVE APPROACH

Ana Abrantes[1], Ana Beatriz Garcia[2], Ana Margarida Martins[1], Catarina Oliveira[1], Catarina Gregório[1], Miguel Raposo[1], Daniel Inácio Cazeiro[1], Tiago Rodrigues[2], João Agostinho[2], Dulce Brito[2], Miguel Nobre Menezes[2], Fausto J. Pinto[2]

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Introduction: Endomyocardial biopsy (EMB) outside the context of heart transplant is seldom performed due a perceived significant risk of complications. However, several studies have suggested that left ventricle EMB is safer and has a higher diagnostic yield that transvenous right ventricle biopsy, particularly if performed with a transradial approach.
Objectives: Describe the safety and diagnostic yield of EMB performed under a structured program.
Methods: Single center observational prospective registry of consecutive non-heart transplant patients (pts) submitted to EMB from January 2017 to November 2023, after implementation of a structured program where left-sided and radial access were preferred unless unavailable/contraindicated. Success rate, complications and diagnostic yield were assessed. Student T test were used for comparison of continuous variables.
Results: We included 73 pts, 69% males, mean age 54 years. 64.4% of pts presented with congestive heart failure, 8.2% cardiogenic shock, 6.8% MINOCA, 6.8% complete atrioventricular block and 5 pts were asymptomatic (carriers of Val30Met mutation). The diagnostic suspicion was infiltrative cardiomyopathy in 62%, acute myocarditis in 22% (60% with cardiogenic shock and 40% chest pain with abnormal serum troponin) and chronic myocarditis in 16%. EMB was performed on average 42 days after clinical presentation and 7 days in pts with myocarditis/cardiogenic shock. Left-sided EMB was possible in 69 (95%) of pts and vascular access was radial in 95% of these. Only 4 right-sided EMB cases were undertaken with femoral (1) or jugular access (3). The success rate was 100%. On average 6.5 fragments were obtained, 86% from at least 3 locations, mainly antero-lateral, inferior and septal walls. Procedural related complications occurred only in 1 pt (ventricular fibrillation during the procedure, promptly cardioverted, with full recovery, no sequelae and successful procedural completion). All ambulatory pts (35) were discharged on the same-day. Anatomopathology identified cardiac amyloidosis in 38% of pts, inflammatory infiltrate diagnostic of acute myocarditis in 21% and chronic myocarditis in 4%, and non-specific findings in 37% of pts. The overall diagnostic yield was 63% and was highest for acute myocarditis (69%) and infiltrative cardiomyopathy (62%).
Conclusions: Left-sided transradial EMB, in experienced hands, is highly successful and safe, with good diagnostic yield. These results data may allow clinicians to refer pts for EMB with higher confidence.

PO 6. CORONARY SINUS REDUCER DEVICE FOR THE TREATMENT OF REFRACTORY ANGINA. A SINGLE CENTRE EXPERIENCE

Miguel Sobral Domingues, Rita Carvalho, Joana Pereira, Sérgio Madeira, João Brito, Luís Raposo, Rui Teles, Manuel Almeida

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: The coronary sinus Reducer emerged as a complementary therapy in patients with angina refractory to optimal medical therapy and not amenable to revascularization.
Objectives: The aim of this study was to assess the safety and efficacy of the Reducer in a real-world cohort of patients presenting with refractory angina.
Methods: Twenty-six patients with refractory angina, objective evidence of myocardial ischemia attributable to the left coronary artery and deemed unsuitable for revascularization were treated with Reducer at a single center between April 2018 and November 2022. Safety endpoints were procedural success and complications. Efficacy endpoints, assessed at 6-month, were a reduction in Canadian Cardiovascular Society angina (CCS) class and a reduction in pharmacological antianginal therapy.
Results: Twenty-one (81%) had end-stage coronary artery disease without targets for further revascularization (13 had previous CABG ± PCI and 8 had only PCI) and 5 patients had microvascular disease without epicardial stenosis. All procedures were performed via right jugular vein. The mean procedure and fluoroscopy duration were 66 ± 29 and 19 ± 8 minutes. Procedural success was achieved in all patients, with no device related complications. There was one cardiac tamponade, promptly treated with pericardiocentesis. Regarding the efficacy endpoint, 21 patients (81%) had at least 1 reduction in CCS class, 13 patients (50%) had at least 2 class reductions, and 7 patients (28%) became asymptomatic, with a mean reduction of CCS class of 1.4 ± 0.9, from 2.6 ± 0.5 to 1.2 ± 0.9 (p = 0.001) at 6-month follow-up. During this time frame, twelve patients (46%) withdrawn or reduced the dose of at least on anti-anginal drug, the mean reduction of anti-anginal drugs was 0.54 ± 0.86, from 3.5 ± 1.02 to 2.9 ± 1.07 (p = 0.04).
Conclusions: In this real-world, single-center experience, implantation of Reducer was safe and associated with improvement of angina and reduction of anti-anginal drugs intake in patients with refractory angina unsuitable for revascularization.

SEXTA-FEIRA, 19 ABRIL de 2024 | 08:00-09:00

Área de Posters 2 | Sessão de Posters 02 - Embolia Pulmonar

PO 7. PERFORM SCORE: A PROGNOSTIC TOOL FOR PREDICTING NEED FOR FIBRINOLYSIS IN PULMONARY EMBOLISM

Mariana Duarte Almeida, Gonçalo Ferreira, João Gouveia Fiúza, Vanda Devesa Neto, Inês Pires, Nuno Craveiro

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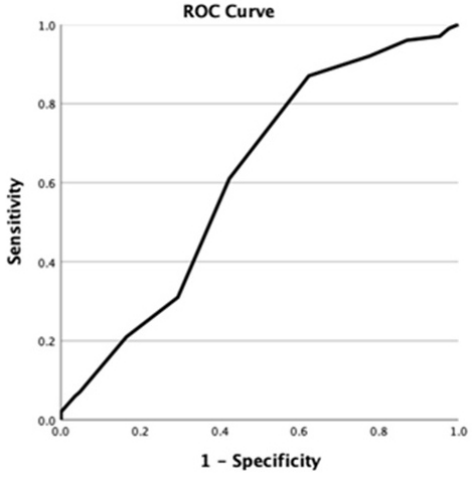
Introduction: Pulmonary embolism (PE) is a potentially lethal condition presenting to emergency departments, which requires precise risk stratification for timely intervention. The Pulmonary Embolism Severity Index (PESI)

score is widely used for acute PE severity assessment. However, obtaining comprehensive information in the emergency setting, particularly regarding comorbidities like cancer and chronic pulmonary disease, can be challenging. Consequently, there is a need to evaluate streamlined scoring systems for rapid decision-making. The validated Pulmonary Embolism Risk score FOR Mortality (PERFORM) score, utilizing age, heart rate, and partial pressure of arterial oxygen, has been used to predict mortality in PE patients. This study aims not only to assess PERFORM's capacity to predict mortality outcomes, but mainly to predict fibrinolysis requirement in PE-diagnosed patients.

Methods: Retrospective data from 198 patients admitted due to intermediate or high-risk acute PE in a Cardiology Department were analyzed. Demographic information, admission clinical data, treatment choices, and mortality outcomes were examined. The PERFORM score was calculated for each patient. Independent t-test was used for group comparison. Logistic regression was used to assess the association between PERFORM and outcomes. The score's ability to predict fibrinolysis and mortality outcomes was evaluated using Receiver Operating Characteristic (ROC) curves and Area Under the Curve (AUC) values.

Results: In the analyzed cohort of 198 patients (59.1% females, mean age 63.1 ± 17.9 years), 50.5% underwent fibrinolysis, and 6.6% experienced in-hospital mortality. Patients that undergone fibrinolysis had a higher PERFORM score (6.0 ± 2.0), comparing with those submitted to a conservative approach (5.2 ± 2.2). The independent t-test indicated a statistically significant difference between the groups (p = 0.007). This suggests that PERFORM score can predicted need for fibrinolysis, yielding an odds ratio of 1.212 (p = 0.009; 95%CI: 1.049-1.400). ROC analysis resulted in an AUC of 0.611 (p = 0.009, 95%CI 0.528-0.694), indicating a moderate discriminatory capacity. However, the PERFORM score did not predict mortality (p = 0.777; CI 95%: 0.376-0.671).



Conclusions: In our population, PERFORM score lacked ability to predict mortality, but showed some capacity to predict need for fibrinolysis, especially in settings that are information-constrained and time-sensitive. Nevertheless, both low and high PERFORM scores lack conclusive determination for the optimal therapeutic approach. Attending physicians should integrate clinical data, incorporating the PERFORM score, while carefully weighing risks and benefits associated with fibrinolysis. Prospective refinements in scoring systems hold promise for tailoring interventions to maximize benefits for individual patients.

PO 8. SERUM ALKALINE PHOSPHATASE AS A RISK-STRATIFICATION TOOL IN PULMONARY EMBOLISM

Tiago Filipe Aguiar, Carlos Costa, Simão Carvalho, Adriana Pacheco, Diana Carvalho, Lisa Ferraz, Joana Ribeiro, Ana Briosa Neves

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Introduction: Through its combined potential as a biomarker for systemic inflammation, acute hepatic overload injury, and diffuse vascular calcification, serum alkaline phosphatase (ALP) could act as an important biomarker for risk-stratification in acute pulmonary embolism (APE).

Objectives: To evaluate the prognostic value of serum ALP in patients presenting at the emergency department with APE.

Methods: Cohort analysis of 201 sequential patients presenting in the Internal Medicine ward due to APE diagnosed by computed tomography pulmonary angiogram (CTPA). The study endpoints were in-hospital mortality, and a composite endpoint (CE) of in-hospital mortality and need for fibrinolysis.

Results: The population consisted of 237 patients, with a mean age of 69 ± 17 years, of which 40% were male. According to the PESI score, 34% of the patients were classified as high or intermediate-high risk. ALP levels were positively associated with a higher in-hospital mortality (120 [IQR 66-164] vs. 78 [71-100], with vs. without in-hospital mortality, respectively [p < 0.05]), and with the CE (80 [IQR 62-139] vs. 68 [62-100], p < 0.05). In the multivariate analysis, ALP remained and independent predictor of the CE (OR 1.003 per unit increase in ALP, 95%CI 1.000-1.007, p < 0.05); a non-significant trend was observed for the prediction of in-hospital mortality after adjustment for confounding variables (OR 1.004 per unit increase, 95%CI 1.000-1.009, p = 0.057). To assess whether gamma-glutamyl transferase (GGT), also a marker of cholestasis, would be an equivalent predictor of prognosis, similar analyses were performed for GGT. GGT was associated with both in-hospital mortality and the CE in univariate but not multivariate analysis, suggesting it is inferior to ALP as a prognostic indicator in this setting. Limitations: Our study was retrospective in nature. The fact that our cohort was small and that there were some missing cases for the TTE data and PESI score, precluded their inclusion in the multivariate analyses.

Conclusions: Our results suggest that serum ALP is an important prognostic indicator in the setting of APE, and may be used as an add-on to existing risk-scores to support treatment decisions.

PO 9. RESIDUAL PULMONARY HYPERTENSION AFTER PEA – AN ILL-DEFINED PROBLEM

Catarina Sena Silva[1], Cláudia Jorge[2], Ana Beatriz Garcia[1], Catarina Simões de Oliveira[1], Ana Margarida Martins[1], Miguel Azaredo Raposo[1], Daniel Inácio Cazeiro[1], Marta Vilela[1], Tatiana Guimarães[2], Nuno Lousada[2], Fausto J. Pinto[2], Rui Plácido[2]

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Introduction: Chronic thromboembolic pulmonary hypertension (CTEPH) is a complex disease, with a pathophysiology that goes beyond thrombus induced mechanical obstruction. Pulmonary endarterectomy (PEA) is the gold-standard treatment for all suitable patients (pts), however, many suffer from residual PH. Balloon pulmonary angioplasty (BPA) and vasodilator therapy are therapeutic options for these pts. Residual pulmonary hypertension (PH) after PEA is a complex and ill-defined reality. While PEA is the gold-standard treatment for CTEPH, many pts still suffers from incomplete clearance of the pulmonary tree and/or persistent microvasculopathy after surgery. This study aimed to retrospectively analyze a population who underwent PEA to determine the presence of residual PH and explore potential predictors of this condition.

Methods: This retrospective study collected clinical and laboratory parameters at baseline and follow-up (FUP), including the COMPERA 4-strata risk assessment. Hemodynamic data from right heart catheterization, intra-op surgical disease classification, and echocardiographic assessment were compared. Clinically significant residual PH was defined as a mean pulmonary artery pressure (mPAP) > 37 at 6-month post-PEA. Mean absolute differences before and after treatment were calculated, and logistical regression was conducted to search for predictors of residual PH.

Results: The study included 30 pts with a mean age of 58 ± 14.9 years. The majority (57%) were female, and the mean follow-up (FUP) duration was 74.4 ± 24 months. Eleven pts (37%) had residual PH at 6-month post-PEA and were enrolled in BPA program after optimized medical therapy including vasodilators. Univariate analysis identified pre-PEA tricuspid S', pre-PEA

pulmonary vascular resistance, and mPAP evaluated in the OR post PEA as factors significantly related to residual PH at 6 months. However, multivariate analysis using logistic regression failed to predict residual PH. At FUP, 85.7% of pts achieved a low to intermediate-low risk on the 4 strata assessment, with 70% experiencing an improvement in World Health Organization (WHO) functional class. Among these, 44% reduced their WHO class by more than 1 level. The mean decrease in NTproBNP, a marker of cardiac strain, was 1,688 ± 1,156 pg/ml. Although not statistically significant, there was a trend towards smaller improvement in all categories for pts with residual PH. During the FUP period, 5 pts died, all of whom had heart failure hospitalizations.
Conclusions: Residual PH affects a significant number of pts who undergo PEA for CTEPH. The pathophysiology of residual PH after PEA is complex, and there is a lack of appropriately powered studies to identify risk factors. However, multimodal management in referral centers may lead to favorable outcomes in terms of functional capacity improvement and overall risk reduction.

PO 10. BALLOON PULMONARY ANGIOPLASTY IN CTEPH – READY FOR THE FRONTLINE?

Sofia Esteves[1], Miguel Azaredo Raposo[2], Daniel Inácio Cazeiro[2], Tatiana Guimarães[2], Susana Robalo Martins[2], Nuno Lousada[2], Rui Plácido[2], Miguel Nobre Menezes[2], Cláudia Moreira Jorge[2], Fausto J. Pinto[2]

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Introduction: Balloon pulmonary angioplasty (BPA) is currently guideline recommended as a treatment option when pulmonary endarterectomy (PEA) is not feasible, and medical therapy does not ameliorate symptoms. There are now reports supporting BPA as a 1st line option, even in patients (pts) with operable disease, excluding pts with large central clots.
Objectives: To evaluate hemodynamic, laboratorial, and clinical results from a BPA program in a PH referral center, comparing pts who had BPA only with those with prior PEA.
Methods: Retrospective single center study, analyzing a population of CTEPH pts treated in a PH referral center, enrolled in a BPA program. Clinical parameters with risk stratification (with the 4 strata risk assessment tool), right heart catheterization (RHC), echocardiography, laboratorial data and clinical outcomes were assessed. We compared the results from BPA sessions between groups, regarding hemodynamic changes and complications.
Results: We analyzed a population of 18 pts with a mean age of 64 ± 11.5 years, 78% female, with a mean FUP was of 6.8 ± 2 years. Regarding therapeutic strategy, 67% of pts were enrolled in a BPA program due to residual PH post PEA, and 33% of pts had first line BPA, being deemed not suitable for surgery. All pts were under vasodilator specific therapy, 50% under dual therapy and 17% with triple. 67 BPA sessions were performed, with a mean of 4 sessions/pt and 3 lesions treated/session. Hemoptysis was the only complication, occurring in 9 sessions, resolving with non-invasive ventilation. Hemodynamic outcomes after BPA sessions: there was a significant difference between groups, with larger reductions in the BPA only group. Mean reduction of mPAP was 6.8 ± 12.4 mmHg (17.3 in BPA vs. 2.9 in BPA post PEA); mean reduction of sPAP was 10.2 ± 18.2 mmHg (21 vs. 6.12); median reduction of PVR was 0.83 IQR 3.5 Wu (3.7 vs. no reduction). These results were mainly driven by 4 pts in the PEA+BPA group, who displayed worsening hemodynamics despite optimized medical therapy and successive BPA sessions. 3 patients died, 2 of which were of this progressively worsening cohort. At FUP, 70% of pts were at low or intermediate low risk status, 44% having improved WHO functional class. Median reduction of NTproBNP was of 1,450 ± 2,340 pg/ml.
Conclusions: BPA is a safe when conducted in experienced centers. CTEPH has a complex physiopathology and the benefits of BPA extend beyond hemodynamic improvement measured by RHC. Pts with residual PH post PEA tend to have less significant hemodynamic improvement, probably reflecting the complexity of the lesions and the associated microvasculopathy. In selected pts, BPA as an alternative to PEA, should be explored in adequately powered studies.

PO 11. PREVALENCE AND PREDICTORS OF NORMOTENSIVE CARDIOGENIC SHOCK IN INTERMEDIATE-HIGH RISK PULMONARY EMBOLISM

Bárbara Lacerda Teixeira, Sofia Jacinto, Miguel Antunes, André Grazina, Francisco Albuquerque, André Ferreira, João Reis, Ana Galrinho, Luís Almeida Morais, Ruben Ramos, Duarte Cacela, Rui Cruz Ferreira

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Introduction: Patients diagnosed with acute pulmonary embolism (PE) and hypotension (high-risk PE) exhibit a notably elevated mortality rate.

	All (n= 46)	Without normotensive shock (n = 31)	With normotensive shock (n = 15)	p value
Female - n (%)	22 (45,8)	19 (54,3)	3 (23,1)	0,054
Age in years - mean ± SD	57 ± 17,9	55 ± 18,6	63 ± 11,3	0,192
Cancer - n (%)	6 (12,5)	5 (14,3)	1 (7,7)	0,539
Acute-on-chronic - n (%)	**8 (16,7)**	**3 (8,6)**	**5 (38,5)**	**0,014**
Duration of symptoms - mean ± SD	3 (2)	3 (1)	2 (4)	0,325
CDT - fibrinolysis - n (%)	36 (75)	29 (82,9)	7 (53,8)	0,061
CDT - penumbra - n (%)	5 (10,4)	4 (11,4)	1 (7,7)	0,587
CDT - fibrinolysis + penumbra - n (%)	**7 (14,6)**	**2 (5,7)**	**5 (38,5)**	**0,011**
Systolic blood pressure in mmHg - mean ± SD	117 ± 25	114 ± 25	125 ± 25	0,211
Heart rate in bpm - mean ± SD	100 ± 20	100 ± 20	100 ± 23	0,988
Lactate in mmol/L - median (IQR)	**1,5 (1,08)**	**1,3 (1)**	**1,7 (1,35)**	**0,011**
Arterial oxygen saturation in % - median (IQR)	92 (4,5)	94 (5)	92 (3,5)	0,403
Venous oxygen saturation in % - mean ± SD	**64 ± 8,4**	**67 ± 6,8**	**57 ± 7,7**	**< 0,001**
Ratio Pit/CV - mean ± SD	1,4 ± 0,2	1,4 ± 0,2	1,4 ± 0,2	0,899
Saddle PE - n (%)	**15 (31,3)**	**8 (22,9)**	**7 (53,8)**	**0,040**
RV dilatation - n (%)	43 (95,6)	31 (93,9)	12 (100)	0,383
RV dysfunction - n (%)	**29 (61,7)**	**18 (52,9)**	**11 (84,6)**	**0,046**
TAPSE in mm - mean ± SD	16 ± 3,5	17 ± 3,7	15 ± 3,0	0,341
Systolic pulmonary artery pressure in mmHg - median (IQR)	43 (17)	41 (9)	56 (26)	0,065
Troponin in pg/ml - median (IQR)	137 (415)	150 (608)	123 (264)	0,685
NT-proBNP in pg/ml - median (IQR)	**2538 (3414)**	**1991 (2839)**	**3667 (5702)**	**0,036**
Hemoglobin in g/dL - mean ± SD	13,5 ± 2,2	13,1 ± 2,2	14,5 ± 2,0	0,053
Creatinine in mg/dL - median (IQR)	**0,9 (0,4)**	**0,8 (0,3)**	**1,4 (1,0)**	**0,010**
D-dimers in ng/ml - median (IQR)	7906 (12433)	7000 (11881)	11508 (36676)	0,585

Table 1. Baseline characteristics, procedural, echocardiography, CT and laboratory data.

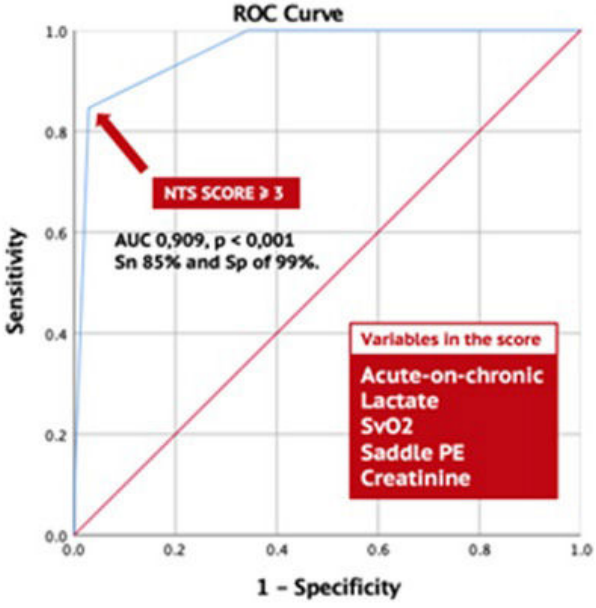

Image 1. Receiver operating characteristic curve showing the performance of the NTS SCORE in predicting NTS in intermediate-high PE patients.

Figure PO 11

In intermediate-risk PE, cardiogenic shock may also manifest, but this subgroup is less extensively characterized. Patients with normotensive shock (NTS) display systolic blood pressure ≥ 90 mmHg but cardiac index ≤ 2.2 L/min/m2, and it is generally recognized that these patients may still face significant morbidity and mortality due to compromised cardiac function and inadequate perfusion to vital organs.
Objectives: To assess prevalence and predictors of NTS in intermediate-risk PE.
Methods: A prospective registry of consecutive intermediate-high PE pts submitted to catheter directed therapies (CDT) in a single tertiary center was used. Clinical, biomarkers, echocardiographic, CT and right heart catheterization (RHC) data were collected at admission. Pts were divided according to having NTS or not. Comparison was assessed by chi-square, t-test and Mann-Whitney. Logistic regression was used to identify predictors of NTS. After the identification of this variables, a composite score was made and assessed for its accuracy to identify NTS patients using ROC curve analysis.
Results: 48 pts (45.8% women, mean age 57 ± 18) were included. 27.1% (n = 13) were in NTS. Patients in NTS were more likely to have acute-on-chronic presentation (38.5% vs. 8.6%, p = 0.014), higher lactate levels (1.7 vs. 1.1, p = 0.011), lower venous saturation of oxygen (SvO2) (57 ± 7.7 vs. 67 ± 6.8, p < 0.001), have saddle PE (53.8% vs. 22.9%, p = 0.040), RV dysfunction on echocardiography (84.6% vs. 52.9%, p = 0.046), higher NT-proBNP levels (3,667 vs. 1,991, p = 0.036) and higher creatinine levels (1.4 vs. 0.8, p = 0.010). A double approach in CDT (fibrinolysis + penumbra) was more common in patients with NTS (38.5% vs. 5.7%, p = 0.014). Regarding NTS predictors, we identified 5 independent predictors: acute-on-chronic presentation (p = 0.005), lactate levels (p = 0.034), SvO2 (p = 0.013), saddle PE (p < 0.001) and creatinine levels (p = 0.017). Using a ROC curve analysis, AUC for lactate was 0.740 with a Sn of 61.5% and a Sp 66% for a cut-off of 1.55, for SvO2 was 0.836 with a Sn of 76.9% and Sp 82% for a cut-off of 61.9%, for creatinine was 0.745 with a Sn of 61.5% and Sp 80% for a cut-off of 1.1 mg/dL. After identify these cut-offs, a composite score was created, attributing 1 point for each predictor. A score ≥ 3 (from 0 to 5) demonstrated high accuracy to identify NTS patients, with an AUC 0.909, p < 0.001, a Sn 85% and Sp of 99%.
Conclusions: Despite being hemodynamically stable, 27% of patients classified as intermediate-high risk exhibited normotensive shock. Our findings indicate that acute-on-chronic presentation, lactate levels, SvO2, the presence of saddle pulmonary embolism, and creatinine levels were independent predictors of this condition. A score 3 ≥ effectively enhanced the risk stratification of these patients.

PO 12. POOR PROGNOSIS IN PATIENTS WITH ACUTE PULMONARY EMBOLISM TREATED WITH MECHANICAL THROMBECTOMY

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Introduction: Acute pulmonary embolism (PE) is associated with high mortality and morbidity rates. Percutaneous catheter-based treatments have emerged as a viable alternative for treating this condition, alongside thrombolysis.
Objectives: The aim of this study is to evaluate the outcomes of patients with acute PE referred for mechanical trombectomy.
Methods: From January 2016 and August 2023, all patients referred to a tertiary centre for pulmonary angiography with the intent of undergoing mechanical thrombectomy for acute PE were retrospectively included. Clinical data and outcomes were collected.
Results: Fifty-two patients (58% female; mean age 66 ± 18 years) were referred to pulmonary angiography in the setting of acute PE, of whom 40 patients (77%) underwent continuous aspiration mechanical thrombectomy with an overall success rate of 70%. Twenty-eight percent of patients had bilateral thrombus. Thirty-two patients had intermediate-high risk or high-risk PE, and the mean Pulmonary Embolism Severity Index (PESI) was 146 points. Thirteen patients (25%) underwent thrombolysis prior to angiography, while 15 patients (28%) had an absolute or relative contraindication for thrombolysis. Ventilation/perfusion scans were performed in ten patients (19%) during the follow-up period, of whom five patients (10%) had evidence of residual illness, with no significant differences between the thrombectomy and non-thrombectomy groups (p = 0.8). The overall mortality rate over the complete follow-up period was 39%, while 25% of patients died within 48 hours of the procedure. Predictors of mortality on univariate analysis included older age (HR 1.06 [95%CI 1.00-1.11, p = 0.03]), history of chronic obstructive pulmonary disease (HR 3.88 [95%CI 1.41-10.69, p = 0.01]), history of previous deep vein thrombosis or PE (HR 3.40 [95%CI 1.34-8.63, p = 0.01]), thrombolysis prior to referral for mechanical thrombectomy (HR 5.94 [95%CI 1.93-18.26, p < 0.01), shock or haemodynamic instability (HR 8.50 [95%CI 2.44-29,52, p < 0.01]) and resuscitated cardiac arrest (HR 5.98 [95%CI 2.34-15.30, p < 0.01]). On Cox multivariate analysis, the presence of shock or haemodynamic instability was a predictor of increased mortality (HR 5.23 [95%CI 1.12-24.3, p = 0.04]).
Conclusions: Intermediate and high-risk acute PE is associated with high morbidity and mortality rate regardless of treatment strategy. This is particularly evident during the index hospitalization, especially in clinical and hemodynamic unstable patients.

SEXTA-FEIRA, 19 ABRIL de 2024 | 08:00-09:00

Área de Posters 3 | Sessão de Posters 03 - Arritmias cardíacas e dispositivos percutâneos no risco cardioembólico

PO 13. LEFT ATRIAL VOLUME PREDICTS MAJOR ADVERSE CARDIAC EVENTS AFTER CATHETER ABLATION FOR ATRIAL FIBRILLATION

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Introduction: Atrial fibrillation (AF) is linked with significant mortality and morbidity, imposing a considerable burden on both patients and healthcare systems. Recent studies suggest that early rhythm-control therapy reduces the risk of major adverse cardiovascular events (MACE) compared to standard care in selected patients with early AF. While left atrial dilation has been associated with the clinical recurrence of AF and time to first recurrence post-ablation, this metric lacks direct clinical implications, failing to address the association between AF ablation outcomes and more severe clinical endpoints, such as all-cause mortality, stroke risk, cardiovascular mortality, or hospitalization.
Objectives: This study aimed to evaluate the prognostic significance of Left Atrial Volume Index (LAVI) in predicting MACE following pulmonary vein isolation (PVI).
Methods: We conducted a retrospective analysis of patients with symptomatic AF who underwent PVI at our center. LAVI was measured using transthoracic echocardiography (TTE) prior to AF ablation. The primary endpoint was the time to first MACE (cardiovascular death, non-fatal myocardial infarction, non-fatal stroke, and acute heart failure necessitating hospitalization) after AF ablation. The secondary outcome was the time to the first documented recurrence of atrial arrhythmias.
Results: The study included 730 consecutive patients with symptomatic AF (470 male; mean age 58 ± 11 years). Most patients (74%, N = 542) presented with paroxysmal AF. The mean indexed LA volume was 39 ± 17 ml/m^2. Over a follow-up period of 1.7 ± 1.2 years, 202 recurrences and 17 MACE were observed. LAVI was significantly associated with MACE (Hazard Ratio [HR]: 1.44 for each 10 ml/m^2 increase; 95% Confidence Interval [CI]: 1.02-2.02; p = 0.039). Furthermore, each two-fold increase in LAVI was associated with a 41% increase in the risk of early recurrence of AF (HR of 1.41; 95%CI: 1.00-1.98; p = 0.048).

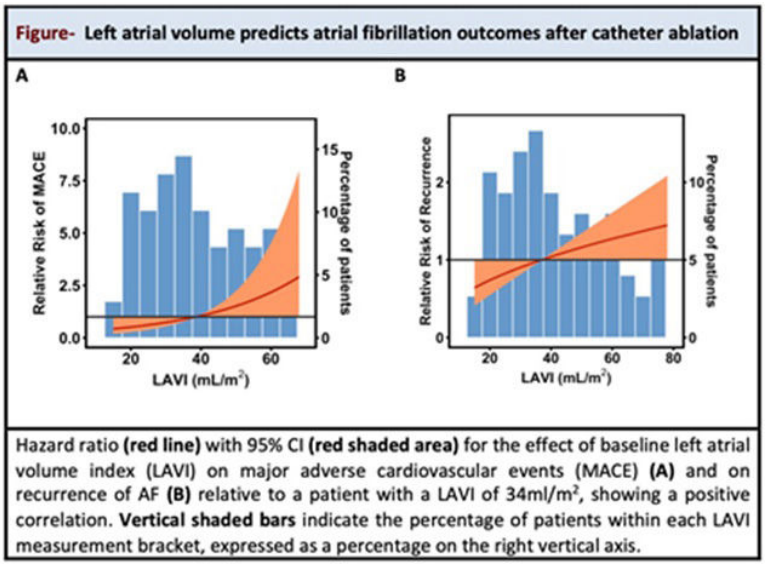

Figure- **Left atrial volume predicts atrial fibrillation outcomes after catheter ablation**

Hazard ratio **(red line)** with 95% CI **(red shaded area)** for the effect of baseline left atrial volume index (LAVI) on major adverse cardiovascular events (MACE) **(A)** and on recurrence of AF **(B)** relative to a patient with a LAVI of 34ml/m², showing a positive correlation. **Vertical shaded bars** indicate the percentage of patients within each LAVI measurement bracket, expressed as a percentage on the right vertical axis.

Figure PO 13

Conclusions: Beyond its predictive value for AF recurrence, TTE-derived LAVI is a potentially valuable indicator for anticipating MACE following AF ablation.

PO 14. IMPLANTABLE LOOP RECORDER MONITORING IN CARDIOMYOPATHIES: UNVEILING CLINICALLY RELEVANT ARRHYTHMIAS

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Introduction: Implantable loop recorders (ILR) are a valuable tool in the diagnosis of infrequent arrhythmias in cardiomyopathy patients (CM P). Their impact on improving the detection of relevant arrhythmias and guiding clinical management is still being studied.
Objectives: To evaluate the value of ILR on the diagnosis of dysrhythmias and subsequent management of CM P and arrhythmia suggestive symptoms.
Methods: Single-center retrospective study that included CM P who underwent ILR implantation due to arrhythmia suggestive symptoms.
Results: This study included 44P (52% females; mean age 59 ± 17 years) with the following CM: 43.5% (19P) dilated CM (DCM), 34% (15P) hypertrophic CM (HCM), 9% (4P) RV arrhythmogenic CM (ACM), 4.5% (2P) non-dilated LV CM with hypertrabeculation (N-DCH), 4.5% (2P) Fabry disease (FD) and 4.5% (2P) transthyretin amyloidosis (ATTR). None of the P had experienced life-threatening arrhythmias prior to ILR implantation. The most common reasons for ILR implantation were unexplained syncope (71%) and palpitations suspected to be of arrhythmic origin (23%). During a median follow-up of 18 (IQR 5-34) months after ILR implantation, arrhythmic events were documented in 27P (61%). Specifically, sustained ventricular tachycardia (VT) was detected in 8P (2 DCM, 2 HCM, 1 ACM, 1 N-DCH, 1 FD, 1 ATTR), and non-sustained VT in 1P (ACM). As a result, all of those P underwent ICD implantation. 3P with HCM had symptomatic pauses > 6s due to sick sinus syndrome, resulting in 1 beta-blocker dose reduction, 1 pacemaker implantation and 1 ICD (P also had non-sustained VT). 4P had complete heart block leading to: 2 CRT-D (HCM and DCM, P with borderline LVEF~35%), 1 ICD (FD, P also had non-sustained VT) and 1 pacemaker implantation (HCM). One HCM P had slow atrial fibrillation (AF), resulting in pacemaker implantation. Six P had AF, with 3 experiencing symptoms, all started anticoagulation. Two P had asymptomatic supraventricular tachycardia. One patient with DCM had wide complex tachycardia and underwent an electrophysiological study with ventricular programmed stimulation, which was negative. One DCM P had nocturnal heart block with subsequent sleep apnea diagnosis and started CPAP therapy. Symptoms without diagnostic findings were reported in 2P.
Conclusions: ILR monitoring identified clinically relevant arrhythmias in over half of the CM P and arrhythmia suggestive symptoms, leading in most of them to a management change with a potential prognostic impact on sudden death and thromboembolism prevention, such as device implantation and anticoagulation.

PO 15. IMPROVING ADHERENCE TO ANTICOAGULATION: A NUDGE STRATEGY-BASED INTERVENTION ON PATIENTS WITH ATRIAL FIBRILLATION OR ATRIAL FLUTTER SCHEDULED FOR ELECTRICAL CARDIOVERSION

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Introduction: Atrial fibrillation (AF) and atrial flutter (AFL) are important causes of morbidity and are associated with an increased risk of stroke. This risk is particularly high immediately after reversion to sinus rhythm, due to atrial stunning, and can be substantially reduced if preceded by ≥ 3 weeks of therapeutic anticoagulation before electrical cardioversion (ECV). Suboptimal medication adherence is frequent and is associated with increased morbidity, rescheduling of procedures and economic burden. Exploring helpful strategies to overcome this problem is crucial and the use of nudges has shown promising results in promoting adherence to health interventions in other areas.
Objectives: To investigate the impact of nudging (defined as subtly directing individuals toward positive behavioral choices) on adherence to anticoagulation before elective ECV. Design: Prospective interventional study that included outpatients with AF or AFL scheduled for an elective ECV between May and November 2023, in a Portuguese hospital. Intervention: Patients (pts) were randomly assigned to receive a short letter (the nudge), via mail, providing education about anticoagulation and potential risks of nonadherence (intervention group) or to usual care (oral information given at the time of appointment - control group). On the day of ECV, pts were asked about optimal adherence to anticoagulation, defined as no missed anticoagulant tablets in the previous 3 weeks, by two different health

	All (n=65)	Intervention (n = 33)	Control (n=32)	p-value
Age - mean±SD	62.7±11.4	62.3±12.3	63.0±10.6	0.799
Gender - n (%)				0.726
Women	21 (32.3)	10 (30.3)	11 (34.4)	
Men	44 (67.7)	23 (69.7)	21 (65.6)	
Current working situation- n (%)				0.794
Active	36 (55.4)	17 (51.5)	19 (59.4)	
Unemployed	5 (7.7)	3 (9.1)	11 (34.4)	
Retired	24 (36.9)	13 (39.4)	2 (6.3)	
Level of education completed - n (%)				0.772
Secondary School or University	17 (26.2)	8 (24.2)	9 (28.1)	
Basic School	48 (73.8)	25 (75.8)	23 (71.9)	
Regular weekly physical activity	11 (16.9)	4 (12.1)	7 (21.9)	0.294
Anticoagulant Medication - n (%)				0.915
Warfarin	5 (7.7)	2 (6.1)	3 (9.4)	
Apixaban	29 (44.6)	14 (42.4)	15 (46.9)	
Edoxaban	18 (27.7)	10 (30.3)	8 (25.0)	
Rivaroxaban	13 (20.0)	7 (21.2)	6 (18.8)	
CHA_2DS_2-VASc - mean±SD Women	3.2±1.8	3.1±2.0	3.4±1.7	0.974
Men	2.1±1.6	2.2±1.8	2.0±1.3	
Arrhythmia - n (%)				0.998
Atrial Fibrillation	53 (81.5)	27 (81.8)	26 (81.3)	
Atrial Flutter	12 (18.5)	6 (18.2)	6 (18.7)	
Comorbidities - n (%)				
Hypertension	39 (60.0)	20 (60.6)	19 (59.4)	0.919
Diabetes Mellitus	12 (18.5)	5 (15.2)	7 (21.9)	0.485
Stroke	5 (7.7)	1 (3.0)	4 (12.5)	0.197
Psychiatric disorders	9 (13.8)	2 (6.1)	7 (21.9)	0.082
Heart Failure	23 (35.4)	11 (33.3)	12 (37.5)	0.725

Table 1. Characteristics of the participants. Descriptive statistics are given as counts with percentages for categorical variables and as mean ± standard deviation (SD) for continuous variables. Categorical variables were analysed using the Pearson Chi-Square or Fisher exact test. Student t test was executed for continuous variables.

Figure PO 15

professionals. A questionnaire was also applied. For pts who failed one or more pills, ECV was postponed and education on anticoagulation was provided.

Results: A total of 65 pts were enrolled (mean age 63 ± 11, 33% female, mean CHA_2DS_2-VASc score 2.5 ± 1.7): 33 in the intervention group and 32 in the control group. There were no significant differences in baseline characteristics between the groups (Table). Anticoagulation optimal adherence was higher in the intervention group than in the control group (97% vs. 78%, p = 0.03). One patient in the intervention arm and 7 pts in the control arm were discharged without undergoing ECV due to suboptimal compliance. Compared with usual care, the number of postponed elective ECV was lower in the group receiving the informative letter, highlighting potential benefits of this nudge strategy (3% vs. 22%; OR 0.11 [95%CI 0.01-0.97], p = 0.03).

Conclusions: The implementation of a nudge strategy, in the form of a simple informative letter, significantly improved compliance in pts with AF or AFL scheduled for elective ECV. Given that low awareness about the importance of anticoagulation is a main reason for suboptimal adherence, efforts to inform and alert pts in a straightforward, inexpensive, and accessible way can improve anticoagulation adherence and mitigate the potential harmful consequences of poor compliance, including the costs associated with postponing procedures such as ECV.

PO 16. DIAGNOSTIC YIELD OF 24-HOUR HOLTER MONITORING IN NONAGENARIANS – INSIGHTS FROM A SINGLE-CENTER COHORT

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Introduction: With increasing life expectancy, the prevalence of very old individuals in clinical practice is rising. Despite this, there is a paucity of data regarding diagnostic performance of 24-hour Holter (24-H) monitoring in those patients (pts).

Objectives: Evaluate the diagnostic yield of 24-H monitoring in nonagenarians.

Methods: Single-center retrospective cohort study of pts with age ≥ 90yrs who underwent 24-H monitoring (Oct 2014-Nov 2022). Data on baseline characteristics, electrocardiography and outcomes (1-year all-cause mortality, cardiovascular (CV) mortality, urgent pacemaker (PM) implantation) was recorded. 24-H positive findings were defined: sinus node disease (SND) (symptomatic sinus pause > 2.5s; junctional rhythm); atrioventricular (AV) node disease (type 2 2nd degree AV block; high-grade AV block; 3rd degree AV block); atrial fibrillation (AF) (episode with duration

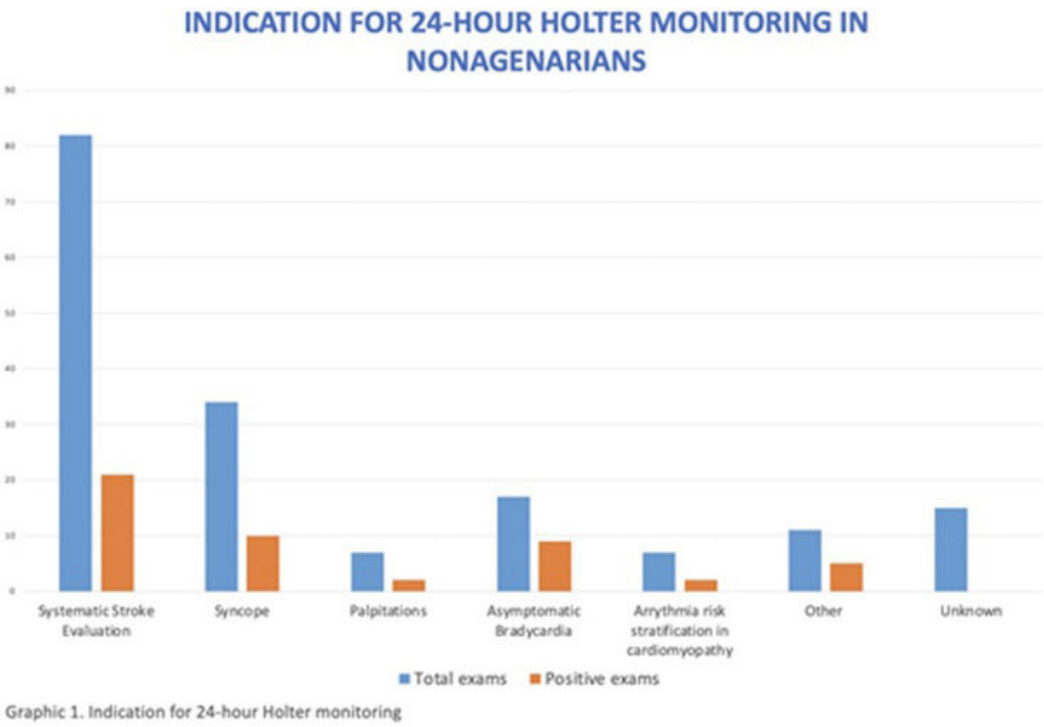

Figure PO 16

> 30s); slow AF (mean ventricular rate < 50/min; symptomatic ventricular pause > 3s; asymptomatic ventricular pause > 6s).
Results: 204 exams from 181 pts were analyzed (median 91 years, 55% male). Structural heart disease was documented in 43% of pts, mainly hypertensive heart disease (56%). Electrocardiographic features were sinus rhythm (68%), bundle branch block (34%) and median corrected QT interval 435 ms (IQR 390-480). Indications for Holter were systematic stroke evaluation (40%), syncope (17%), monitoring of AF rate control (10%), evaluation of asymptomatic bradycardia (8%), monitoring of premature atrial/ventricular contractions (5%), palpitations (3%) and arrythmia risk stratification in cardiomyopathy (3%) (Figure). Positive findings were observed in 29% of syncope cases [AV node disease (40%), SND (40%), and slow AF (20%)] and 4 pts (40%) were referred for PM implantation. Regarding palpitations, 2 pts had a positive study (29% diagnostic yield), 1 with AV node disease (referred for PM implantation) and 1 with *de novo* AF. Regarding stroke evaluation, the diagnostic yield was 26%, the majority with *de novo* AF (76%). Of those 50% were anticoagulated after this finding. Overall, 24-H monitoring changed therapeutic attitudes in 26 pts (14%). One-year all-cause mortality was 23%, CV mortality was 3% and 4% required urgent PM implantation.
Conclusions: In this population, 24-H monitoring remained a valuable non-invasive test for nonagenarians and lead to changes in therapeutic management in 14% of pts. As expected one-year mortality was high, mainly due to non-CV causes.

PO 17. LEFT ATRIAL APPENDAGE CLOSURE (LAA): A COMPREHENSIVE ANALYSIS OF PERIPROCEDURAL AND LONG-TERM OUTCOMES IN ELDERLY PATIENTS

Mariana Rodrigues Simões, Gonçalo Ferraz Costa, Gonçalo Terleira Batista, Tatiana Pereira dos Santos, Ana L. Silva, Rafaela Fernandes, Vanessa Lopes, José Luís Martins, Manuel Santos, Luís Paiva, Marco Costa, Lino Gonçalves

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Introduction: Elderly patients are an expanding and vulnerable population. When undergoing catheter based left atrial appendage closure (LAA), a comprehensive consideration of risks is crucial.
Methods: We conducted a retrospective study at one centre, reviewing all patients who underwent catheter based LAA closure between May 2010 and December 2020. Using SPSS software, we compare periprocedural results and outcomes by the end of follow-up between elderly patients (≥ 75 years old) and younger ones.
Results: A total of 156 patients were included. Seventy-six patients were 75 years old or older (49%). The older group had a median age of 79 (ID = 5) years, and the other 68 (ID = 8) years. Among the elderlies, 68% were men *versus* (*vs*) 60% in the younger group. The elderly group presented a median follow-up time of 424(ID = 1,075) days *vs*. 564 (ID = 1,159) days, (p = 0.420). Among the elderlies, forty-eight had permanent atrial fibrillation (AF), seven persistent AF and twenty-one paroxysmal AF. Elderly patients had more hyperlipidaemia (n = 48 *vs*. 44) and coronary artery disease (n = 14 vs. 9), but differences were not significant. The elderly group had higher median creatinine values at in-hospital admission: 1.07 (ID = 0.51) vs. 0.87 (ID = 0.41) mg/dl, p = 0.001. The mean CHA_2DS_2VASC and HASBLED scores were higher among older patients (4.85 ± 1.17 vs. 3.78 ± 1.45 and 3.28 ± 0.92 vs. 2.83 ± 1.22, respectively) but with no significant differences. Ten elderlies underwent the LAA occlusion after a thrombotic event despite correct use of oral anticoagulation. More elderly patients closed the LAA after a major bleeding (n = 49 vs. 39, p = 0.048; OR: 1.908 (CI 1.003-3.627)). Other reasons for LAA occlusion included frequent minor bleeding. The procedure was equally successful (96% vs. 96%, p = 0.936). Related to in-hospital major complications, 7 elderly presented events (2 vascular access complications, 3 cardiac tamponades, 1 type-2 myocardial infarction and 1 major bleeding) against 1 event (cardiac tamponade) in the younger group, p = 0.031, OR: 8.01 (0.96-66.8). By the end of follow up, only 3 patients in both groups had experienced a stroke (p = 0.931). Five elderly patients (*vs* 4 younger) presented a major bleeding, (p = 0.736). Nineteen of the thirty-one patients who died were elderlies (p = 0.092). There were no differences observed between cardiovascular and non-cardiovascular deaths between groups (p = 0.862 and p = 0.265, respectively).
Conclusions: Elderly patients were associated with more periprocedural non-fatal major complications but no differences in long term outcomes.

PO 18. BEYOND 55: CLINICAL PERSPECTIVES ON TRANSCATHETER PFO CLOSURE - INSIGHTS FROM A UNICENTER STUDY

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Introduction: Transcatheter patent foramen ovale (PFO) closure has emerged as a pivotal intervention for cryptogenic stroke. Despite strong evidence supporting its superiority over antithrombotic therapy alone, a significant knowledge gap persists due to the exclusion of patients aged over 60 years in major trials.
Methods: Single-center, retrospective study. Patients who underwent percutaneous PFO closure from 2003 to 2023 were included. We aimed to compare procedural and long-term outcomes in two age groups: 55 years and older versus those younger than 55, focusing on stroke/transient ischemic attack (TIA), death, and new-onset atrial fibrillation (AF). Statistical analysis was performed using SPSS 28.0.1.1 software.
Results: A total of 378 patients were included, 55.9% female. The mean age was 60.6 (± 4.5) years in the older group (28.3%), and 42.5 (± 8.1) years in the younger group (71.7%). Statistically significant differences were found in cardiovascular risk factors (CVRF) at baseline: a higher prevalence of arterial hypertension (45.3% vs. 25.1%; p < 0.001), dyslipidemia (61.1% vs. 39.9%; p < 0.001), and diabetes (14.7% vs. 6.2%; p = 0.012) in the older group. Previous stroke and TIA were present in 74.0% and 21.3%, respectively, similar in both groups (p = 0.414). A large shunt (94.4%), long-tunnel (86.2%), and large-size (72.6%) were the most prevalent high-risk PFO features, with long-tunnel being significantly more frequent in the younger group (89.9% vs. 76.4%; p = 0.002). The risk of paradoxical embolism (RoPE) score was significantly higher in patients younger than 55 (7.2 ± 1.3 points) compared with the older patients (5.2 ± 1.2 points; p < 0.001). No notable differences in periprocedural complications were observed between the two groups (p = 1.000). Two cases of periprocedural AF were identified, one in each group. Over a mean follow-up of 65(± 54) months, 6 deaths occurred, with a slightly higher rate in the older group (3.0%) versus the younger (2.2%), though not statistically significant (p = 0.353). For the composite of TIA/stroke, 6 events were recorded, notably higher in the older group (4.1%) than the younger (0.8%; p = 0.050). Long-term AF was seen in 7 patients, more frequent in the older patients (4.2%) compared to the younger (1.2%), but this difference did not reach statistical significance (p = 0.090). There were no TIA/stroke incidents in patients on oral anticoagulation.
Conclusions: In patients over 55 years, our findings suggest a trend toward more recurrent cerebrovascular events following PFO closure compared to the younger, possibly due to a higher burden of CVRF. However, the actual incidence of TIA/stroke in the older group was lower than predicted by the RoPE score, hinting at potential benefits. Randomized trials are necessary to assess PFO closure effectiveness in older patients, especially when compared to oral anticoagulation in this high-AF group.

SEXTA-FEIRA, 19 ABRIL de 2024 | 09:00-10:30

Área de Posters 1 | Sessão de Posters 04 - Choque cardiogénico

PO 19. UNVEILING MORTALITY OUTCOMES IN CARDIOGENIC SHOCK ADULT PATIENTS WITH PERIPHERAL VENOARTERIAL EXTRACORPOREAL MEMBRANE OXIGENATION

Mariana Sousa Paiva, Ana Rita Bello, Catarina Brízido, Maria Rita Lima, Daniel A. Gomes, Francisco Albuquerque, Rita A. Carvalho, Pedro Lopes, João Presume, Christopher Strong, António Tralhão

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Introduction and objectives: Venoarterial extracorporeal membrane oxygenation (VA-ECMO) is a temporary advanced circulatory support for patients with or at risk of refractory cardiogenic shock (CS). Although mortality in this setting is understandably high, there is scant information about death patterns after cannulation. Our aim was to describe the timing and causes of in-hospital death of our cohort of adult CS patients supported with VA-ECMO, including those who died after a successful weaning process.
Methods: Single-center retrospective study of all consecutive patients who underwent peripheral VA-ECMO implantation from January 2015 to November 2023 for refractory CS. Patient and procedural variables, VA-ECMO-related

Figure 1A – Kaplan-Meier curve: 30-day all-cause mortality during total ECMO-run

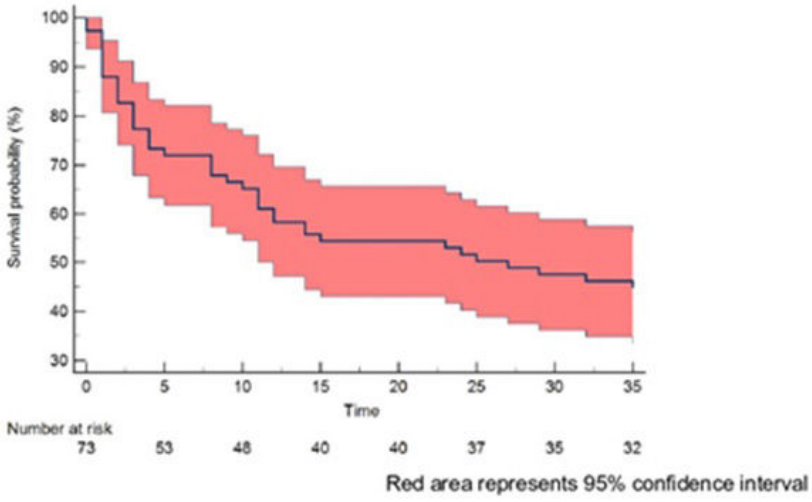

Figure PO 19 —*Continued*

Figure 1B – Evolving outcomes for cardiogenic shock patients during the total ECMO-run of the cohort

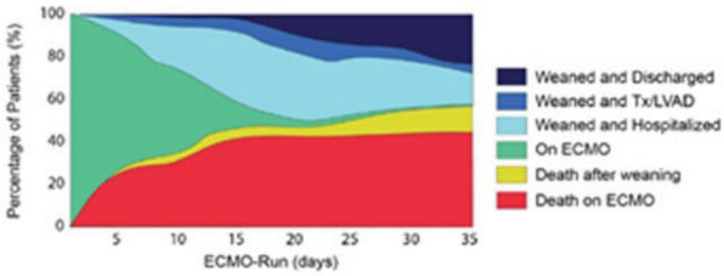

Figure 1C - Mortality causes by day of ECMO-run

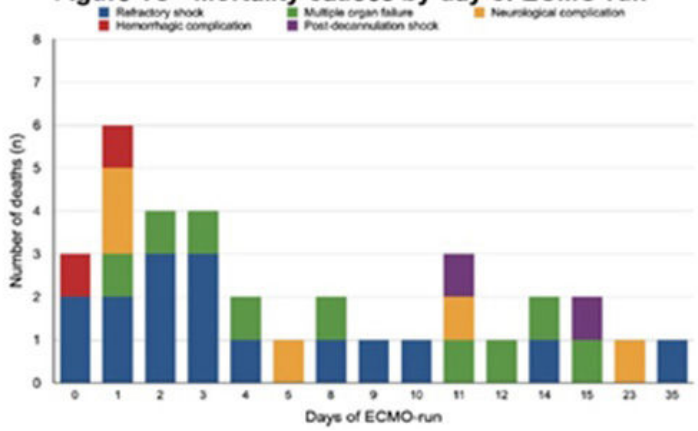

Figure PO 19 ***—cont'd.***

complications, in-hospital and 30-day mortality (on ECMO and after weaning) rates, and causes of death were collected from electronic records.

Results: In total, 75 patients (mean age 53 ± 14 years, 76.0% (n = 57) male) were included, the majority with a femoro-femoral VA-ECMO configuration (n = 72; 96.0%). The most common etiologies of CS were acute myocardial infarction (n = 33; 44.0%), acute-on-chronic heart failure (n = 15; 20.0%) and acute myocarditis (n = 9; 12.0%). Before ECMO cannulation, 28 patients (37.3%) experienced cardiac arrest. At the time of cannulation, the majority of the patients were classified as SCAI class D (n = 52; 69.3%), with median SAVE and SAPS II scores of -6 (IQR -11 to -2) and 46 (IQR 38-53), respectively. VA-ECMO-related complications were frequent, with at least one occurring in 59 patients (78.7%). In-hospital mortality during VA-ECMO support stood at 44% (n = 33), with a median time to death of 3 days (IQR 1-11) (Figure 1A). Primary causes of death on ECMO were refractory shock (n = 16, 48.5%), followed by multiple organ failure (n = 8, 24.2%) and catastrophic neurological events (n = 5, 15.2%) (Figure 1C). After successful weaning, 13 additional patients deceased, with a median time from decannulation to death of 14 days (IQR 3-30) (Figure 1B). None fulfilled criteria for a new ECMO-run, 5 patients (38%) had a surgical mechanical circulatory support implanted, but none was candidate to advanced heart failure therapies. From the remaining 29 patients (39%), 7 (24%) underwent either heart transplant or left ventricular assist device implantation during indexed hospitalization, and all were later discharged.

Conclusions: Over the past 8 years, the mortality rate for patients undergoing peripheral VA-ECMO for CS remained high, replicating results from larger studies. A substantial number of patients died post-successful weaning, underscoring the complexity of this high-risk population. Further research is crucial for refining patient selection, optimizing management, and improving outcomes.

PO 20. IABP IMPLANTATION TRENDS AFTER THE TRIALS - WHEN IT GETS CRITICAL, DO WE FOLLOW GUIDELINES?

Catarina Sena Silva[1], João R. Agostinho[2], Ana Margarida Martins[1], Catarina Simões de Oliveira[1], Ana Beatriz Garcia[1], Catarina Gregório[1], Tatiana Guimarães[2], Rafael Santos[2], Hugo Côrte-Real[2], Cláudia Jorge[2], Pedro Cardoso[2], Fausto J. Pinto[2]

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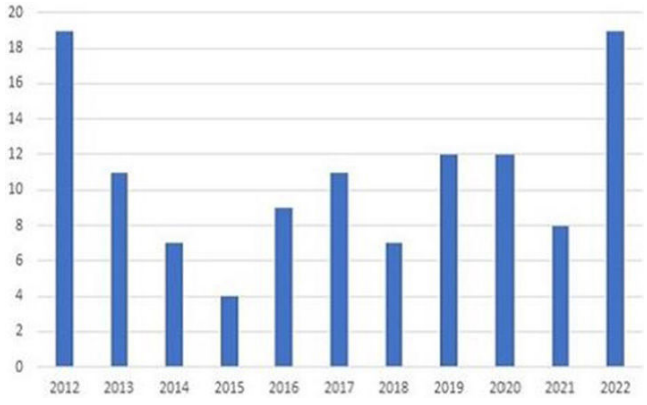
Introduction: Despite the improvements in cardiogenic shock (CS) management, mortality rate is still high. In this setting, intra-aortic balloon pump (IABP) had been widely used especially in acute coronary syndromes (ACS). However, following the 2012 published IABP-SHOCK II trial and the resulting class III, level B recommendation in the following ESC guidelines, its use was expected to decrease dramatically. So, evaluating the trends in IABP utilization is of utmost importance. This study aimed to characterize a real world non-controlled population in which IABP was employed as part of clinical care in a tertiary center between 2012 and 2022.

Methods: Single center retrospective observational study conducted in a tertiary hospital. Clinical data bases were searched for use of IABP in the last 10 years. We then collected clinical, laboratorial, echocardiography and cath data at time of implantation and during follow-up.

Results: We gathered a total of 119 pts (68% male, mean age 67.1 ± 12.4 years) who presented with CS during the studied 10 years. The main indication was ACS, in 90.8%, and advanced heart failure in the remainder of pts. 85 pts (71.4%) presented with STEMI, whereas 24 (20.2%) presented with NSTEMI.

Anterior descending artery was the culprit vessel in most cases. In 13 pts (8.4%) there was a mechanical complication motivating the implantation of IABP -intraventricular rupture was the most frequent followed by papillary muscle rupture. In 15 pts IABP was used as a complement to ECMO therapy. Mean ejection fraction was 33.1 ± 13.8% and mean lactate level was 5.85 ± 4.6 mmol/L. There was a high mortality rate during follow-up with a 30-day mortality rate of 63% (in line with previous trials) and a 1-year mortality rate of 71%, accordingly with the severity of the clinical presentation. 30% of pts had electrical disturbances during IABP support - ventricular tachycardia and electrical storm were responsible for about half the cases.We analyzed yearly trends of IABP implantation and noticed a steep decrease from 2012, up to 2016. Interestingly, we noticed a rise in implantation rate after 2017, with 2022 numbers matching those of 2012 (Figure).



Conclusions: In our population, IABP's were used mainly in the setting of acute coronary syndrome with CS.Even though its implantation suffered a decrease after 2012, in more recent years there was renewed interest in this mechanical support technique. Such trend can be explained by increasing number of primary angioplasty in older patients with severe comorbidities, a significant rise in mechanical complications during COVID-19 pandemic and, foremost, introduction of ECMO therapy in our center (coupled with left ventricle venting using IABP). As expected in the setting of critical clinical presentation, our study shows a high 30-day mortality rate, followed by a stabilization after discharge, suggesting most who survive critical phase evolve favorably.

PO 21. REAL-WORLD INSIGHTS: PRACTICAL IMPELLA OUTCOMES IN CARDIOGENIC SHOCK AND HIGH-RISK ELECTIVE PERCUTANEOUS CORONARY INTERVENTION

Mariana Martinho, Bárbara Marques Ferreira, Rita Calé, Diogo Santos Cunha, Oliveira Baltazar, Nazar Ilchyshyn, João Mirinha Luz, Pedro Santos, Ana Rita Pereira, Gonçalo Morgado, Cristina Martins, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Cardiogenic shock (CS) complicates 5-10% of all acute coronary syndromes (ACS), with an in-hospital mortality of approximately 40%. The use of Impella in elective high-risk coronary intervention appears to reduce procedure-related mortality. Given its capacity to rapidly unload the left ventricle and increase cardiac output, it has been posited as a potential short-term mechanical circulatory support system in CS. However, conflicting evidence exists regarding the advantageous aspects of its application. Furthermore, some studies suggest delayed weaning may improve outcomes, but further investigation is necessary to determine the impact of removal timing on patient (pt) outcomes and device-associated complications.
Methods: Retrospective observational single-center study of consecutive pts undergoing Impella CP device insertion, between 2021 and 2023. Two patient groups were established, depending on being admitted for scheduled angioplasty, or device insertion due to CS (either CS on admission, or intraprocedural impending CS). Safety endpoints were defined as vascular complications, severe bleeding (BARC ≥ 3), hemolysis, and device-related embolic events. A comparison was conducted between in-hospital mortality, device-associated complications, and their relationship with the device weaning time.
Results: A total of 23 pts were included: mean age 70 ± 12 years; 65.2% males. There were no significant differences regarding CV risk factors between groups. All, except one pt in CS group, had multivessel coronary disease. There were 12 elective pts (52.2%) and 11 pts with CS (47.8%). The latter group had higher in-hospital mortality (54.5% vs. 0.0%, p = 0.004). Among the CS group, mortality was higher in the subgroup with CS on admission (n = 5, 71.4%) compared to intraprocedural CS subgroup (n = 2, 50.0%). There were no intraprocedural deaths. Almost all electively admitted pts had the device removed immediately, while 72.7% of pts in the CS group had delayed device removal, with a median weaning time of 18h (24h for CS on admission pts vs. 4h in intraprocedural CS pts). In CS, this time did not influence in-hospital mortality (p = 0.513). A total of 8 pts had device-related complications (4 bleeding, 2 vascular complications, 1 hemolysis, and 1 multiple embolization), primarily in the delayed-weaning group (7.1% vs. 87.5%, p < 0.001).
Conclusions: Impella has shown to be safe and effective for elective pts. In CS, although it may assist in stabilizing pts during the procedure, its use was associated with an in-hospital mortality rate similar to that previously described. Its effectiveness did not rely on longer support, and this poses a higher risk of vascular complications. Although in this population CS caried a poor prognosis that was irrespective of device insertion, this suggests that complementary knowledge is needed for pt selection, in order to improve survival rates.

PO 22. VASCULAR COMPLICATIONS OF INTRA-AORTIC BALLOON PUMP (IABP) IMPLANTATION - A SINGLE-CENTER ANALYSIS

Rui Antunes Coelho[1], Daniel Caeiro[2], Marisa Passos Silva[2], Fábio Nunes[2], Rafael Teixeira[2], Marta Ponte[2], Adelaide Dias[2], Pedro Braga[2], Ricardo Fontes de Carvalho[2]

[1]Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo. [2]Centro Hospitalar de Vila Nova de Gaia/Espinho.

Introduction: The intra-aortic balloon pump (IABP) is one of the most commonly used circulatory assist devices in patients in cardiogenic shock after myocardial infarction, in order to both increase coronary blood flow and decrease left ventricular afterload. But the use of the intra-aortic balloon pump (IABP) remains controversial, due to some studies have shown

	WEANING TYPE (WT)		IN-HOSPITAL MORTALITY			DEVICE-RELATED COMPLICATIONS		
	Immediate (n,%)	Delayed (n,%)	n (%)	Immediate WT (n,%)	Delayed WT (n,%)	N (%)	Immediate WT (n,%)	Delayed WT (n,%)
ELECTIVE HIGH-RISK PCI (n=12; 52.2%)	11 (91.7%)	1 (8.3%)	0 (0.0%)	-	-	2 (16.7%)	1 (9.1%)	1 (100%)
							p-value = 0.020	
CARDIOGENIC SHOCK (n=11; 47.8%)	3 (27.3%)	8 (72.7%)	7 (63.6%)	2 (66.7%)	5 (62.5%)	6 (60.0%)	0 (0.0%)	6 (85.7%)
				p-value = 0.898			p-value = 0.011	

Figure PO 21

no benefit in end mortality with this device. One of the reasons for this could be the increase in vascular complications when using the IABP.

Patient characteristics	All (n = 668)	Patients with complications (n = 31)	Patients without complications (n = 637)	p
Age in years, median (IQR)	69 (58-76)	70 (58-79)	69 (58-76)	0,759
Male gender, n (%)	488 (73,1)	20 (64,5%)	468 (73,5)	0,332
Hypertension, n (%)	444 (66,5)	19 (61,3)	425 (66,8)	0,524
Diabetes mellitus, n (%)	215 (32,2)	11 (35,5)	204 (32,1)	0,692
Dyslipidemia, n (%)	430 (64,5)	19 (61,3)	411 (64,6)	0,705
Smoking, n (%)	248 (37,2)	15 (48,4)	233 (36,6)	0,186
Body mass index in kg/m², median (IQR)	27,7 (24,9-29,8)	28,0 (24,9-29,9)	27,5 (24,7-29,8)	0,879
Creatinine clearance in ml/min, median (IQR)	57,0 (37,0-81,0)	39,0 (34,5-64,5)	57,8 (37,8-82,3)	0,160
Previous coronary disease, n (%)	238 (35,6)	10 (32,3)	228 (35,8)	0,668
Previous stroke, n (%)	51 (7,6)	3 (9,7)	48 (7,5)	0,724
Previous peripheral arterial disease, n (%)	48 (7,2)	2 (6,5)	46 (7,2)	0,871
Previous valvular disease	41 (6,1)	2 (6,5)	39 (6,1)	0,941
Family history of CAD, n (%)	34 (5,1)	1 (3,2)	33 (5,2)	0,628
Cardiogenic shock, n (%)	264 (39,5)	14 (45,2)	250 (39,2)	0,709
Class Killip-Kimball IV, n (%)	96 (52,7)	7 (53,8)	89 (52,7)	0,934
Mechanical complications of ACS, n (%)	79 (11,8)	3 (10,0)	76 (11,9)	0,747
30% ≤ LVEF < 40%, n (%)	130 (19,5)	4 (12,9)	126 (19,8)	0,204
LVEF <30%, n (%)	203 (36,0)	13 (57,7)	188 (34,8)	**0,018**
Days with IABP, median (IQR)	2 (1-4)	3 (1-4)	2 (1-4)	0,773
Days in hospital, median (IQR)	8 (4-14)	8 (4-13)	8 (4-14)	0,481
PCI, n (%)	364 (59,5)	14 (45,2)	350 (59,2)	0,709
CABG, n (%)	261 (38,9)	13 (41,9)	248 (38,7)	0,627
Metropks, n (%)	91 (49,7)	9 (69,2)	82 (48,2)	0,481
In-hospital mortality, n (%)	162 (24,3)	13 (41,9)	149 (23,4)	**0,019**

Table 1 – Characteristics of patients that received IABP with or without complications

Objectives: Our aim was evaluate the vascular complications that occurred in patients with IABP and understand if any of the clinical characteristics were associated with the presence of these complications.

Methods: We performed a retrospective observational cohort study of all patients that received IABP in two different intensive care units (general and cardiac), from January 2005 up to August 2022.
Results: Between January 2005 and August 2022, around 691 IABP were implanted in our institution. Of these, it was possible to assess information about vascular complications in 668. Of the 668 patients analyzed, 31 (4.6%) had significant vascular complications. About 11 patients (1.6%) had significant bleeding, 7 (1.0%) had vascular injury and 13 (1.9%) developed lower limb ischemia. 47 cases (7.0%) reported non-significant complications, such as minor hemorrhage or hematoma at the access local. One case of intra-arterial balloon rupture was reported. Of the clinical features evaluated, only severe impairment of the left ventricular ejection fraction (LVEF) was significantly associated with the occurrence of vascular complications (p = 0.018). The existence of vascular complications is associated with higher in-hospital mortality in patients who underwent IABP implantation (23.4% in the group without vascular complications vs. 41.9% in the group of patients with these complications; p = 0.019).
Conclusions: In a population of 668 patients who had IABP implantation, the occurrence of significant vascular complications (lower limb ischemia, vessel wall injury or major bleeding) was observed in 4.6% of cases. The occurrence of these complications has a statistically significant association with severe impairment of the LVEF and higher in-hospital mortality.

PO 23. CARDIOGENIC SHOCK FOLLOWING ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION IN WOMEN: COMPLICATIONS AND OUTCOMES

Mariana Pereira Santos, André Alexandre, Andreia Campinas, David Sá-Couto, Diana Ribeiro, Raquel Baggen Santos, Bruno Brochado, João Silveira, André Luz, Severo Torres

Centro Hospitalar Universitário do Porto, EPE/Hospital Geral de Santo António.

Introduction: Differences in women's prognosis have been described for both ST-segment elevation myocardial infarction (STEMI) and cardiogenic shock (CS). These might reflect asymmetries in clinical management, but also gender-specific comorbidities and pathologic mechanisms.
Objectives: We aimed to evaluate the risk of in-hospital complications and mid-term outcomes of women with CS following STEMI.
Methods: We retrospectively studied STEMI patients treated by primary percutaneous coronary intervention (PCI) from 2008 to 2017 in a tertiary

Table I - Complications and outcomes during hospitalization for STEMI patients with cardiogenic shock

	All patients (n=117)		Women (n=40)		Men (n=77)		P value
	n	%	n	%	n	%	
Stroke	5	4.3	2	5.0	3	3.9	0.571*
Reinfarction	2	1.7	1	2.5	1	1.3	0.577*
Advanced AV block	21	17.9	13	32.5	8	10.4	**0.004**
Nosocomial Infection	47	40.2	16	40.0	31	40.3	0.570
Lowest haemoglobin recorded (±SD), g/dL	11.3	2.2	10.6	2.11	11.6	2.1	**0.023**
Red-cell transfusion	8	6.8	5	12.5	3	3.9	0.099
IABP Insertion	28	23.9	7	17.5	21	27.3	0.225
Length of hospital stay# (IQR), days	16.0	11.0-23.0	14.0	11.0-20.0	18.5	12.0-25.0	0.290
In-hospital mortality	57	48.7	17	42.5	40	52.9	0.300

*Fisher's exact test; #Excluding patients that died during hospital stay.
AV: atrioventricular; SD: standard deviation; IABP: intra- aortic balloon pump; IQR: interquartile range

Figure PO 23

care centre, presenting or evolving in Killip class IV (defined as cardiogenic shock or hypotension and organ hypoperfusion). Clinical and demographic characteristics, as well as complications and outcomes, were evaluated for both sexes. Major adverse cardio-cerebrovascular events (MACCE) at 1-year follow-up was a composite of death, cerebrovascular accident, new myocardial infarction in any vessel, or target lesion revascularization.
Results: Among 1,131 patients presenting with STEMI, our study included 117 (10.3%) patients in CS, of which 40 (34.2%) were women. Women were older [71.8 (± 13.4) vs. 64.6 (± 11.72) years, p = 0.002] and less frequently smokers (25.0% vs. 50.7%, p = 0.008). Prevalence of classic cardiovascular risk factors, namely diabetes (34,1% vs. 39.2%, p = 0.860), hypertension (71.5% vs. 60.8%, p = 0.212), BMI [26.6 (± 5.2) vs. 26.1 (± 3.4) kg/m^2, p = 0.539] and dyslipidaemia (47.5% vs. 70.0%, p = 0.799), was the same for both groups. Women had lower haemoglobin [12.4 (± 1.9) vs. 13.8 (± 1.9) g/dl, p < 0.001] and lower creatinine clearance at admission [52.4 (± 30.6) vs. 67.3 (± 29.4) ml/min, p = 0.017]. Door-to-balloon times [80.0 (59.0-180.0) vs. 67.5 (47.5-105.0) min, p = 0.302], total ischemic time [210 (120-360) vs. 203 (120-476) min, p = 0.302] and prevalence of anterior STEMI (35.0% vs. 50.0%, p = 0.123) were not significantly different. The prevalence of in-hospital complications was generally similar for both sexes (Table), except for the risk of advanced atrioventricular (AV) block that was higher in women (32.5% vs. 10.7%, p = 0.004). Also, haemoglobin nadir was lower in women [10.6 (± 2.1) vs. 11.7 (± 2.1) g/dl, p = 0.023]. In a 1-year follow-up, the occurrence of MACCE was similar for both sexes (60.0% vs. 50.7, log-rank p 0.734).
Conclusions: Women with CS and STEMI submitted to PCI had a similar prevalence of complications as men. Mid-term outcomes, assessed by MACCE at 1 year, were also similar for both sexes.

PO 24. CALCIUM HIDES THE CLUE: UNRAVELING THE DIAGNOSTIC VALUE OF EARLY CORONARY CALCIUM SCORING IN CARDIAC ARREST SURVIVORS

Ana Margarida Martins, Ana Beatriz Garcia, Catarina Oliveira, Ana Abrantes, Miguel Raposo, Catarina Gregório, Beatriz Valente Silva, Joana Rigueira, Rui Plácido, Doroteia Silva, Fausto J. Pinto, Ana Almeida

Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Prognosis for out-of-hospital cardiac arrest (OHCA) remains dismal, with a mortality rate of up to 65%, even among patients (pts) who undergo successful resuscitation. Acute coronary syndrome (ACS) is a major cause of OHCA, but the benefits of early coronary angiography (CA) in resuscitated pts without STEMI are increasingly debated. Coronary artery calcium (CAC) is a predictor of CV events and is commonly assessed through cardiac CT with ECG gating. Notably, standard chest CT scans as those performed for etiologic study of cardiac arrest, can also reveal CAC.
Objectives: To find if CAC detected in non-gated CT scans performed in OHCA survivors could be a good predictor of coronary artery disease and help select those who effectively require CA. We also aimed to assess the rate of CAC reporting.
Methods: Single-center, retrospective study of OHCA survivors without STEMI. We selected those who performed a non-gated chest CT as a part of an etiological study and underwent CA due to clinical, ECG or echo suspicion of ACS. An investigator blinded to the CA report, evaluated CAC both quantitively (with Agatston score) and qualitatively (visual assessment: absent, mild, moderate or severe).
Results: A total of 45 pts were included, 71% male, mean age of 57 ± 10 years old. 88.9% of the OHCA were witnessed, with mean no-flow time of 4 ± 7 mins and low-flow time of 18.3 ± 13.6 mins. Most pts presented with ventricular fibrillation or non-specified shockable rhythm (22.4% each). CT scans were performed with a mean of 3.7h after first medical contact. CAC was identified in 57.8% pts and classified as mild, moderate and severe in 19.2%, 42.3% and 38.4%, respectively. Mean Agatston score was 387 ± 322UA. Only 16 pts showed significant coronary lesions in the CA (33.3% of pts), of which 80% had angioplasty and 2.2% CABG. The most frequent culprit vessel was the anterior descending artery. Quantitative CAC assessment accurately predicted the presence of significant lesions on CA (AUC = 0.873; 95%CI 0.773-0.974, p < 0.001) (Figure). In fact, of the 19 pts who showed a Agatston score of 0, none showed significant lesions on CA. The presence of moderate or severe CAC by visual assessment also predicted significant lesions on CA (OR 13.4, 95%CI 1.755-103.68, p = 0.012). There was also a good and significant correlation between the vessel with at least moderate calcification in CT-scan (Agatston score > 100) and the vessel identified as culprit in CA (kappa = 0.615, p < 0.001). The CAC was reported in only 7.7% CT exams, all with severe calcification.

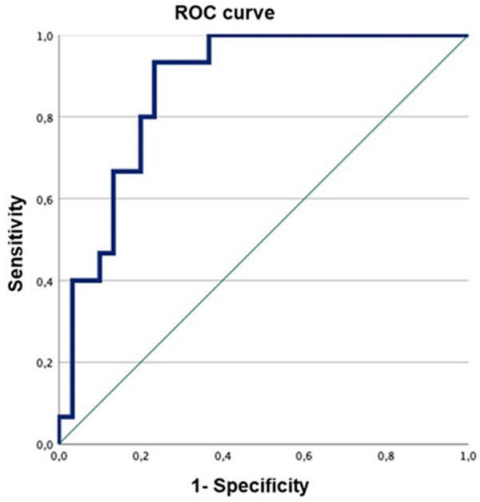


Figure 1 – ROC curve analysis of Coronary Calcium Score evaluation in predicting significant lesions in coronary angiography in OHCA survivors

Conclusions: Assessment of CAC in chest CT scans proved to be feasible and displayed a robust correlation with the presence, severity and location of CAD. Its routine use upfront showed to be an important complement to CT scans report, better directing patient care – avoiding time consuming invasive procedure and focusing on neuro-protection, the single most determinant prognostic factor in these patients.

PO 25. OUT-OF-HOSPITAL CARDIAC ARREST: EPIDEMIOLOGY, ICU OUTCOMES, AND PROGNOSTIC INSIGHTS

Marta Miguez de Freitas Vilela[1], Diogo Rosa Ferreira[1], Ana Abrantes[1], Miguel Azaredo Raposo[1], Catarina Gregório[1], Catarina Simões de Oliveira[1], Ana Margarida Martins[1], Ana Beatriz Garcia[1], Carolina Robalo[1], João Ribeiro[2], Fausto Pinto[3], Doroteia Silva[3]

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Introduction: Out-of-hospital cardiac arrest (OHCA) is a global leading cause of death, challenging public health policies. The difficulty lies in obtaining comprehensive epidemiological data on OHCA patients, with literature varying widely in terms of incidence, patient characteristics, and outcomes.
Objectives: Characterize the population and outcomes of OHCA.
Methods: Retrospective, observational, single-center study on patients admitted to an ICU unit of a tertiary hospital following OHCA between 2017 and 2019. Data was collected from clinical registries. Follow-up was obtained by contacting the surviving patients or families.
Results: Out of the 78 patients included in the study, 32.9% were female, exhibiting an average age of 59.3 ± 15.1. Only two patients had a history of family sudden death. The most common arrest sites were at home (39.2%) and at the street (20.3%). A significant proportion of OHCA were observed by witnesses (84.8%), and basic life support was provided in 72.2% of instances. Notably, only 25.3% of these interventions incorporated the use of an automated external defibrillator. Mean no-flow time was 4.1 ± 3.1 minutes

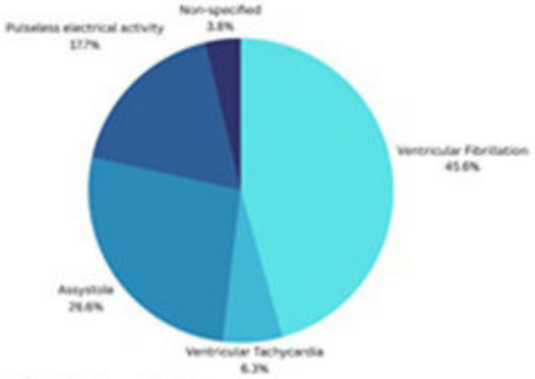

Chart 1: Arrest Rythm

Presumed cause of OHCA	N
Cardiac	53 (67.9%)
Respiratory	12 (15.4)
Trauma	3 (3.8%)
Metabolic	2 (2.6)
Neurological	2 (2.6%)
Unknown	6 (7.7%)

Table 1: Presumed cause of OHCA

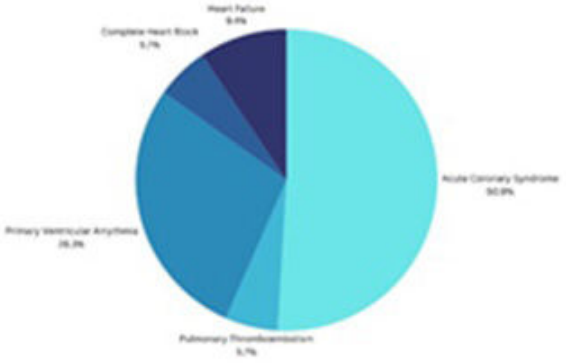

Chart 2: Cardiac causes of OHCA

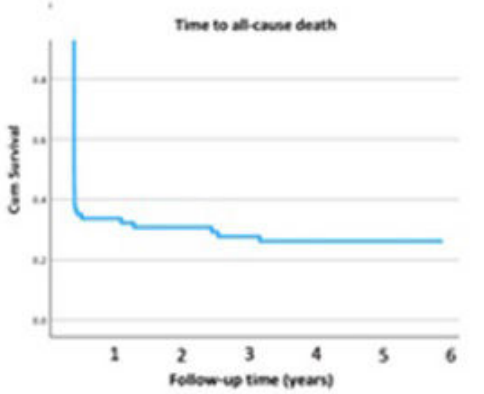

Chart 3: Cumulative survival of OHCA patients

Figure PO 25

and low-flow-time was 22.7 ± 12.3 minutes. 51.9% had a shockable rhythm. Arrest rhythm is displayed in Chart 1 and cause of OHCA in the Table. Out of the patients with a cardiac cause, 50.9% were due to acute coronary syndrome. Mean left ventricle ejection fraction at 48 hours was 38.9 ± 14.2%. A total of 59 patients (74.7%) died during follow-up (FUP). Mean FUP time in surviving patients was 3.9 years. The majority of the patients died in the ICU (57%) and 67.1% during hospital stay. The main cause of death was anoxic encephalopathy (55.7%). Neuroprognostication applied to 79.7% revealed: 71.2% considered deceased, 15.2% recovered (Glasgow Coma Score > 9), and 6.3% had unclear prognosis. Of 5 unclear cases, 4 died during admission. Regarding neurological outcomes, the cerebral performance category (CPC) was calculated. At discharge from ICU the median CPC was 2 and 1 at discharge from hospital. Median CPC at follow-up was 1 and median ECOG performance status was 2. Two patients had a CPC score of 4 at FUP.
Conclusions: This study reveals that our survival rate aligns with previously documented rates in the literature. Our results emphasize that the prognosis for these patients is established early in the hospital admission process. Those who survive until discharge exhibit a positive prognosis, often without significant neurological impairment.

PO 26. BEYOND THE ARREST: ASSESSING SURVIVAL WITH SOFA AND SAPS II SCORES IN OHCA PATIENTS

Diogo Ferreira[1], Marta Vilela[1], Catarina Oliveira[1], Ana Beatriz Garcia[1], Ana Margarida Martins[1], Carolina Robalo[2], João Cravo[1], João Ribeiro[1], Fausto Pinto[3], Doroteia Silva[3]

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Introduction: Out-of-hospital cardiac arrest (OHCA) is a global health concern with millions of cases yearly. Survival depends on factors like witnessed events, timely cardiopulmonary resuscitation, and initial shockable rhythms. Despite typically being admitted to intensive care units (ICUs), validated scores for post-admission survival prediction are lacking. Widely used ICU tools such as the Sequential Organ Failure Assessment (SOFA) and the Simplified Acute Physiology Score II (SAPS II) to forecast clinical outcomes lack validation for predicting overall mortality in OHCA patients.
Methods: Retrospective, observational, single-center study conducted on patients admitted to a polyvalent ICU unit of a tertiary hospital following OHCA between 2017-2019. SOFA and SAPS II scores calculated in the first 24 hours of admission were divided into tertile groups to determine whether a correlation between these scores and time to death could be identified. Kaplan-Meier survival analysis was performed.
Results: The study included 79 OHCA patients, with 32.9% being female. 84.8% of the cardiac arrests were witnessed, and 39.2% occurred at home. Sixty patients (75.9%) died during follow-up (FUP). Mean FUP time for surviving patients was 3.9 years. All patients had SOFA and SAPS II scores calculated within the first 24 hours post-arrest. SAPS II score first tertile was 50 and second tertile was 68. Patients with SAPS II score from 51 to 68 had a greater risk of mortality (HR: 3.17; 95%CI: 1.28-7.86, p = 0.013) relative to patients under or equal to 50 and patients with SAPS II score greater than 68 had around 4.6 times the risk of mortality when compared to patients under 51 (HR: 4.64; 95%CI: 1.90-11.32, p < 0.001). SOFA score within the first tertile was under or equal to 7. The second tertile was 10. Patients within the second tertile (SOFA score from 8 to 10) had a greater risk of mortality relative to patients with a SOFA score under or equal to 7 (HR: 2.19, 95%CI: 1.06-4.52, p = 0.03) and patients with SOFA score greater than 10 had 2.5 times the risk (HR: 2.54, 95%CI: 1.24-5.22, p = 0.01) of mortality when compared to patients within the first tertile (under or equal to 7). There was not a statistically significant difference in the risk of mortality in patients with SOFA score from 8 to 10 and patients with SOFA score greater than 10.
Conclusions: SOFA and SAPS II scores calculated within the first 24h can be applied to estimate mortality risk in OHCA patients admitted to an ICU.

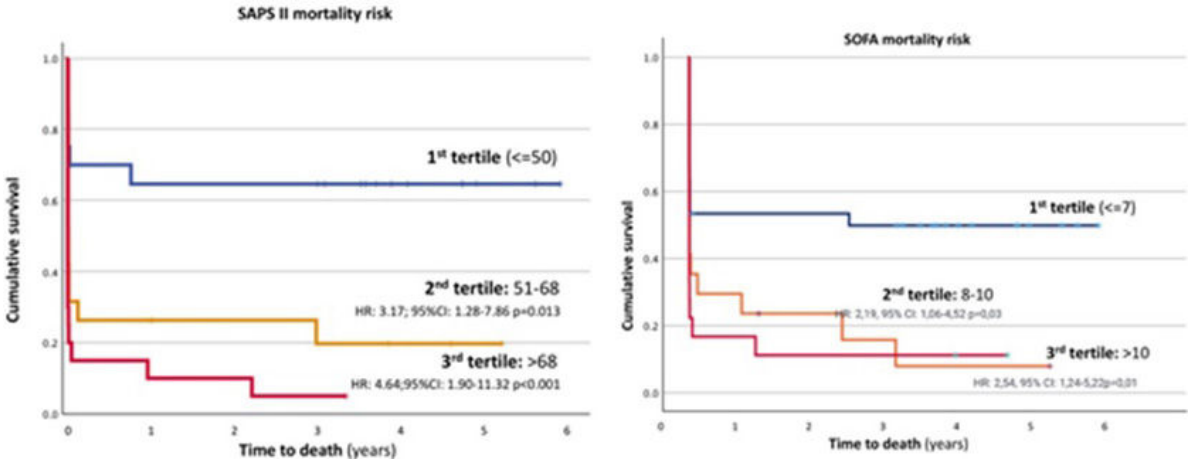

Figure PO 26

PO 27. SURVIVAL CLOCK: UNVEILING MORTALITY PREDICTORS IN OUT-OF-HOSPITAL CARDIAC ARREST

Daniel Inácio Cazeiro[1], Ana Margarida Martins[1], Catarina Simões de Oliveira[1], Ana Beatriz Garcia[1], João Santos Fonseca[1], João Mendes Cravo[1], Marta Vilela[1], Diogo Ferreira[1], Carolina Robalo[2], Fausto J. Pinto[3], João Ribeiro[4], Doroteia Silva[3]

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Introduction: Out-of-hospital cardiac arrest (OHCA) affects around 3.8 million people annually worldwide. Early initiation of cardiopulmonary resuscitation and prompt access to defibrillators are crucial, but despite improved care systems, mortality remains high. Prognostic indicators like no-flow time (NFT), low-flow time (LFT), and Glasgow Coma Score (GCS) after return to spontaneous circulation (ROSC) are often associated with outcomes, but specific cut-off values are lacking in evidence.

Objectives: to establish a correlation between NFT, LFT and GCS after ROSC and all-cause mortality.

Methods: Retrospective, observational, single-center study on patients admitted to an intensive care unit (ICU) of a tertiary hospital following OHCA between 2017 and 2019. Data was collected from clinical registries, receiving operating characteristic analysis was used to assess the impact of LFT, NFT and GCS after ROSC in predicting all-cause mortality (ACM). Kaplan-Meier survival analysis was performed.

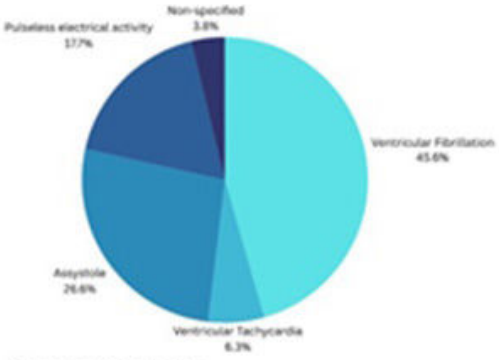


Chart 1: Arrest Rythm

Presumed cause of OHCA	N
Cardiac	53 (67.9%)
Respiratory	12 (15.4)
Trauma	3 (3.8%)
Metabolic	2 (2.6)
Neurological	2 (2.6%)
Unknown	6 (7.7%)

Table 1: Presumed cause of OHCA

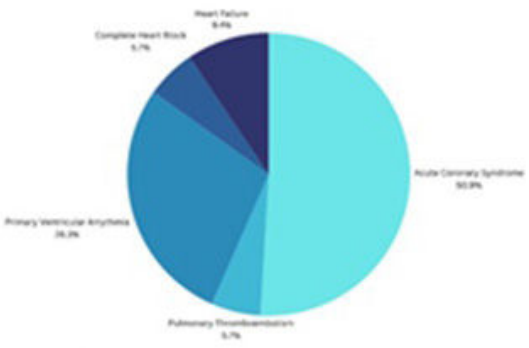


Chart 2: Cardiac causes of OHCA

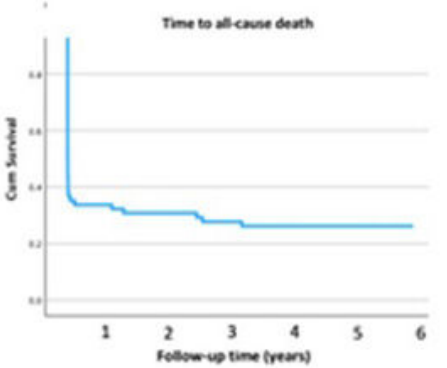


Chart 3: Cumulative survival of OHCA patients

Figure PO 27

Results: Among the 79 participants considered, 32.9% were female, with a mean age of 59.3 ± 15.1 years. The majority of OHCA were witnessed (84.8%), and basic life support was administered in 72.2% of cases. However, only 25.3% of these interventions involved the use of an automated external defibrillator. A total of 59 patients (74.7%) died during follow-up (FUP). Mean FUP time in surviving patients was 3.9 years. Mean NFT was 4.1 ± 3.1 minutes and LFT was 22.7 ± 12.3 minutes. There was not a correlation between NFT and ACM. However, there was a strong correlation between increasing LFT and ACM. Specifically, the use of a 15-minute cut-off demonstrated the highest sensitivity and specificity in predicting mortality. Patients that face a LFT greater than 15 minutes had 2.1 times the risk of death when compared to patients with LFT of less than 15 minutes (HR: 2.07, 95%CI: 1.124-3.34, p = 0.045). Median GCS after ROSC was 3. It was found that GCS of 6 was the best cut-off value in terms of sensitivity and specificity to discriminate mortality risk. Patients with a GCS inferior to 6 had a statistically significant greater risk of mortality than patients with a GCS of at least 6 (HR: 4.43, 95%CI: 1.73-11.32, p < 0.001).
Conclusions: Our study underscores the importance of time and neurological status in OHCA cases. NFT cannot be used to predict ACM as it is difficult to ascertain. In contrast, a LFT beyond 15 minutes and a GCS below 6 serve as key indicators associated with increased mortality risk.

SEXTA-FEIRA, 19 ABRIL de 2024 | 09:00-10:30

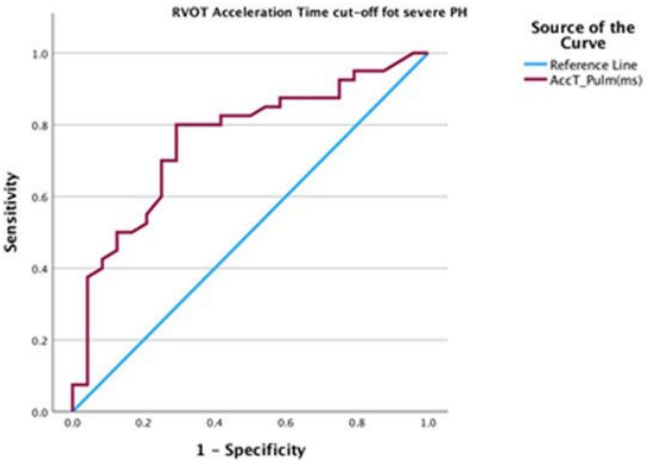
Área de Posters 2 | Sessão de Posters 05 - Ecocardiografia

PO 28. ANALYZING THE RVOT ENVELOPE IN PULMONARY HYPERTENSION - SIMPLICITY IS KEY

Diogo Ferreira[1], Miguel Raposo[1], Ana Abrantes[1], Sara Prata[1], Tatiana Guimarães[2], Ana Abreu[2], Catarina Sousa[2], Fausto J. Pinto[2], Rui Plácido[2]

[1]Department of Cardiology, Centro Hospitalar Lisboa Norte, CAML, Faculdade de Medicina. [2]Department of Cardiology, Centro Hospitalar Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina.

Introduction: Transthoracic echocardiography (TTE) has had an increasingly important role in non-invasive evaluation of pulmonary hypertension (PH) patients (pts). Right ventricular outflow tract (RVOT) systolic Doppler flow envelope analysis has gathered evidence of correlation with hemodynamic parameters and prognosis. Acceleration time (PAccT), the presence of mid-systolic notch, pre and post-notch velocities and other parameters have been studied. However, this analysis may be time consuming and have significant inter-observer variability.
Objectives: To evaluate the correlation between RVOT systolic Doppler flow and hemodynamic parameters in pts with PH.
Methods: Retrospective, single-center study of consecutive pts with a strong PH suspicion, who were submitted to right heart catheterization (RHC) and TTE in the same day. RVOT systolic Doppler flow envelope was analyzed, with measurements of ejection time (ET), presence of mid-systolic notch, time-to-notch (TN), PAccT, deceleration slope, pre- and post-notching peak velocities. Clinical, epidemiological, TTE and RHC data were recorded. For statistical analysis, Pearson's and Spearman's correlations, and Chi-square and Fisher's exact test were applied. We proceeded to ROC curve analysis to define cut-offs to severe PH (defined as mPAP > 45 mmHg) based on PAcct.
Results: We included 73 pts, with a predominance of female sex (64.4%) and mean age of 63.5 years of age. 93.2% (68) had PH confirmed by RCH, 39.7% (29) of which had clinical group 1; 8% (6) group 2; 11% (8) group 3 and 34% (25) group 4. From RHC, mean sPAP was 68.9 mmHg, mean mPAP 39.5 mmHg and mean PCWP 10.6 mmHg. Well-defined notched envelopes were identified in 38.4% of pts. The presence of a notched pattern and reduced PaccT (defined as < 105 ms) were associated with higher sPAP, mPAP and PVR, as were with reduced RV function parameters (FAC and TAPSE/sPAP, but not TAPSE or tricuspid S') Pre and post notch peak velocities and deceleration slope showed weak correlations with hemodynamic parameters and RV function on echo. ROC curve analysis enabled the definition of a cut-off value of < 80 ms PAcct to determine severe PH, with an area of 0.758.



Conclusions: RVOT doppler flow analysis proved to be a valuable non-invasive tool in PH assessment. The presence of a mid-systolic notch and reduced PAccT time had good correlation with hemodynamic assessment and reduced RV function. Other time consuming measures such as time to notch, deceleration slope, pre- and post-notching peak velocities showed weak correlation, and add no significant value to assessment. A cut-off value for PAcct of < 80 ms was established to determine severe PH, with a sensitivity of 80% and specificity of 70%.

PO 29. AI AUTOMATED ECHOCARDIOGRAPHIC MEASUREMENTS - IS THIS THE FUTURE?

Miguel Azaredo Raposo[1], Ana Margarida Martins[1], Ana Beatriz Garcia[1], Catarina Simões Oliveira[1], Ana Abrantes[1], Catarina Gregório[1], Susana Gonçalves[2], Matthew Frost[3], Pierre Michel[3], Ana Almeida[2], Catarina Sousa[2], Fausto J. Pinto[2]

[1]Cardiology Department, Centro Hospitalar Universitário Lisboa Norte, CAML, Faculty of Medicine, University of Lisbon. [2]Cardiology Department, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@RISE, Faculty of Medicine, University of Lisbon. [3]Us.2AI.

Introduction: Echocardiography is a fundamental diagnostic modality for assessing cardiac function and structure. Demand for this exam is rising sharply, increasing the pressure on the health system. Acquiring adequate images takes experienced operators. Manually measuring standard dimensions, volumes and more complex parameters is a time-consuming task, subject to human error and interobserver variability. Deep learning algorithms have been developed, and validated, to automatically classify, segment, and annotate two-dimensional (2D) videos and Doppler modalities in standardized views.
Objectives: To compare acquired measurements, using a proprietary deep learning software (Us2.AI) with measurements obtained by experienced operators, when analyzing the same set of standardized views.
Methods: We compared results from 102 echocardiograms performed in a one-week time span. Standardized views were acquired by experienced operators, in the normal workflow of an echocardiography lab. DICOM files were uploaded to the Us2.AI platform and subjected to automated assessment. We compared measurements of 24 parameters (Table), regarding left ventricular (LV) volumetric assessment, wall thickness, mitral (MV) annular tissue Doppler and inflow pulsed Doppler, tricuspid regurgitation (TR) maximum velocity and aortic valve (AV) velocity and area assessment. Mean absolute differences between automated and operator measurements were calculated. Pearson's correlation test was applied.

Table 1. Comparison between automated and operator measurements

Measure	Mean Absolute Difference	r
IVSd	1,82	0.753
LVPWd	1,63	0.619
RWT	0,09	0.630
LV mass	33,45	0.772
LVEDV A4C	16,89	0.688
LVESV A4C	8,26	0.679
LVEF A4C	6,26	0.512
LVEDV biplane	11,19	0.810
LVESV biplane	4,94	0.896
LVEF biplane	5,22	0.534
e' septal	0,9	0.874
e' lateral	0,89	0.920
MV-E	3,19	0.970
MV-A	2,92	0.984
E/A ratio	0,05	0.974
E Dec T	41,43	0.226
E/e' mean	1,75	0.913
TR Pmax	2,35	0.942
AoV Vmax	0,09	0.906
AoV Pmax	1,68	0.906
AoV Pmean	1,66	0.877
AoV VTI	4,35	0.979
AVA	0,39	0.782
LVOT VTI	2,83	0.885

r = Correlation coefficient

Aov Vmax - Aortic valve continuos doppler maximum velocity; AVA - Aortic Valve area measured through continuity equation; DecT - deceleration time of early diastolic MV transmitral flow; IVSd - interventricular septal diameter end diastolic; LVEDV biplane - left ventricular end diastolic volume biplane; LVEF biplane - left ventricular ejection fraction biplane ; LVESV biplane - left ventricular end systolic volume biplane ; LVOT VTI - Left ventricular outflow tract velocity time integral ; LVPWd - left ventricular posterior wall thickness measured end diastolic ; MV-A - late diastolic transmitral flow ; MV-E early diastolic transmitral flow ; TR Vmax tricuspid regurgitation maximum velocity

Figure PO 29

Results: Very strong correlations (r. > 0.9) were found between measurements of MV E, A and E' waves, AV velocities and VTI, and TR pressure gradient. LVOT VTI, AV area and LV biplane volumes also showed strong correlations. Moderate correlations were found between LV 4 chamber volume measurements and ejection fraction (EF). E wave deceleration time showed the poorest correlation (r. 0.226). Mean absolute difference (MAD) in LV EF was 5.2%, a satisfactory result for an essential parameter, described to have an inter-observer variability of up to 14%. MAB in LV wall thickness was < 2 mm. Regarding AV assessment, MAD in AV vmax was < 0.1 m/s.
Conclusions: Automated measurements showed relatively small mean differences compared to conventional expert measurements. Strong and very strong correlations were observed for most parameters. This study strengthens and supports the use of automated measurements when applied in a real-world environment. The adoption of such validated tools may significantly reduce time per exam, and improve access to echocardiography, particularly in busy settings.

PO 30. THREE-DIMENSIONAL ECHOCARDIOGRAPHY FOR THE ASSESSMENT OF RIGHT VENTRICULO-ARTERIAL COUPLING IN PRE-CAPILLARY PULMONARY HYPERTENSION

Bárbara Lacerda Teixeira, Rita Teixeira, Ricardo Carvalheiro, Raquel Santos, João Reis, Luís Almeida Morais, Tânia Mano, Pedro Rio, Ana Teresa Timóteo, Ana Galrinho, Rui Cruz Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Right ventricular maladaptation and failure determine outcome in pulmonary hypertension. The assessment of right ventricular-arterial coupling (RVAC) through the examination of pressure-volume loops is not commonly conducted. An alternative approach to assess RVAC is by integrating pressure data obtained through right heart catheterization (RHC) with right ventricular (RV) volumetric data derived three-dimensional echocardiography (3DE).
Objectives: To correlate estimations of RVAC obtained solely from doppler analysis and 3DE with those obtained using a combination of RHC and 3DE, to compare those parameters between a cohort with PH and a control without PH and to correlate RVAC with pulmonary vascular resistance.
Methods: A prospective registry of pre-capillary PH patients evaluated in a single tertiary center was used and compared with a control group without PH. In both groups, patients underwent same day RHC and echocardiographic assessment. Effective elastance of the pulmonary artery (PA Ea), maximum end-systolic elastance of the RV (RV Emax), and right ventricular-arterial coupling (RVAC, calculated as PA Ea/RV Emax) were determined using a combination of right heart catheterization (RHC) and end-systolic volume measured by 3DE as well as through simplified formulas in 3DE that incorporated mean pulmonary artery pressure (mPAP), stroke volume, and end-systolic volume (Figure 1). Comparison of groups was assessed using t-Test or Mann-Whitney analysis. Pearson's correlation was applied to assess correlations between continuous variables.
Results: A total of 15 patients were included in the analysis: 10 pts with PH (5 group I PH and 5 group IV PH) were compared with 5 pts without PH. Significant correlations were found between PA Ea calculated by 3DE

Fig 1.

Formulas for the calculation of PA Ea, RV Emax and RVAC

PA Ea = mPAP / SV

RV Emax = mPAP / ESV

RVAC = PA Ea / RV Emax

= ESV / SV

mPAP: mean pulmonary artery pressure
sPAP: systolic pulmonary artery pressure
SV: stroke volume
ESV: end-systolic volume

Parameters obtained in RHC:
mPAP and SV

Parameters obtained in 3DE:
sPAP, mPAP (0,61 * sPAP + 2), SV, ESV

Fig 3.

Comparison of measures of Ea, Emax and RVAC by RHC and 3D echocardiography between patients with and without PH.

	Without PH (n= 5)	With PH (n=10)	P
PA Ea RHC in mmHg/ml/m2 - median (IQR)	0,2 (0,06)	0,6 (0,55)	**0,002**
PA Ea 3DE in mmHg/ml/m2 - median (IQR)	0,4 (0,17)	0,99 (0,74)	**0,002**
RV Emax RHC + 3DE in mmHg/ml/m2 - median (IQR)	0,37 (0,15)	0,62 (0,36)	**0,027**
RV Emax 3DE in mmHg/ml/m2 - median (IQR)	0,39 (0,19)	0,60 (0,36)	**0,014**
RVAC RHC + 3DE	0,62 (0,19)	1,15 (0,57)	**0,014**
RVAC 3DE	1,1 (0,41)	1,59 (0,76)	**0,020**

Fig 2.

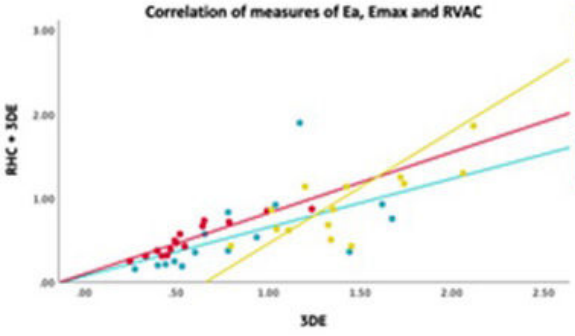


Fig 4.

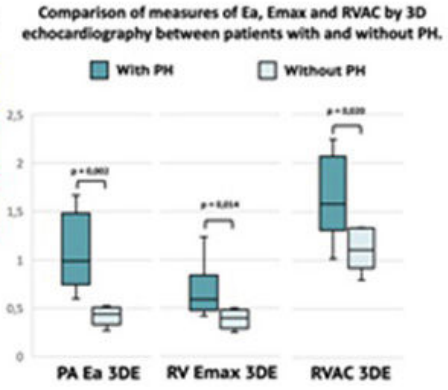


Figure PO 30

and by RHC (r = 0.569, p = 0.027), between RV Emax calculated by 3DE and by RHC+3DE (r = 0.917, p < 0.001) and between RVAC measured by 3DE and RHC+3DE (r = 0.788, p < 0.001), although there is a consistent tendency to overestimation of 3DE elastance parameters (Figure 2). Patients with pre-capillary PH present significantly higher PA Ea (p = 0.002 and p = 0.002), RV Emax (p = 0.027 and p = 0.014) and RVAC (p = 0.014 and p = 0.020) than patients without PH, independently of the method used (Figures 3 and 4). 3DE PA Ea and 3DE RVAC showed significant increases with higher pulmonary vascular resistance levels (r = 0.635, p = 0.011 and r = 0.548, p = 0.034). However 3DE RV Emax did not exhibit a significant increase under similar conditions (p = 0.088).

Conclusions: Measurements of PA Ea, RV Emax and RVAC obtained solely from 3DE demonstrated a strong correlation with the reference measurements obtained from RHC. Patients with PH present higher PA, RV Emax RVAC measured by both methods. For higher values of pulmonary vascular resistance there was a significantly higher ventricular-arterial uncoupling.

PO 31. NONINVASIVE MEASUREMENT OF MEAN PULMONARY ARTERY PRESSURE THROUGH ECHOCARDIOGRAPHY - IS IT A RELIABLE ALTERNATIVE?

Daniel Inácio Cazeiro[1], Miguel Azaredo Raposo[1], Catarina Simões de Oliveira[1], Ana Beatriz Garcia[1], Ana Margarida Martins[1], Ana Abrantes[1], Sara Prata[1], Tatiana Guimarães[2], Catarina Sousa[2], Ana G. Almeida[2], Fausto J. Pinto[2], Rui Plácido[2]

[1]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: In the diagnostic algorithm of pulmonary hypertension (PH), echocardiography plays a fundamental role regarding initial assessment of its probability. Subsequent diagnosis should be confirmed by right heart catheterization (RHC) and is defined as a mean pulmonary artery pressure (mPAP) > 20 mmHg. However, there are several formulas which can be used to noninvasively estimate mPAP through echocardiography.

Objectives: To analyze the accuracy of noninvasive echocardiographic measurement of mPAP and ability to predict PH severity.

Methods: Retrospective single-center study including patients who were submitted to echocardiogram and RHC on the same day, from 2021 to 2023. Hemodynamic parameters from RHC were collected from the patients' (pts) records. Echocardiograms were reviewed and three formulas were used to estimate mPAP: (mPAP1) 0.61 * estimated pulmonary artery systolic pressure + 2; (mPAP2) 90-0.62 *pulmonary acceleration time and (mPAP3) tricuspid regurgitation mean gradient + estimated right atrial pressure. Pearson tests were used to assess the correlation between RHC and echocardiographic mPAP. Receiving operating characteristic analysis was used to assess the performance of echocardiographic mPAP in predicting severe PH, here defined as RHC mPAP > 45 mmHg or pulmonary vascular resistance (PVR) > 5 Wood units (WU).

Results: A total of 73 pts were included (64.4% female), with a mean age of 63.5 years. Mean mPAP was 39.5 mmHg and median PVR was 6.5 WU, measured by RHC. When measured by echocardiography, mean mPAP1, mPAP2 and mPAP3 values were 39.7, 39.0 and 37.5 mmHg, respectively. A strong correlation was found between RHC mPAP and mPAP1 (r = 0.768, p < 0.001), as well as mPAP3 (r = 0.792, p < 0.001). Correlation between RHC mPAP and mPAP2 was moderate (r = 0.468, p < 0.001). The highest sensitivity and specificity for predicting RHC mPAP > 45 mmHg was achieved with mPAP1 and mPAP3 values of 38.9 and 41.5 mmHg, respectively. Although specificity for predicting PVR > 5 WU was low with both mPAP1 and mPAP3, values < 27.8 and < 25.9 mmHg were 100% sensitive for excluding severe PH, respectively.

Conclusions: Noninvasive echocardiographic measurement of mPAP through the mPAP1 and mPAP3 formulas showed good correlation with RHC mPAP, and values > 38.9 and > 41.5 mmHg revealed reasonable diagnostic accuracy for predicting severe PH. Measurement of noninvasive mPAP might also prove useful as a screening tool to exclude high PVR.

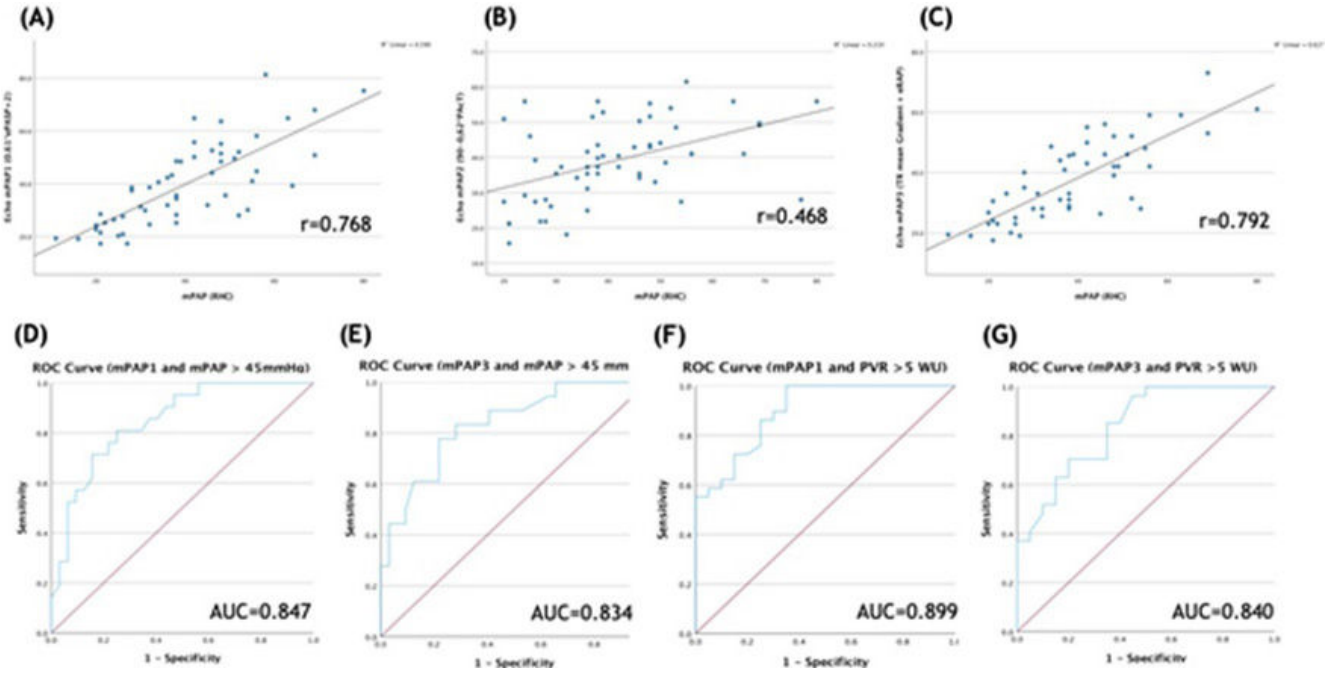


Figure PO 31

PO 32. THE FLUTTER-BY EFFECT IN TRANSCATHETER AORTIC VALVE IMPLANTATION BIOPROSTHESIS

Gonçalo Ferraz Costa

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Aortic stenosis (AS) is one of the most common valve diseases associated with high mortality if untreated. Transcatheter aortic valve implantation (TAVI) is a well-established therapeutic option and is offered increasingly to patients of lower risk. Echocardiography is the first-line exam to evaluate AS patients before and after the procedure. Flutter-by effect is an ultrasound finding reported in surgical biological aortic prosthesis, which has been speculated to compromise valve function. However, the flutter-by effect prevalence on TAVI and its clinical significance is still unknown.

Objectives: The aim of this study was to assess the prevalence of the flutter-by effect in patients undergoing TAVI and to evaluate its clinical significance through its effects on pressure gradients across the prosthetic aortic valve, as well as its impact on complications and mortality.
Methods: This study is a retrospective, single-center cohort study. Subjects underwent TAVI between January and September 2022. All data regarding patient characteristics, intraprocedural data, echocardiographic findings, and complications were retrospectively collected from the clinic's database. Transthoracic echocardiography was performed within eight days post-TAVI and during follow-up. We investigated the presence of this effect according to valve brand, dimensions, and baseline left ejection fraction. All statistical analyses were conducted using SPSS 29.0.
Results: The prevalence of the flutter-by effect was 19.5% at baseline and 25.1% at follow-up, with no significant difference between the two measurement points. No significant differences were found between patients with and without the flutter-by effect for any of the examined echocardiographic measurements. There was a significant difference in the

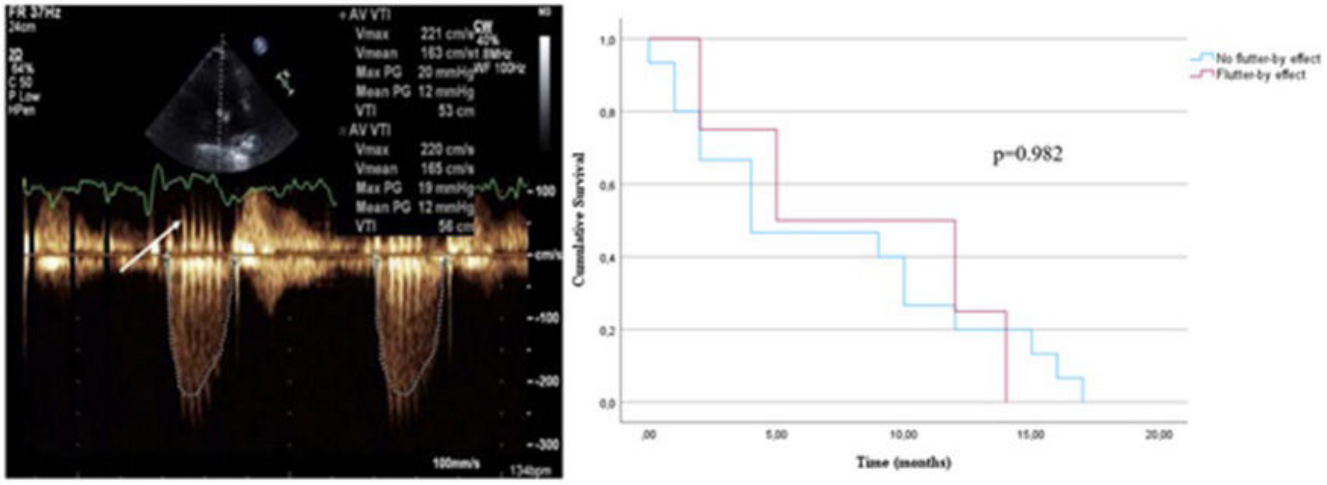


Figure PO 32

prevalence of the flutter-by effect at baseline according to the EF grouping at baseline (p = 0.017), but not at follow-up (p = 0.227). The flutter-by effect was more prevalent in the Accurate Neo2 valve. At one-year follow-up, there were no significant differences in complications, hospitalizations, and mortality between participants with and without the flutter-by effect.
Conclusions: Our study suggests that the flutter-by effect is a normal finding post-TAVI.

PO 33. PERFORMANCE OF THREE DIMENSIONAL RIGHT VENTRICULAR EVALUATION AND RIGHT VENTRICULAR STRAIN IN SICKLE CELL DISEASE PATIENTS

Ana Raquel Carvalho Santos[1], Inês Vieira[2], Isabel Cardoso[1], Christopher Saunders[2], Madalena Silva[2], Tânia Mano[1], Vera Ferreira[1], Pedro Rio[1], Ana Teresa Timoteo[1], Ana Galrinho[1], Patrícia Ribeiro[1], Rui Cruz Ferreira[1]

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Introduction: Echocardiography (TTE) is recommended for routine follow-up of all sickle cell disease (SCD) patients (pts) for assessment of possible cardiovascular (CV) complications. Cardiac remodelling occurs in these pts due to a high-output state. Additionally, pulmonary hypertension may develop due to pulmonary vasculopathy. TTE with focus on right ventricular evaluation is essential for detecting SCD cardiomyopathy.
Objectives: Evaluate the performance of 3D right ventricular evaluation and right ventricular strain in pts with SCD.
Methods: A prospective, single centre analysis was made including pts with sickle cell disease referred for evaluation in Hemoglobinopathies clinic. TTE was performed as part of usual follow up. Special attention was given to 3D right ventricular image acquisition and right ventricular strain. Data were collected on population characteristics and TTE measurements. When testing hypothesis, Mann-Whitney test was performed. A p value of 0.05 was considered statistically significant.

Table 1: Echocardiographic evaluation of sickle cell disease patients.

Echocardiographic parameter	Median (Interquartile range)
LV End-diastolic diameter (mm)	50 (47-54)
LV End-systolic diameter (mm)	32 (28-35)
Interventricular septum (mm)	8.5 (7.0-9.0)
Posterior wall (mm)	8.0 (7.0-9.0)
Indexed right atrium volume (mL/m2)	22.5 (18.8-28.2)
Indexed left atrium volume (mL/m2)	38.0 (29.2-48.0)
LV End-diastolic volume (mL/m2)	74 (65-78)
LV End systolic volume (mL/m2)	28 (26-63)
LV biplanar ejection fraction (%)	60 (55-63)
Cardiac index (l/min/m2)	4.1 (3.4-4.5)
LV global longitudinal strain (%)	-18.1 (-15.9- -19.7)
Tricuspid regurgitation velocity (cm/s)	2.24 (2.00-2.39)
Pulmonary systolic artery pressure (mmHg)	19 (16-23)
Mitral E wave velocity (cm/s)	93 (77-104)
Mitral A wave velocity (cm/s)	53 (46-63)
E/A ratio	1.78 (1.39-1.99)
Mitral septal e' (cm/s)	13 (12-15)
Mitral lateral e' (cm/s)	18 (16-21)
E'/e ratio	6.2 (5.3-7.0)
Pulmonary acceleration time (ms)	146 (123-167)
Tricuspid s' (cm/s)	17 (17-19)
Tricuspid annular plane systolic excursion (mm)	26 (24-31)
3D RV indexed end-diastolic volume (mL/m2)	55 (44-68)
3D RV indexed end-systolic volume (mL/m2)	31 (25-36)
3D RV ejection fraction (%)	45.5 (40.9-52.9)
3D RV Fractional area change	43 (37-47)
3D RV medium dimension (mm)	30.5 (26.7-34.0)
3D RV base dimension (mm)	43.0 (40.7-48.3)
3D RV longitudinal dimension (mm)	75.5 (72.0-84.3)
RV free wall strain (%)	-19.5 (-15.1- -22.0)
RV global longitudinal strain (%)	-17.5 (-13.7- -20.5)

LV – Left ventricular; RV - Right ventricular

Results: From September to November 2023, TTE evaluation was acquired in 22 pts, median age 30 (22-40) years. The majority of pts were female (63.6%), with 45.5% having a vaso-occlusive crisis in the last year and 13.6% needing regular transfusion therapy. Regarding CV disease, 4.5% had hypertension, 4.5% atrial fibrillation, 27.3% kidney disease and 22.5% history of stroke. The Table specifies TTE measurements of included pts. Regarding altered parameters, 9% had septal hypertrophy, 59% large left atrium, 9% large right atrium, 41% large left ventricular (LV) volumes, 9% LV ejection fraction bellow 54%, 23% cardiac index above 4.5 L/min/m^2, 59% LV longitudinal strain below -19%, 4.5% pulmonary systolic artery pressure above 30 mmHg and tricuspid regurgitation velocity above 2.5 cm/s, 18% E/A ratio above 2 and, 45% 3D right ventricular ejection fraction (RVEF) bellow 44% and decreased right ventricular free wall strain. Tricuspid s' and tricuspid annular plane systolic excursion were normal, even when RVEF was decreased. Additionally, when comparing those two parameters and 3D RVEF, there was no association. Although, pulmonary acceleration time was lower in pts with lower 3D RVEF (134 vs. 159 ms, p = 0.036).
Conclusions: Right ventricular evaluation is one of the major focuses when performing TTE in SCD pts. As showed in our analysis commonly used parameters may not be sufficient to detect discrete alterations. 3D RVEF may have a role in the routinely evaluation of these pts.

PO 34. ECHOCARDIOGRAPHY IN PULMONARY HYPERTENSION HEMODYNAMIC EVALUATION – A SILVER LINING

Miguel Azaredo Raposo[1], Daniel Cazeiro[1], Catarina Simões Oliveira[1], Ana Beatriz Garcia[1], Catarina Gregório[1], Ana Margarida Martins[1], Susana Gonçalves[2], Tatiana Guimarães[2], Ana G. Almeida[2], Catarina Sousa[2], Fausto J. Pinto[2], Rui Plácido[2]

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Introduction: Right heart catheterization (RHC) is the gold standard in pulmonary hypertension (PH) diagnosis. However, its invasive nature and lack of availability justify the need for non-invasive alternatives, namely transthoracic echocardiography (TTE).
Objectives: To evaluate the correlation of same-day echocardiographic estimation and invasive measurements of pulmonary and right ventricle (RV) hemodynamics.
Methods: Retrospective, single-center study of consecutive pts with a diagnosis of PH, who were submitted to right heart catheterization (RHC) and TTE on the same-day. TTE derived sPAP estimation, RV-RA gradients, pulmonary artery (PA) diameter and right ventricular (RV) function, TAPSE, TAPSE/sPAP ratio, tricuspid S' and RV fractional area change (FAC) were assessed. Values were paralleled with the hemodynamic evaluation from RHC. For statistical analysis, Pearson's and Spearman's correlations were applied. ROC curves to define cut-offs of reduced cardiac output (CI) were obtained.
Results: We included 69 pts, with a predominance of female sex (64%) and mean age of 63.7 years. As for PH clinical groups, 43% (30) were Group 1; 10% (7) Group 2; 12% (9) group 3 and 30% (23) group 4. Mean sPAP-RHC was 71.2 mmHg, compared with 64.9 mmHg when estimated with echo, revealing a strong correlation (r. 0.776, p. < 0.001). sPAP-TTE also had a positive correlation with PVR (r. 0.653, p. < 0.001). Assessment of RV function with FAC, TAPSE/PSAP, TAPSE and tricuspid S' showed significant positive correlation with cardiac output and index, and significant negative correlation with PVR. RV dimensions had no significant correlation with hemodynamic measurements. Through ROC curve analysis, we were able to determine cut-off points for TAPSE (< 17.95 mm), Tricuspid S' (< 11.5 cm/s) and RV FAC (< 33.5%) to determine reduced CI, defined as < 2.5 l/min/m^2.
Conclusions: sPAP-TTE assessment showed strong correlation with invasive measurements obtained in the same-day. It did, however, slightly under-estimate comparing to the RHC measured sPAP. Standard RV function parameters showed strong correlation with cardiac index, and cut-off points to determine reduced CI were established, strengthening the evidence for the value of these simple measurements in hemodynamic assessment of patients with PH.

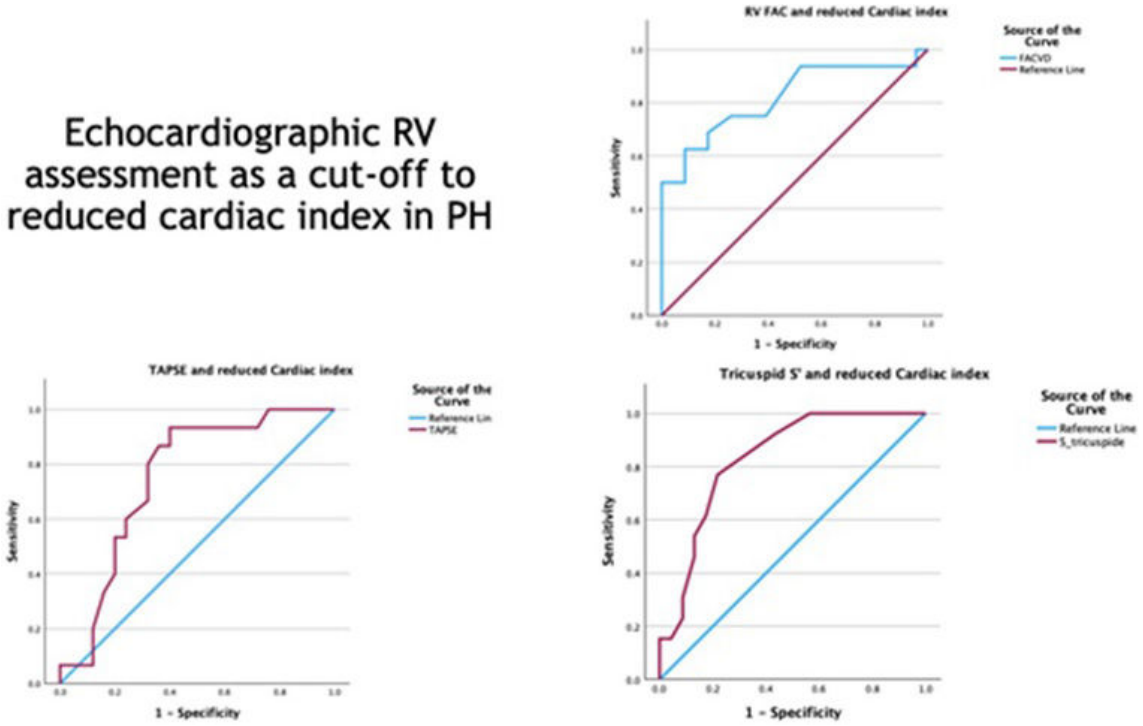

Figure PO 34

PO 35. MYOCARDIAL WORK IN ATHLETES: A NOVEL APPROACH TO DIFFERENTIATE ATHLETIC HEART ADAPTATIONS FROM CARDIOMYOPATHY?

António Baptista Carvalho[1], Rita Rodrigues[2], Rita Gomes[2], Rita Santos[2], Lígia Mendes[2]

[1]Hospital de Vila Franca de Xira, EPE. [2]Hospital da Luz Setúbal.

Introduction: The study of the athlete's heart due to the physiological adaptations resulting from exercise can be very challenging since several characteristics can be overlapping with those of cardiomyopathies. Initially, the study of deformation was received with great enthusiasm as a potential differentiating parameter, but it was quickly realized that the higher athletes' ventricles volumes have low strains due to the geometry of the chamber. More recently, a non-invasive myocardial work study tool has emerged, integrating load and deformation. The aim of this study is to determine the additional value of the Myocardial Work indices determined by echo in the study of the athlete's heart.

Methods: Were retrospectively included 121 male soccer players from the first national league (class IC of Mitchell classification), a non-invasive analysis of the myocardial mechanics recurring to myocardial strain and myocardial work using a GE Vivid E95 echocardiographic ultrasound system and a commercially available software (EchoPAC V.204, GE Vingmed Ultrasound AS, Horten, Norway). Categorical variables are presented as percentages and continuous variables as means and standard deviations. The statistically analysis was performed on SPSS v.27.

Results: For the athletes group, the median of age was 24 (21-31) years and the median body mass index was 23 (22.2-24.0) kg/m^2. The median of systolic blood pressure was 118 (108-125) mmHg and the diastolic blood pressure was 66 (52-76) mmHg. Results in the Table. Compared to a control group of healthy individuals, our athletes exhibited lower Global Longitudinal Strain (GLS), Global Work Index (GWI), and Global Constructive Work (GCW), while maintaining equivalent levels of Global Work Efficiency (GWE) and Global Wasting Work (GWW).

Conclusions: In elite athletes, GLS, GWI, and GCW are lower compared to the general population, while GWE and GWW remain equivalent. GWE emerges as a potentially promising parameter for differentiating between normal physiological adaptations and pathology in athletes.

Table n.1 – descriptive analysis	Athletes (*N=121*)	Control (N=30)	p value Control vs Athletes
Age (years)	24 (21-31)	27 ± 4	0,089
Systolic Blood Pressure (mmHg)	118 (108-125)	125 ± 12	0,003
Diastolic Blood Pressure (mmHg)	66 (52-76)	76 ± 11	< 0,001
Mean Arterial Pressure (mmHg)	82 ± 13	60 ± 13	< 0,001
Indexed Left ventricular end-diastole volume (Biplane) (mL/m^2)	89 (78-98)	62 ± 19	< 0,001
Indexed Left ventricular end-systole volume (Biplane) (mL/m^2)	34 ± 8	26 ± 10	< 0,001
LVEDV >74 mL/m^2 (n.,%)	101 (84)	4 (13)	
Left ventricular ejection fraction (Biplane) (%)	61 ± 5	59 ± 6	0,085
E/e' average ratio	4,50 (3,80-5,06)	5,10 ± 0,60	0,002
Global longitudinal strain of the left ventricle (%)	-17,8 ± 1,8	-18,5 ± 1,8	0,05
Global Work Index (GWI) (mmHg%)	1587 (1420-1708)	1710 ± 228	0,017
Global Constructive Work (GCW) (mmHg%)	1940 ± 267	2131 ± 284	< 0,001
Global Work Efficiency (GWE) (%)	95 (94-97)	96 (94-97)	0,705
Global Wasted Work (GWW) (mmHg%)	81 (60-108)	69 (60-109)	0,830

Figure PO 35

PO 36. ASSESSING THE VALUE OF ROUTINE CONTRAST ECHOCARDIOGRAPHY FOR LEFT VENTRICULAR THROMBUS SCREENING IN ANTERIOR ST-ELEVATION MYOCARDIAL INFARCTION PATIENTS

Vanda Devesa Neto, João Fiúza, Gonçalo Ferreira, Mariana Almeida, Joana Correia, Inês Pires, Emanuel Correia, Davide Moreira, Miguel Correia, Nuno Craveiro, António Costa

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio.

Introduction: Left ventricular (LV) thrombus is more prevalent in anterior STEMI in compared to other types of acute myocardial infarction. Contrast echocardiography (TTE) has demonstrated potential in improving diagnostic accuracy, impacting treatment decisions related to antithrombotic therapy versus oral anticoagulation. This study aims to evaluate the efficacy of contrast TTE as a routine screening method for detecting LV thrombus during the acute phase of anterior STEMI.
Methods: A single center randomized controlled trial was conducted on consecutive patients with anterior STEMI admitted to the cardiology department between November 2021 and February 2023. The study group underwent routine contrast TTE, while the control group followed a conventional approach. Conventional approach involved regular TTE, with contrast administered if thrombus suspicion arose. Demographical, clinical and diagnostic data were collected. Thrombus identification rates were compared between groups, and demographic, clinical, and diagnostic data were collected. Chi-squared and Mann-Whitney U tests were used for categorical and mean comparisons, respectively.
Results: 72 patients were included in this study (50% in each group). 76% (55) were male. Mean age was 66.1 ± 13.5 years. The median interval from admission to the echocardiographic was 4 days (IQR 3) for both groups. Late presentation occurred in 6.7% and 10.5% of the patients in the study and control group, respectively. Across the entire patient cohort, a successful reperfusion was observed in 92.6% of cases. The median length of hospital stay was 6 days for both groups. Thrombus was detected in 24% of population. Routine contrast echocardiography significantly improved thrombus detection compared to the conventional approach (14% vs. 33%; p = 0.047; χ^2 3.78). Thrombus detection was not significantly associated with fibrinolysis (p = 0.08). No significant differences were observed in LV ejection fraction (p = 0.95) or LV volume (p = 0.27) between the groups. Thrombus presence was significantly associated with apical aneurysm (p < 0.01; x2 7.18; 0% vs. 36%). In-hospital mortality was 1.5% (n = 1). There were no notable variations between groups in terms of 6-month mortality or occurrence of stroke events (p = 0.87). Additionally, no significant incidents of hemorrhage were identified during the follow-up period for either group.
Conclusions: The routine use of contrast echocardiography significantly improved thrombus detection in anterior STEMI patients. Thrombus detection during the acute phase did not correlate with adverse outcomes during hospitalization or in the 6-month follow-up period.

SEXTA-FEIRA, 19 ABRIL de 2024 | 09:00-10:30

Área de Posters 3 | Sessão de Posters 06 - Hipertensão Pulmonar

PO 37. THE UNUSUAL SUSPECT – IS PULMONARY VENO-OCCLUSIVE DISEASE UNDERRECOGNIZED?

Daniel Inácio Cazeiro[1], Miguel Azaredo Raposo[1], Catarina Simões de Oliveira[1], Ana Margarida Martins[1], Ana Beatriz Garcia[1], Ana Mineiro[2], Catarina Resende[3], Tatiana Guimarães[4], Susana Robalo Martins[4], Nuno Lousada[4], Fausto J. Pinto[4], Rui Plácido[4]

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Introduction: Pulmonary hypertension (PH) with features of venous involvement (PVOD) is a rare, rapidly progressive type of PH, often

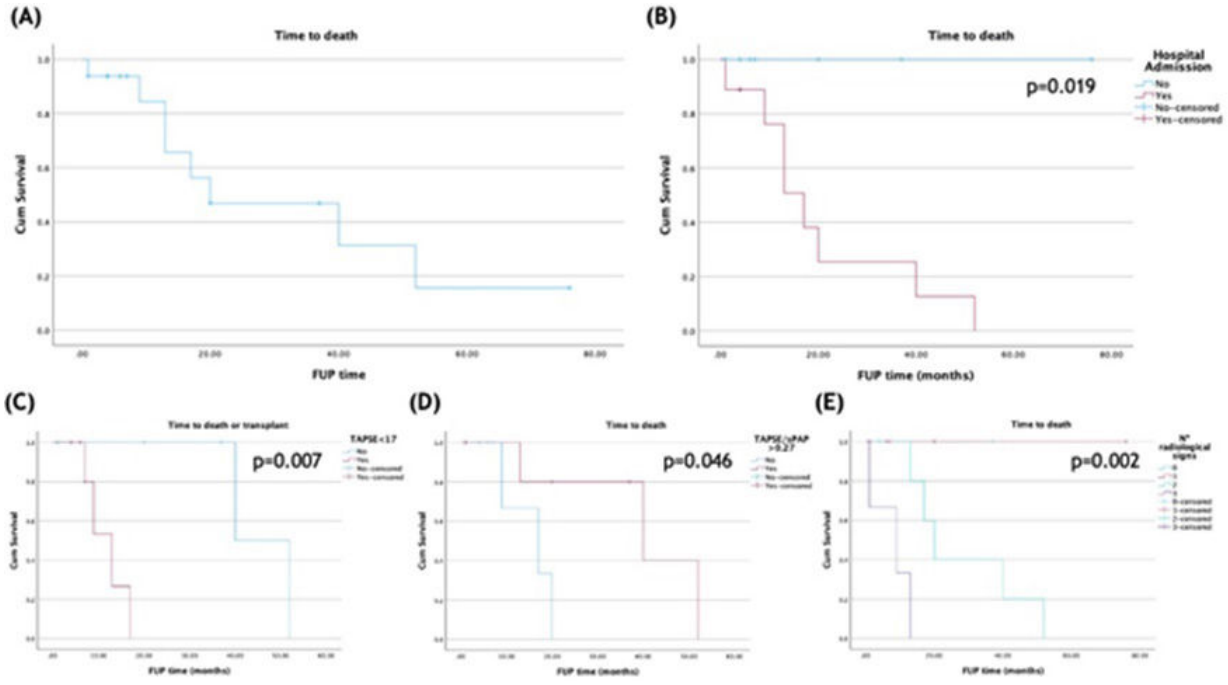

Figure PO 37

underrecognized because of its nonspecific presentation. However, some clinical and diagnostic exam findings may allow a presumptive diagnosis (dx) of PVOD. Due to its lack of specific treatment, prognosis is generally poor.
Objectives: To characterize a population with probable/definitive dx of PVOD.
Methods: Retrospective single-center study which included patients (pts) from 2011 to 2023, with a dx of pre-capillary PH and findings suggestive of PVOD. Clinical and exam data were collected from pts' records. A descriptive analysis was performed. Survival was analyzed using Kaplan Meier curves and log rank tests.
Results: A total of 17 pts were included (53% male), with mean age of 58.8 ± 14.1 years (y). 65% of pts presented ≥ 1 risk factor for PVOD (associated mutation, systemic sclerosis or previous exposure to tobacco, chemotherapy, or organic solvents). Most were on functional class (FC) III. Median NTproBNP level was 1,719 pg/mL and mean 6-minute walking test distance (6MWTD) was 259 ± 157 m, with mean O_2 saturation nadir of 83 ± 5%. Mean echocardiographic values revealed right ventricular dilatation (basal diameter of 50 ± 6 mm) and dysfunction (TAPSE of 15 ± 4 mm and s' of 9 ± 2 cm/s). Median mean pulmonary artery pressure (PAP) was 43 mmHg, with high pulmonary vascular resistance and low cardiac index (10 ± 7 WU and 2.0 ± 0.5 L/min/m²). On chest imaging, 94%, 65% and 18% of pts presented 1, 2 or 3 signs of PVOD, respectively (mediastinal lymphadenopathy, septal lines, and ground glass opacities). Regarding pulmonary function tests, lung volumes were normal, and mean diffusion capacity for carbon monoxide was severely reduced (38 ± 19%). Most pts were started on vasodilators. There were no significant clinical or hemodynamic improvements. Three pts experienced clinical worsening after drug initiation (1 developed acute pulmonary edema). From a total of 6 referrals, 2 pts (12%) were submitted to lung transplant. Median follow-up time was 13 months (mo). Nine pts were hospitalized, and 9 pts died (53%). Mean time to death was 21 ± 17 mo. Pts with ≥ 2 radiological signs, TAPSE < 17 mm, TAPSE/systolic PAP ratio < 0.27 or hospitalizations had a higher death rate.
Conclusions: PVOD is a rare form of PH, with a challenging dx and poor prognosis. Prompt clinical recognition and early referral for transplant are crucial for a successful outcome.

PO 38. ECHOCARDIOGRAPHIC INSIGHTS REDEFINING RISK IN PULMONARY ARTERIAL HYPERTENSION: A FOCUS ON RIGHT ATRIAL VOLUME INDEX FOR ENHANCED STRATIFICATION

Liliana Brochado, João Luz, Paula Fazendas, Filipa Ferreira, Sofia Alegria, João Grade, Mariana Martinho, Bárbara Ferreira, Diogo Cunha, Oliveira Baltazar, Nazar Ilchyshyn, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Pulmonary arterial hypertension (PAH) is a rare condition, defined in the 2022 ESC guidelines as a mean pulmonary artery pressure exceeding 20 mmHg, as measured by right heart catheterization. In PAH, the right atrium (RA) plays a critical role, and its size, determined by echocardiography, is crucial for risk stratification. Despite this, current guidelines still prioritize right atrial area (RAA) over the right atrial volume index (RAVI). This approach is contrary to the recommendations of international echocardiography societies since 2016, which advocate for the use of RAVI for a more accurate assessment.
Objectives: Identify the RAVI value corresponding to the RAA, in PAH risk stratification used in the 2022 ESC guidelines.
Methods: We conducted a retrospective analysis of all consecutive patients of a single-center Pulmonary Hypertension Unit, since 2002. Patients' echocardiograms were revised for simultaneous assessment of RAA and RAVI. Over an average follow-up of 6.7 (5.9) years, we recorded a cohort of 82 patients diagnosed with PAH. From this group, we excluded 27 patients with congenital etiologies, 14 due to the insufficient quality of echocardiographic data, and one patient identified as an extreme statistical outlier.
Results: A total of 40 patients were included with a mean age at diagnosis of 48.8 (SD 17.8) years, predominantly female (78%). The most prevalent etiologies were idiopathic (33%) and connective tissue disease-associated PAH (28%). Clinical presentations included right heart failure signs in 30% of patients, rapid symptom progression in 13%, syncope history in 15%, and 78% in WHO functional class III-IV. Average 6-minute walk distance and NT-proBNP levels were 392 m and 1,636.18 ng/L (SD 2,576.14), respectively. Average hemodynamics parameters were right atrial pressure 7.4 mmHg (SD 4.9), cardiac index 2.3 L/min/m² (SD 2.1), stroke volume index 3.4 mL/m² (SD 3.9) and mixed venous oxygen saturation 66% (SD 11). Average echocardiographic parameters were RAA 20.1 cm² (SD 4.8), TAPSE/sPAP 0.34 mm/mmHg (SD 0.18) and RAVI 37.78 mL/m² (SD 13.67). Statistical analysis revealed a strong and significant correlation between RAA and RAVI (r = 0.82, 95%CI: 0.69-0.90, p < 0.001). The derived linear relationship is expressed as "y = 2.8*X -18". Therefore, an RAA value of 18 cm² translates to a RAVI of 32 mL/m², while an RAA of 26 cm² corresponds to a RAVI of 55 mL/m².
Conclusions: Our study supports a revision in HAP risk assessment guidelines, suggesting a shift to a more comprehensive approach using RAVI measurements. We propose categorizing risk as low for RAVI < 32 mL/m², intermediate for RAVI between 32-55 mL/m², and high for RAVI > 55 mL/m². This recommendation aligns with the standards of international societies and is grounded in best clinical practices, considering that indexing measurements of the RA to body size potentially offer greater accuracy tan absolute values.

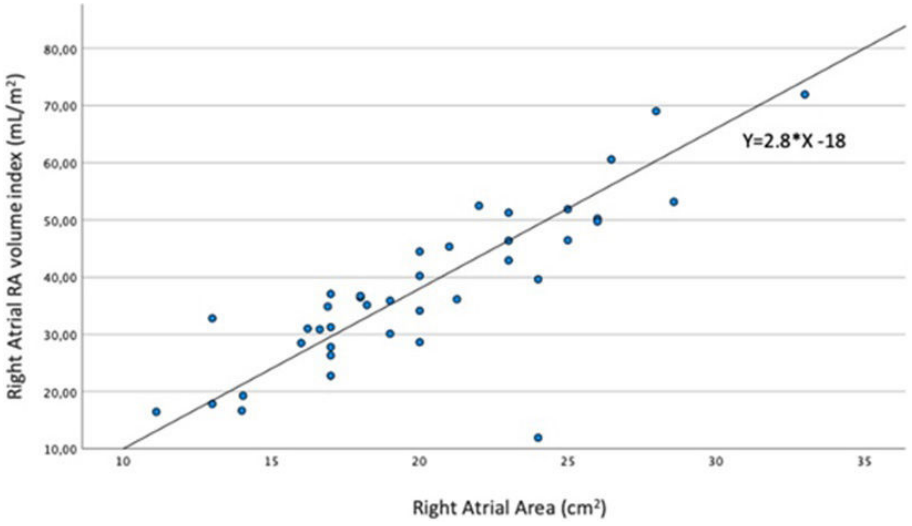

Figure PO 38

PO 39. FOUR-STRATA RISK-ASSESSMENT TOOL FOR PULMONARY HYPERTENSION: CAN WE ASSOCIATE IT WITH HAEMODYNAMIC PARAMETERS?

João Fernandes Pedro[1], Ana Beatriz Garcia[1], Catarina Oliveira[1], Ana Margarida Martins[1], Miguel Azaredo Raposo[1], Catarina Gregório[1], João Fonseca[1], Tatiana Guimarães[2], Susana Martins[3], Nuno Lousada[3], Fausto J. Pinto[3], Rui Plácido[3]

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Introduction: Pulmonary hypertension (PH) is a severe pulmonary vascular disease associated with significant morbidity and mortality. The disease can be idiopathic, hereditary (group 1), associated with left heart disease (group 2), lung disease and/or hypoxia (group 3), pulmonary artery obstructions (group 4) or related with multifactorial mechanisms (group 5). Recent European Society of Cardiology (ESC) guidelines proposed a new comprehensive risk-assessment tool which classifies patients with PH having low, intermediate-low risk, intermediate-high risk or high risk in order to better stratify mortality risk. The four-strata risk-assessment tool is based on World Health Organization-Functional Capacity (WHO-FC), six-minute walk distance (6MWD) and NT-proBNP. However, the correlation between this new classification method and haemodynamic measures is not yet established.
Objectives: To study the association between the four-strata risk assessment tool and right heart catheterization (RHC) hemodynamic parameters.
Methods: We conducted a retrospective analysis of PH group 1 and 4 patients that underwent RHC in the last two years in a tertiary hospital. Information about demographics, WHO-FC, 6MWD, blood biochemistry and data from echocardiography and RHC were collected. In an exploratory analysis, four-strata risk and RHC parameters were compared.
Results: A total of 79 patients were evaluated (median age 68 years, 34% men and 66% female). Of these 53% had group 1 PH and 47% group 4 PH. There were 34 patients (43%) classified as low risk, 28 patients (35%) as intermediate-low risk and 2 (3%) as intermediate-high risk. Four-strata classification during follow-up showed a significant statistic association with pulmonary artery systolic pressure (p = 0.013), pulmonary mean arterial pressure (p = 0.013), cardiac output (p = 0.06) and pulmonary vascular resistance by Fick equation (p = 0.002) and thermodilution (p = 0.013).
Conclusions: Four-strata risk assessment tool score has a statistically significant association with clinically relevant RHC parameters. As a non-invasive evaluation, it should be performed during follow-up to obtain a more sensitive risk stratification and therefore optimize patient care, eventually leading to therapy adjustments.

PO 40. ASSESSING INVASIVE HEMODYNAMICS IN PULMONARY HYPERTENSION: EXAMINING THE PREDICTIVE UTILITY OF CARBOHYDRATE ANTIGEN 125 AND N-TERMINAL PRO-BRAIN-TYPE NATRIURETIC PEPTIDE

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Introduction: N-terminal pro-brain-type natriuretic peptide (NT-proBNP) shows a correlation with the severity of pulmonary hypertension (PH). While elevated levels of the novel biomarker carbohydrate antigen 125 (Ca-125) have been associated with fluid congestion in heart failure (HF), its role in the context of PH remains unexplored.
Objectives: Our goal was to examine whether Ca-125 and NT-proBNP could serve as reliable indicators predicting invasive hemodynamics in patients with PH and its role in clinical practice, particularly related to hemodynamic changes related to fluid congestion and disease progression.
Methods: Prospective examination involving 19 patients with PH who underwent right heart catheterization between April and November 2023. We evaluated serum levels of Ca-125 and NT-proBNP. Elevated Ca-125 levels were defined as > 30 U/mL and NT-proBNP levels as > 1,100 pg/mL. Demographic and procedural data were systematically reviewed. We investigated the association between CA-125 and NTproBNP with hemodynamic parameters and their predictive accuracy.
Results: The study population had a mean age of 63.5 ± 12.3 years, 73.7% being female, 31.6% classified as obese, and 31.6% having chronic renal disease (CKD). Among the PH groups, 42.1% were classified as group I, 31.6% as group II, and the remainder as group IV. No statistically significant differences were observed in age, gender, PH group, CKD, and HF history between patients with elevated versus lower levels of Ca-125 and NT-proBNP. In terms of hemodynamic parameters, significant differences were noted in mixed venous oxygen saturation (SvO2) between patients with elevated vs. low levels of Ca-125 (70.6 ± 7.9 vs. 58.6 ± 6.1%, p = 0.027) and NT-proBNP (71.8 ± 7.7 vs. 62.1 ± 7.7%, p = 0.024). Pulmonary capillary wedge pressure (PCWP) differed significantly concerning NT-proBNP (12.6 ± 5.0 vs. 19.1 ± 8.1 mmHg, p = 0.05). Other parameters, including right atrial pressure (RAP), mean pulmonary arterial pressure (mPAP), pulmonary vascular resistance (PVR), and cardiac index (CI), did not exhibit significant differences. Ca-125 demonstrated a moderate and positive correlation with interleukin-6 (r = 0.664, p = 0.010) and NT-proBNP levels (r = 0.504, p = 0.028). In contrast, NT-proBNP exhibited a moderate positive correlation with serum creatinine (r = 0.725, p < 0.001) and a moderate negative correlation with SvO2 (r = -0.653, p = 0.003). Notably, elevated Ca-125 accurately predicted elevated NT-proBNP levels (AUC 0.9, p = 0.016), while elevated NT-proBNP accurately predicted PCWP (AUC 0.9, p = 0.024) and RAP (AUC 0.85, p = 0.048).
Conclusions: In summary, our study indicates that elevated Ca-125 and NT-proBNP levels may signal invasive hemodynamic changes in pulmonary hypertension. Their interrelation suggests potential as complementary indicators of disease severity, warranting further validation in larger cohorts.

PO 41. GENETIC TESTING IN PAH: ASSESSING CLINICAL RISK AND PROGNOSTIC SIGNIFICANCE OF MUTATIONS

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Introduction: Pulmonary Arterial Hypertension (PAH) is often associated with genetic mutations (GM), more frequently with the bone morphogenetic protein type II (BMPR2) gene. The identification of GM is useful for early diagnosis (dx) and treatment of relatives. However, it is still not well established whether GM are associated with worse clinical outcomes.
Objectives: To analyze a population submitted to genetic testing and compare outcomes between patients with and without GM.
Methods: We performed a single-center, retrospective study with patients from 2010 to 2023, with a confirmed dx of PAH and who were submitted to genetic testing (BMPR2 or next generation sequencing panel). A control group (CG) was established, considering functional class (FC), six-minute walking test (6MWT), mean pulmonary artery pressure (mPAP), and tricuspid annular plane systolic excursion (TAPSE)/ systolic PAP (sPAP) ratio. Clinical characteristics, biomarker levels, hemodynamic and echocardiographic parameters were collected from patients' records. Mann-Whitney or t-test analysis were performed to evaluate differences between the mutation group (MG) and the CG. Kaplan Meier analysis and log rank tests were used to compare survival between both groups.
Results: We had access to the results of 36 patients' tests, of which 12 identified a GM (diagnostic yield 33%). Of these, 2 were asymptomatic carriers and 10 were diagnosed with PAH. Seven GM were identified in BMPR2 (58%), 2

(A)

	Mutation	No mutation	p-value
Female sex (%)	7 (70.0)	10 (71.4)	1.000
Age at diagnosis	42.0 +/- 10.3	49.4 +/- 14.3	0.180
WHO class (%)			
1	0 (0.0)	1 (7.1)	0.660
2	8 (80.0)	11 (78.6)	
3	2 (20.0)	2 (14.3)	
NTproBNP (pg/mL)	1609 (2152)	194 (905)	0.022
6MWT distance (m)	429 (117)	306 (124)	0.127
mPAP (mmHg)	56.2 +/- 16.3	51.1 +/- 25.2	0.578
PVR (WU)	16.1 +/- 7.7	9.1 +/- 5.3	0.026
CI (L/min/m2)	1.85 +/- 0.34	2.40 +/- 0.69	0.036
TAPSE (mm)	16.3 +/- 4.3	20.9 +/- 5.3	0.047
TAPSE/sPAP	0.25 +/- 0.14	0.37 +/- 0.17	0.095
N of PAH drugs (%)			
1	2 (20.0)	1 (7.1)	0.255
2	2 (20.0)	8 (57.1)	
3	6 (60.0)	5 (35.7)	
Hospital admissions (%)	4 (40.0)	4 (28.9)	0.673
Deaths (%)	2 (20.0)	4 (28.9)	1.000

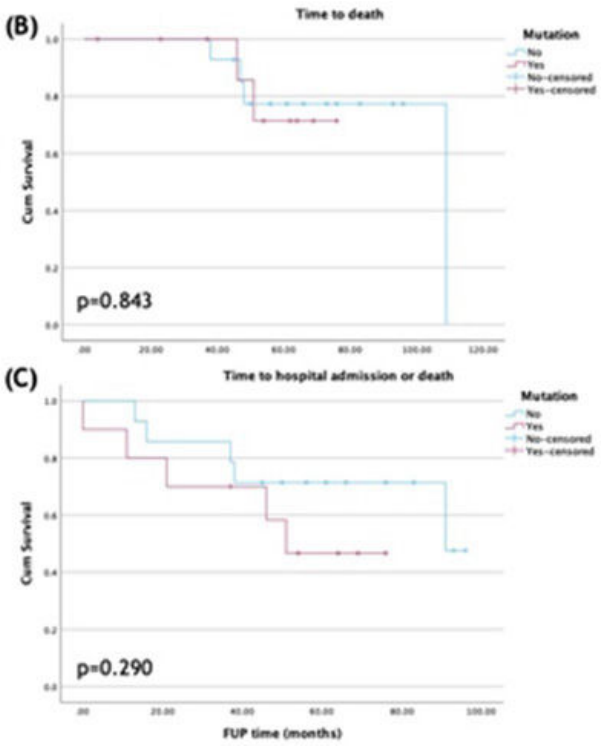

Figure PO 41

in ACVRL1 (17%) and 1 in ABCC8, FOXF1 and EIF2AK4 genes (8% each). Regarding PAH patients with GM, 70% were female, mean age at dx was 42 ± 10 years and most were on FC III. When comparing with the CG (n = 14), NTproBNP levels were higher (1,609 vs. 194 pg/mL, p = 0.022), pulmonary vascular resistance was higher (16.1 ± 7.7 vs. 9.1 ± 5.3 WU, p = 0.026), cardiac index was lower (1.85 ± 0.34 vs. 2.40 ± 0.69 L/min/m^2, p = 0.036) and TAPSE was lower (16 ± 4 vs. 21 ± 5 mm, p = 0.047). In the MG, a higher proportion of patients were under PAH triple therapy (60% vs. 35.7%), although it was not statistically significant. Mean follow-up time was 49 months (mo) in the MG and 67 mo in the CG. There were no statistically significant differences regarding time to death (p = 0.843) or time to hospital admission or death (p = 0.290).

Conclusions: In our population, genetic testing had a good diagnostic yield. PAH patients with GM presented with higher clinical risk, in what NTproBNP levels, right ventricular function and hemodynamic profile were concerned. However, these differences did not seem to affect prognosis.

PO 42. ESTUDO SHAPE - UMA PRIMEIRA FOTOGRAFIA À REALIDADE DA HIPERTENSÃO ARTERIAL PULMONAR EM PORTUGAL

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Introdução: A Hipertensão Arterial Pulmonar (HAP) é uma doença rara e progressiva, com um risco de mortalidade elevado. O estudo sHAPe destina-se a contribuir para a compreensão dos desafios existentes na jornada dos doentes com HAP em Portugal.

Objetivos: Caracterizar a população de doentes com HAP em Portugal.

Métodos: Estudo observacional, transversal e multicêntrico, envolvendo 5 dos 6 Centros de Tratamento. Os doentes são convidados a participar pelo médico no momento da consulta, preenchendo um questionário que recolhe dados clínicos e informação sobre as preferências, expectativas e impacto psicossocial e económico da doença. Os dados clínicos são reportados pelo médico e incluem a classificação da doença, tempo desde o diagnóstico e avaliação do risco segundo as *guidelines* da ESC/ERS 2022.

Resultados: Nesta análise interina são reportados dados de 129 doentes com diagnóstico de HAP, incluídos entre abril e novembro de 2023; 78% do sexo feminino. 59% dos doentes têm idade entre 41 e 65 anos. 10% dos doentes foram diagnosticados há menos de 1 ano. 69% dos doentes estão na classificação clínica da HP no subgrupo 1.4, sendo a HAP associada a cardiopatias congénitas (31%) e a doenças do tecido conjuntivo (31%) as mais prevalentes. 16% dos doentes estão na classe funcional-OMS (CF) I, 56% na CF II, 23% na CF III e 5% na CF IV. 43% dos doentes foram classificados em baixo risco (< 5%), 46% em risco intermédio (5-20%) e 11% em risco alto (> 20%) de mortalidade esperada a 1 ano.

Conclusões: Esta primeira subanálise do estudo sHAPe revela, pela primeira vez, dados da realidade nacional relativos a incidência, classificação etiológica e gravidade da HAP e evidenciam a sua diversidade etiológica, clínica e sociodemográfica. Este constitui um primeiro passo para compreender as expectativas dos doentes e impacto da doença na sua vida e na dos seus cuidadores.

Este estudo conta com o apoio técnico da MOAI Consulting e financiamento da Janssen Portugal.

PO 43. CONNECTIVE TISSUE DISEASE AND PULMONARY HYPERTENSION – AN OMINOUS ASSOCIATION

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Introduction: Pulmonary hypertension (PH) is a severe complication of connective tissue disease (CTD) and CTD associated pulmonary arterial hypertension (PAH) is the second most common cause of group 1 PH.
Objectives: To characterize patients with CTD associated PAH and to determine predictors of mortality.
Methods: Observational single centre retrospective study including patients followed in a reference hospital for PH, who fulfilled basic requirements of RHC and echo at beginning and more than 3 appointments.
Results: We identified 48 patients with CTD and associated PH followed during 9.1 ± 4.3 years. Mean age was 65.25 ± 14.4 years and female per male ratio was 10:1; regarding CTD aetiology, systemic sclerosis was the most prevalent (52.1%), followed by systemic lupus erythematous (22.6%) and limited systemic sclerosis (10.1%). Mean time between CTD diagnosis and beginning of PH follow-up was 5.25 years. Most patients were classified as having pre-capillary hypertension (93.3%). As expected, most were under specific PH therapy, of which more than half had double (57.5%) and triple (17.5%) therapy; PDE5 inhibitors were prescribed in 35 patients (87.5%), endothelin receptor antagonists in 31 patients (64.6%) and prostanoid analogs in 11 patients (22%). Concomitant drug therapy for CTD was highly prevalent, as more than 80% were under corticotherapy and 57% with immunosuppressants. Almost all patients were symptomatic (95.6%) as dyspnoea (87.5%), fatigue (75%) and chest pain (12%) were the most frequent complaints. Interstitial lung disease associated with CTD was present in 25% patients and 9% had serositis. Blood analysis, echo and right heart catheterization parameters were performed at baseline and during follow-up. NTproBNP median was 204 ng/mL and mean haemoglobin level was 12.63 ± 1.67 g/dL. Mean sPAP by echocardiograpy was 58.73 ± 3.61 mmHg and TAPSE was 19.72 ± 0.73 mm. Regarding invasive haemodynamic measurements, most patients had severe PH with mean mPAP of 40.89 ± 2.32 mmHg and mean pulmonary vascular resistance of 9.84 ± 1.01 mmHg. Risk stratification at the start of follow-up with COMPERA 4-strata analysis showed that most patients were either low (39.6%) or intermediate low risk (35.4%).
Conclusions: CTD associated PH is an important cause of PH ranging a diverse population and encompassing several diseases. It is an ominous complication with an unfavourable prognosis, requiring specific therapy both for PH as for CTD as well as a thorough investigation.

PO 44. FOUR STRATA RISK STRATIFICATION IN PULMONARY ARTERIAL HYPERTENSION: IS IT REALLY ENOUGH?

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Introduction: Pulmonary arterial hypertension (PAH) treatment relies on risk stratification. Recently, the latest guidelines recommend employing a 4-strata risk stratification tool for follow-up, that is based in three accessible and non-invasive parameters: functional class, NT-proBNP or BNP levels, and 6-minute walking distance (6MWD).
Objectives: Validation of the 4-strata risk stratification tool in our PAH population.
Methods: Retrospective cohort that included all PAH patients (pts) being followed in a referral center since 2005 with complete dataset. Complex congenital heart disease and unrepaired congenital lesions were excluded from this analysis. All clinical data needed for risk stratification, based in the ESC Guidelines, were collected at baseline and 6-12 months after therapy. Adverse events until November 2023 were recorded and defined as: parenteral prostanoid therapy initiation (excluding the first 6 months), pulmonary transplant and death.
Results: We included 58 pts, 71% female, mean age 49.67 ± 16.04 years. Concerning etiology of PAH: 31% associated with connective tissue disease, 20.7% associated with HIV infection, 17.2% idiopathic, 12.1% associated with portal hypertension, 6.9% with features of venous/capillary involvement, 5.2% heritable, 5.2% associated with congenital heart disease, and 1.7% associated with drugs. At baseline, 15 pts (25.9%) were at low-risk, 36 (62.1%) at intermediate-risk, and 7 (12.1%) at high-risk. Detailed baseline characteristics can be found in the Table. In the first 6 months, 22 pts (37.9%) underwent monotherapy, 27 (46.6%) initiated upfront combination therapy excluding prostanoids, and 8 (13.8%) combination therapy including parenteral prostanoid. Based on classic 3-strata risk stratification tool, following 6-12 months of therapy, 41 pts (70%) were at low-risk, and 17 (29.3%) were at intermediate-

		All patients (n=58)	Low-risk (n=15)	Intermediate -risk (n=36)	High-risk (n=7)	p-value
Baseline evaluation	WHO-FC					p<0.001
	I	0	0	0	0	
	II	11 (19.0%)	8 (53.3%)	2 (5.6%)	1 (14.3%)	
	III	30 (51.7%)	7 (46.7%)	23 (63.9%)	0	
	IV	17 (29.3%)	0	11 (30.6%)	6 (85.7%)	
	6MWT (m)	362.4±123.1	431.5±102.4	337.2±108.9	321.7±176.5	p=0.050
	NT-proBNP (ng/L)	1380 (457-3181)	270 (57-761)	1696 (991-3339)	2926 (2016-4024)	p<0.001
	RA area (cm²)	23.4±8.7	20.9±10.5	23.0±6.2	34.3±10.1	p=0.052
	TAPSE/sPAP (mm/mmHg)	0.2±0.1	0.3±0.1	0.2±0.1	0.1±0.1	p=0.012
	Pericardial effusion					p=0.169
	No	37 (63.8%)	12 (80.0%)	22 (61.1%)	3 (42.9%)	
	Minimal	12 (20.7%)	2 (13.3%)	7 (19.4%)	3 (42.9%)	
	Moderate/large	5 (8.6%)	0	5 (13.8%)	0	
	RAP (mmHg)	8.9±5.6	5.9±2.9	8.7±5.1	16.0±8.7	p<0.001
	CI (L/min/m2)	2.1±0.6	2.7±0.6	2.1±0.5	1.5±0.3	p<0.001
	SVI (mL/m2)	27.6±8.7	35.0±7.6	27.1±8.0	18.5±3.5	p<0.001
	SvO2 (%)	64.6±10.8	71.9±6.7	64.1±10.9	53.2±2.7	p<0.001
	Monotherapy	22 (37.9%)	10 (66.7%)	10 (27.8%)	2 (28.6%)	p=0.029
	Combination therapy	27 (46.6%)	5 (33.3%)	20 (55.6%)	2 (28.6%)	p=0.208
	i.v./s.c PCA	8 (13.9%)	3 (20.0%)	9 (25.0%)	3 (42.9%)	p=0.512
		All patients (n=58)	Low-risk (n=21)	Intermediate -low-risk (n=21)	Intermediate -high-risk (n=13)	High-risk (n=4)	p-value
6-12 months reevaluation	WHO-FC						p<0.001
	I	12 (20.7%)	9 (45.0%)	2 (9.5%)	1 (7.7%)	0	
	II	33 (56.9%)	11 (55.0%)	16 (76.2%)	6 (46.2%)	0	
	III	11 (19.0%)	0	3 (14.3%)	5 (38.5%)	3 (75%)	
	IV	1 (1.7%)	0	0	1 (7.7%)	0	
	6MWT (m)	406.7±120.5	482.4±57.5	402.1±115.0	273.3±105-9	-	p<0.001
	NT-proBNP (ng/L)	259 (117-989)	121 (46-270)	299 (140-739)	1191 (635-2503)	11538 (1431-14956)	p<0.001
	RA area (cm²)	26.0±20.2	18.7±3.6	20.0±6.4	25.3±12.5	-	p=0.242
	TAPSE/sPAP (mm/mmHg)	0.4±0.2	0.5±0.2	0.4±0.2	0.3±0.1	0.2±0.0	p=0.014
	Pericardial effusion						
	Mild/Moderate	10 (17.2%)	0	2 (9.5%)	7 (58.8%)	1 (25%)	p<0.001
	RAP (mmHg)	7.5±4.8	6.4±2.8	7.3±5.4	7.3±4.0	16.3±6.8	p<0.007
	CI (L/min/m2)	2.9±0.9	3.1±1.1	2.8±0.8	2.7±0.3	3.4±1.8	p<0.480
	SVI (mL/m2)	42.3±13.5	42.3±12.7	43.9±12.7	37.1±5.9	53.3±34.0	p<0.288
	SvO2 (%)	71.4±7.4	74.7±6.6	71.9±6.4	68.1±4.9	62.1±12.6	p<0.011

***Table 1* Clinical characteristics of the patients at baseline, and 6-12 months after treatment.**
Continuous variables are expressed as mean ± standard deviation with exception of NT-proBNP expressed as median, Q1 and Q3.
Abbreviations: 6MWT – 6-minute walking test; CI – cardiac index; PCA – prostacyclin analogue; RA – right atrium; RAP – right atrial pressure; sPAP – systolic pulmonary arterial pressure; SvO2 – mixed venous oxygen saturation; SVI – stroke volume index; TAPSE – tricuspid annular plane systolic excursion; WHO-FC – World Health Organization functional class; PCA – parenteral.

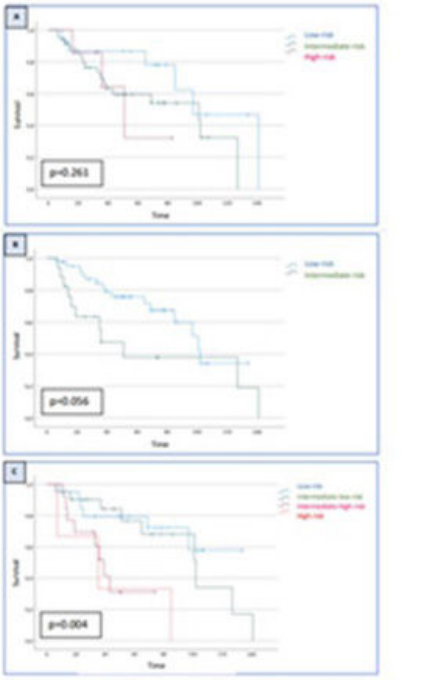

Figure 1. Kaplan-Meier survival curves. A. According to the 3-strata risk stratification tool at baseline: patients at low-risk vs intermediate-risk vs high-risk (log Rank p=0.261). B. According to the 3-strata risk stratification tool following 6-12 months of therapy: patients at low-risk vs intermediate-risk (log Rank p=0.056). No patients fell into the high-risk category. C. According to the 4-strata risk stratification tool following 6-12 months of therapy: patients at low-risk vs intermediate low-risk vs intermediate-high-risk vs high-risk (log Rank p=0.004).

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risk. There were no high-risk pts. Risk reduction was achieved in 35 pts (60.3%), unaltered in 21 (36.2%), and increased in 3 (5.2%). Based on new 4-strata risk stratification tool, following 6-12 months of therapy, 21 pts (36.2%) were at low-risk, 21 (36.2%) at intermediate-low-risk, 13 (22.4%) at intermediate-high-risk, and 3 (5.2%) were at high risk. Using Cox-regression analyses, this new 4-strata risk stratification tool proved to be a predictor of survival free from events. Adverse events were 4x and 6x higher in intermediate-high-risk and high-risk, respectively (p = 0.014). The same did not happen with 3-strata risk stratification tool at baseline or 6-12 month after therapy. Survival Kaplan-Meier curves can be found in the Figure.
Conclusions: In our PAH population, 4-strata risk stratification tool was the best predictor for survival free from events when compared to the classic 3-strata multiparametric tool, where risk for adverse events seems to be underestimated.

PO 45. ASSESSING THE ARTERIAL-VENTRICULAR UNCOUPLING IN PULMONARY ARTERIAL HYPERTENSION – IS THERE A PLACE FOR STROKE VOLUME INDEX?

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Introduction and objectives: Arterial-ventricular uncoupling (AVU) is a major factor in pulmonary arterial hypertension (PAH) pathophysiology, and the gold standard to measure AVU is obtained by conductance catheterization. As this tool is not widely available, multiple surrogates have been investigated, and the ratio of tricuspid annular plane systolic excursion to estimated pulmonary arterial systolic pressure (TAPSE/PASP) as emerged as one of the best validated. As stroke volume is integral to measure AVU, our goal was to investigate if stroke volume index (SVI) could be a feasible surrogate.

	PAH patients N = 79
Age at time of evaluation – mean (SD)	50.94 (14.28)
Females - % (n)	73.4 (58)
PAH etiology - % (n)	
- Idiopathic	24.1 (19)
- Congenital heart disease	22.8 (18)
- Connective tissue disease	19.0 (15)
- HIV infection	12.7 (10)
- Porto-pulmonary	10.1 (8)
Patients on pulmonary vasodilators at time of evaluation - % (n)	32.9 (26)
- Naïve	67.1 (53)
- 1	11.4 (9)
- >1	21.5 (17)
- On parenteral prostanoids	6.3 (6)
Long-term oxygen therapy - % (n)	19.0 (15)
Functional class (WHO) - % (n)	
- I	3.8 (3)
- II	29.1 (23)
- III	48.1 (38)
- IV	19.0 (15)
Follow-up time (years) – median (IQR)	4.5 (5.5)
NTproBNP (pg/mL) – median (IQR)	1014 (2094)
TAPSE/PSAP (mm/mmHg) – median (IQR)	0.20 (0.15)
Annular tricuspid S' wave (cm/s) – mean (SD)	9.47 (2.55)
Mixed venous oxygen saturation (%) – mean (SD)	65.9 (9.1)
Mean pulmonary artery pressure (mmHg) – mean (SD)	48.6 (12.9)
Mean right atrium pressure (mmHg) – median (IQR)	7.0 (8)
Cardiac index by TD (L/min) – mean (SD)	2.4 (0.7)
Cardiac index by Fick (L/min) – median (IQR)	2.2 (0.9)
Pulmonary vascular resistance (Wood units) by TD – median (IQR)	9.1 (5.6)
Pulmonary vascular resistance (Wood units) by Fick – median (IQR)	9.3 (8.0)
SVI by TD – median (IQR)	33.0 (15.0)
SVI by Fick – median (IQR)	27.9 (16.3)

Methods: We performed a retrospective longitudinal analysis of a cohort with confirmed PAH between January 2010 and December 2022 in a PH certified centre. We assessed their SVI [by both Fick method and thermodilution method (TD)] and TAPSE/PSAP at the time of first evaluation in our centre, and evaluate possible correlations between them. Adverse events until November 2023 were also registered and defined as need for parenteral prostanoids, lung transplantation and death by any cause.
Results: Seventy-nine (79) patients were included in this analysis. Mean age at time of evaluation was 51 years old. 73.4% of patients were female, and 67.1% were naïve of pulmonary vasodilators. About a quarter (24.7%) of patients had idiopathic PAH, and other quarter (23.4%) had PAH associated with congenital heart disease. Median SVI using TD was 31.04 ml/m^2, and with Fick method was 29.14 mL/m^2. Median TAPSE/PASP was 0.20 mm/mmHg. By using Tello *et al* TAPSE/PASP cutoff of 0.31 mm/mmHg, SVI by Fick was significantly lower (25.06 vs. 33.09, p = 0.008), and there was moderate to high correlation between TAPSE/PASP and SVI (Fick) regarding need for prostanoids (r = 0.637). By using ERS/ESC 2022 TAPSE/PASP cutoff of 0.19 mm/mmHg, both TD and Fick SVI were significantly lower (26.29 vs. 33.35, p = 0.038; 22.34 vs. 34.01, p < 0.001), but no correlation was established between TAPSE/PASP and SVI regarding adverse events. In linear regression analysis, we have discovered association of SVI by Fick with TAPSE/PSAP, which for each increase of 0.1 mm/mmHg in TAPSE/PSAP, there was an estimated increase of 4.5 ml of SVI (p = 0.05).
Conclusions: Our study shows that SVI could be a potential surrogate for AVU, and it also has prognostic implications. The main limitation was the comparison with a non-invasive, although validated, surrogate, so comparison with the gold-standard is mandatory to corroborate this hypothesis.

SEXTA-FEIRA, 19 ABRIL de 2024 | 11:00-12:00

Área de Posters 1 | Sessão de Posters 07 - Hipertensão arterial

PO 46. REAMING AT RESISTANT HYPERTENSION: OLD WEAPONS BROUGHT BACK

Rui Antunes Coelho, Ana Fátima Esteves, Catarina Sá, Ricardo Santos, Alexandre Calçada, Raquel Louzada, Joana Silva Ferreira, Jéni Quintal, Catarina Pohle, Sara Gonçalves, Filipe Seixo

Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo.

Introduction: High blood pressure (BP) is the most prevalent cardiovascular risk factor and remains the leading modifiable cause of death. In many patients, pharmacological therapy is insufficient to adequately control blood pressure. Multiple clinical trials have demonstrated the safety and efficacy of renal sympathetic denervation in reducing BP.
Objectives: The aim of this study is to present our center's initial experience with a radiofrequency renal denervation technique, describing the characteristics of the first patients submitted to this procedure, as well as to evaluate its safety and effectiveness in our population.
Methods: An observational study with all patients who were treated with renal denervation, between January and September 2023, was performed. For this procedure we selected patients with resistant Hypertension, defined as elevated BP values despite treatment with at least 3 different classes of anti-hypertensive medications (including one diuretic). Patients with secondary hypertension and with eGFR < 40 mL/min/1.73 m^2 were excluded. Baseline patient characteristics were evaluated as well as ABPM/AMPA values prior to the procedures and at least 3 months after. The Wilcoxon test was used to compare median blood pressure values before and after the procedure. A p-value < 0.05 was considered statistically significant.
Results: Nine patients underwent renal denervation, 7 (78%) male with a median age of 66 [50;70] years. Three (33%) patients had grade 1 arterial

	Before renal denervation	3 months after renal denervation	Reduction	Wilcoxon test
Systolic blood pressure in mmHg, median [IQR]	158 [147; 184]	138 [127; 162]	18 [15-23]	Z = -2,668 P= 0,008
Diastolic blood pressure in mmHg, median [IQR]	89 [67; 97]	84 [55; 90]	9 [5-10]	Z = -2,556 P = 0,011
Mean blood pressure in mmHg, median [IQR]	113 [93; 126]	102 [80; 113]	13 [9-15]	Z = -2,668 P = 0,008

Table 1 – Systolic, diastolic and mean blood pressure values before and three months after renal denervation.

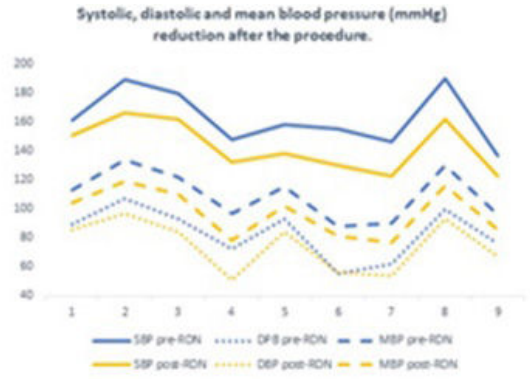

Image 1 - Values of systolic, diastolic and mean blood pressure (in mmHg) for each of the nine patients undergoing renal denervation, before and three months after the procedure.

Figure PO 46

hypertension, four (44%) had grade 2 and two (22%) had grade 3. Six patients (67%) had diabetes mellitus, seven (78%) had dyslipidemia, four (44%) were smokers and six (67%) had obstructive sleep apnea syndrome. All patients were taking renin-angiotensin-aldosterone system inhibitors, dihydropyridine calcium channel blockers and diuretics. Six patients (67%) were taking spironolactone and all but one were taking beta-blockers. Five patients (56%) were taking rilmenidine and one (11%) methyldopa. Patients were taking a mean of 5 (± 1) pharmacological classes. After renal denervation, previously ongoing pharmacological therapy was maintained. There was no statistically significant difference in renal function before (GFR 90 [61;125] ml/min/m^2) and after (GFR 96 [70;130] ml/min/m^2) renal denervation (p = 0.770). There were no complications. Comparing BP values prior and after the procedure, renal denervation was associated with a significant reduction in systolic (reduction of 18 [15;23] mmHg; p = 0.008), diastolic (9 [5;10] mmHg; p = 0.011) and mean BP (13 [9;15] mmHg, p = 0.008).
Conclusions: Renal denervation proved to be a safe and effective procedure in reducing blood pressure in this first group of patients with resistant hypertension who was submitted to procedure in our center. Further patients need to be included and a longer follow-up is needed to assess the benefit of this technique.

PO 47. SIGNIFICANCE OF NOCTURNAL DIASTOLIC BLOOD PRESSURE IN PREDICTING OUTCOMES IN HYPERTENSIVE DISORDERS OF PREGNANCY

Carlos Costa, Mesquita Bastos, Adriana Pacheco, Diana Carvalho, Simão Carvalho, Tiago Aguiar, Tiago Adrega

Centro Hospitalar do Baixo Vouga, EPE/Hospital Infante D. Pedro.

Introduction: Ambulatory blood pressure monitoring (ABPM) has become increasingly important in diagnosing and caring for pregnant hypertensives.
Objectives: To determine which blood pressure values obtained through ABPM better correlate with adverse events for pregnant women and newborns.
Methods and results: The study included 204 pregnant women diagnosed with gestational hypertension or chronic hypertension. It was considered an event: preeclampsia/eclampsia (PEEC), fetal/neonatal death, prematurity, low weight at birth, gestational diabetes and maternal death. All systolic blood pressure (SBP) and diastolic blood pressure (DBP) measurements, both casual and ambulatory, were statistically associated with the global event and PEEC. After adjusting for confounding variables (casual SBP, casual DBP, age, BMI, risk factors for preeclampsia, medication and gestational age on ABPM), casual SBP and DBP no longer showed a significant association with the events. Nocturnal blood pressure values have a greater predictive value compared to daytime values. In comparison with nocturnal SBP, nocturnal DBP correlates more significantly with the global event [HR 1.054 (95%CI 1.034;1.075) vs. HR 1.025 (95%CI 1.012;1.037)], PEEC [HR 1.066 (95%CI 1.039;1.094) vs. HR 1.035 (95%CI 1.019;1.051)], low birth weight (HR 1.088 (95%CI 1.053;1.125) vs. HR 1.042 (95%CI 1.023;1.062)] and prematurity [HR 1.079 (95%CI 1.042;1.117) vs. HR 1.038 (95%CI 1.017;1.060)]. DBP dipping is more strongly associated with global events than SBP dipping [HR 0.940 (95%CI 0.885;0.999) vs. HR 1.017 (95%CI 0.948;1.091)].
Conclusions: In a cohort of hypertensive pregnant women, nocturnal DBP showed the strongest correlation with events. The diastolic dipping pattern correlates more significantly with global event than the systolic pattern.

PO 48. AMBULATORY PULSE PRESSURE MONITORING AS A PROGNOSTIC INDICATOR FOR CARDIOVASCULAR EVENTS IN A HYPERTENSIVE POPULATION

Simão de Almeida Carvalho, Carlos Costa, Tiago Aguiar, Adriana Pacheco, Diana Carvalho, Andreia Fernandes, J. Mesquita Bastos

Centro Hospitalar do Baixo Vouga/Hospital Infante D. Pedro, EPE.

Introduction: In hypertension, Pulse Pressure (PP) is a key predictor of adverse cardiovascular outcomes seen in diabetes, older individuals, and recently, in resistant hypertension. The spectrum of hypertensive severity varies, from controlled cases to challenging-to-manage resistant hypertension. Understanding these differences is crucial for tailored treatments. Ambulatory Blood Pressure Monitoring (ABPM) provides comprehensive insights, going beyond clinic assessments, crucial in precise evaluation and management.
Objectives: To investigate the correlation between pulse pressure and cardiovascular events across various phenotype types of hypertensive populations to ascertain the predictive value of this relationship for individualized risk assessment.
Methods: 898 hypertensive patients underwent ABPM in a retrospective study. Clinical and lab data were collected. Parametric tests (Independent-Samples t Test, Chi-square, Kaplan-Meier with log-rank test in SPSS) were used for variables with a normal distribution. Patients were categorized by office blood pressure, ABPM, and anti-hypertensive meds into groups: Ambulatory Resistant Hypertension (ARH), Ambulatory Non-Resistant Hypertension (ANRH), White Coat Uncontrolled Resistant Hypertension (WCURH), Controlled Hypertension (CH). Using a 60 mmHg threshold, pulse pressure was compared between two groups, aligning with past studies - clinical trials and meta-analyses - on cardiovascular risk factors.
Results: Demographics, follow-up duration, patients, and blood pressure metrics for the hypertensive groups are detailed in the Table. Pulse pressure varied notably among the groups, with controlled hypertension at 46.7 ± 8.4 mmHg and resistant hypertension at 60.9 ± 12.2 mmHg. A composite outcome including stroke, acute coronary syndrome, heart failure hospitalization, peripheral artery disease, and death was established for endpoint analysis. When the event rate in the ambulatory non-resistant hypertension and resistant hypertension groups was calculated as a percentage of pulse pressure greater than 60 mmHg, an analysis of event-free Kaplan-Meier curves revealed a statistically significant event rate with the worst outcome for those with PP greater than 60 mmHg.
Conclusions: In summary, within the groups of resistant hypertension and ambulatory non-resistant hypertension, our study reveals a notable correlation

Table 1. Baseline Characteristics of the Patients stratified by hypertension group

	CH	WCURH	ANRH	ARH
Number of patients – N (% of total)	129 (14)	289 (32)	377 (42)	103 (12)
Follow-up (days)	3820.6 ± 1909.9	4299.7 ± 1974.0	4865.9 ± 1805.5	3584.2 ± 2362.0
Sex – female (%)	40.8	49.1	56.4	43.4
Age (years)	61.8 ± 10.0	57.1 ± 12.2	61.2 ± 11.8	57.8 ± 11.1
Weight (Kg)	76.2 ± 12.6	75.2 ± 13.8	74.9 ± 13.9	80.2 ± 15.5
BMI (Kg/m²)	28.4 ± 4.3	28.1 ± 4.7	27.5 ± 5.0	29.7 ± 4.7
Office blood pressure (mmHg)				
• Systolic	127.5 ± 10.4	157.1 ± 18.4	160.3 ± 18.1	163.0 ± 26.4
• Diastolic	78.2 ± 8.9	95.2 ± 13.1	101.5 ± 12.4	94.6 ± 15.6
24-hour blood pressure (mmHg)				
• Systolic	117.5 ± 8.0	118.7 ± 7.3	141.6 ± 12.2	142.4 ± 12.5
• Diastolic	71.0 ± 5.9	71.6 ± 5.7	86.8 ± 8.8	81.55 ± 10.4
• Mean	87.2 ± 5.4	88.3 ± 5.2	105.9 ± 8.8	102.8 ± 9.7
• Pulse Pressure	46.7 ± 8.4	47.2 ± 6.8	55.0 ± 11.0	60.9 ± 12.2

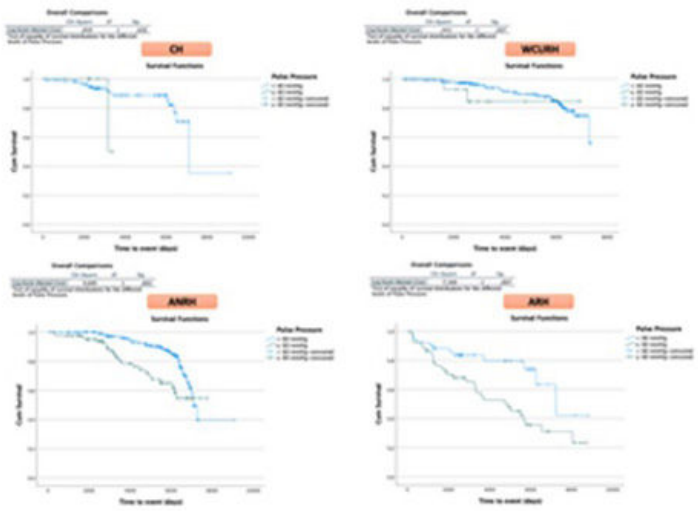

Figure PO 48

between elevated pulse pressure levels and adverse cardiovascular events, indicating its potential as a valuable prognostic marker. This emphasizes the necessity for customized risk assessment approaches, highlighting the predictive value of pulse pressure in the management of cardiovascular risks among these particular subsets of hypertensive individuals.

PO 49. UNRAVELING THE STRUCTURAL AND FUNCTIONAL ADAPTATIONS IN HYPERTENSIVE HEART DISEASE: WHAT LIES BEYOND LEFT VENTRICULAR HYPERTROPHY?

António Baptista Carvalho[1], José Ferreira Santos[2], Duarte Espregueira Mendes[2], Rita Gomes[2], Rita Rodrigues[2], Rita Santos[2], Vânia Madeira[2], Patrícia Amado[2], Catarina Sousa[2], Sónia Balão[2], João Colaço[3], Lígia Mendes[2]

[1]Hospital de Vila Franca de Xira, EPE. [2]Hospital da Luz Setúbal. [3]Hospital da Luz Lisboa.

Introduction: Historically, hypertensive heart disease (HHD) has been associated with left ventricular hypertrophy (LVH). Nevertheless, a universally accepted definition of HHD is lacking, which should encompass a broader spectrum of hypertension-induced organ damage, including both structural and functional adaptations, extending beyond LVH.

Objectives: To assess and delineate, using transthoracic echocardiography, the structural and functional findings characteristic of HHD in patients diagnosed with hypertension.

Methods: We conducted a retrospective assessment of consecutive patients referred for hypertension evaluation and undergoing ambulatory blood pressure monitoring (ABPM) and transthoracic echocardiography within a six-month timeframe, over a one-year period at a single center. Both echocardiographic assessments and ABPM followed established best practices. Patients were categorized into three groups: controls (without hypertension), with controlled hypertension and with uncontrolled hypertension. Morphological and functional echocardiographic findings were compared across these groups to identify variations that define HHD.

Results: Our analysis included 1,951 patients (median age 60 ± 13 years, with 51% male). 385 patients (20%) exhibited normal blood pressure readings during ABPM (mean blood pressure 115 ± 8/71 ± 6 mmHg) and were considered the control group. 904 (48%) patients had controlled hypertension (mean blood pressure 115 ± 9/68 ± 7 mmHg), and 599 (32%) had uncontrolled hypertension (mean blood pressure 135 ± 10/81 ± 7 mmHg). 39% patients

Variable	Controls	Controlled HTN	Uncontrolled HTN	p value Controls vs Controlled HTN	p value Controls vs Uncontrolled HTN	p value Controlled vs Uncontrolled HTN
Posterior wall (mm)	8,5 ± 2,3	9,5 ± 2,1	9,7 ± 2,4	<0,001	<0,001	0,829
Septum (mm)	8,9 ± 2,6	10,1 ± 2,3	10,4 ± 2,5	<0,001	<0,001	0,614
Indexed Left Ventricle mass (g/m2)	72,3 ± 26,0	83,3 ± 25,1	85,9 ± 28,7	<0,001	<0,001	0,807
Indexed Left atrium (mL/m2)	34,2 ± 9,1	38,1 ± 11,9	38,1 ± 11,3	<0,001	<0,001	0,372
Indexed Right atrium (mL/m2)	20,7 ± 7,4	21,8 ± 9,8	20,9 ± 8,4	<0,001	0,048	0,084
Ascending Aorta (mm)	30,1 ± 7,7	31,9 ± 6,9	31,9 ± 7,1	<0,001	0,291	0,010
LVOT TVI (cm)	19,5 ± 6,7	20,6 ± 6,8	19,8 ± 6,7	<0,001	<0,001	<0,001
E wave (m/s)	0,72 ± 0,16	0,74 ± 0,19	0,72 ± 0,17	<0,001	<0,001	<0,001
A wave (m/s)	0,77 ± 0,23	0,77 ± 0,24	0,77 ± 0,22	<0,001	<0,001	0,433
E' septal (cm/s)	9,5 ± 2,9	8,5 ± 2,5	8,2 ± 2,3	0,103	0,561	0,406
E/E' septal	7,8 ± 2,5	9,0 ± 3,4	9,2 ± 3,2	<0,001	<0,001	0,937
E' lateral	12,5 ± 3,8	10,8 ± 3,37	10,4 ± 3,4	<0,001	<0,001	0,606
E/E' lateral	6,0 ± 1,9	7,2 ± 2,9	7,4 ± 2,9	<0,001	<0,001	0,823
E/E' average	6,9 ± 2,0	8,1 ± 2,9	8,3 ± 2,9	<0,001	<0,001	0,981

Figure PO 49

received no blood pressure treatment, 24% were treated with a single drug, 27% with two drugs, and 10% with three or more drugs. Structural and functional echocardiographic parameters are presented in the Table. In comparison to the control group, patients with controlled and uncontrolled hypertension exhibited enlarged ascending aorta and atria, reduced early filling tissue Doppler velocities and E/e' ratios, elevated A wave velocities, and higher left ventricular (LV) mass, consistent with classical HHD.
Conclusions: HHD encompasses a multitude of structural and functional echocardiographic features extending beyond simple LVH. This broader spectrum of findings should be taken into account when assessing patients with hypertension.

PO 50. LONG-TERM OUTCOMES AFTER RENAL DENERVATION: A FOLLOW-UP OF 5 YEARS

Maria Inês Roxo, Andreia Carnevale, Rita Calça, Ana Rita Martins, Pedro Gonçalves, Manuel Almeida, Augusta Gaspar, Patrícia Branco

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction and objectives: Arterial hypertension (HTN) is a significant cause of cardiovascular morbimortality worldwide. Adequate blood pressure (BP) control constitutes a crucial tool to prevent its enduring end-organ damage and high burden of disease. Resistant HTN may be particularly challenging to address: in this field, denervation of the renal sympathetic nerves is developing as a promising despite controversial therapy. Our goal was to study long-term outcomes in a cohort of patients with resistant HTN submitted to renal denervation (RDN).
Methods: We conducted a retrospective, single-centre study amongst patients with resistant HTN who underwent RDN between July 2011 and July 2022. All patients routinely underwent blood and urine testing, 24-hour ambulatory BP monitoring (ABPM) and echocardiographic evaluation every 6 to 12 months after the procedure. We collected several demographic, clinical and laboratory variables, and analysed outcomes at 5 years of follow-up using SPSS software.
Results: 78 patients were submitted to RDN in our centre, 53% of which (n = 41) were male. There were no complications related to the procedure. At 5 years of follow-up, there were different types of responders. In ABPM, 61% of the patients showed a decrease in mean systolic BP (SBP), with a median reduction of 16 mmHg (IQR 16.5). In 46% of patients, there was a reduction in albumin/creatinine ratio (ACR), with a median decrease of 17.63 mg/g (IQR 120.67). Before RDN, 30 patients (38.5%) had an ACR above 30 mg/g, while after 5 years the number of patients with ACR in this range was 21 (26.9%). In echocardiographic evaluation, 70% of the patients evidenced a decrease in left ventricular mass index (LVMI) with a median reduction of 20 g/m^2 (IQR 41). These results are summarised in the Figure. In total, 70% of the patients were considered responders to RDN, either through a reduction in mean SBP, in LVMI, in ACR or simultaneously in all three variables. Additionally, the reduction in mean SBP in ABPM, LVMI and ACR proved to be independent variables, both in Spearman tests and binary logistic linear regression (nonsignificant p-values). 77% of the patients were prescribed less antihypertensive drugs after follow-up, with a median reduction of 2 drugs (IQR 2).
Conclusions: Our study identified a significant percentage of responders to RDN, evidenced by an improvement in one or more variables associated with BP control and HTN-mediated end-organ damage, without any safety issues to report. It is also important to emphasize that the observed reduction in ACR and LVMI was independent of the reduction in SBP. This finding suggests that RDN might have a direct effect on albuminuria and left ventricular hypertrophy, instead of solely as an indirect result of the control of BP. Hence, while further studies are needed to support this evidence, the results nevertheless raise hope for the therapeutic potential of RDN in patients with resistant HTN.

PO 51. BASELINE RENIN LEVELS AND THE EFFICACY OF MINERALOCORTICOID INHIBITORS: A META-ANALYSIS

Ana Rita Ferreira Leite[1], António Afonso Angélico Gonçalves[2], Adelino Leite-Moreira[1], João Sérgio Neves[1], João Pedro Ferreira[3]

[1]Centro Hospitalar Universitário de São João. [2]Centro Hospitalar de Vila Nova de Gaia/Espinho. [3]Faculdade de Medicina da Universidade do Porto.

Introduction: Hypertension (HTN) is a major contributor to cardiovascular morbidity and mortality. Heightened aldosterone production is a driving

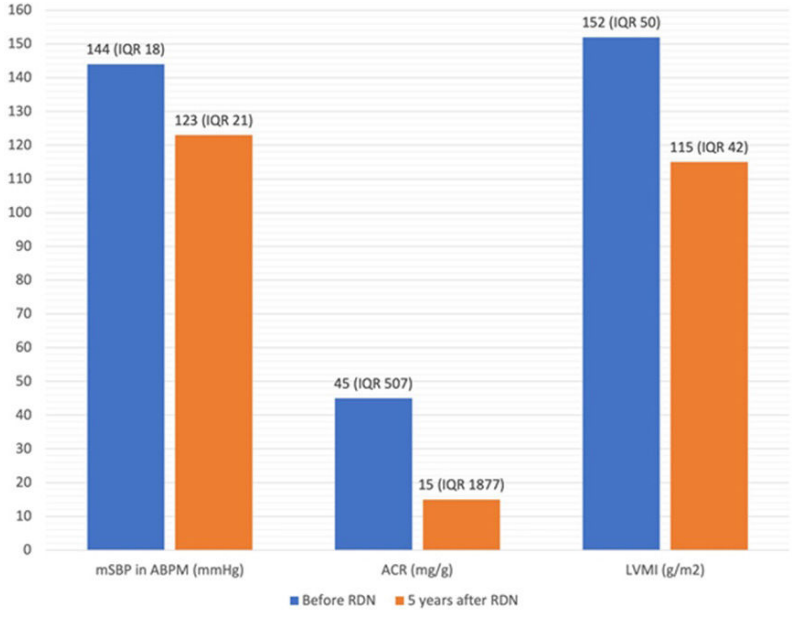

Figure 1: Descriptive analysis of the reduction in mSBP in ABPM, ACR and LVMI in responders, before RDN and 5 years after the procedure (ACR: albumin/creatinine ratio; RDN: renal denervation; IQR: interquartile range; LVMI: left ventricular mass index; mSBP in ABPM: mean systolic blood pressure in 24-hour ambulatory blood pressure monitoring).

Figure PO 50

factor to HTN in several conditions. Renin levels are surrogates of mineralocorticoid receptor (MR) activity and may predict the effects of MR antagonists (MRA) and aldosterone synthase inhibitors on blood pressure (BP).
Objectives: To assess whether baseline renin levels predict the BP response to mineralocorticoid inhibitors.
Methods: We collected phase II-IV randomized clinical trials (RCTs) available on PubMed and Web of Science focusing on the effect of MRAs or aldosterone synthase inhibitors on BP. The least squares mean (LSM) change of BP from baseline and 95% confidence intervals (95%CI) were extracted from the treatment effect estimates according to baseline plasma renin levels. A random-effects meta-analysis assessing baseline renin interaction on mineralocorticoid inhibitors effects on BP was performed.
Results: Three phase II RCTs, including 659 patients submitted to treatment with MRA (esaxerenone 1.25-5 mg, eplerenone 50-100 mg, spironolactone 25-50mg) or aldosterone synthase inhibitors (lorundrostat 100 mg) were included. The RCTs included patients with essential HTN, uncontrolled HTN, or at risk of developing heart failure. The median follow-up period ranged from 8 to 36 weeks. Baseline plasma renin, presented as plasma renin activity (PRA) or Log2 normalized protein expression (NPX), was stratified in high and low renin groups according to the cutoff of 1 ng/mL/h for PRA or the median for NPX. MRA or aldosterone synthase inhibitors decreased systolic BP from baseline without effect modification by baseline renin levels (LSM: -15.12; 95%CI -18.62, -11.63 mmHg for the lower renin category; and LSM: -12.88; 95%CI -15.96, -9.80 mmHg for the higher renin category; p for interaction = 0.34). Similarly, the decrease in diastolic BP from baseline exhibited no modification based on baseline renin levels (LSM: -7.62; 95%CI -9.67, -5.57 mmHg for the lower renin category; and LSM: -7.37; 95%CI -8.92, -5.81 mmHg for the higher renin category; p for interaction = 0.85).
Conclusions: In a meta-analysis of phase II RCTs, baseline categorical renin levels did not predict the impact of mineralocorticoid inhibitors on BP. Studies with longer follow-up periods, larger populations and exploring varying renin cut-offs are needed to better understand the relation between MR activity and the efficacy of mineralocorticoid inhibitors.

SEXTA-FEIRA, 19 ABRIL de 2024 | 11:00-12:00

Área de Posters 2 | Sessão de Posters 08 - Intervenção estrutural: TAVI

PO 52. TRANSCATHETER AORTIC VALVE REPLACEMENT AND BICUSPID AORTIC VALVE

Fernando Nascimento Ferreira, Inês Rodrigues, Miguel Figueiredo, Bárbara Teixeira, Francisco Albuquerque, Ricardo Carvalheiro, Tiago Mendonça, André Grazina, Duarte Cacela, Ruben Ramos, António Fiarresga, Rui Cruz Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Bicuspid aortic valve (BAV) is the most common congenital heart disease and is closely associated with the development of valve defect, particularly stenosis. In this context, transcatheter aortic valve replacement (TAVR) has gained a role in the management of these patients despite the lack of clinical evidence.
Objectives: To evaluate potential differences between individuals undergoing TAVR with and without BAV anatomy.
Methods: Consecutive patients with severe aortic stenosis who underwent TAVR between 2017 and 2023 in a single center were included. Two groups were defined based on the diagnosis of BAV using Computed Tomography Angiography. Baseline demographic, clinical and imaging characteristics were evaluated. Technical success, safety and efficacy endpoints according to the Valve Academy Research Consortium-2 (VARC 2) criteria were compared using the Chi-square test, Fisher's exact test, Mann-Whitney U test, and multinomial logistic regression, with a p-value considered statistically significant when < 0.05.
Results: A total of 803 individuals underwent TAVR (21 with BAV Group), with a median age of 83 years and 54.5% being male. BAV pts were younger (79 (46) vs. 83 (37) p = 0,001) and had a higher prevalence of smoking (42.9% vs. 11.6%, p = 0.00), stage 5 CKD (19% vs. 2.3%, p = 0.002), and lung disease (38.1% vs. 19.2%, p = 0.047), with no significant differences in surgical risk scores. No significant differences were found between groups in mean transvalvular gradient, AV area, prevalence of aortic regurgitation, and AV calcium score. However, the diameter of the valve annulus was significantly higher in the BAV group (26 mm (7.2) vs. 23 mm (16.7), p = 0.001). Regarding the BAV group, the most frequent type of BAV classification was Sievers type 1 (61.9%), 52.4% of which, with fusion of right and left coronary cusps. Moderate aorta calcification was observed in 47.6% of cases, and the mean ascending aorta diameter was 42 ± 6 mm. There were no significant differences in procedural success (100% BAV vs. 94,5%, p = 0,622) and immediate post-procedural valve performance (mean gradient > 20 mmHg 4,8% vs. 6,9% p1,0; moderate to severe leak 4,8% vs. 4,9% p = 1,0). Peri-procedural safety endpoints were similar in both groups except with arrhythmias (23.8% in BAV vs. 51.3%, OR 0.295 (0.107-0.814), p = 0.014). At 1 year follow up, there was a higher prevalence of intra-prosthetic regurgitation after procedure in the BAV group (9.5% vs. 1.4%, OR 7.378 (1.529-35.601), p = 0.043, but no significant differences in the prevalence of stroke, HF, hospitalizations or mortality.
Conclusions: TAVR is a safe and effective procedure in BAV patients as in tricuspid AV patients. Besides similar valve performance immediately after the procedure, the occurrence of valve degeneration seems higher at 1 year of FUP. Larger-scale studies are needed to validate these results.

PO 53. SURVIVAL IN VERY ELDERLY PATIENTS SUBMITTED TO TAVI COMPARED TO THE GENERAL POPULATION

Miguel Sobral Domingues, Rita Lima, Mariana Paiva, Samuel Azevedo, Débora Correia, Afonso Oliveira, Sérgio Madeira, João Brito, Pedro Gonçalves, Henrique Gabriel, Manuel Almeida, Rui Teles

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Severe aortic stenosis (AS) is the most common acquired valvular heart disease. Transcatheter aortic valve implantation (TAVI) is indicated as an alternative to surgery in patients (pts) with severe AS above 75yo regardless of surgical risk. The prevalence of severe AS increases with age. In the very elderly, i.e. > 85yo, the presence of severe AS is often accompanied with important comorbidities and frailty. To improve pts assessment in the heart team, it is essential to characterize the outcomes of previous interventions in this challenging group of patients and that was the goal of the present study.
Methods: Single-centre retrospective analysis, on prospectively collected data, of consecutive patients ≥ 85 years old undergoing TAVI between 2015 to 2021. Successful TAVI, major procedural complications and 1-year mortality rates were defined according to the VARC-3 definition. Observed survival was compared to an age-matched population using life expectancy tables available at Instituto Nacional Estatística. Simulated survival curves for the age-matched population were performed using an expected hazard rate of 0.14. This is a conservative approach assuming that mortality rate remains constant in the population during follow-up.
Results: 767 TAVIs procedures were performed, and 349 (45%) pts were included in the study. Median age was 87 years [86-89], 60% female (n = 211) with a median Euroscore II of 5% [4-7]. A total of 98 pts (28%) had previous coronary artery disease (CABG, PCI or MI), 300 pts (85%) had chronic kidney disease and 22 pts (6%) had a previous stroke. Median gradient was 49 mmHg [42-60] and ejection fraction was 55 mmHg [50-56]. 268 pts (77%) underwent an elective TAVI and the remaining 23% were urgent procedures after hospital admission. The transfemoral approach was used in 334 pts (96%) and 258 pts (74%) implanted a self-expanding valve. Median in-hospital time was 6 days [4-11] and most common complications were permanent pacemaker

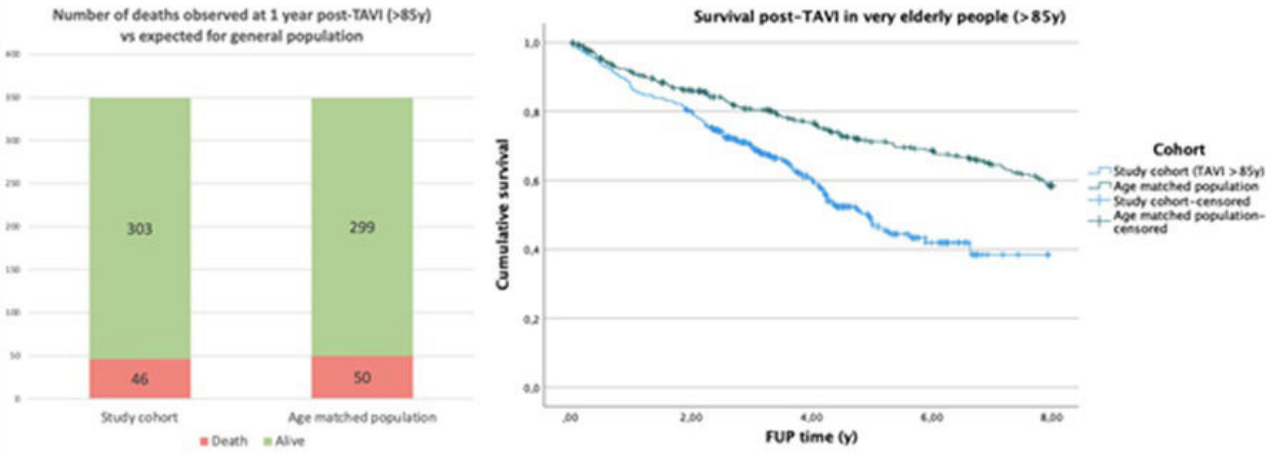

Figure PO 53

implantation (n = 59, 17%) and major access-related complications (n = 17, 5%). All-cause mortality at 30 days and 1 year were 2.1% (n = 7) and 13.1% (n = 46), respectively. This compares similarly to the cohort of younger pts (< 85y) which presented a 30 day and 1 year mortality of 2.8% and 12.8%, respectively. 35 pts (10%) were readmitted in the first year (vs 7.6% in < 85yo, non-significant). The mean survival time in our cohort was 4.9 years compared to expected 6.2 (Figure, log-rank < 0.01). The mortality rate at one year was 13% (n = 46) in our cohort compared to expected mortality 14% (n = 50), not statistically significant.

Conclusions: In this study, very old patients submitted to TAVI had a 1-year mortality rate similar to age-matched population and a mean survival time of more than 4 years, albeit inferior to an age-matched population.

PO 54. OUTCOMES OF INFECTIVE ENDOCARDITIS AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION VERSUS AORTIC VALVE REPLACEMENT SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS

José Carlos Pires Ferreira[1], Gonçalo Costa[2], Lino Gonçalves[2], Rogério Teixeira[2]

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Introduction: Infective endocarditis (IE) after transcatheter aortic valve implantation (TAVI) and surgical aortic valve replacement (SAVR) is a rare but life-threatening complication.

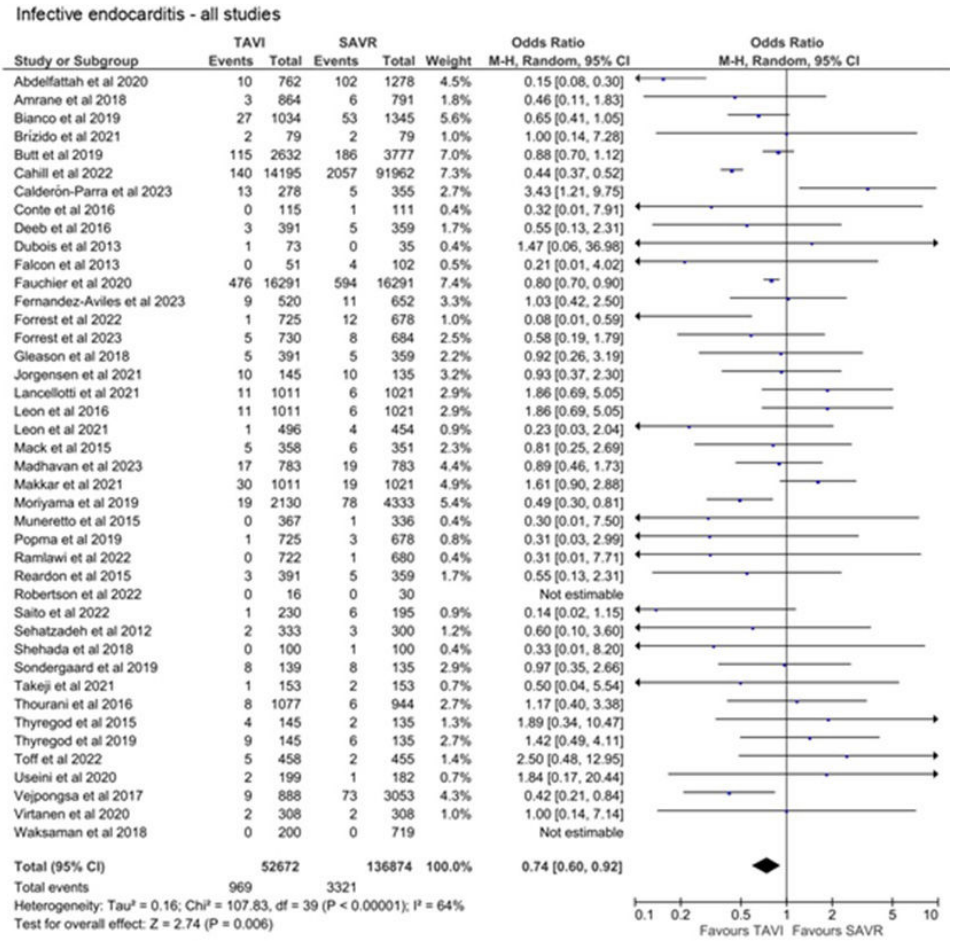

Figure PO 54

Objectives: To assess the comparative risk of IE between TAVI and SAVR.
Methods: We performed a systematic searched PubMed, Embase and Cochrane database, between July and August 2023, to identify observational and interventional studies that reported the event rate of IE in both TAVI and SAVR. A Mantel-Haenszel method and a random-effects model was used to calculate the odds ratio (OR) and 95% confidence interval (CI).
Results: Forty-two studies were included in which seventeen were randomised clinical trials. A total of 172,752 patients were included, providing 4,079 pooled infective endocarditis events (865 in TAVI and 3,214 in SAVR), resulting in an incidence of 2% and 2.5% in TAVI and SAVR, respectively. Our meta-analysis revealed a lower incidence of IE in TAVI patients compared to SAVR (pooled odds ratio [OR], 0.74; 95% confidence interval [CI] 0.60, 0.92, $p < 0.01$; $I^2 = 64\%$). However, sub-analysis of randomized controlled trials showed no significant difference between TAVI and SAVR. Sub-analysis of surgical risk revealed no significant difference across the surgical risk (low, intermediate, and high), but a trend was noted favouring TAVI in high surgical risk (pooled OR 0.55; 95%CI [0.28, 1.11], $p = 0.09$, $I^2 = 50\%$). Studies reporting IE at 1 year follow-up did not show difference between TAVI and SAVR (pooled OR 0.85; 95%CI [0.59, 1.23], $p = 0.40$, $I^2 = 0\%$), as well at 5-year follow-up SAVR (pooled OR 0.76; 95%CI [0.41, 1.41], $p = 0.38$, $I^2 = 78\%$).
Conclusions: The results of this systematic review and meta-analysis suggests a lower incidence of IE in TAVI compared to SAVR, with no significant difference in randomized controlled trials. These findings possibly highlight discrepancy between real world experience and clinical trials.

PO 55. 30-DAY AND 1-YEAR MORTALITY AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT: THE IMPACT OF BALLOON AORTIC VALVULOPLASTY AS A BRIDGING THERAPY IN A TERTIARY CENTER

Francisco Barbas de Albuquerque, Bárbara Lacerda Teixeira, André Grazina, Rúben Ramos, António Fiarresga, Alexandra Castelo, Tiago Mendonça, Inês Rodrigues, Duarte Cacela, Rui Ferreira

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Introduction: Since the advent and development of transcatheter aortic valve replacement (TAVR) in contemporary era, balloon aortic valvuloplasty (BAV) has seen renewed interest. We aimed to compare 30-day and 1-year all-cause mortality between patients submitted to BAV as a bridging therapy before definite TAVR and patients submitted directly to TAVR.
Methods: This was an observational, retrospective study of patients who underwent TAVR between 2009 and 2022 in a tertiary center. Patients with severe aortic stenosis (SAS) who underwent TAVR without prior BAV (woBAV group) and patients who were performed TAVR with prior BAV (wBAV group) as a bridging therapy were included. Primary endpoint was all-cause mortality at 30 days and 1 year after TAVR between wBAV and woBAV groups.
Results: 800 patients were included, of which 767 were in woBAV group and 33 were in wBAV group. 30-day all-cause mortality rate was 21% in wBAV group compared to 4.4% in woBAV (unadjusted hazard ratio [HR], 5.19; 95% confidence interval [CI], 2.3 – 11.7, $p < 0.001$). At 1-year, all-cause mortality rate was 27% in wBAV group compared to 12% in woBAV group (unadjusted HR, 2.55; 95%CI, 1.28-5.10, $p = 0.007$). After covariate adjustments, mortality remained significantly higher in wBAV group (Figure).
Conclusions: Our study provides valuable insights into the outcomes of patients undergoing TAVR with prior BAV as bridging therapy, as these patients have higher mortality at 30 days and 1 year comparing to their counterparts. This underscores the importance of meticulous patient selection when considering BAV as bridging therapy, since this technique still has a role in contemporary TAVR era.

PO 56. CONTRACTILE RESERVE AND SURVIVAL OUTCOMES IN TRANSCATHETER AORTIC VALVE IMPLANTATION FOR LOW-FLOW, LOW-GRADIENT AORTIC STENOSIS

Tatiana Pereira dos Santos, Ana L. Silva, Gonçalo Terleira Batista, Mariana Rodrigues Simões, Rafaela Fernandes, Vanessa Lopes, Joana Guimarães, Diogo Fernandes, Elisabete Jorge, Rogério Teixeira, Marco Costa, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Few data exist on patients with low-flow, low-gradient aortic stenosis (LFLG-AS) undergoing transcatheter aortic valve replacement

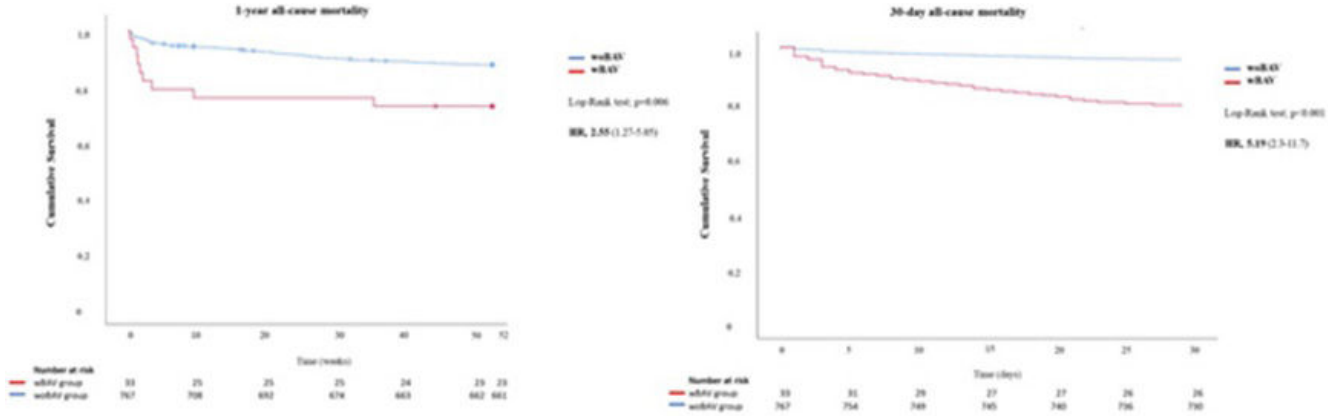

Table 3. Results from unadjusted and adjusted Cox Models at 30-day and 1-year all-cause mortality between groups

	30-day all-cause mortality HR (95% CI)		1-year all-cause mortality HR (95% CI)	
Covariate	Unadjusted	Covariate Adjusted	Unadjusted	Covariate Adjusted
BAV	5.19 (2.30-11.7)	3.82 (1.67-8.73)	2.55 (1.27-5.05)	1.99 (1.00-3.97)
Male				
Atrial Fibrillation		2.05 (1.11-3.82)		2.03 (1.36-3.02)
EuroScore II		1.05 (1.02-1.08)		1.05 (1.03-1.07)
STS score				
LVEF < 40%				

BAV, balloon aortic valvuloplasty; CI, confidence interval; HR, hazard ratio; LVEF, left ventricular ejection fraction; STS, Society of Thoracic Surgeons

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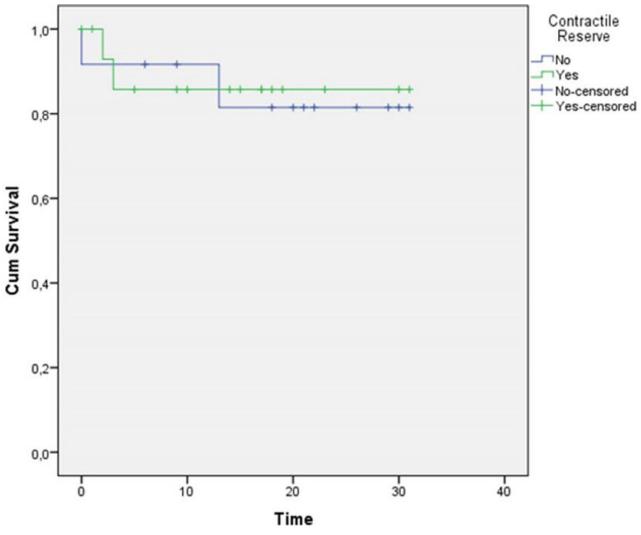
Figure PO 55

(TAVR). Also, very scarce data exist on the usefulness of dobutamine stress echocardiography (DSE) before TAVR in these patients.
Objectives: This study seeks to assess the prognostic significance of contractile reserve at baseline in patients undergoing TAVR for low-flow, low-gradient aortic stenosis.
Methods: Retrospective analysis of TAVR patients (March 2020 to November 2023) at a Portuguese tertiary center. We identified cases of LFLG AS defined by left ventricular ejection fraction (LVEF) < 50%, aortic valve area < 1 cm^2 (and/or < 0.6 cm^2/m^2, severe AS) and mean gradient < 40 mmHg. We included patients with a dobutamine stress echocardiogram (DSE) and evaluated contractile reserve (CR) determined by an increase in LVEF ≥ 5% or stroke volume ≥ 20% following dobutamine. Statistical analysis used Kaplan-Meier curve and t-tests.
Results: Among the total cohort of 147 patients with LFLG AS, 28 patients had pre-TAVR DSE. The mean age was 76.9 ± 8.3 years and 67.9% are male. The mean follow-up period (FUP) was 15.7 ± 10.1 months. Cardiovascular risk factors included hypertension (85.7%), diabetes (42.9%), coronary artery disease (CAD) (33.2%) and tobacco use (21.4%). Procedurally, 88.9% used transfemoral access, and 85.7% utilized the MANTA® closing device. Contractile reserve was identified in 16 patients, while 12 did not exhibit CR. No significant differences in baseline demographics, medical history, CAD, access site, valve types or complications between the two groups. Mean LVEF for CR was 31.4% ± 8.8 and 32.08% ± 7.3 for absent CR (p = 0.84). Mean transvalvular gradient was 26.8 ± 7.4 mmHg and 25.2 ± 6.1 mmHg, respectively (p = 0.57). Overall mortality in LFLG TAVR was 10.9%. Kaplan-Meier analysis revealed comparable all-cause mortality between the CR and non-CR groups. Survival rates at 12 months were 85.7% with CR and 91.7% without CR, with no statistically significant difference (p = 0.86). After TAVR, LVEF increased 9.4% ± 10.0 (p < 0.001) and no difference was found between the groups (p = 0.95).



Conclusions: In summary, the presence or absence of contractile reserve in dobutamine stress echocardiography does not appear to predict differences in survival and does not influence the prognosis of patients undergoing TAVR for LFLG AS. LVEF demonstrates an increase during FUP; however, CR exhibits no discernible impact.

PO 57. ORAL ANTICOAGULATION AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT

Fernando Nascimento Ferreira, Inês Rodrigues, Francisco Albuquerque, Miguel Figueiredo, Barbara Teixeira, Francisco Albuquerque, Ricardo Carvalheiro, Tiago Mendonça, Duarte Cacela, Ruben Ramos, António Fiarresga, Rui Cruz Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Current European guidelines recommend isolated oral anticoagulation following transcatheter aortic valve replacement (TAVR) in patients (pts) with clinical indication, but the optimal antithrombotic regimen is still a matter of debate.
Objectives: To compare the procedure-related complications and long term outcomes of vitamin K antagonist (VKA) and non-vitamin K oral anticoagulants (NOAC) in pts undergoing TAVR with indication for OAC.
Methods: Consecutive pts under OAC with severe aortic stenosis who underwent TAVI between 2018 and 2023 in a single center were included. Two groups were defined based on the anticoagulant class prescribed post-procedure. Peri-procedural safety endpoints and 1-year efficacy endpoints defined by VARC-2 were evaluated according to OAC class and compared using the Chi-square test, Exact Fisher test, Mann-Whitney U test, and independent samples t-test. A p-value < 0.05 was considered statistically significant.
Results: A total of 214 pts undergoing TAVR with indication for anticoagulation post-procedure were included (20 with DOAC and 194 with VKA). The median age was 83 years and 51.4% were male. Patients under VKA were younger (median 83 years (31) vs. 79 years (54), p = 0.003), had a higher prevalence of prior valve replacement (6.2% vs. 45%, p = 0.001), and higher Euroscore II (median 6.46 (22.9) vs. 3.96 (40.1), p = 0.003). Regarding procedural safety endpoints, there was no significant differences in the prevalence of life-threatening bleeding or need for transfusional support during hospitalization (p = 1.0; p = 0.188, respectively). In additions, there was no significant differences in the acute kidney injury (AKI), (AKI equal to or greater than KDIGO2 8.8% (DOAC) vs. 0% (VKA), p = 0.525) and in major vascular complications (p = 0.609).For long-term endpoints, there were no statistically significant differences in the prevalence of Stroke, re-hospitalization, and mortality at 1 year (p = 0.182; p = 1.0; p = 0.662, respectively). No valve thrombosis was observed in either group. Additionally, the has no statistically significant differences in the prevalence of thromboembolic and hemorrhagic events until end of follow up as well as all-cause mortality (p = 0,603; p = 1,0; p = 1,0, respectively).
Conclusions: From the analysis, individuals undergoing anticoagulation with VKA after TAVR, despite being younger, appear to have a higher prevalence of prior valve replacement and a higher surgical risk. However, there were no findings suggestive of higher risk of hemorrhagic and thrombotic complications, as well as higher all-cause mortality in either study group. However, larger-scale studies are needed to corroborate these results.

SEXTA-FEIRA, 19 ABRIL de 2024 | 11:00-12:00

Área de Posters 3 | Sessão de Posters 09 - Epidemiologia e formação médica

PO 58. SMALL CHANGES CAN MAKE A DIFFERENCE: THE IMPACT OF DIFFERENT AJMALINE CHALLENGE PROTOCOLS ON CARBON FOOTPRINT

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[1]Centro Hospitalar Universitário de S. João, EPE. [2]Hospital da Senhora da Oliveira, EPE-Guimarães

Introduction: Climate change is an urgent public health crisis that significantly impacts disease development and health outcomes. The 2022 Lancet Countdown Report showed an increase in healthcare's emissions to 2.7 Gt CO2 equivalents (CO2eq), which accounts for 5.2% of global emissions. One of the strategies to reduce waste is dematerialization of procedures and simplification of protocols. Brugada syndrome is an inherited disease associated with sudden cardiac death in structurally normal hearts with

characteristic electrocardiographic findings, that might be unmasked by an ajmaline challenge. There are two validated protocols – continuous infusion and intermittent ajmaline bolus administration.
Objectives: Our aim was to compare the environmental impact of two ajmaline challenge protocols.
Methods: We performed a retrospective and observational analysis of adult patients (pts) who underwent ajmaline testing between March 2020 and June 2023 in two hospitals. In Group A (infusion protocol), 1mg/kg of ajmaline diluted in 50 mL of 5% glucose solution was infused in 10 minutes, up to the target dose, until a positive result or termination criteria ensued. In Group B (bolus protocol), 10 mg of ajmaline were administered every 2 minutes, again up to the target dose of 1mg/kg (maximum of 100 mg) or test interruption was indicated. Green-house gas emissions (GHGE), resulting from the processing of the materials used in both protocols, were estimated based on previously reported life cycle GHGE of each product's composition list as described by manufacturers; their weight was measured directly.
Results: A total of 101 pts were included, 49 pts in group A with a mean age of 47.3 ± 14.3 years and 52 patients in group B with a mean age of 43.9 ± 16.6 years. No complications were observed in either group. Test performance was not evaluated, since both protocols have been previously validated. Concerning material consumption and waste production, group A produced 5.19 kg of plastic (102 g per test), 1.79 kg of glass and a total consumption of 4.70kg of ajmaline. Group B produce 832 g of plastic (16g per test), 1.58 kg of glass and a total ajmaline use of 4.15kg. Regarding GHGE, group A significantly produced more CO2eq than group B (18.19 kg CO2eq vs. 6.23 kg CO2eq, p < 0,001).
Conclusions: Our study shows the significant impact of adopting a more dematerialized ajmaline challenge protocol on the environment protection: swapping from infusion to bolus led to a 66% decrease in CO2eq emissions. As the evidence and awareness of healthcare's environmental footprint grows, it is important that healthcare professionals implement changes in favor of a more sustainable medical practice. Although our population is small, implementing this environmentally friendly strategy worldwide would have expressive results.

PO 59. ATIVIDADE CIENTÍFICA E SATISFAÇÃO GLOBAL NO INTERNATO MÉDICO - A REALIDADE *OUTLIER* DA CARDIOLOGIA

Gonçalo Ferraz Costa[1], Vanda Neto[2], Mariana Brandão[3], Diogo Ferreira[3], Pedro Azevedo[4], João Presume[5], Hélder Santos[6], Fernando Montenegro[7]

[1]Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra. [2]Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio. [3]Centro Hospitalar de Vila Nova de Gaia/Espinho. [4]Centro Hospitalar do Algarve, EPE/Hospital de Faro. [5]Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz. [6]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [7]Unidade Local de Saúde de Matosinhos, EPE/Hospital Pedro Hispano.

Introdução: O Internato Médico é crucial na formação médica pós-graduada. A Cardiologia, embora desejada, tem perdido popularidade nas escolhas de especialidade. No inquérito nacional de satisfação do internato médico, a Cardiologia teve uma baixa classificação de satisfação, possivelmente devido à exigência na atividade científica.
Objetivos: Este estudo visa avaliar a satisfação da Cardiologia no inquérito do internato médico e comparar sua exigência científica com outras especialidades.
Métodos: Primeiro, analisámos os dados relativos à Cardiologia no inquérito de satisfação do internato médico. Depois, consultámos as grelhas curriculares e número mínimo de itens para a cotação máximo de produção científica (artigos publicados e comunicações orais/pósteres) em cada especialidade. Para simplificar o mínimo necessário para atingir esses limites, consideramos os fatores mais valorizados (por exemplo, 1.º autor em revistas indexadas). Avaliámos a correlação entre esses itens mínimos e a satisfação global usando correlação de Pearson.
Resultados: A Cardiologia apresentou menor satisfação (3,69/5 *versus* 4,12/5) com taxa de resposta inferior (16% *versus*. 19%). As principais categorais com menor satisfação são o apoio limitado à atividade científica (2,66/5 *versus* 2,15/5) e falta de tempo para estudo autónomo (1,1/5 *versus* 2,01/5). Relativamente à exigência científica, para a Cardiologia, o mínimo exigido é 46 itens: 6 artigos originais em revistas de 1.º ou 2.º quartil, 20 resumos como 1.º ou 2.º autor em revistas de 1.º ou 2.º quartil e 20 resumos como 1.º ou 2.º autor em revistas de 3.º ou 4.º quartil. Em 9 especialidades (18,4%), não há grelha curricular. Das que têm, 10 não têm limite para publicações (25,6%). A mediana para as restantes é de 10 [IQ 6, 14,5], com Cardiologia sendo um *outlier* extremo, em conjunto com Imunoalergologia (36). Outros *outliers* incluem também Dermatovenereologia (28), Urologia (25) e Pneumologia (25). Adicionalmente, apenas a Cardiologia e Gastroenterologia diferenciam por quartil da revista. As restantes especialidades diferenciam por revista indexada *versus* não indexada e revista nacional *versus* internacional. A correlação entre satisfação global e itens mínimos não foi significativa (r = 0,043, p = 0,823).

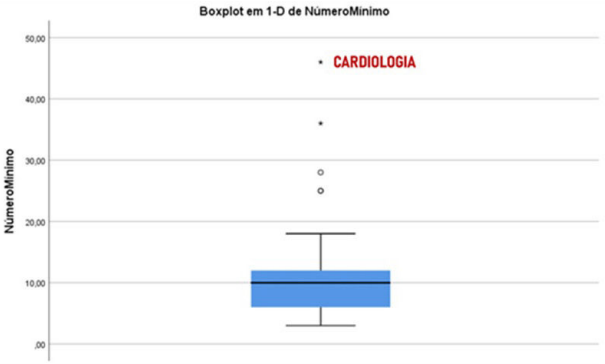

Figura 1. Boxplot do número mínimo de produção científica

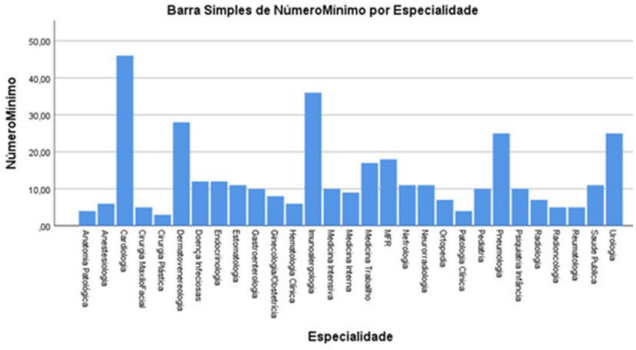

Figura 2. Histograma do número mínimo de produção científica por especialidade

Conclusões: O nosso estudo não demonstrou existir correlação entre exigência de produção científica e grau de satisfação global da especialidade. No entanto, a Cardiologia destaca-se como a especialidade mais exigente em termos quantitativos e qualitativos comparativamente às restantes.

PO 60. TRENDS AND INSIGHTS INTO CONGENITAL HEART DISEASE EPIDEMIOLOGY IN PORTUGAL: A TWO-DECADE PERSPECTIVE

Joana Suarez, Sérgio Laranjo, Conceição Trigo, Fátima F. Pinto

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Introduction and objectives: We present data related to prenatal diagnosis (PND), demographic characteristics, prevalence, mortality and associated malformations of congenital heart disease (CHD) in Portugal from 2000 to 2019.
Methods: The cohort comprises 6,521 CHD cases from the Portuguese National Registry of Congenital Malformations.
Results: The overall incidence of CHD increased from 326.6 per 100,000 live births in 2000 to 437.7 in 2019. The most common CHD type was

left-to-right shunts, peaking at 314.62 per 100,000 in 2015. Critical CHDs showed a significant increase in PND, particularly for Tetralogy of Fallot and Hypoplastic Left Heart Syndrome, indicating advancements in diagnostic technology, improvement in prenatal diagnosis and increased awareness. The progressive improvement in medical care is shown through a decrease in non-survivors beyond the first week. Notably, there was also an increase in medical terminations of pregnancy after 2009, possibly due to enhanced detection of severe anomalies. In a sub-analysis of our cohort, 3,734 had other associated malformations, primarily from the Q80-Q89 group (other congenital malformations), followed by blood diseases (D50-D89 group). The average birth weight was approximately 2,731.6 grams. Prematurity and additional malformations significantly impacted survival, with non-survivors having a lower average birth weight (836.7 grams). Despite the increase in global incidence, we want to highlight that our cohort only reports malformations detected at birth and reported to the national registry. Being underestimated due to the lack of reporting of cardiac malformations detected later, this is the main limitation of this study.

Conclusions: This comprehensive study provides insights into the evolving landscape of CHD in Portugal, emphasizing the importance of PND and the impact of associated malformations on patient outcomes.

PO 61. A GLOBAL PERSPECTIVE ON LIPID CONTROL AFTER ACUTE CORONARY SYNDROME – ARE WE DOING ENOUGH?

Sofia Andraz, Joana Massa Pereira, Hugo Costa, Miguel Espírito Santo, Lucas Hamann, Pedro de Azevedo, Jorge Mimoso

Centro Hospitalar e Universitário do Algarve, EPE/Hospital de Faro.

Introduction: Secondary prevention after acute coronary syndrome (ACS) involves aggressive LDL cholesterol reduction, with a target below 55 mg/dL and a 50% reduction from baseline. While high-intensity statins are the primary therapy, additional medications such as ezetimibe and PCSK9 inhibitors (PCSK9i) may be needed. However, in Portugal, PCSK9i are restricted to severe dyslipidemia (LDL > 140 or > 100 mg/dL with additional risk criteria), creating a "grey zone" for patients not meeting PCSK9i criteria.

Objectives: This study evaluates lipid control and contributing factors for LDL reduction in post-ACS patients.

Methods: A single-center retrospective study included consecutive ACS patients discharged between January and October 2020. Lipid levels and medication data were collected at least 6 weeks post-discharge, categorizing patients into LDL groups (< 55, 55-100, > 100 mg/dL). Demographics, baseline characteristics, medication and lipid values were compared between groups. Patients were excluded if no follow-up (mostly non-residents) or missing key data.

Results: Among 211 patients (mean age 64.7 ± 12.2 years; 74.4% male), 77 (36.5%) achieved LDL < 55 mg/dL, 93 (44%) between 55 and 100 mg/dL, and 41 (19.5%) above 100 mg/dL at follow-up. At discharge, 197 (93%) received high-intensity statins, 80 (38%) a combination of high-intensity statins and ezetimibe. Mean LDL reduction was 80 ± 48, 66 ± 45, and 8 ± 47 mg/dL for groups < 55, 55-100 and > 100, respectively. Patients with LDL > 100 mg/dL at follow-up were more likely smokers, with uncontrolled blood pressure, higher BMI, higher baseline LDL, and reported non-adherence. In adherent patients on high-intensity statins, 38 (37%) had LDL < 55 mg/dL, and 53 (52%) remained in the 55-100 mg/dL "grey zone", adding 33 (49%) and 25 (37%) when in combination with ezetimibe. Only 2 patients received PCSK9i.

Conclusions: In this contemporary post-ACS cohort, < 40% achieved recommended LDL values. Higher prevalence of uncontrolled cardiovascular risk factors associated with worse lipid profiles suggests noncompliance with medication and lifestyle changes. Over one-third adhering to proper medication and presenting a significant LDL reduction, still remained in the "grey zone", potentially at higher risk of recurrent events. Addressing this gap in lipid control may help improving secondary prevention in post-ACS patients.

Table 2 – Change in metabolic profile and medication from hospitalization to follow-up.

			LDL < 55 mg/dL (n=77, 36%)	LDL 55 – 100 mg/dL (n=93, 44%)	LDL > 100 mg/dL (n=41, 19%)	Total (n=211, 100%)	p-value
During hospital stay	BMI	Mean±SD	27.2 ± 5.9	26.5 ± 3.2	27.2 ± 4.3		0.54
	LDL cholesterol	Mean±SD	124 ± 48	140 ± 45	161 ± 51		**<0.001**
	Total cholesterol	Mean±SD	184 ± 55	203 ± 48	224 ± 58		**<0.001**
	HDL cholesterol	Mean±SD	43 ± 14	44 ± 11	44 ± 10		0.77
	Triglycerides	Mean±SD	128 ± 85	126 ± 78	124 ± 73		0.97
	HbA1c	Mean±SD	5.9 ± 2.3	5.9 ± 2.1	5.4 ± 2.4		0.49
Medication at discharge	High-intensity statin	n (%)	74 (96%)	86 (92%)	37 (90%)	197 (93%)	0.43
	Ezetimibe	n (%)	36 (47%)	28 (30%)	16 (39%)	80 (38%)	0.083
	PCSK9i	n (%)	0	0	0	0	
Follow-up	Adherent patients	n (%)	74 (99%)	85 (93%)	23 (57%)	182 (86%)	**<0.001**
	Adherent patients on:	n (%)					
	- high-intensity statin alone		38 (37%)	53 (52%)	11 (11%)	102 (48%)	
	- high-intensity statins and ezetimibe		33 (49%)	25 (37%)	9 (13.4%)	67 (32%)	
	LDL reduction	Mean±SD	80 ± 48	66 ± 45	8 ± 47	60 ± 53	**<0.001**
	BMI	Mean±SD	25.3 ± 3.5	25.1 ± 4.9	29.4 ± 6.4	25.8 ± 5.0	**0.004**
	Active smokers	n (%)	9 (13%)	14 (18%)	11 (34%)	34 (16.1%)	**0.044**
	Systolic BP (mmHg)	Mean±SD	132 ± 25	134 ± 20	145 ± 23	135 ± 23	**0.016**
	Diastolic BP (mmHg)	Mean±SD	71 ± 10	72 ± 12	76 ± 16	72 ± 12	0.22
	HbA1c (%)	Mean±SD	8.0 ± 8.1	6.5 ± 1.2	6.9 ± 1.4	7.1 ± 4.9	0.27
Maximum medication during follow-up	High-intensity statin	n (%)	71 (95%)	78 (86%)	41 (100%)	190 (90%)	**0.011**
	Ezetimibe	n (%)	43 (57%)	52 (57%)	30 (73%)	125 (59%)	0.17
	PCSK9i	n (%)	0	1 (1%)	1 (2%)	2 (1%)	

Figure PO 61

PO 62. ANÁLISE DA PERSPETIVA DOS JOVENS CARDIOLOGISTAS SOBRE AS ATUAIS MATRIZES DO INTERNATO EM PORTUGAL - RESULTADOS PRELIMINARES

Gonçalo Ferraz Costa[1], Vanda Devesa Neto[2], João Presume[3], Mariana Brandão[4], Diogo Ferreira[4], Hélder Esperto[5], Pedro Azevedo[6], Fernando Montenegro[7]

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Introdução: O Internato de formação específica desempenha um papel determinante no percurso profissional da maioria dos médicos, acabando por ocupar um lugar central na sua vida nos anos em que decorre. Naturalmente, a vivência do Internato e o grau de satisfação com o mesmo influenciam não só os resultados profissionais obtidos, mas também todas as outras dimensões da vida pessoal. Neste âmbito, o Conselho de Jovens Cardiologistas considerou pertinente repetir o levantamento da perceção dos internos de especialidade e recém-especialistas sobre o internato e os métodos de avaliação aplicados no final da especialidade, fazendo uma reflexão à implementação da grelha curricular.
Métodos: Os autores desenvolveram um inquérito na forma de questionário constituído por 40 perguntas de resposta aberta e fechada (incluindo respostas Sim/Não, respostas com 3 a 5 opções diferentes, e respostas de avaliação em escalas de 6 pontos de Lickert com extremos em 0 = Nada e 5 = Muito ou Totalmente). As perguntas encontravam-se divididas em 5 categorias - Geral, Especialidade e local de internato, Currículo da especialidade e Exame final da especialidade, Grelha Curricular. O questionário foi formatado através de uma plataforma de utilização aberta (Google® Forms), sendo de preenchimento anónimo. O inquérito foi aberto a respostas a 01/12/2023.
Resultados: Até à data, o inquérito foi preenchido por um total de 35 jovens cardiologistas. Dos participantes, 2,9% eram internos do 1.º ano, 14,3% do 2.º ano, 22,9% do 3.º ano, 22,9% do 4.º ano, 22,9% do 5.º ano e 5,8% eram recém-especialistas. A satisfação com a especialidade de Cardiologia decresceu, com 61,8% dos jovens cardiologistas a revelarem que esta corresponde às suas expectativas iniciais, comparativamente ao 94,2% do inquérito de 2019. Adicionalmente, apenas 22,9% e 17,1% concordam parcialmente e totalmente que a Cardiologia é uma especialidade atrativa. Das causas mencionadas, salienta-se a carga laboral elevada associada a uma exigência curricular exagerada. 48,6% passam um número médio > 60 horas no hospital, com pouco ou nada desse tempo dedicado à investigação (91,2%) ou estudo (97%). Relativamente à grelha curricular, a maioria discorda completamente ou parcialmente que a atual grelha curricular permita uma avaliação justa ou equitativa dos internos (85,7%), havendo um consenso que a maioria dos itens da grelha curricular são exagerados. Adicionalmente, a maioria (94,3%) considera a atual grelha leva uma exagerada sobrecarga financeira para interno. Relativamente a apoio financeiro/logístico, 20% mencionou nunca ter recebido apoio, 31,4% raramente, 20% infrequentemente e 17,1% frequentemente.
Conclusões: Os resultados preliminares, apesar da baixa percentagem de resposta, sugerem um desagrado dos jovens cardiologistas relativamente à atual situação da especialidade, especificamente à exigência curricular associado.

PO 63. REAL-LIFE IMPACT OF SODIUM-GLUCOSE CO-TRANSPORTER-2 INHIBITORS AFTER ACUTE CORONARY SYNDROME

Catarina Ribeiro Carvalho, Marta Catarina Bernardo, Isabel Martins Moreira, Luís Sousa Azevedo, Ana Baptista, Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introduction: Sodium-glucose co-transporter-2 inhibitors (SGLT2i) are recommended for patients with heart failure (HF), regardless of left ventricular ejection fraction (LVEF), to reduce the risk of HF hospitalization and cardiovascular mortality. However, its benefit after acute coronary syndromes (ACS) has not been established.

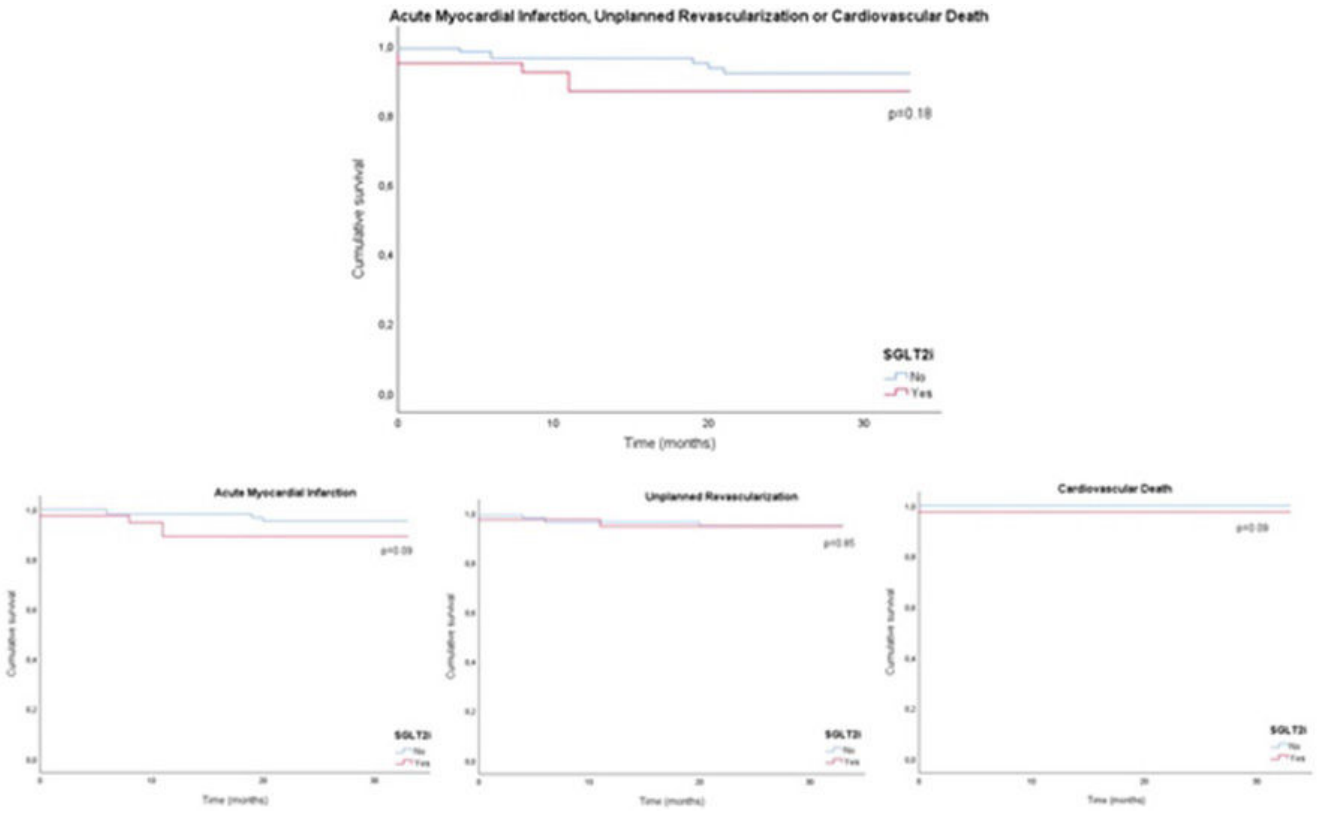

Figure PO 63

Objectives: To evaluate the prognostic impact of SGLT2i after ACS.
Methods: This was a single center retrospective study of patients hospitalized with ACS, included in the Portuguese Registry of Acute Coronary Syndromes, between January 2021 and December 2022. Patients previously taking SGLT2i were excluded. The impact of SGLT2i prescription at discharge on the composite endpoint of recurrent acute myocardial infarction, unplanned revascularization or cardiovascular death was evaluated. Additionally, the incidence of HF outcomes was compared between the two groups.
Results: A total of 157 patients was included, 27.4% with SGLT2i prescription. Mean follow-up duration was 20.9 ± 8.1 months. Apart from being slightly older than patients without SGLT2i prescription (69.6 ± 11.8 vs. 63.8 ± 13.1 years, p = 0.01) and the higher prevalence of diabetes mellitus (67.4 vs. 14.9%) and arterial hypertension (76.7 vs. 52.5%, p = 0.004), there were no other significant differences in the baseline characteristics of the two groups. LVEF was also similar between groups (50.4 ± 14.7 vs. 51.4 ± 8,7%, p = 0.66), as was discharge medication. SGLT2i didn't significantly reduce the incidence of the composite endpoint (p = 0.18), which occurred in 12.8% of patients in the SGLT2i group and in 6.4% of patients without SGLT2i prescription. In a multivariate analysis, accounting for possible confounders including diabetes mellitus and chronic kidney disease, only previous HF (HR = 37.0, 95%CI 6.12-220.2) and severely reduced LVEF (HR = 14.0, 95%CI 2.07-94.37) were independent predictors of this endpoint. When analyzing the individual components of the primary endpoint, SGLT2i didn't demonstrate a significant improvement in recurrent acute myocardial infarction (p = 0.09), unplanned revascularization (p = 0.85) or cardiovascular death (p = 0.09). These findings remained consistent similar in the subgroup analysis of patients with reduced LVEF, with SGLT2i exhibiting a neutral effect in each individual outcome. Regarding HF outcomes, SGLT2i didn't lead to a significant increase in LVEF (variation of mean LVEF of 3,1 ± 7.2 vs. 7.5 ± 8,8%, p = 0.06) or a reduction of HF events (HF hospitalizations, urgent HF visits or unplanned outpatient HF visits) (p = 0.14).
Conclusions: SGLT2i initiation after ACS didn't reduce the incidence of the composite endpoint of recurrent acute myocardial infarction, unplanned revascularization or cardiovascular death, regardless of diabetes mellitus or LVEF. Additionally, SGLT2i didn't exhibit a significant impact in HF outcomes after ACS.

SEXTA-FEIRA, 19 ABRIL de 2024 | 12:00-13:00

Área de Posters 1 | Sessão de Posters 10 - Dislipidémia e metabolismo lipídico

PO 64. IS THE TRIGLYCERIDE GLUCOSE INDEX A VALUABLE MARKER IN THE EARLY IDENTIFICATION OF CARDIOVASCULAR EVENTS?

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Introduction: Current research showed that the triglyceride glucose (TyG) index is a cheap clinical marker associated with calcium (CAC) score and atherosclerotic cardiovascular disease (CVD). Nevertheless, its relationship with early atherosclerotic cardiovascular (ASCVD) events remains uncertain.
Objectives: We intend to evaluate the association between the TyG index and CAC score, a marker of subclinical atherosclerosis, in a normal population free of apparent CVD. After that, we investigated whether this marker is a good tool to identify early CV events in an asymptomatic population.
Methods: We performed a prospective study with 1,284 subjects aged 51.8 ± 8.3, 73.5% male, without apparent coronary artery disease. CAC score was performed by cardiac computed tomography and reported as Agatston units. The TyG index was calculated as ln [TG (mg/dL) × FBG (mg/dL)/2], derived from previous studies and was subdivided into terciles. Outcome variables were myocardial infarction, unstable angina, stroke, peripheric disease and CV death. The incidence of outcomes was estimated for each TyG tercile. All outcomes were investigated by Cox proportional hazards regression analysis adjusting for baseline covariates.
Results: Spearman´s correlation, we obtain a positive correlation between TyG index and CAC (r = 0.201; p < 0.0001). CV events were diagnosed in 47 participants during the follow-up period. In the low tercile (< 8.49), there were 20% of total ASCVD events, on the medium tercile [8.49-8.97[there were 42.2%, and in the high (≥ 8.97) 37.8% ASCVD events (p = 0.145). Multivariate-adjusted hazard ratios (HRs) for subjects in the medium/highest TyG index tercile confirmed that these patients were at higher risk for CV events compared with participants in the lowest TyG index tercile after adjusting for smoking, hypertension, and dyslipidemia (HR = 2.552; 95%CI-1.144-5.693; p = 0.022).
Conclusions: Our study demonstrated that a higher TyG index is associated with a higher risk of ASCVD events using a representative cohort of a Portuguese population. TyG index, which is inexpensive and easy to calculate, reflects insulin resistance and may be potentially helpful in identifying individuals at high risk of suffering early CV events. Then, it could be beneficial in primary CVD prevention.

PO 65. LIPOPROTEIN(A) ROLE IN ACUTE MYOCARDIAL INFARCTION: REAL-WORLD DATA OF A TERTIARY CARE CENTRE

Catarina Amaral Marques, André Cabrita, Cátia Oliveira, Luís Santos, Ana Isabel Pinho, Miguel Rocha, Pedro Palma, Helena Santos Moreira, Paulo Maia Araújo, Cristina Cruz, Rui André Rodrigues

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Growing evidence points to lipoprotein(a) [Lp(a)] role in cardiovascular (CV) risk modulation. However, its clinical practice assessment and utility are poorly studied, particularly in acute myocardial infarction (AMI). Our aim was to evaluate Lp(a) behavior in a real-world cohort of AMI patients (pts).
Methods: Tertiary care centre retrospective study of pts admitted with type one AMI between 2020 and 2023, in whom Lp(a) was assessed (n = 162). Data was based on pts' medical records review. Lp(a) values ≥ 30 mg/dL denoted higher CV risk pts (Lp30 pts), in accordance with current literature.
Results: 162 pts were included: 19% female; median age at AMI was 54 years; 95% presented ≥ 1 CV risk factor (CVRF). Non-ST/ST segment elevation AMI frequency was 46% and 54%, respectively. Median Lp(a) was 37.5 mg/dL; 58% presented Lp(a) ≥ 30 mg/dL. Median follow-up (FU) time was 24 months. Regarding baseline characteristics, no differences were found across the spectrum of Lp(a) values in terms of CVRF (p = 0.6), sex (p = 0.8), age (p = 0.3),

Variables independently associated with CV events occurrence (Cox regression)

Variables	B	S.E.	Wald	df	HR (95% CI)	p-value
CAC severity			19.910	2		<0.0001
Moderate	1.353	0.425	10.119	1	3.869 (1.681 – 8.904)	0.001
High	1.816	0.408	19.807	1	6.145 (2.762 – 13.671)	<0.0001
Diabetes	0.762	0.364	4.390	1	2.143 (1.050 – 4.371)	0.036
TyG index tercile			6.565	2		0.038
[8.49 – 8.97[	0.937	0.409	5.243	1	2.552 (1.144 – 5.693)	0.022
≥8.97	0.247	0.441	0.315	1	1.281 (0.539 – 3.042)	0.575

Figure PO 64

ANTIDYSLIPIDEMIC TREATMENT			Lp(a) (mg/dL)	p-value
Pre-AMI AD treatment	No (n=110)	Median (IQR)	33.7 (54.1)	0.02*
	Yes (n=52)	Median (IQR)	48.2 (79.5)	
Pre-AMI AD regimen	Other statin (n=24)	Median (IQR)	31.5 (74.5)	0.003*
	HI statin (n=18)	Median (IQR)	47.8 (70.1)	
	HI statin + ezetimibe (n=6)	Median (IQR)	74.7 (76.7)	
	Other statin + ezetimibe (n=4)	Median (IQR)	167.6 (160.3)	
FU AD regimen	HI statin + ezetimibe (n=85)	Median (IQR)	46.7 (76.3)	0.13
	HI statin (n=63)	Median (IQR)	31.2 (51)	
	Other regimen (n=8)	Median (IQR)	62.7 (41.4)	
	Stopped medication (n=4)	Median (IQR)	51.1 (86.5)	

AD, antidyslipidemic; AMI, acute myocardial infarction; FU, follow-up; HI, high-intensity; IQR, interquartile range; Lp(a), lipoprotein(a)
** p-value<0.05; Non-parametric tests were used for statistical analysis*

Figure PO 65

or previous CV events (p = 0.6). Notably, Lp30 pts presented more family history of premature coronary heart disease (CHD) (30% vs. 13% in non-Lp30; p = 0.01). Lipid panel at admission was comparable between groups, namely for low-density lipoprotein (LDL) values (median LDL of 118 mg/dL in Lp30 vs. 110 mg/dL; p = 0.2). However, higher Lp(a) pts were more frequently on pre-AMI antidyslipidemic treatment (p = 0.02), as well as on higher-intensity drug regimens (p = 0.003) (Table). Concerning in-hospital management and outcomes, multivessel disease was more commonly identified in higher Lp(a) (p = 0.05). No other differences were found. Similarly, no differences were observed in CV outcomes on FU across the whole range of Lp(a) values. Still, higher Lp(a) pts presented worse lipidic control on FU (non-LDL-target pts with median Lp(a) of 44 mg/dL vs. 33 mg/dL in LDL-target pts; p = 0.03). Nonetheless, FU antidyslipidemic treatment was not different (Table) across the Lp(a) spectrum (p = 0.13). Genetic testing for familial hypercholesterolemia was performed in 7%, and more commonly requested in higher Lp(a) pts (median Lp(a) of 98 mg/dL on tested pts vs. 35 mg/dL on non-tested; p = 0.009).
Conclusions: Reflecting about our real-world data on AMI pts, important messages stand out: 1) lipidic panel at admission was comparable in Lp30 vs. non-Lp30, likely reflecting higher frequencies and higher-intensity regimens of treatment presented by Lp30; 2) worse lipidic control was observed in higher Lp(a), conferring a well-known increased CV risk in non-LDL-target pts; 3) genetic testing frequency was clearly discrepant from the proportion of pts with family history of premature CHD. Our data raises awareness for this higher CV risk and vulnerable subgroup of AMI pts, highlighting the need for a rigorous evaluation and management. Additional larger and longer FU studies are needed.

PO 66. TARGET LIPID GOALS IN VERY HIGH RISK CARDIOVASCULAR PATIENTS – RESULTS FROM A SECONDARY PREVENTION OUTPATIENT PROGRAM

Ana Raquel Soares, Sofia Picão Eusébio, Sofia Jacinto, José Viegas, Pedro Brás, Tiago Pack, Teresa Ferreira, Luís Almeida Morais, António Mário Santos, Rui Cruz Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Hyperlipidemia, particularly low-density lipoprotein cholesterol (LDL-C), is one of the main therapeutic targets when preventing atherosclerotic cardiovascular disease. Recently, our institution developed an outpatient program to optimize cardiovascular prevention in those with coronary artery disease and high-risk cardiovascular profile, in a shared effort between Cardiology and Internal Medicine.
Objectives: We aim to analyze lipid lowering therapy options and efficacy, comparing with national data.
Methods: Patients followed in a dedicated secondary prevention outpatient program at a single tertiary center, between February 2020 and November 2023, were analyzed. Clinical variables, laboratory data in particular serum lipid levels, and medication were assessed.
Results: From a cohort of 77, 72 (93.5%) very-high risk patients were compliant with follow-up. Upon admission, mean HDL-C was 42 ± 11 mg/dL; LDL-C 92 ± 51 mg/dL; total cholesterol 158 ± 59 mg/dL and triglyceride 144 ± 90 mg/dL. Thirteen (18.1%) and 31 (43.1%) presented serum LDL-C < 55 mg/dL and < 70 mg/dL, respectively. Diabetics (OR 3.054; p = 0.024), CKD patients (OR 5.842, p = 0.006) and those ≥ 65 years-old (OR 3.346, p = 0.016) presented more frequently under 70 mg/dL LDL-C at admission. Women (45.5% vs. 13.1% male, p = 0.010) and CKD patients (37.5% vs. 12.5% no-CKD, p = 0.022) presented more frequently an optimal LDL-C level. At a mean follow-up of 316 ± 171 days, mean HDL-C was 43 ± 9 mg/dL; LDL-C 72 ± 40 mg/dL; total cholesterol 136 ± 48 mg/dL; triglyceride 135 ± 83 mg/dL. Twenty-two (30.6%) and 38 (52.8%) presented serum LDL-C < 55 mg/dL and < 70 mg/dL, respectively. No significant clinical predictors of achieving target lipid goals were found. Of those starting with LDL-C > 70 mg/dL, 38.2% achieved < 70 mg/dL and 26.5% achieved < 55 mg/dL LDL-C. At last appointment, 50.0% and 44.4% were under atorvastatin and rosuvastatin, respectively. Combination with ezetimibe was used in 84.7%. Only one patient was approved for a PCSK9 inhibitor. Two significant adverse events (myalgia) during statin therapy were reported.
Conclusions: Our data supports the benefit of a dedicated multidisciplinary program targeting very high-risk patients. Therapeutic adherence and optimal LDL-C goals were considerably increased comparatively to previously reported real-world nationwide data (LATINO study). More favorable results may not have been achieved due to limited access to advanced lipid-lowering therapy. This notion may enable the development of future specific policies, in order to comply with international guideline LDL-C targets.

PO 67. DO TRIGLYCERIDES IMPACT CARDIOVASCULAR OUTCOMES? A 10-YEAR FOLLOW UP STUDY FROM A PORTUGUESE COHORT

Helena Santos Moreira, Miguel Rocha, Pedro Mangas Palma, Ana Lebreiro, Afonso Rocha, Vítor Araújo, Joana Rodrigues, Paula Dias, Rui André Rodrigues

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Hypertriglyceridemia has long been described as a marker of increased cardiovascular (CV) risk. Even so, the intricate interplay of

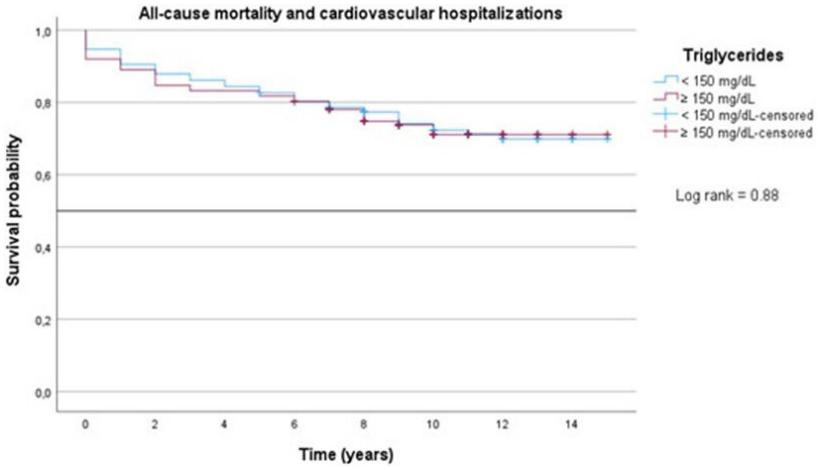

Figure PO 67

triglycerides (TG) and CV events is still a matter of ongoing debate, with recent trials showing controversial data.
Objectives: The aim of this study was to determine whether TG level in very-high risk patients (pts) following acute coronary syndromes (ACS) is associated with major adverse CV outcomes at long-term follow-up (FUP). The primary composite endpoint included all-cause mortality and hospital admissions due to CV events.
Methods: We performed a retrospective analysis focusing on ACS pts who were admitted in our centre between 2008 and 2018. Comprehensive data including information from index event and posterior FUP was collected through medical records review. Pts were subsequently stratified in two groups according to TG level: group A with TG < 150 mg/dL and group B with TG ≥ 150 mg/dL. Statistical analysis was performed in SPSS software.
Results: A total of 591 pts were enrolled with a predominant male representation of 85.3% and a mean age of 55 (± 10) years old. The most frequent diagnosis at admission was myocardial infarction with ST segment elevation (49.6%, 293 pts). Smoking history (77.3%) and hypercholesterolemia (61.6%) were the most prevalent CV risk factors. After the acute phase, all pts underwent cardiac rehabilitation program (CRP), with nutritional support and lipid-lowering therapies intensification, namely high intensity statins. At the end of CRP visits, 23.2% of pts still fell into group B of the cohort, with a median TG level of 190 (IQR 75) mg/dL. The mean FUP time in overall analysis was 10 (± 2) years, with no statistically significant difference in both TG groups (p = 0.351). During FUP, 159 (26.9%) pts reached the primary endpoint, with ACS representing most recurrent events (91 pts, 57%). When comparing groups A and B, the primary outcome was similar (122 vs. 37 pts, p = 0.972) as so the time to its occurrence (Figure), uncovering that pts in group B TG were not by itself significantly associated with increased risk of CV events.
Conclusions: In agreement with the recent trials, our pragmatic study has brought to light the potential lack of long-term clinical impact associated with TG level reduction in pts with coronary artery disease. Further large scale randomized controlled trials are needed to comprehensively assess the significance of TG and their targeted therapies in the realm of secondary CV prevention.

PO 68. EFFICACY OF ORAL HYPOLIPIDEMIC THERAPIES IN A REAL WORLD POPULATION

Inês Caldeira de Araújo[1], Pedro Alves da Silva[2], Ana Margarida Martins[1], Ana Abrantes[1], João Cravo[1], Gisela Afonso[3], Graça Araújo[3], Sandra Miguel Correia[3], José Costa[3], Nelson Cunha[1], Inês Aguiar Ricardo[1], Fausto J. Pinto[2]

[1]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa. Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Hypolipidemic therapies are a cornerstone in the management of patients (pts) after an acute ST segment elevation myocardial infarction (STEMI). The efficacy of such therapies is based on clinical trials where pts are highly selected and closely monitored, perhaps not entirely reflecting a real world scenario.
Objectives: To evaluate efficacy of hypolipidemic therapy in a real world population of young pts with STEMI from an intermediate CV risk country.
Methods: Retrospective, single-center study of consecutive pts, aged below 50 years, who were admitted with STEMI and discharged under hypolipidemic therapy, between 2017 and 2021. Demographics, clinical characteristics, and outcomes were analyzed. Parametric and non-parametric tests were performed as appropriate.
Results: We included 306 pts, 81.7% men, mean age was 43.9 years, 52% had hypertension, 76% dyslipidemia, 20% diabetes, 70% were smokers and 63.8% were overweight. Most pts had one vessel disease, mainly anterior descending coronary artery. Only 26 pts were previously under statin therapy, at discharge, 63% of pts received high intensity statin, 33% moderate intensity and 4% ezetimibe concomitantly. During a mean follow-up (FUP) of 3.8 years, 35% of pts intensified medication, 55% received high intensity statin and 22% combination of high intensity statin and ezetimibe. Patients under high intensity statin presented a significant reduction of cLDL (119 ± 39 vs. 82 ± 33, p < 0.001) with a mean reduction of 30 ± 41% - 20 percentual points inferior to the expected average reduction of 50%. Furthermore, only 26% of pts presented a 50% reduction of baseline cLDL and only 21.5% met the cLDL < 55 mg/dl goal. Similarly, when analyzing pts under high intensity statin plus ezetimibe, a significant cLDL reduction was observed (118.7 ± 33.5 vs. 69.9 ± 49.8, p = 0.004), with an average reduction of 33 ± 48%. Only 23.7% of these pts reached cLDL goal and 27% reduced cLDL above 50%. During FUP 19 pts had a second coronary event, of these 21% were under high intensity statin strategy and 47.4% high intensity statin plus ezetimibe. Statin intolerance was present in only 2 pts and rhabdomyolysis was not reported.
Conclusions: In this real-world population hypolipidemic therapy proved to be safe and effective in lowering cLDL, however average reduction was inferior to the one previously reported. Early up titration and aggressive LDL control with PCSK9i or inclisiran has to be implemented such as lifestyle measures.

PO 69. DIABETES MELLITUS INFLUENCE IN LIPOPROTEIN(A) GENE EXPRESSION AND ASSOCIATION TO CORONARY ARTERY DISEASE

Ana Débora Câmara de Sá[1], M. I. Mendonça[2], F. Sousa[1], E. Henriques[2], S. Freitas[2], M. Rodrigues[2], S. Borges[2], G. Guerra[2], G. Abreu[1], A. Drumond[1], A. C. Sousa[2], R. Palma dos Reis[3]

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Introduction: Lipoprotein(a) [Lp(a)] and type 2 diabetes mellitus are both well-established risk factors for the development of coronary artery disease.

Table 1: LPA rs3798220 T>C and Lp(a) levels association with CAD in non-diabetic and diabetic populations

Non-diabetic (n=2399)					Diabetic (n=810)				
		w/o CAD (n=1282)	CAD (n=1117)	p-value			w/o CAD (n=206)	CAD (n=604)	p-value
LPA rs3798220 (n, %)	TT	1251 (97.6)	1052 (94.2)	p<0.0001	LPA rs3798220 (n, %)	TT	199 (96.6)	580 (96.0)	p=0.710
	TC	31 (2.4)	65 (5.8)			TC	7 (3.4)	24 (4.0)	
Lp(a) concentration (mg/dL)		25.6 ± 30.0	37.2 ± 39.7	p<0.0001	Lp(a) concentration (mg/dL)		23.9 ± 29.2	38.5 ± 41.4	p<0.0001

CAD – Coronary artery disease; Lp(a) - Lipoprotein(a).

Figure PO 69

Lp(a) levels are 75% to 95% heritable and predominately determined by single-nucleotide variants at the LPA gene; rs3798220 is one of the most studied variants and contributes significantly to Lp(a) levels. Whether diabetes could influence the LPA rs3798220 account for Lp(a) levels is unknown.
Objectives: Assess differences in the association between the LPA rs3798220 T>C polymorphism and Lp(a) levels concerning coronary artery disease (CAD) in diabetic and non-diabetic populations.
Methods: A cohort of 3,209 subjects (mean age 59.3 ± 8.9 years, 76.3% male) were selected from the Research Center's dataset. The LPA rs3798220 T>C was genotyped with the TaqMan PCR assay (Applied Biosystems 7300 Real-Time). This genetic variant has a minor allele frequency (MAF) < 2%; hence, the risk homozygous CC is a rare genotype, and we used the heterozygous CT in our analysis. Lp(a) biochemical levels were measured in all participants. Of the 3,209 participants, 810 had diabetes, while 2,399 were non-diabetic. For each group, chi-squared tests were used to determine the association of CAD prevalence by genotype, and t-tests were used to evaluate differences in CAD prevalence by Lp(a) levels.
Results: In non-diabetic subjects, LPA TC was significantly associated with CAD compared with TT ($p < 0.0001$); in the same way, Lp(a) was higher in the CAD population (37.2 ± 39.7) compared to the healthy population (25.6 ± 30.0) ($p < 0.0001$). In diabetic individuals, Lp(a) is higher in the CAD population (38.5 ± 41.4) compared to the population without CAD (23.9 ± 29.2) ($p < 0.0001$); nevertheless, there was no difference in genotype between CAD and non-CAD patients ($p = 0.710$).
Conclusions: In non-diabetic patients, the LPA rs3798220 T > C variant appears to explain elevated Lp(a) levels and their association with CAD. However, in people with diabetes, Lp(a) is elevated in CAD patients besides the fact that no significant genotype differences were displayed. Non-genetic influences like behavioural factors or epigenetic changes may account for high Lp(a) levels in this population.

SEXTA-FEIRA, 19 ABRIL de 2024 | 12:00-13:00

Área de Posters 2 | Sessão de Posters 11 - Miocardite Aguda

PO 70. CAN SYSTEMIC IMMUNE INFLAMMATORY INDEX BEAT 18F-FDG PET-CT IN IDENTIFYING BREAST CANCER PATIENTS WITH INCREASED RISK OF VASCULAR DISEASE?

Rafaela Fernandes, João Borges-Rosa, Rodolfo Silva, Joana Moura Ferreira, Manuel Oliveira-Santos, Mariana Simões, Eric Monteiro, Gracinda Costa, Lino Gonçalves, Maria João Vidigal-Ferreira

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Cancer is a well-known pro-inflammatory state. We hypothesized that systemic inflammation could be proportional to tumour 18[F] Fluorodeoxyglucose (^{18}F-FDG) PET-CT uptake and correlate to vascular inflammatory activity.
Methods: Single-centre retrospective observational study of consecutive women with breast cancer (BC). Patients had to be under 55 years, performed ^{18}F-FDG PET-CT before treatment and between 2018 and 2021. The purpose was to evaluate if systemic immune inflammatory (SII) index could be a non-invasive screening marker in BC patients, helping clinicians to identify patients at higher risk of developing vascular disease. SII index was calculated by the ratio of neutrophil-to-platelet and lymphocyte counts at cancer diagnosis. ^{18}F-FDG vascular uptake was acquired as tissue-to-background ratio (TBR) by measuring maximum standard uptake value (SUV) in the aorta and correcting it to right atrial mean SUV. Tumour uptake was obtained as MTV and total lesion glycolysis (TLG) was the product of MTV and tumour medium SUV. Data was collected through revision of informatized clinical files. Statistical analysis used Kolmogorov-Smirnov test to assess normality, Student t test or non-parametric equivalent tests for continuous variables, correlation and regression models.
Results: 45 women were enrolled. Mean age was 43.3 ± 7.59 years, most had no baseline CVRF (35/81.4%). Mean follow-up time was 47 ± 14.9 months. All-cause mortality was 22.2% (n = 10), with no cardiovascular (CV) mortality or significant CV events. Median SII index was 545.3 ± 818.6 × 10^9 cells/L. SII index was not influenced by baseline CVRF, and it does not correlate with MTV or aortic TBR. A positive correlation was established between aortic mean TBR and MTV ($r = 0.318$, $p = 0.040$) due to abdominal aortic TBR ($r = 0.507$, $p = 0.001$). A linear regression model was applied which translated that for every 1 cm^3 increase in MTV, abdominal aortic TBR increases by 0.001 ($p = 0.047$). This was not influenced by baseline CVRF.
Conclusions: SII index does not correlate with either MTV or aortic TBR. Correlation between MTV and abdominal aortic TBR could indicate a risk for vascular disease. Therefore, SII index lacks the power that ^{18}F-FDG abdominal aortic uptake in PET-CT may have to potentially be a surrogate marker for vascular disease in BC cancer patients.

PO 71. RISK OF ADVERSE CARDIOVASCULAR EVENTS ACROSS THE GLOBAL LONGITUDINAL STRAIN SPECTRUM IN RHEUMATOID ARTHRITIS PATIENTS

André Alexandre[1], David Sá Couto[1], Mariana Brandão[1], Sofia Cabral[1], Tomás Fonseca[1], Rita Quelhas Costa[2], António Marinho[1], Betânia Ferreira[3], João Pedro Ferreira[4], João Silveira[1], Severo Torres[1], Patrícia Rodrigues[1]

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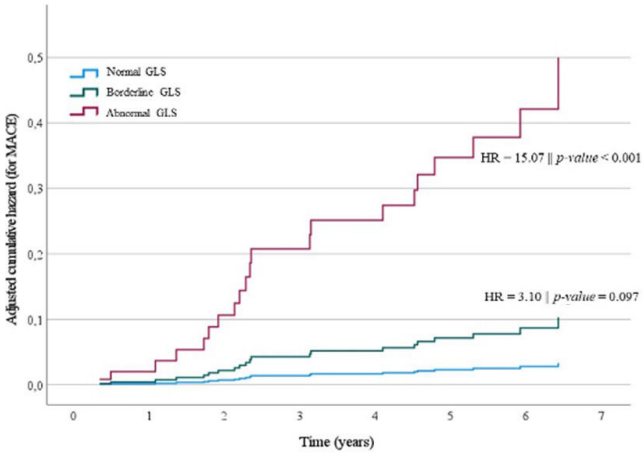
Introduction: Rheumatoid arthritis (RA) is a common chronic systemic inflammatory disease. Individuals with RA face an elevated risk of heart failure (HF), with rates up to twice as high as the general population. HF significantly contributes to adverse cardiovascular outcomes in this population. Many RA patients remain undiagnosed for HF, and there are currently no established recommendations for echocardiographic screening.

Strain analysis has emerged as a promising tool for the early detection of ventricular dysfunction and hence, risk of adverse cardiovascular outcomes.
Objectives: This study aimed to assess the relationship between left ventricle (LV) global longitudinal strain (GLS) and the risk of cardiovascular adverse events in RA patients.
Methods: This was a prospective study of RA patients without known heart disease, who were followed for 7 years. They were categorized into three groups based on their LV GLS: normal GLS (≥ 18%), borderline GLS (-16% to -17.9%), and abnormal GLS (< 16%). Clinical characteristics and outcomes across these groups were compared. The primary endpoint was the occurrence of major adverse cardiovascular events (MACE), as a composite of acute coronary syndrome, heart failure hospitalization, stroke or cardiovascular death. The secondary endpoint included all-cause mortality.
Results: Of 290 RA patients included in the analysis, 73% exhibited normal LV GLS, 15% borderline LV GLS, and 12% abnormal LV GLS. The median age was 58 years and 78% were females. Patients with abnormal LV GLS were older and most likely male. Additionally, they were more likely to have dyslipidemia and chronic kidney disease. Regarding serum biomarkers, NT-proBNP, high-sensitivity-troponin T and C-reactive protein were also higher in this group. A shorter distance in 6-minute-walk-test was noted for the abnormal LV GLS patients. Survival analysis revealed higher risk of MACE in the abnormal and borderline LV GLS groups compared to the normal LV GLS group in the 7-year follow-up period (Log-rank test p < 0.001). No significant differences in all-cause mortality were evidenced. In multivariate Cox regression, RA patients with abnormal LV GLS exhibited a 15 times higher risk of MACE compared to patients with normal LV GLS (Figure), also without significant differences in all-cause mortality.



Conclusions: RA patients with abnormal LV GLS exhibited a significantly higher risk of MACE when compared to patients with normal LV GLS, without significant differences in all-cause mortality.

PO 72. ASSESSING MYOCARDIAL RECOVERY AND VENTRICULAR REMODELING AFTER ACUTE MYOCARDITIS

Rafael Silva Teixeira, Inês Neves, Marta Almeida, Fábio Nunes, Marta Leite, André Lobo, Inês Rodrigues, Antonio Gonçalves, Mariana Brandão, Daniel Caeiro, Nuno Dias Ferreira, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE.

Introduction: Cardiovascular magnetic resonance (CMR) imaging is a standard diagnostic tool for acute myocarditis. However, the natural history of CMR-based tissue markers and their prognostic value for left ventricular recovery remain inadequately characterized. This retrospective study aims to elucidate the progression of CMR-based myocardial injury and chamber remodeling in patients with suspected acute myocarditis.
Methods: We reviewed data from 124 consecutive patients admitted with clinically suspected acute myocarditis between January 2014 and October 2023, who exhibited CMR findings consistent with the Lake-Louise criteria. A subgroup of 49 patients with available follow-up (FUP) CMR assessments underwent quantitative comparisons of left ventricular (LV) chamber volumes, LV ejection fraction (LVEF), and the extent of myocardial late gadolinium enhancement (LGE) at baseline and FUP using predefined criteria. The primary outcomes were defined as an improvement in LVEF of at least 10% and an increase in indexed left ventricular end-diastolic volume of at least 10% at the follow-up assessment.
Results: The mean age of the cohort was 36 ± 13 years, with the majority being male (85%). No clinical differences were noted between patients who underwent FUP CMR and those who did not. The baseline LVEF was 57% with an interquartile range (IQR) of 53 to 63. The median number of LV segments with visually-determined LGE was 6 (IQR: 4 to 8). LVEF significantly improved from 57 ± 9% to 62 ± 9% (mean difference: 5 ± 12%; p < 0.001), after a median FUP of 11 months (IQR: 7 to 18). LV volumes remained unchanged. The extent of LGE decreased from 39 ± 21% to 26 ± 20% (p = 0.0001) but it was not associa. Multivariable logistic regression analysis, used to predict binary LVEF-based outcomes, adjusted the total LGE (%) for baseline LVEF. NTproBNP was the only biomarker associated with LVEF change (Odds Ratio per doubling of NTproBNP: 0.51; 95%CI: 0.26 to 0.96; p = 0.04). Troponin and inflammatory markers did not reach statistical significance.
Conclusions: In patients with clinically suspected acute myocarditis, significant reductions in CMR-based tissue injury markers were observed within the first year of recovery. The study found that baseline levels of NT-proBNP were inversely associated with improvements in LVEF, suggesting its potential as a predictive biomarker for cardiac recovery.

PO 73. DO CARDIAC BIOMARKERS PREDICT SHORT AND LONG-OUTCOMES IN ACUTE MYOCARDITIS? RESULTS OF A LONG-TERM PROSPECTIVE STUDY

Daniel Inácio Cazeiro[1], Miguel Nobre Menezes[2], Ana Beatriz Garcia[1], Ana Margarida Martins[1], Catarina Simões de Oliveira[1], João Silva Marques[2], Beatriz Silva[2], Joana Rigueira[2], Rui Plácido[2], Dulce Brito[2], Ana G. Almeida[2], Fausto J. Pinto[2]

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Introduction: Biomarkers such as high sensitivity cardiac Troponin and NT-proBNP are standard tools for the diagnosis and prognosis of cardiovascular diseases. Although often employed in the context of acute myocarditis, their role in risk stratification of these patients is not well established. The aim of this study was to evaluate whether cardiac biomarkers correlate with acute myocarditis outcomes.
Methods: Prospective observational single-center study including patients admitted with acute myocarditis from 2007 to 2022 and followed at a tertiary cardiology center. Clinical, imaging and laboratory data pertaining to hospital admissions was collected. Patients were followed annually for a minimum of five years with annual clinical, treadmill, Holter and transthoracic echocardiogram. After that period, they were given the choice to continue complete follow-up or be discharged. Patients who were discharged received a telephone follow-up during November 2023. Frequency tables were obtained and data analysis was performed with Chi-square test and Cox regression.
Results: We enrolled 158 patients, with a mean age of 33 ± 13 years and 20 patients were female. The mean follow-up time was 6 ± 4,3 years. The majority presented with chest pain (94.3%), and 1.9% exhibited signs of acute heart failure. Severe complications, including cardiogenic shock or arrhythmic storm, were observed in only 7 (3.6%) of the patients during admission. Patients had a mean left ventricle ejection fraction (LVEF) of 58 ± 7,8% at admission. Twenty two (13,9%) patients presented with a LVEF ≤ 50%. During index admission, the peak troponin T level was 2006 ± 507 ng/L, 4th generation troponin I was 15.2 ± 6.5 ng/L, and NT-proBNP was 933 ± 189 pg/mL. Troponin T or Troponin I levels did not significantly differ between patients who developed severe complications and those who did not, during index admission. During long-term follow-up, there was also no association

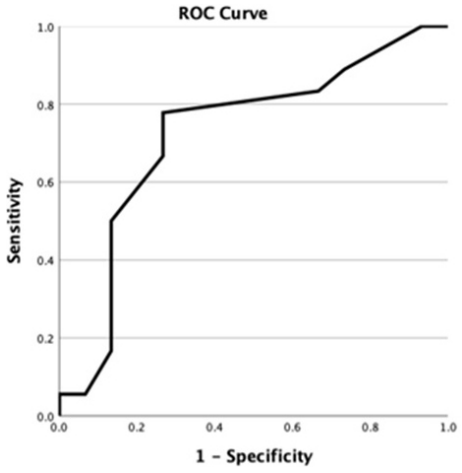
between peak troponin levels and readmissions due cardiovascular causes and all-cause death at follow-up. NT-proBNP levels were higher (4,306 ± 1,617 pg/mL) in patients with severe complications during index admission (p < 0,038), but were not associated with cardiovascular readmissions nor all-cause mortality during follow-up.
Conclusions: Troponin levels were not associated with prognosis at any disease stage in patients acute myocarditis, it did not correlate with complications. NT-proBNP levels were associated with complications during index admission, but had no prognostic value during follow-up.

PO 74. SAMY SCORE: A DISCRIMINATIVE TOOL FOR DISTINGUISHING MYOCARDITIS FROM ACUTE CORONARY SYNDROME

Mariana Duarte Almeida, João Gouveia Fiúza, Gonçalo Ferreira, Vanda Devesa Neto, Luísa Gonçalves, Nuno Craveiro

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio.

Introduction: Distinguishing between myocarditis and acute coronary syndrome (ACS) poses challenges due to overlapping symptoms of chest pain and troponin elevation. The European Society of Cardiology recommends excluding coronary disease (greater or equal to 50% stenosis) in suspected myocarditis, but invasive angiography has a 1-2% complication risk. Cardiac magnetic resonance imaging (CMR) is a safer alternative, indicating myocarditis, and ruling out myocardial infarction. In the absence of accessible CMR, SAMY score, validated for myocarditis vs. ACS, aids physicians in decision-making. It considers age, C-reactive protein, leukocyte count, recent infection (< 4 weeks), hypertension, and hyperlipidemia.
Methods: Retrospective data from June 2021 to May 2023 were collected for chest pain admissions in a Cardiac Intensive Care Unit with elevated troponin levels suggestive of myocardial infarction and absence of significant coronary artery obstruction (MINOCA-diagnosed patients). Demographics, blood labs, CMR details and discharge diagnosis were gathered. SAMY score was calculated for each patient and compared with CMR diagnosis. Independent t-test was used for SAMY score comparison between groups. Logistic regression was used to assess the association between PERFORM and outcomes. The score's capacity to predict myocarditis diagnosis was analyzed using ROC curve and respective area under the curve (AUC).



Results: A cohort of 58 patients, 67.2% being females, was analyzed. The mean age was 65.8 ± 15.9 years old. Of these patients, 56.9% underwent CMR (n = 33), which suggested a myocarditis diagnosis in 54.5% (n = 18) of the cases. Patients with a CMR-diagnosis of myocarditis had a higher SAMY score (3.5 ± 2.7), compared with those without myocarditis (1.4 ± 2.7), with a statistically significant difference between the groups (p = 0.032). This suggests that SAMY score can predict myocarditis diagnosis, yielding an odds ratio of 1.358 (p = 0.042; 95%CI: 1.011-1.824). Receiver Operating Characteristic (ROC) analysis was conducted, resulting in an Area Under the Curve (AUC) value of 0.724 (p = 0.029; 95%CI: 0.540-0.909), meaning a moderate discriminatory capacity.
Conclusions: The SAMY score is a practical tool in the emergency department, using six easily obtainable clinical variables for myocarditis and ACS differentiation. However, low SAMY score does not conclusively negate myocarditis, nor does a higher score definitively establish the diagnosis. Attending physicians should integrate clinical data, considering the SAMY score, while assessing risks and benefits associated with potential percutaneous coronary intervention for each patient. Future refinements in scoring systems hold the promise of tailoring invasive angiography interventions to those individuals who stand to derive the most benefit.

PO 75. WHAT IS THE LONG-TERM PROGNOSIS OF ACUTE MYOCARDITIS? RESULTS OF A LONG-TERM PROSPECTIVE STUDY

Marta Miguez de Freitas Vilela[1], Ana Margarida Martins[1], Ana Beatriz Garcia[1], Catarina Simões de Oliveira[1], Miguel Nobre Menezes[2], João Silva Marques[2], Beatriz Silva[1], Joana Rigueira[2], Rui Plácido[2], Dulce Brito[2], Ana G Almeida[2], Fausto J. Pinto[2]

[1]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: In patients (pts) with acute myocarditis, guidelines advocate annual follow-up (FUP), including ECG and echocardiogram for at least four years. Nevertheless, few contemporary prospective studies have addressed the long-term prognosis of acute myocarditis, rendering the best strategy for the FUP of these pts ill-supported by evidence.
Objectives: To assess long-term outcomes of acute myocarditis pts.
Methods: Prospective observational single-center study including pts admitted with acute myocarditis from 2007 to 2022 and followed at a tertiary cardiology center. Clinical, imaging and laboratory data was collected. Pts were followed for a minimum of five years with annual clinical, treadmill, Holter and transthoracic echocardiogram. After that period, they chose to either continue FUP or be discharged. Pts who were discharged received a telephone FUP during November 2023. Frequency tables were obtained and data analysis was performed with Chi-square test and Cox regression.
Results: We included 158 pts, 12.7% female, with a mean age of 33 ± 13 years. The majority presented with chest pain (94.3%). Seven pts (3.6%) had severe complications, such as cardiogenic shock or arrhythmic storm. Upon admission, 44.3% of pts showed ST-segment elevation and a mean left ventricle ejection fraction (LVEF) of 58 ± 7.8%. Out of the 140 pts who underwent cardiac magnetic resonance imaging (CMR), myocardial edema and late gadolinium enhancement (LGE) were present in 47.8% and 88.5%, respectively. Myocardial biopsy was performed in 9 pts. During a mean FUP time of 6 ± 4.3 years only 13.3% pts were readmitted, 80.9% of them due to recurrent myocarditis. Only 1 pts with LVEF < 50% at admission did not recover at FUP. All other pts maintained LVEF > 50% at FUP. No pts exhibited significant arrythmias on Holter monitoring or during treadmill stress tests. Severe complications during admission did not correlate with reduced LVEF at one year (p = 0.20) or at FUP (p = 0.08). FUP CMR was conducted on 63 pts, with 4.8% of them retaining myocardial edema and 73.1% LGE. Six pts (3.8%) died at FUP. Four pts had experienced fulminant myocarditis at index admission and died due to recurrent fulminant myocarditis. One pts died 6 years after uncomplicated acute myocarditis due to non CV-causes, at age 62. One pts died 2 years after non-complicated acute myocarditis due to trauma. There was a statistically significant association between death and severe complications during index admission (p < 0.001).
Conclusions: Myocarditis affects a young population and the majority of patients exhibit a benign course at long-term FUP. Pts with fulminant myocarditis had a poor prognosis even after index-event survival, often due to recurrent fulminant myocarditis. Thus, early disease stages seem to determine prognosis, prompting consideration of whether pts with milder cases truly require extended FUP.

SEXTA-FEIRA, 19 ABRIL de 2024 | 12:00-13:00

Área de Posters 3 | Sessão de Posters 12 - Cardio-oncologia e Medicina na Gravidez

PO 76. CANCER THERAPY-RELATED CARDIOVASCULAR TOXICITY: WHAT'S THE ACCURACY OF BASELINE CARDIOVASCULAR RISK STRATIFICATION IN THE PREDICTION OF ITS OCCURRENCE?

Beatriz Vargas Andrade, Bruno Castilho, Nuno Cotrim, Catarina Gonçalves Coelho, Rita Veiga, Mariana Saraiva, Sandra Bento, Vítor Martins

Hospital Distrital de Santarém, EPE.

Introduction: Advances in cancer prevention and treatment have significantly improved survival, but cancer therapy-related cardiovascular toxicity (CTR-CVT) is a growing concern. Comprehensive baseline cardiovascular risk (BCVR) assessment is crucial to make appropriate cancer treatment choices and define prevention and surveillance strategies. Validation of the International Cardio-Oncology Society (HFA-ICOS) BCVR assessment tools is not yet robustly established.
Objectives: To evaluate the accuracy of BCVR assessment tools published by HFA-ICOS in predicting the occurrence of CTR-CVT in a Portuguese population.
Methods: Retrospective study of a population submitted to cancer therapy at risk for CV toxicity and followed in CO consultation. BCVR was defined according to HFA-ICOS assessment tool and CTR-CVT according to 2022 ESC CO guidelines. Primary endpoint was evidence of CTR-CVT during follow-up (FU). For patients (pts) treated both with anthracyclines (AC) and HER2-targeted therapies (anti-HER2), the risk was calculated by the proforma for anti-HER2.
Results: We included 75 pts, mean age 62.3 ± 10.6 years, 84% female, with mean FU of 34 months. The majority (80%) had breast cancer, followed by gastrointestinal (6.7%) and prostate (4%) malignancies. A significant proportion had advanced disease (33.3% with metastasis). 28% of pts had ≥ 1 hospital admission and overall mortality rate during FU was 26.7%. Regarding chemotherapy regimens, 44% were exposed to AC, 36% to AC plus anti-HER2 and 8% only to anti-HER2. From the remaining pts, 8% received VEGF-inhibitors and 4% androgen deprivation therapies. 28% had low BCVR, 36% intermediate risk, 24% high risk and 12% very high risk. 30% of the pts were treated with cardioprotective drugs regardless of CTR-CVT, due to comorbidities. 22.7% of pts reached the endpoint, mainly in the form of left ventricular systolic dysfunction. Of these, 58.8% were symptomatic. There was no statistically significant association between BCVR and the development of CTR-CVT, either symptomatic or not. Regarding cardioprotective drugs, we didn't find a statistically significant difference between the use of statins, beta-blockers and angiotensin-converting enzyme inhibitors/angiotensin receptor blockers at baseline and the development of CTR-CVT.
Conclusions: In our population, mainly composed by breast cancer female pts, the BCVR didn't correlate with the development of CTR-CVT. Further studies are needed to clarify if the HFA/ICOS assessment tool should be revised in order to improve risk stratification.

PO 77. CHARACTERIZATION OF LEFT ATRIAL FUNCTION DURING CARDIAC REMODELING AND REVERSE REMODELING INDUCED BY PREGNANCY

Sara Anjos[1], Ana Filipa Ferreira[1], Maria João Azevedo[2], Juliana Morais[1], Francisca Almeida Saraiva[1], Carla Sousa[3], Ana Paula Machado[3], Adelino Leite-Moreira[1], Benedita Sampaio-Maia[4], Carla Ramalho[3], António Sousa Barros[1], Inês Falcão-Pires[1]

[1]Faculdade de Medicina da Universidade do Porto. [2]Academic Center for Dentistry Amsterdam, University of Amsterdam and Vrije Universiteit Amsterdam. [3]Centro Hospitalar Universitário de São João. [4]I3S - Instituto de Investigação e Inovação em Saúde, UP.

Introduction: The hemodynamic overload present in pregnancy leads to cardiovascular remodeling, characterized by enlargement of left atrial (LA) and ventricular (LV) volumes associated with impaired LV relaxation, maintaining preserved systolic function. These changes are reversible during postpartum. Few scientific evidence has been published about LA function yet.
Objectives: To assess the changes in LA function through two-dimensional speckle tracking echocardiography analysis during pregnancy and its recovery up to 1 year after delivery and to determine potential predictors of its progression.
Methods: Prospective cohort study including volunteer pregnant women (healthy, obese and/or hypertensive and/or with gestational diabetes) recruited in two tertiary centers between 2019 and 2021. Women were evaluated by transthoracic echocardiography at the 1st trimester [1T, 10-15 weeks, baseline], 3rd trimester [3T, 30-35 weeks, peak of cardiac remodeling] of pregnancy as well as at the 1st, 6th and 12th month after delivery (during RR). Generalized linear mixed-effects models evaluate the variation of left atrial function assessed by strain and its potential predictors.
Results: We included 130 pregnant women with a median age of 33 [30,36] years, being 39.2% multiparas. Fifty-four (41.5%) have at least one cardiovascular risk factor. A significant enlargement of LA volume (24 [22, 28] mL/m^2 to 29 [25, 33] mL/m^2, $p < 0.001$) and an increasing of E/e' (5.85 [5.08, 6.36] to 6.70 [5.67, 7.82], $p < 0.001$) was observed from 1T to 3T, recovering both as soon as 1 month after delivery (LA volume: 29 [25, 33] mL/m^2 to 24 [20, 27] mL/m^2, $p < 0.001$; E/e': 6.70 [5.67, 7.82] to 5.70 [4.82, 6.47], $p < 0.001$). Regarding LA function, a significant reduction of LA strain was verified from 1T to 3T (35 [31, 41]% to 31 [29, 36]%, $p < 0.001$), recovering 6 months postpartum (31 [29, 36]% to 33 [30, 38]%, $p = 0.035$). Systemic vascular resistance seemed to be an independent predictor of lower LA strain (-3.83 [-6.40, -1.25], $p = 0.004$). The presence of cardiovascular risk factors (-0.80 [-2.28, 0.68], $p = 0.287$), smoking habits (-1.26 [-2.82, 0.30], $p = 0.112$), parity (-0.33 [-1.93, 1.27], $p = 0.684$) and age (-0.11 [-0.29, 0.08], $p = 0.257$) showed a no significant impact in LA strain.
Conclusions: Despite diastolic function and LA volume having recovered 1 month after delivery, the LA function improved significantly only 6 months postpartum. Systemic vascular resistance is an independent predictor of LA strain.

PO 78. IMPACT OF CARDIOVASCULAR RISK FACTORS IN CARDIAC REMODELLING AND REVERSE REMODELLING INDUCED BY PREGNANCY

Ana Filipa Ferreira[1], Maria João Azevedo[2], Juliana Morais[1], Fábio Trindade[1], Francisca Almeida Saraiva[1], Sílvia Oliveira Diaz[1], Carla Sousa[3], Adelino Leite-Moreira[1], Benedita Sampaio-Maia[4], Carla Ramalho[3], António Sousa Barros[1], Inês Falcão-Pires[1]

[1]Faculdade de Medicina da Universidade do Porto. [2]Academic Center for Dentistry Amsterdam, University of Amsterdam and Vrije Universiteit Amsterdam. [3]Centro Hospitalar Universitário de S. João, EPE. [4]I3S - Instituto de Investigação e Inovação em Saúde, UP.

Introduction: Haemodynamic overload during pregnancy induces cardiac remodelling, followed by reverse remodelling (RR) after delivery, characterized by normalization to their pre-pregnancy state. The impact of cardiovascular risk factors (CRF) in cardiac remodelling and RR is variable and remains to be clarified.
Objectives: To characterise cardiac remodelling and RR during pregnancy and postpartum, respectively, and to investigate CRF's impact in these processes.
Methods: This prospective cohort study included volunteer pregnant women (healthy [H group] or obese and/or hypertensive and/or with gestational diabetes [CRF group]) recruited in two tertiary centres between 2019 and 2022. Women were evaluated by transthoracic echocardiography at the 1st trimester [1T, 10-15 weeks, baseline], 3rd trimester [3T, 30-35 weeks, peak of cardiac remodelling] of pregnancy as well as at the 1st, 6th and 12th month after delivery (during RR). Blood samples were collected to quantify plasma troponin I (cTnI), procollagen I COOH-terminal propeptide (PICP), ST2/IL33-receptor, C-reactive protein (CRP) and relaxin-2 by ELISA. Generalised linear mixed-effects models were used to evaluate the extent of RR. Kruskal-Wallis test was used for group comparisons.

Table 1

		Healthy Group			CRF Group		Healthy vs CRF
Variables	N	Median (IQR)	p-value	N	Median (IQR)	p-value	p-value
Left Ventricular Mass Index [g/m2]							
1T	55	61.5 [55.4; 69.8]	<0.001	21	55.0 [52.3; 66.8]	<0.001	
3T	68	79.3 [65.2; 81.3]	Ref	53	74.5 [63.9; 86.2]	Ref	
PP1	69	64.4 [58.9; 73.2]	<0.001	41	67.7 [58.9; 77.0]	<0.001	0.089
PP2	75	60.0 [53.2; 65.1]	<0.001	54	64.1 [53.4; 74.9]	<0.001	
PP3	48	62.3 [55.9; 67.6]	<0.001	31	63.5 [55.1; 71.9]	<0.001	
Relative Wall Thickness							
1T	55	0.31 [0.28; 0.35]	<0.001	21	0.34 [0.32; 0.37]	0.003	
3T	69	0.34 [0.30; 0.37]	Ref	53	0.38 [0.33; 0.42]	Ref	
PP1	69	0.31 [0.27; 0.35]	<0.001	41	0.35 [0.32; 0.39]	0.006	
PP2	76	0.31 [0.28; 0.34]	<0.001	54	0.35 [0.31; 0.39]	<0.001	**<0.001**
PP3	48	0.33 [0.29; 0.36]	0.248	31	0.36 [0.32; 0.37]	0.029	
Left Atrial Volume Index [mL/m2]							
1T	52	24 [22; 28]	<0.001	20	23 [20; 26]	<0.001	
3T	65	28 [25; 33]	Ref	52	29 [25; 33]	Ref	
PP1	63	23 [20; 28]	<0.001	40	25 [21; 27]	<0.001	0.557
PP2	74	22 [19; 25]	<0.001	54	24 [20; 25]	<0.001	
PP3	47	21 [20; 24]	<0.001	31	23 [20; 26]	<0.001	
Left Ventricular Diastolic Volume Index [mL/m2]							
1T	51	48 [43; 51]	<0.001	21	45 [42; 50]	<0.001	
3T	64	55 [50; 59]	Ref	50	52 [47; 58]	Ref	
PP1	64	50 [45; 55]	<0.001	40	48 [45; 52]	0.001	0.355
PP2	74	47 [43; 51]	<0.001	54	46 [42; 50]	<0.001	
PP3	47	47 [43; 51]	<0.001	30	48 [45; 51]	<0.001	
Heart Rate [bpm]							
1T	55	73 [67; 80]	<0.001	20	74 [69; 82]	0.036	
3T	69	77 [70; 84]	Ref	52	81 [73; 86]	Ref	
PP1	69	58 [54; 64]	<0.001	41	64 [59; 68]	<0.001	**0.002**
PP2	76	64 [58; 68]	<0.001	54	66 [63; 72]	<0.001	
PP3	48	65 [59; 70]	<0.001	31	70 [63; 75]	<0.001	
Ejection Fraction (%)							
1T	51	63 [60; 65]	0.226	21	60 [58; 62]	0.645	
3T	65	61 [58; 63]	Ref	51	60 [58; 62]	Ref	
PP1	64	62 [60; 64]	0.346	40	60 [58; 64]	0.480	**0.009**
PP2	75	62 [59; 65]	0.825	54	60 [57; 63]	0.243	
PP3	47	62 [59; 65]	0.767	30	62 [58; 65]	0.209	
Global Longitudinal Strain (%)							
1T	29	-22.9 [-25.5; -19.9]	0.420	10	-21.7 [-22.7; -21.1]	0.863	
3T	44	-21.8 [-25.3; -20.1]	Ref.	36	-21.3 [-22.5; -20.1]	Ref	
PP1	45	-23.0 [-25.1; -20.7]	0.536	28	-21.5 [-23.2; -20.0]	0.560	**0.003**
PP2	61	-23.2 [-25.7; -21.3]	0.190	42	-22.0 [-23.4; -20.6]	0.056	
PP3	41	-23.3 [-25.2; -21.4]	0.088	30	-23.3 [-24.5; -21.1]	0.002	
E/e'							
1T	54	5.8 [5.1; 6.2]	<0.001	21	6.2 [5.0; 7.6]	0.011	
3T	69	6.5 [5.6; 7.6]	Ref	52	7.0 [5.7; 8.2]	Ref	
PP1	69	5.4 [4.7; 6.1]	<0.001	41	6.2 [5.2; 7.3]	0.012	**0.004**
PP2	75	5.7 [5.1; 6.4]	<0.001	53	6.0 [5.4; 6.7]	<0.001	
PP3	48	5.6 [5.0; 6.6]	<0.001	31	6.0 [5.4; 7.0]	0.002	

Figure PO 78

Results: We included 130 pregnant women with a median age of 33 [30,36] years, 41.5% with at least one CRF. As shown in the Table, pregnant women developed cardiac hypertrophy with significant atrial and ventricular enlargement from 1T to 3T in both groups. A significant rise in filling pressures was also documented. During postpartum, a significant regression of cardiac hypertrophy and dilation was verified in the two study groups, accompanied by a significant decrease of E/e' as soon as 1 month postpartum. Systolic function was preserved during follow-up, showing a significant increase of global longitudinal strain only in CRF group 1-year after delivery. These cardiac adaptations induced by pregnancy were accompanied by a significant reduction in plasma cTnI ($p = 0.048$), PICP ($p < 0.001$), ST2/IL33-receptor ($p < 0.001$), CRP ($p < 0.001$) and relaxin-2 ($p < 0.001$) levels from 3T to 6-months postpartum. Compared to the healthy pregnant women, the CRF group showed higher relative wall thickness (RWT) for all time points of the follow-up period, with similar values of indexed cardiac mass and volumes. Pregnant women with CRF revealed higher E/e', contrasting with lower ejection fraction and worse global longitudinal strain.

Conclusions: The significant cardiac reverse remodelling occurred as soon as 1 month after delivery, returning to basal values 6 months postpartum, supported by a significant reduction of plasma biomarkers levels related to myocardial injury, repair, fibrosis, and inflammation. Pregnant women with CRF showed higher RWT, impaired relaxation and subclinical LV dysfunction when compared with healthy women at all time points of the study.

PO 79. ARE STATINS PREVENTIVE OF CARDIOTOXICITY IN BREAST CANCER PATIENTS TREATED WITH ANTHRACYCLINES? A SINGLE CENTER RETROSPECTIVE ANALYSIS

Cátia Oliveira, Luís Santos, Ana Pinho, Pedro Palma, Helena Moreira, Miguel Rocha, André Cabrita, Catarina Marques, Mariana Paiva, Carla Sousa, Filipe Macedo

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Introduction/Objectives: Anthracyclines (AC) have long been proved to be associated with a significant risk of cardiotoxicity (CT). We aimed to evaluate the impact of statins in preventing CT in patients with breast cancer (BC).

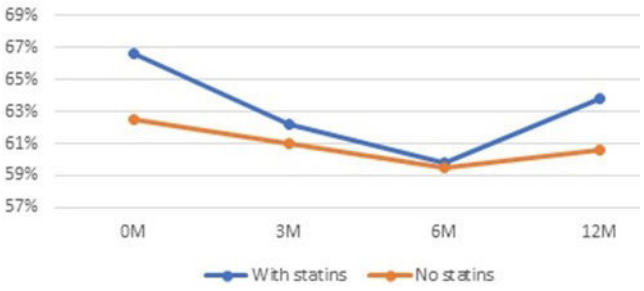
Methods: We retrospectively analyzed a population of BC female patients (pts) treated with AC referred to Cardio-Oncology outpatient clinic from January 2017 to November 2021. All pts had a clinical and echocardiographic evaluation before treatment, at 3, 6 months and 12-months after finishing oncologic treatment. Baseline CT risk was defined according to the HFA-ICOS risk assessment tool. CT was defined as LVEF < 50% and/or GLS variation > 15% during follow-up. As cardioprotective drugs (CPD), we considered beta-blockers and renin-angiotensin-aldosterone system inhibitors.

Results: A total of 271 pts were included with a mean age of 49.9 ± 5.6 years-old. During a median follow-up time of 14.8 ± 5.5 months, 30.9% patients developed CT. The overall prevalence was similar in pts on AC and on AC plus anti-HER2 therapy (AHT) (27.2% vs. 35.9%, $p = 0.131$), but it was more severe in the latter group (moderate/severe 1.8% vs. 7.8%, $p = 0.038$). Overall, 20.4% of the pts were medicated with statins before oncologic treatment. Comparing those medicated with statins with those who weren't, the former group had tendentially less CT (20.4% vs. 33.8%, $p = 0.057$). Regarding severity of dysfunction, there were no differences between the groups. Pts on statins had a significantly higher cardiovascular (CV) risk (≥ 2 CV risk factors: 64.8% vs. 18.35%, $p < 0,001$) and CT risk (moderate to very high risk: 57,4% vs. 31,8%, $p < 0,001$). Regarding CPD, 57,4% of the statins group were also medicated with CPD, compared to 30,8% of the remaining pts ($p < 0.001$). Overall, 48% pts recovered, 63.6% in the statins group compared to 46.5% in the group not medicated ($p = 0.103$). Regarding echocardiographic outcomes, LVEF at 12 months was similar between groups, but the statins group seemed to recover faster (Figure). GLS was similar at 12 months between groups.

Conclusions: Patients exposed to AC had a significant risk of developing CT, which was more severe when concurrently on AHT. Pts medicated with statins had a tendentially less CT, which indicates that statins might

prevent cardiac dysfunction. These results highlight the importance of cardiac monitoring and give some strength to the value of statins as primary prevention, especially considering the results of recent trials.

Figure 1. LVEF evolution in patients who developed cardiotoxitiy



PO 80. MORBIDITY AND MORTALITY OF CARDIO-ONCOLOGY PATIENTS: IS THERE ANY LINK TO BASELINE CARDIOVASCULAR RISK?

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Introduction: Cancer therapy-related cardiovascular toxicity (CTR-CVT) is one of the most significant adverse effects of cancer treatment, responsible for considerable morbidity and mortality. Efforts to lessen the morbidity of CTR-CVT have included better recognition of baseline patient risk factors and improvement of prevention and surveillance strategies.
Objectives: To evaluate the association between baseline cardiovascular risk (BCVR) - calculated by assessment tools published by Heart Failure Association of the European Society of Cardiology in collaboration with the International Cardio-Oncology Society (HFA-ICOS) - with morbidity and mortality in a Portuguese population.
Methods: Retrospective study of a population submitted to cancer therapy classes evaluated for BCVR according to HFA-ICOS assessment tool. CTR-CVT was defined according to 2022 ESC CO guidelines. Primary endpoint was the occurrence of all-cause hospitalization or mortality during follow-up (FU). For patients (pts) treated both with anthracyclines (AC) and HER2-targeted therapies (anti-HER2), the baseline risk was calculated by the proforma for anti-HER2.
Results: We included 75 pts, mean age 62.3 ± 10.6 years, 84% female, with mean FU of 34 months. The majority (80%) had breast cancer, followed by gastrointestinal (6.7%) and prostate (4%) malignancies. A significant proportion had advanced disease (33.3% were metastatic). Regarding chemotherapy regimens, 44% were exposed to AC, 36% to AC plus anti-HER2, and 8% only to anti-HER2. Also, 8% received VEGF inhibitors and 4% androgen deprivation therapies. 28% had low BCVR, 36% intermediate risk, 24% high risk and 12% very high risk. 30% of the patients were treated with cardioprotective drugs prior to CTR-CVT, mostly due to comorbidities. 22.7% of patients had a diagnosis of CTR-CVT, mainly in the form of left ventricular systolic dysfunction. Of these, 58.8% were symptomatic. 36% of patients reached the endpoint: 28% of patients had ≥ 1 hospital admission and 26.7% died during FU. Hospitalization and death were significantly more frequent in men ($p = 0.003$ and $p < 0.001$ respectively) and metastatic cancer pts ($p < 0.01$ and $p < 0.01$ respectively). There was no association between BCVR and all-cause hospitalization, but an association between BCVR and all-cause mortality was found (p 0.016). There was no statistically significant difference between the use of statins, beta-blockers or angiotensin-converting enzyme inhibitors/angiotensin receptor blockers at baseline and the primary endpoint.
Conclusions: In our population, BCVR correlated with mortality during FU, which was more frequent in men and metastatic cancer pts. That reinforces the value of a multidisciplinary approach in these patients, where BCVR prevention strategies can have a major prognostic role.

PO 81. 18F-FDG UPTAKE AS A SURROGATE MARKER OF VASCULAR DISEASE IN BREAST CANCER: THE ROLE OF ROUTINE EXAMS IN CARDIOVASCULAR RISK EVALUATION

Rafaela Fernandes, João Borges-Rosa, Rodolfo Silva, Joana Moura Ferreira, Manuel Oliveira-Santos, Mariana Simões, Eric Monteiro, Gracinda Costa, Lino Gonçalves, Maria João Vidigal-Ferreira

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Inflammation is associated with cancer development and progression. The use of 18[F] Fluorodeoxyglucose (^{18}F-FDG) PET-CT on diagnosis and monitoring of patients with breast cancer (BC) is based on its uptake by high metabolic state cells. We hypothesize that pro-inflammatory state in BC is associated with vascular inflammatory activity, independently of cardiovascular risk factors (CVRF).
Methods: Single-centre retrospective observational study of consecutive women with BC under 55 years. Patients had to perform staging ^{18}F-FDG PET-CT before treatment and between 2018 and 2021. ^{18}F-FDG vascular uptake was obtained as tissue-to-background ratio (TBR) by measuring maximum standard uptake value (SUV) in the aorta and correcting it for blood pool activity. Tumour uptake was obtained as metabolic tumour volume (MTV). Total lesion glycolysis (TLG) was the product of MTV and tumour medium SUV. Data was collected through revision of informatized clinical files. Statistical analysis used T Student test or non-parametric equivalent tests for continuous variables, bivariate correlation and linear regression models.
Results: 45 women were included. Mean age was 43.3 ± 7.59 years, most had no CVRF (35/81.4%). There was a positive correlation between total mean aortic TBR and MTV ($r = 0.318$, p-value = 0.040), and TLG ($r = 0.304$, p-value = 0.050). When analysing each aortic segment, a positive correlation was found between abdominal aortic TBR and MTV ($r = 0.507$, p-value = 0.001), and TLG ($r = 0.479$, p-value = 0.001). Linear regression stated that for every 1cm^3 increase in MTV, abdominal aortic TBR increases by 0.001 (p-value = 0.047), independently of baseline CVRF.
Conclusions: Our study suggests that ^{18}F-FDG uptake in the abdominal aorta might be a promising surrogate marker of vascular inflammatory activity in patients with BC. Larger prospective studies with longer follow-up are necessary to evaluate if vascular inflammation results in CV events in cancer survivors.

SEXTA-FEIRA, 19 ABRIL de 2024 | 14:00-15:00

Área de Posters 1 | Sessão de Posters 13 - Ablação de fibrilhação auricular

PO 82. SAME-DAY DISCHARGE AFTER ATRIAL FIBRILLATION ABLATION: IS IT SAFE?

João Fernandes Pedro[1], Catarina Oliveira[1], Ana Beatriz Garcia[1], Ana Margarida Martins[1], Ana Abrantes[1], Céu Barreiros[1], Nelson Cunha[2], Afonso Nunes Ferreira[2], Gustavo Lima da Silva[2], Nuno Cortez-Dias[2], Fausto J. Pinto[2], João de Sousa[2]

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Introduction: Same-day discharge after atrial fibrillation (AF) ablation represents a paradigm shift in post-procedure care. This approach allows patients (pts) to return home on the same day after their ablation, promoting comfort and reducing hospitalization duration.

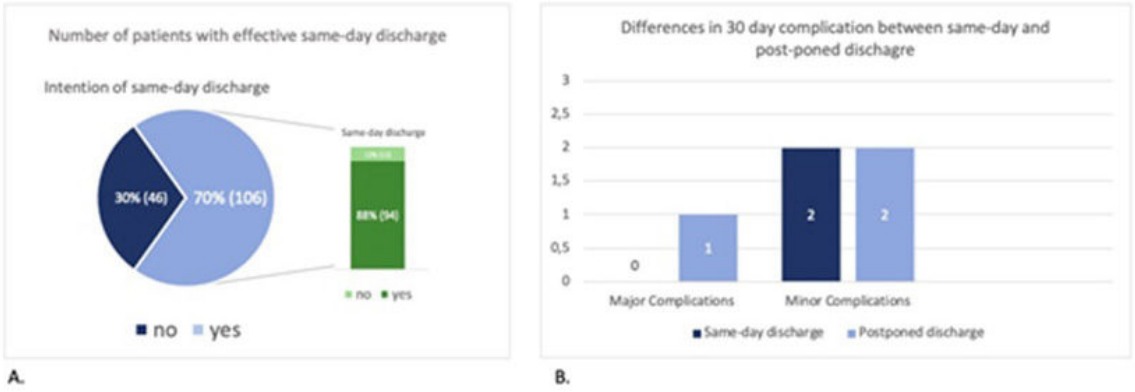

Figure 1: A: Number of patients with effective same-day discharge. B: Differences in 30 day complication between same-day and post-poned discharge

Figure PO 82

Objectives: To evaluate safety of same-day discharge in pts submitted to either pulsed field ablation (PFA) or cryoablation (CA).
Methods: Single-center retrospective study of AF pts submitted to ablation with either PFA or CA from May 2019 to November 2023. Ablation strategy consisted in pulmonary vein isolation complemented with ablation of the cavo-tricuspid isthmus in pts with history of atrial flutter. Pts were considered eligible to same-day discharge if an observation period of at least 6h was assured after the procedure. Safety was defined as 30-day major or minor complications. Chi-square tests were used for the comparison of continuous variables.
Results: We included 152 pts, 60 were submitted to PFA and 92 to CA, 56.6% males, median age 66 ± 14 years, mean CHA2DS2-VASc score 2.45 ± 1.4. Paroxysmal AF, short and long-standing persistent AF were present in 67%, 16% and 15% of pts respectively. Previous stroke was present in 8.7% of pts and 27 pts had history of heart failure. Acute success rate was 99.3%, concomitant cavo-tricuspid isthmus ablation was performed in 20% of pts, and mean procedure time was 107.5 ± 74 min. Same-day discharge was initially considered in 70% of pts, however of these, 12 pts remained under further observation due to acute complications. No major or minor acute complications were reported in pts with same-day discharge. There were no significant differences in 30 days complications between groups. At 30 days no major complications were reported in pts with same-day discharge. One pts in which same-day discharge was halted died 4 days after ablation from hemorrhagic shock. Regarding minor complications at 30 days, 4 minor femoral hematoma were reported, 2 in each group.
Conclusions: In our population, same-day discharge proved to be a safe strategy if careful pts selection is assured. This practice enhances overall pt experience, marking a significant paradigm shift in AF management.

PO 83. PULMONARY VEINS ANATOMY VARIANTS AND CRYOBALLOON ABLATION FOR ATRIAL FIBRILLATION

Ana Rita Teixeira, Pedro Silva Cunha, Ana Lousinha, Guilherme Portugal, Bruno Valente, Madalena Coutinho Cruz, Ana Sofia Delgado, Manuel Brás, Margarida Paulo, Rui Cruz Ferreira, Mário Oliveira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Cryoballoon ablation (CBA) has consistently demonstrated a reduction of atrial fibrillation (AF) recurrence, without increasing the risk of adverse events. Pulmonary veins (PV) frequently exhibit anatomic variants that may make the ablation procedure using the cryoballoon approach difficult. We aimed to evaluate whether PV anatomy variants influence the safety and success of CBA, and the AF recurrence.
Methods: A single-centre retrospective study was conducted, including all patients (pts) with AF who underwent CBA between 2010 and 2020. Pts were stratified according to their PV anatomy into regular (2 left PVs and 2 right PVs) or variant. Arrhythmia recurrence was defined as any episodes of AF, atrial flutter, or atrial tachycardia lasting > 30 seconds, and occurring after 90 days of CBA. Demographic, clinical and procedure related data were retrieved. Groups were compared using Chi-square and Mann-Whitney analysis.
Results: A total of 193 pts were included, 61% males, with a mean age of 57 ± 13 years. Paroxysmal AF was found in 154 pts. Most were treated with an antiarrhythmic drug (65.8%). Regular PV anatomy was identified in 128 patients (66.3%), a left common trunk in 35 patients (18.1%), a right common trunk in 7 patients (3.6%), a right intermediate branch in 17 patients (8.8%) and other mixed variants in 6 patients (3.1%). There were no significant differences in the baseline clinical and echocardiographic characteristics between groups. Procedural complications occurred in 14 pts (7,2%). There was no difference between groups regarding the procedure time or radiation dose. However, atypical PV anatomy seems to be significantly associated with higher complication rates (15.4% vs. 4.7%, p = 0.011). During a follow-up of 16 ± 15 months, AF recurrence was present in 58 pts (30%), and, despite a trend to a higher recurrence rate, it was not significantly different when comparing typical and atypical PV groups (25.8% vs. 38.5%, p = 0.069, respectively). The success rate at one year was 85.5%. At 1-year follow-up, patients with atypical PV anatomy did not exhibit significantly higher rates of AF recurrence (regular 10.9% vs. variant 20%, p = 0.086).
Conclusions: CBA is a safe and successful procedure. The presence of atypical PV anatomy seems to be associated with an increased risk of procedure complications, but it is not correlated with higher rates of AF recurrence at 1 year.

PO 84. EARLY EXPERIENCE WITH A NEW MULTI-ELECTRODE RADIOFREQUENCY BALLOON USING INTEGRATED 3D IMAGING FOR PULMONARY VEIN ISOLATION IN ATRIAL FIBRILLATION

Mário Martins Oliveira[1], Silvia Ribeiro[2], Afonso Ferreira[3], Sofia Jacinto[1], Guilherme Portugal[1], Bruno Valente[1], Pedro Silva Cunha[1], Ana Sofia Delgado[1], Nuno Cortez Dias[3], João Sousa[3], Victor Sanfins[2]

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Introduction: Catheter ablation has become an important treatment for patients with symptomatic atrial fibrillation (AF), with pulmonary vein isolation (PVI) showing more success than medical therapy, and being accepted as the cornerstone of AF ablation. Single-shot technologies have emerged as a common option for AF ablation, providing a more simplified approach targeting only PVI. However, these procedures are fluoroscopy-

based. Recently, a radiofrequency (RF) balloon ablation system (Heliostar™, Biosense Webster), combining single-shot PVI with an integrated 3D electroanatomic mapping system, showed favourable safety and clinical outcomes. This preliminary study aimed to assess the initial experience with this innovative technology regarding feasibility and safety in AF ablation.
Methods: We studied the first consecutive patients (learning curve) with paroxysmal (PAF) or persistent AF undergoing "de novo" PVI, using the Heliostar RF balloon in three centers experienced in cryoballoon AF ablation. Clinical characteristics, procedural data, safety and early AF recurrence were analyzed.
Results: There were 17 patients (59% male, mean age 62 ± 10 years, 65% PAF, left ventricular ejection fraction 30-63%), all medicated with a beta-blocker and/or an anti-arrhythmic drug. Mean left atrium volume was 40 ± 12 ml/m2. Regarding procedural characteristics: general anaesthesia – 70%, deep sedation – 30%, oesophagus thermometer – 100%, pre- and post-PVI 3D mapping – 100%, mean "skin-to-skin" time - 87 ± 35 min, fluoroscopy time - 11 ± 8 min, and RF time - 7.0 ± 0.5 min. The total number of RF applications was 6 ± 1/per patient. In 8 cases (47%), PVI was obtained with a single shot in all veins. Mean time-to-isolation was 9 sec for the left superior pulmonary vein, 10.3 sec for the left inferior, 8 sec for the right superior and 9 sec for the right inferior. In 2 cases, RF application was interrupted due to increased oesophageal temperature (> 2º C). No acute complications were registered during the procedure. During a median 4-month follow-up, 6 patients (35%) exhibited AF episodes, all but one during during the blanking period. No complications were observed during this period.
Conclusions: Our early learning curve experience shows that single-shot PVI using the novelle Heliostar technology appears to be a safe and effective option for AF ablation, with favourable procedural duration, fluoroscopy time and RF time. Longer follow-up and larger experience are necessary to establish the role of this approach in daily clinical practice.

PO 85. CHARACTERIZING RECURRENT ATRIAL FIBRILLATION AFTER CATHETER ABLATION: PATTERNS OF PULMONARY VEIN RECONNECTION AND PREDICTORS OF COMPLETE PULMONARY VEIN ISOLATION

Ana Inês Aguiar Neves, Marta Leite, João Gonçalves Almeida, Mariana Ribeiro Silva, Rafael Teixeira, Fábio Nunes, Marta Catarina Almeida, Paulo Fonseca, Helena Gonçalves, Marco Oliveira, João Primo, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE.

Introduction: Recurrence of atrial fibrillation (AF) after catheter ablation is frequently due to pulmonary vein (PV) reconnection. However, some patients have AF recurrences despite durable pulmonary vein isolation (PVI). We aimed to assess the characteristics of patients referred to reablation procedures, including PV reconnection patterns, and to determine predictors of complete PVI.
Methods: Retrospective, single-centre study including all consecutive patients undergoing PVI for AF between 2017 and 2021. Ablation procedures included conventional radiofrequency ablation (2017), CLOSE-protocol guided radiofrequency ablation (2018-2021) and second-generation cryoballoon. Recurrence was defined by the identification of an atrial arrhythmia (AF or atrial flutter) after a 90-day blanking period.
Results: PVI was performed in 767 patients (36% female, mean age 59 ± 8 years, mean CHA_2DS_2VASc score 1.4 ± 1.2, 77% of patients had paroxysmal AF). Median follow-up was 29 months. Recurrence of atrial arrhythmia was identified in 230 patients (30%). Seventy-nine patients (38% female, mean age 59 ± 8.5 years) underwent a reablation procedure. Patients who underwent reablation were less likely to have chronic kidney disease and to have an evident source for AF on electroanatomical mapping ($p < 0.05$ for all). They were more likely to have moderate to severe valvular disease, left atrial dilatation, concomitant flutter, longer history of AF, previous electrical cardioversions, symptomatic recurrences, and to have antiarrhythmic medication reintroduced ($p < 0.05$ for all). Median time from index ablation to recurrence was 12 months, while the median time to reablation was 16 months. Patients who suffered recurrence between six to twelve months after the ablation procedure were more likely to undergo reablation (41% vs. 26%, p = 0.040). In 60 patients (76%) with evidence of PV reconnection, 28 (41%) had reconnection of the left superior PV, 26 (38%) had reconnection of the left inferior PV, 36 (53%) had reconnection of the right superior PV, and 44 (64%) had reconnection of the right inferior PV. Complete PVI was identified in 19 patients (24%). Patients with complete PVI were more likely to have dyslipidaemia (68% vs. 42%, p = 0.048), chronic kidney disease (21% vs. 3%, p = 0.029), to have undergone CLOSE-protocol guided radiofrequency ablation during the index procedure (94% vs. 55%, p = 0.003), and to have fibrosis on electroanatomical mapping during the index procedure (33% vs. 7%, p = 0.015). PV reconnection was not associated with recurrence within one year after index ablation. On logistic regression, no factors were found to be independently associated with complete PVI.
Conclusions: AF recurrence after catheter ablation is rare, and PV reconnection is commonly detected during reablation procedures. No independent factors were consistently associated with complete PVI.

PO 86. ROLE OF COMBINED PULMONARY VEIN ISOLATION WITH LEFT ATRIAL GANGLIONATED PLEXUS ABLATION IN PAROXYSMAL ATRIAL FIBRILLATION AND SINUS BRADYCARDIA

Sofia B. Paula[1], Margarida Figueiredo[1], Sofia Jacinto[2], Ana Raquel Santos[2], Hélder Santos[2], André Viveiros Monteiro[3], Guilherme Portugal[2], Ana Lousinha[2], Bruno Valente[2], Paulo Osório[2], Pedro Silva Cunha[2], Mário Oliveira[2]

[1]Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo. [2]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [3]Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: Atrial fibrillation (AF) is the most common sustained arrhythmia. It is a complex clinical entity, in which remains difficult to maintain durably of ablation success over time. The role of the autonomic nervous system in the onset and maintenance of AF has been well established, and, therefore, autonomic modulation strategies, including targeting atrial ganglionated plexi (GPs) with catheter ablation, have emerged as new targets. In patients with paroxysmal AF (PAF), particularly in those with long-term sports training, the use of beta-blockers or antiarrhythmic medication is limited by pronounced bradycardia. We aimed to evaluate the safety and efficacy of combining pulmonary vein isolation (PVI) with GP modification in a selected cohort of patients.
Methods: Multicentre retrospective study performed in patients with PAF and moderate sinus bradycardia submitted do PVI and left atrial anatomically-based GP ablation in the same procedure.
Results: We screened 31 patients (age 55.4 (± 13.2) years, 80.6% males). Cardiovascular risk factors were arterial systemic hypertension (35.5%), dyslipidaemia (32.3%), obstructive sleep apnoea (45.2%), and excessive weight (90%). Younger patients (39%) had regular moderate to intensive physical exercise. The mean indexed left atrial volume was 34.72 (± 6.58) ml/m^2 and the CHA_2DS_2VASc score was 0 in 51.6% of the cases. All cases were performed with 3D electroanatomic CARTO (Biosense) or ENSITE (Abbott) systems. Mean RF time was 31.9 (± 13.7) min for PVI and 14.8 (± 5.29) min for the GP. Mean fluoroscopy time was 10.9 (± 7.6) min. All the procedures were successful. There were no major complications. Holter recordings showed a mean heart rate of 64.3 (± 11.5) bpm before ablation, and 67.1 (± 10.9), 71.8 (± 5.1) and 69.6 (± 6.1) bpm, 3, 6 and 12 months after ablation, respectively. The difference between the mean HR before and 3 months after the procedure was not statistically significant (p = 0.2), but after 6 and 12 months there was a statistically significant HR increase (p = 0.004 and p = 0.013, respectively). After 1-year of follow-up, there were 13% of atrial arrhythmias (AF – 9,8%; atrial flutter -3,2%) episodes, with around 85% of the patients maintaining sinus rhythm without antiarrhythmics.
Conclusions: The combination of PVI and left atrial GP modulation is a safe and efficient procedure, allowing a significant increase in heart rate, and suppressing AF in the large majority of patients without the need for antiarrhythmics.

PO 87. ECHOCARDIOGRAPHIC FACTORS IN SHORT TERM RECURRENCE AFTER ATRIAL FIBRILLATION ABLATION

João Mirinha Luz, Luís Brandão, Rita Miranda, Sofia Almeida, Alexandra Briosa, João Grade Santos, Diogo Santos da Cunha, Oliveira Baltazar, Nazar Ilchyshyn, Liliana Brochado, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction and objectives: Rate control in atrial fibrillation (AF) is the mainstay of management with recent studies showing association with lower mortality and better quality of life. Pulmonary vein isolation (PVI) is becoming a cornerstone for rhythm control in AF, with high rates of success. Echocardiography is a paramount exam when assessing patients with AF, so we aimed to evaluate possible factors for short term recurrence after PVI.
Methods: We performed a retrospective analysis of one-hundred and sixty patients subjected to PVI between January 2013 and June 2023. We excluded seventy-three patients from our analysis due to lack of echocardiograpic data. Left atrial area (LAA), volume (LAV), body-surface-area indexed volume (I-LAV), diameter, mitral inflow E and A waves, annular e' velocities, E/e' ratio (global, lateral and septal), deceleration time of E wave and tricuspid regurgitation velocity were assessed, also to evaluate presence of diastolic disfunction. AF recurrence at three (3), six (6) and twelve (12) months after PVI were defined as primary outcomes.
Results: Mean age at time of PVI was 60,05 years-old (SD 10,09). Paroxysmal AF was the main reason for PVI (75%). Presence of diastolic disfunction, LAA, LAV and I-LAV were associated with AF recurrence (Table), with LAA and LAV being the only factors that were consistent at 3, 6 and 12 month-rate recurrences. Using Cox uni- and multivariate analysis, LAA was the only factor independently associated with recurrence at 6 [hazard ratio (HR) 1.27, 95% confidence interval (CI) 1.05-1.54, p = 0.014] and 12 months (HR 1.21, 95%CI 1.04-1.40, p < 0.001), regardless of sex, age and presence of comorbidities. Using ROC analysis, patients with LAA above 25.50 cm^2 [at 3 months: area under the curve (AUC) = 0.771, sensitivity (S) = 83.3%, specificity (E) = 74.3%, p = 0.036; at 6 months: AUC = 0.887, S = 90%, E = 83.9%, p < 0.001] and 22.94 cm^2 (at 12 months: AUC = 0.838, S = 85.7%, E = 73.9%, p < 0.001) were at higher risk of AF recurrence.

	3-MONTH RECURRENCE	6-MONTH RECURRENCE	1-YEAR RECURRENCE
LEFT ATRIUM AREA (CM2)	Yes – 27.30 No – 22.00 (median) **p-value = 0.035**	Yes – 30.35 No – 22.30 (mean) **p-value < 0.001**	Yes – 27.80 No – 20.90 (median) **p-value < 0.001**
LEFT ATRIUM VOLUME (ML)	Yes – 100.50 No – 72.00 (median) **p-value = 0.018**	Yes – 99.00 No – 72.98 (mean) **p-value = 0.004**	Yes – 94.74 No – 72.53 (mean) **p-value = 0.013**
INDEXED LEFT ATRIUM VOLUME (ML/M2)	Yes – 43.60 No – 37.50 (mean) p-value = 0.111	Yes – 51.28 No – 37.87 (mean) **p-value = 0.002**	Yes – 43.10 No – 35.50 (median) **p-value = 0.005**
LEFT ATRIUM DIAMETER (MM)	Yes – 45.50 No – 43.00 (median) p-value = 0.191	Yes – 45.00 No – 42.50 (median) p-value = 0.114	Yes – 43.90 No – 41.00 (median) p-value = 0.075
PRESENCE OF DIASTOLIC DYSFUNCTION (%)	Yes – 80.0 No – 43.1 **p-value = 0.033**	Yes – 71.4 No – 40.0 **p-value = 0.04**	Yes – 66.7 No – 39.4 p-value = 0.063
E/A RATIO	Yes – 1.54 No – 1.08 (median) p-value = 0.113	Yes – 1.35 No – 1.04 (median) p-value = 0.103	Yes – 0.93 No – 1.08 (median) p-value = 0.920
GLOBAL E/E' RATIO	Yes – 10.59 No – 8.60 (median) p-value = 0.221	Yes – 10.59 No – 8.60 (median) p-value = 0.193	Yes – 10.59 No – 8.76 (median) p-value = 0.338

Conclusions: Our analysis showed that various parameters measured by echocardiography could be associated with short term (up to 1 year) AF recurrence. LAA was independently associated with AF recurrence regardless of sex, age, and comorbidities. Patients with overt diastolic dysfunction should be closely followed after PVI, and should probably require more aggressive antiarrhythmic regimens to maintain sinus rhythm after structural rhythm control.

SEXTA-FEIRA, 19 ABRIL de 2024 | 14:00-15:00

Área de Posters 2 | Sessão de Posters 14 - Amiloidose Cardíaca

PO 88. SGLT2 INHIBITORS IN WILD-TYPE TRANSTHYRETIN AMYLOID CARDIOMYOPATHY: WHAT TO EXPECT?

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Hospital da Senhora da Oliveira, EPE-Guimarães.

Introduction: Wild-type transthyretin amyloid cardiomyopathy (wtATTR-CM) is an increasingly recognized etiology of heart failure (HF). Several drug classes used on traditional HF treatment have not shown benefit in patients with wtATTR-CM. Sodium-Glucose Co-Transporter 2 Inhibitors (SGLT2i) are a well-established treatment for HF patients, but its impact specifically in wtATTR-CM patients has not been assessed.
Objectives: To evaluate the efficacy of SGLT2i in wtATTR-CM patients.
Methods: Retrospective, single-center study of patients with diagnosis of wtATTR-CM between 2014 and 2023. The primary endpoint was the composite endpoint of hospitalization due to HF or death from any cause. SGLT2i use and other clinical, laboratory, electrocardiographic and echocardiographic parameters at baseline were compared between patients who achieved vs. did not achieve the primary endpoint. Regression analyses were used to determine the independent predictors of the primary endpoint.
Results: A total of 90 patients were included in the study (72% males; mean age 81 ± 5 years; baseline left ventricular ejection fraction (LVEF) 54% ± 14). Median follow-up was 21 [IQR 13-38] months. In this study, 36 (40%) patients were treated with SGLT2i, 9 achieved the primary endpoint. Patients who achieved vs. did not achieve the primary endpoint did not present significant differences at baseline regarding gender, diabetes, conduction disturbances, and LVEF. SGLT2i use was associated with more patients free of the primary endpoint (75% vs. 37%; p < 0.001), the same association was observed with renin-angiotensin-system-inhibitors (RASI) (70% vs. 34%; p < 0.001), non-use of beta-blockers (64% vs. 42%; p = 0.032), absence of atrial fibrillation (72% vs. 37%; p = 0.001), levels of pro-B-type natriuretic peptide (proBNP) (7,583 ± 8,675 pg/mL vs. 2,549 ± 2,437 pg/mL; p = 0.001), estimated glomerular filtration rate (eGFR) (69.7 ± 25.6 mL/min vs. 57.1 ± 22.7; p = 0.016), interventricular septal thickness (17.5 ± 2.8 mm vs. 19.1 ± 3.9; p = 0.031), and left ventricular mass index (160.4 ± 40.8 g/m^2 vs. 185.7 ± 50.9 g/m^2; p = 0.013). On multivariate regression analysis, SGLT2i use was a protective factor against the occurrence of the primary endpoint (HR 0.124, 95%CI 0.026-0.593, p = 0.009). RASI use was also a protective factor (HR 0.058, 95%CI 0.011-0.293, p < 0.001). Accordingly, patients without SGLT2i had a significantly higher frequency of increase in HF hospitalizations and total mortality (p = 0.022; p < 0.001, respectively), which were reflected in the Kaplan-Meier survival curves (p = 0.046; p < 0.001, respectively).
Conclusions: SGLT2i use showed to be a protective factor against the occurrence of the combined endpoint of HF hospitalization and total mortality in patients with wtATTR-CM, suggesting a therapeutic benefit of these drugs in this disease. However, further randomized prospective studies on this subject are needed.

PO 89. CHARACTERIZATION OF PATIENTS WITH CARDIAC AMYLOIDOSIS DIAGNOSED AT THE TIME OF IDIOPATHIC CARPAL TUNNEL SURGERY

Luís Daniel Santos, Ana Martins, Bárbara Pereira, Micaela Gonçalves, Mariana Vasconcelos, Isabel Fidalgo, Isabel Pinto, Pedro Madureira, Janete Santos, Teresa Faria, Sofia Pimenta, Elisabete Martins

Hospital São João, Porto.

ATTR amyloidosis is a multisystemic disease caused by the accumulation of misfolded proteins in various tissues. Two sites known to be prone to amyloid deposition are the heart and the tenosynovial tissue in the wrist, potentially leading to carpal tunnel syndrome (CTS). Early detection is key to initiating timely treatment. The CarPoS study is an ongoing clinical study which attempts to better understand how the presence of ATTR cardiac amyloidosis is associated with idiopathic CTS. In this study, patients with bilateral and idiopathic CTS enrolled for CTS surgery performed a 99mTc-DPD scintigraphy to detect possible heart involvement. So far, out of the 25 patients included, 4 (16.0%) had high myocardial uptake (Perugini grades 2 or 3) on scintigraphy. Here we present the clinical characteristics of these patients. All four patients were male, and their ages ranged from 76 to 87 years. All had hypertension and dyslipidemia. One patient had a history of myocardial infarction (AMI) and coronary artery bypass surgery. All patients were currently asymptomatic, with no heart failure manifestations. On electrocardiogram (EKG), two patients had a pseudo infarction pattern; the patient with previous AMI had pathological Q waves. All patients presented left ventricular hypertrophy, with maximum myocardial thickness ranging from 13 to 21 mm, with an infiltrative appearance. All but one patient had a dilated left atrium. All patients had a preserved biventricular systolic function; Global Longitudinal Strain was normal in two patients and diminished in the other two. One patient had mild to moderate aortic regurgitation and another had mild to moderate aortic stenosis. On cardiac magnetic resonance, all patients presented late gadolinium enhancement, two of them with a suggestive amyloidosis pattern. Regarding biomarkers, one patient had elevated troponin I. Despite the small number of cases, our study reveals that even at an early stage of CTS, asymptomatic patients can already manifest significant cardiac changes associated with amyloidosis. These results reinforce the importance of cardiac screening in patients with CTS, who are most often evaluated by other medical specialties.

PO 90. THERAPEUTIC VALUE OF SPIRONOLACTONE IN WILD-TYPE TRANSTHYRETIN AMYLOID CARDIOMYOPATHY

Luísa Pinheiro, Mariana Tinoco, Margarida Castro, Tâmara Pereira, Olga Azevedo, António Lourenço

Hospital da Senhora da Oliveira, EPE-Guimarães.

Introduction: Wild-type transthyretin amyloid cardiomyopathy (wtATTR-CM) is an increasingly recognized etiology of heart failure (HF). Recent evidence suggests spironolactone in wtATTR may be beneficial in patients with wtATTR-CM and preserved ejection fraction (EF).
Objectives: To evaluate the therapeutic value of spironolactone in patients with wtATTR-CM.
Methods: Retrospective, single-center study of patients with diagnosis of wtATTR-CM between 2014 and 2023. The primary endpoint was the composite endpoint of hospitalization due to HF or death from any cause. Spironolactone use and other clinical, laboratory, electrocardiographic and echocardiographic parameters at baseline were compared between patients who achieved vs. did not achieve the primary endpoint.
Results: A total of 90 patients were included in the study (72% male; mean age 81 ± 5 years; baseline left ventricular ejection fraction (LVEF) 54% ± 14). Median follow-up was 21 [IQR 13-38] months. In this study, 28 (31%) patients were treated with spironolactone, 14 achieved the primary endpoint. Patients who achieved vs. did not achieve the primary endpoint did not present significant differences at baseline regarding the use of spironolactone, gender, diabetes, conduction disturbances, and LVEF. More patients free of the primary endpoint used Sodium-Glucose Co-Transporter 2 Inhibitors (SGLT2i) (75% vs. 37%; p < 0.001), the same association was observed with renin-angiotensin-system-inhibitors (RASI) (70% vs. 34%; p < 0.001), non-use of beta-blockers (64% vs. 42%; p = 0.032), absence of atrial fibrillation (72% vs. 37%; p = 0.001), levels of pro-B-type natriuretic peptide (proBNP) (7,583 ± 8,675 pg/mL vs. 2,549 ± 2,437 pg/mL; p = 0.001), estimated glomerular filtration rate (eGFR) (69.7 ± 25.6 mL/min vs. 57.1 ± 22.7; p = 0.016), interventricular septal thickness (17.5 ± 2.8 mm vs. 19.1 ± 3.9; p = 0.031), and left ventricular mass index (160.4 ± 40.8 g/m^2 vs. 185.7 ± 50.9 g/m^2; p = 0.013). Accordingly, survival analysis showed no difference in the primary endpoint between the patients with vs. without spironolactone. Spironolactone use was also not associated with the isolated endpoints of total mortality or HF hospitalizations. A sub-analysis contemplating only patients with preserved ejection fraction (EF) at diagnosis (n = 59), showed similar results, where survival analysis demonstrated no difference in the primary endpoint between the patients with vs. without spironolactone, or the isolated endpoints of total mortality or HF hospitalizations.
Conclusions: Despite the limitations of the study, and contrary to recent studies, spironolactone use was not associated with improved outcomes, emphasizing the importance of future investigations to understand the true effect of mineralocorticoid receptor antagonists in wtATTR-CM patients.

PO 91. 12-MONTH EFFECT OF TAFAMIDIS ON THE CLINICAL PROGRESSION OF CARDIAC AMYLOIDOSIS IN A SINGLE CENTRE COHORT

Ricardo da Silva Carvalheiro, Isabel Cardoso, Miguel Antunes, André Ferreira, José Viegas, Pedro Brás, Inês Almeida, Sílvia Aguiar Rosa, Rui Cruz Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Transthyretin cardiac amyloidosis (ATTR – CA) is a progressive disease with significant morbidity and mortality. Tafamidis, a drug that binds to transthyretin, stabilizing the tetramer and avoiding the dissociation and the subsequent formation of amyloid, has shown promise in improving outcomes and slowing disease progression, offering hope for a better prognosis in affected individuals.
Objectives: To assess the 12-month effect of tafamidis on clinical, echocardiographic, laboratory and functional parameters in a population with ATTR-CA.
Methods: We prospectively evaluated a cohort of patients with ATTR-CA treated with tafamidis in a single-centre.
Results: A total of 34 patients (79.4% male) were included, with a mean age of 79 ± 9.1 years at the start of treatment and a median follow up of 15 months. Most patients presented wild-type ATTR-CA, as 9 pts (26.5%) had TTR mutation. At the start of treatment, 73.5% of pts presented NYHA class II symptoms and 23.5% presented NYHA class III. Mean furosemide dose was of 59 ± 39 mg, and 15 pts (44.1%) had previous hospitalizations for heart failure (with a total of 21 hospitalizations). Mean left ventricle ejection fraction (LVEF) was 54 ± 2.5%, GLS -10.9 ± 4.4%, indexed left atrium volume (LAVi) 49 ± 15.4 ml/m^2 and median E/e' ratio 18 (8). Pts walked a mean of 292 ± 103.6 m on the 6-minute walk test (6MWT). Regarding laboratory parameters, mean glomerular filtration rate (GFR) was of 50 ± 22.9 mL/min/1.73, mean high-sensitivity (hs) troponin was 190 ± 85 ng/L and median NTproBNP was 2,031 (3,357) pg/mL. At 12 months follow up, our analysis showed no statistically significant worsening of LVEF (p = 0.542), GLS (p = 0.197), LAVi (p = 0.420) or E/e' ratio (p = 0.300). There was no statistically significant difference on the 6MWT (302 ± 96.7, p = 0.650). We found no statistically significant differences in GFR (p = 0.248) or NTproBNP (p = 0.848) at 12 months, but a significant reduction in troponin (104 ± 77 [p = 0.020]). 4 pts (13.3%) were hospitalized in the 12 months after tafamidis initiation, representing a significant decrease when compared with previous hospitalizations (Z = -2.336, p = 0,019).
Conclusions: In our cohort of patients, there was no statistically significant deterioration of echocardiographic parameters, 6 minutes walking test distance and NT pro BNP after 12 months of treatment with tafamidis. There was a decrease in troponin values and number of hospitalizations after treatment.

Baseline Characteristics	N = 34
Age – yr.	79 ± 9,1
Male gender – n (%)	27 (79.4)
W/ prior HF Hospitalizations – n (%)	15 (44.1)
Arterial Hypertension – n (%)	20 (58.8)
Diabetes Mellitus – n (%)	8 (23.5)
Dyslipidemia – n (%)	17 (50.0)
Coronary Artery Disease – n (%)	6 (17.6)
Atrial fibrillation/flutter – n (%)	21 (61.8)
AV block – n (%)	8 (23.5)
Ventricular Tachycardia – n (%)	3 (8.8)
Pacemaker/ICD – n (%)	7 (20.6)
Carpal tunnel syndrome – n (%)	10 (29.4)
TTR Mutation – n (%)	9 (26.5)

Outcomes	Before Tafamidis	1 year after Tafamidis	p
NYHA Class II – n (%)	25 (73.5)	18 (78.3)	0.848
NYHA Class III – n (%)	8 (23.5)	2 (8.7)	
HF Hospitalizations – n (%)	21 (44.1)	5 (13.3)	**0.003**
Echocardiographic Parameters			
LVEF (%) – mean ± SD	54 ± 3	53 ± 2	0.542
GLS (%) – mean ± SD	-10.9 ± 4.4	-9,8 ± 4.1	0.197
LAVi (ml/m2) – mean ± SD	49 ± 15.4	51 ± 14.9	0.420
E/e' ratio – median (IQR)	18 (8)	18 (10)	0.300
6 Minute Walk Test			
Total meters – mean ± SD	292 ± 104	302 ± 97	0.650
Laboratory Parameters			
GFR (mL/min/1,73) – mean ± SD	50.0 ± 22.9	47,5 ± 17.2	0.248
Hs-Troponin (ng/L) – mean ± SD	190 ± 85	104 ± 77	**0.020**
NTproBNP (pg/mL) – median (IQR)	2031 (3357)	2907 (6664)	0.848

Figure PO 91

PO 92. TRANSCATHETER AORTIC VALVE REPLACEMENT IN PATIENTS WITH COEXISTENT CARDIAC AMYLOIDOSIS

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Introduction: Both the prevalence of aortic stenosis (AS) and cardiac amyloidosis (CA) increase with age, which is why their association is not uncommon in the elderly. Outcomes of concomitant AS-CA undergoing transcatheter aortic valve replacement (TAVR) are unknown. This study sought to investigate outcomes of concomitant AS-CA compared with lone AS undergoing TAVR.
Methods: We prospectively recruited consecutive patients referred for TAVR in a single center. All patients underwent echocardiography, DPD bone scintigraphy, and blood and urine monoclonal immunoglobulin testing before TAVR. Baseline clinical characteristics, laboratory data, and clinical outcomes were analyzed. The primary endpoint was all-cause mortality.
Results: A total of 60 consecutive AS patients undergoing TAVR were recruited: median age was 83 years (IQR 7), and 55% (n = 33) of patients were male. DPD scintigraphy was positive in 6 patients (10%; grade 1: 3 patients; grade 2/3: 3 patients). Light-chain CA (AL) was diagnosed in 1 patient with grade 3. AS-CA patients were older [88 (IQR 7) vs. 83 (IQR 6) years; p = 0.03], more often male (100% vs. 50%; p = 0.03), and more often pacemaker carriers (67% vs. 24%; p = 0.048), compared to AS patients without CA. There were no significant differences in the baseline comorbidities and laboratory data among groups. Regarding prognosis, after a median follow-up of 26 months post-TAVR, 11.7% of patients died. All-cause follow-up mortality did not differ between the AS-CA and lone AS groups (lone AS 9% vs. AS-CA 33%; HR = 3.65, 95%CI 0.71-18.8; p = 0.12). None of the patients died during hospitalization. Rehospitalization for heart failure at 30 days did not differ between groups (lose AS 9.3% vs. AS-CA 16.7%, p = 0.48). Rates of complications post-TAVR, such as stroke, acute kidney injury, vascular complications, and need for a pacemaker also did not differ between groups.
Conclusions: Concomitant severe AS and CA is common in patients undergoing TAVR. AS-CA survival post-TAVR did not differ from lone AS.

PO 93. SGLT2I ON TRANSTHYRETIN AMYLOID CARDIOMYOPATHY: A NEW DRUG FOR AN UNDER-RECOGNIZED CARDIOMYOPATHY

Catarina Gregório[1], Ana Beatriz Garcia[1], Ana Margarida Martins[2], Catarina Simões de Oliveira[2], Miguel Azaredo Raposo[2], Ana Abrantes[2], João Santos Fonseca[2], Daniel Inácio Cazeiro[2], Marta Vilela[2], Fausto J. Pinto[1], Dulce Brito[1], João R. Agostinho[1]

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Introduction: Transthyretin (TTR) stabilizing therapy successfully delays disease progression and reduces heart failure (HF) hospitalizations in patients with cardiac amyloidosis (ATTR-CM). Sodium-glucose cotransporter 2 inhibitors (SGLT2i) have been shown to be beneficial in heart failure (HF) patients independently of ejection fraction. However, patients with ATTR-CM were excluded form SGLT2i trials, some small observation studies have demonstrated that SGLT2i do not negatively affect hemodynamics in ATTR-CM patients and can present a safety profile in this subgroup of patients.
Objectives: To assess SGLT2i tolerability, impact in clinical outcomes and changes in NTproBNP in patients with ATTR-CM.
Methods: Single-center retrospective study of ATTR-CM patients treated with tafamidis 61 mg followed in a tertiary center. Patients who were treated with SGLT2i were compared to a group of patients that were never treated with SGLT2i – control group. Clinical, demographic and echocardiographic parameters, as well as HF admissions, were collected and compared between the two groups.
Results: A total of 65 patients were included, 58 males, median age of 82 ± 7 years, 33 had wild type ATTR and 25 had hereditary ATTR. The SGLT2i group included 43 patients and the control group included 22 patients. The median follow-up (FUP) time was 16 ± 13 months. Despite the lack of statistical differences between groups on NYHA class at baseline or at the end of FUP, there is a tendency to a greater improvement in function class in the SGLT2 group where the 8 patients that were on NYHA III before starting SGLT2i improved to NYHA II or I; in the control group, 1 patient was at NYHA III at baseline and 3 patients were in NYHA III and

	NYHA class (T0)				NYHA class (FUP)			
	1	2	3	4	1	2	3	4
Tafamidis +SGLT2i	6 (14%)	29 (67%)	8 (19%)	0	12 (28%)	31 (72%)	0	0
Tafamidis	6 (27%)	15 (68%)	1 (5%)	0	7 (32%)	11 (50%)	3 (14%)	1 (5%)

Figure PO 93

1 in NYHA IV at FUP (Table). At baseline both groups presented a similar NT-proBNP. However, during follow-up, patients treated with SGLT2i presented a higher level of NT-proBNP (SGLT2i: 1,548 ± 2,564 pg/mL vs. control group: 793 ± 1,375 pg/mL, p = 0.031) and needed diuretic uptitration (p = 0.09). Despite these data suggesting that patients in the SGLT2i group had more severe disease, that may had led to SGLT2 initiation, in this group, only one patient had an admission for HF and in the control group 3 patients experienced at least one HF event leading to hospitalization. All patients were alive at FUP and, in the SGLT2i group only one patient had to stop the drug due to genitourinary recurrent infections.
Conclusions: Treatment with SGLT2i on top of tafamidis appears to be linked to an improvement in NYHA functional class and may have prognostic benefits in patients with ATTR-CM. Larger, well dimensioned studies are necessary to assess the definite impact on SGLT2i on HF admissions in this population.

SEXTA-FEIRA, 19 ABRIL de 2024 | 14:00-15:00

Área de Posters 3 | Sessão de Posters 15 - Patologias diversas em Cardiologia

PO 94. DOES FRAILTY HAVE AN INFLUENCE ON MINOCA?

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Introduction: Frailty is a condition that is associated with aging, the presence of comorbidities and disability. The occurrence of frailty may aggravate the course of illnesses, including myocardial infarction (MI).
Objectives: We aim to build and validate for our population a frailty índex (FI) using the information present in the National Registry of Acute Coronary Syndromes, and then characterize our sample and evaluate the impact of frailty in patients with acute MI with non-obstructive coronary arteries (MINOCA), in terms of management, complications, in-hospital mortality and 1-year mortality in a real-world scenario.
Methods: Multicenter retrospective study, based on the National Registry of Acute Coronary Syndromes, from 1/10/2010-24/10/2022. Only patients (P) hospitalized with a diagnosis of MINOCA (coronary stenosis < 50%) were included. FI was created including twenty-two variables identified from baseline characteristics (Table). Each patient received a frailty score between 0 and 22, and the FI was calculated, ranging between 0-1. P were then divided into two groups: Group A - non-frail (FI ≤ 0.25) – and Group B – frail (FI > 0.25). Kaplan-Meier test was performed to establish the survival rates, CV readmissions and readmissions for other causes, at one year.
Results: A total of 1358 P were analyzed, 1195 in 88.0% in group A and 12.0% in group B. Mean age was 63.9 ± 13.9 years and 62.8% of P were male in group A, while in group B mean age was 68.0 ± 10.8 and 72.4% were men. Group B had more cardiovascular risk factors, such as hypertension (94.5% vs. 63.2% p < 0.001), diabetes (55.2% vs. 22.6% p < 0.001), dyslipidemia (52.2% vs. 89.0% p < 0.001). P in group B also had more previous history of valvular heart disease (12.3% vs. 1.4% p < 0.001), heart failure (27.6% vs. 4.9% p < 0.001), stroke (15.3% vs. 3.9% p < 0.001), and chronic kidney disease (17.8% vs. 1.5% p < 0.001). On admission, group B presented: higher heart rate (HR) -15.7% of P with HR ≥ 100 bpm vs. 9.0% in group A (p = 0.008) -, more atrial fibrillation (14.7% vs. 6.7%, p < 0.001); lower blood pressure (BP) - 5.1% with Bp < 90 mmHg vs. 1.0% (p < 0.001)-, and higher Killip-Kimball classification (24.1% of P in Killip Kimball class > I vs. 8.3%, p < 0.001). There were no differences between the two groups in terms of complications during hospitalization, intrahospital mortality or length of hospital stay. No statistically significant differences were seen regarding mortality rates, readmissions for cardiovascular causes and readmissions for other causes at one-year follow-up, with a Kaplan-Meier test of p = 0.186 (Figure 1A), p = 0.789 (Figure 1B) and p = 0.118 (Figure 1C), respectively.
Conclusions: As expected, frail P have more comorbidities than non-frail P. However, this does not translate into differences in terms of P treatment, number of complications, intrahospital mortality, length of hospital stay or outcomes at 1-year follow-up.

PO 95. PACEMAKER IMPLANTATION IN THE ELDERLY: CAN THE PATIENT'S LEVEL OF DEPENDENCE SELECT THE BEST CANDIDATES FOR DEVICE IMPLANTATION?

Jéni Quintal[1], Raquel Flores[2], Sara Gonçalves[1], Joana Silva Ferreira[1], Rui Antunes Coelho[1], Catarina Pohle[1], Tatiana Duarte[1], Filipe Seixo[1]

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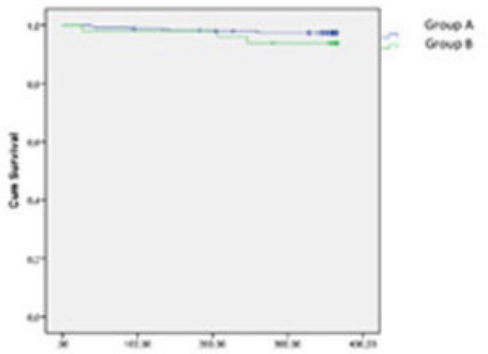
Introduction: Growing life expectancy amplifies cardiovascular disease prevalence, fueling a surge in implantable device use. Ethical and legal questions about the appropriate use, maintenance, and deactivation of such devices in the elderly have been raised but there is scarse data on which patients (pts) would benefit from pacemaker implantation (PMi).
Objectives: To assess the potential of patient dependency level in activities of daily living (ADLs) as a criteria for elderly patient selection for PMi based on clinical outcomes after PMi.
Methods: We performed a single-center retrospective cohort study. Consecutive pts aged = 80 years-old (y) who underwent PMi in our center between 1 November 2021 and 1 November 2023 were enrolled (n = 211). PM generator changes were excluded (n = 65). Two groups were formed according to pts dependency level for ADLs in Barthel score: active pts (gA) and partial/total dependent pts (gB). Baseline characteristics, PMi indication, urgency level, symptoms upon admission, time-lag until PMi, mean in-hospital stay duration, procedural and infectious complications and all-cause mortality were assessed and compared between the groups.
Results: The study included 146 pts, with a mean age of 86 (± 4) y and 53% male prevalence. GA included 111 pts, while gB included 35 (24%) pts. No significant differences between the groups regarding cardiovascular risk factors were seen (Table). Dependent pts were more often submitted to urgent PMi (88.6 vs. 58.6%, p = 0.001). Complete atrioventricular block (AVB) was the main indication for PMi (43.8%), followed by Brady-AFib/Flutter (17.8%), Sinus Node Dysfunction (14.4%), Symptomatic 2nd degree AVB (12.3%) and Tachy-Brady Syndrome (6.2%). AVB was more frequent in gB (62.9 vs. 37.8%, p = 0.009). Regarding symptoms, syncope was the main complaint in gA (31.5%, p = 0.046) and altered state of consciousness the most frequent one in gB (17.1%; p = 0.038). Median in-hospital stay duration was 4 (1-79) days with a median time-lag until PMi of 4 days. The length of in-hospital stay was significantly longer in gB – median 5 (1-79) vs. 4 (1-45) days, p = 0.023. Remarkably, infections during hospitalization were far more common in dependent pts (45.7 vs. 24.3%, p = 0.015), mainly due to nosocomial infections (37.1% gB vs. 18.9% gA, p = 0.026). During a median follow-up time of 10 (0-25) months, 22 deaths were verified. Mortality was higher in gB (31.4% vs. 9.9%; p = 0.002), with a median time until death of 2 (0-9) months and a probability of survival of 68.9% (Figure).
Conclusions: Our study suggests that PM implantation in pts over 80y with dependence leads to longer hospitalizations with infections and provides no additional mortality benefit compared to active pts. Therefore, criteria selection of elderly who would benefit from PMi should take into account not only patient's frailty and comorbidities but also a patient/family engaged decision according to his autonomy.

	Chi-Square	df	Sig.
Log Rank (Mantel-Cox)	1,748	1	,186

Test of equality of survival distributions for the different levels of FragI.

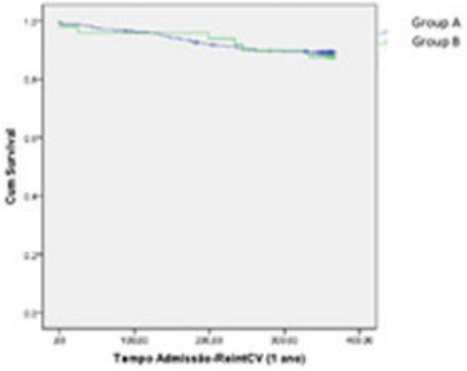


Mortality at 1-year

Figure 1A – Differences between the two groups in terms of mortality rates at 1-year follow-up

	Chi-Square	df	Sig.
Log Rank (Mantel-Cox)	,071	1	,789

Test of equality of survival distributions for the different levels of FragI.

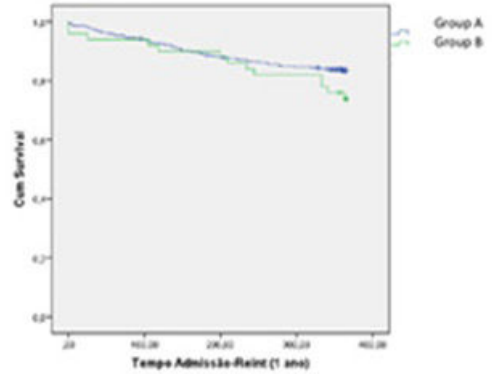


Readmissions for CV causes at 1-year

Figure 1B – Differences between the two groups in terms of readmissions for CV causes at 1-year follow-up

	Chi-Square	df	Sig.
Log Rank (Mantel-Cox)	2,445	1	,118

Test of equality of survival distributions for the different levels of FragI.



Other readmissions at 1-year

Figure 1C – Differences between the two groups in terms of readmissions for other causes at 1-year follow-up

Figure PO 94

Table 1: Features included in the frailty index

Features	Index contribution
BMI <25	Yes=1, No=0
History of AMI	Yes=1, No=0
History of angina	Yes=1, No=0
History of HF	Yes=1, No=0
Previous PCI	Yes=1, No=0
Previous CABG	Yes=1, No=0
Heart valve disease	Yes=1, No=0
History of bleeding	Yes=1, No=0
Pacemaker/ICD	Yes=1, No=0
CKD	Yes=1, No=0
Previous dialysis/renal transplant	Yes=1, No=0
Previous stroke/TIA	Yes=1, No=0
Diabetes Mellitus	Yes=1, No=0
Hypertension	Yes=1, No=0
Dyslipidemia	Yes=1, No=0
Smoker	Active=1, Former/never=0
Peripheral vascular disease	Yes=1, No=0
Dementia	Yes=1, No=0
Chronic lung disease	Yes=1, No=0
Malignancy	Yes=1, No=0
Polymedication (>5 cardiovascular drugs)	Yes=1, No=0
Admission Hb <10g/dL	Yes=1, No=0

Table 1. Baseline and clinical characteristics of individuals according to dependency level

Variables	Overall sample	Dependency level		p-value
	n = 146	A – Active patients n= 111	B – Dependent patients n= 35	
Age, mean (±SD), years	86 (±4.0)	85 (±4.0)	87 (±3.9)	0.077
Male gender, n (%)	78 (53.4)	64 (57.7)	14 (40.0)	0.068
Cardiovascular risk factors				
Hypertension, n (%)	111 (76.0)	84 (75.7)	27 (77.1)	0.859
Diabetes mellitus, n (%)	41 (28.1)	31 (27.9)	10 (28.6)	0.941
Dyslipidemia, n (%)	67 (45.9)	50 (45.0)	17 (48.6)	0.715
Smoking history, n (%)	13 (8.9)	10 (9.0)	3 (8.6)	1.000
Urgency level				
Elective, n (%)	49 (33.6)	45 (40.5)	4 (11.4)	**0.001**
Urgent, n (%)	96 (65.8)	65 (58.6)	31 (88.6)	**0.001**
Indication for PM implantation				
Third-degree AVB, n (%)	64 (43.8)	42 (37.8)	22 (62.9)	**0.009**
Brady-AFib/AFlutter, n (%)	26 (17.8)	20 (18.0)	6 (17.1)	0.906
SND, n (%)	21 (14.4)	18 (16.2)	3 (8.6)	0.261
Symptomatic 2nd degree AVB, n (%)	18 (12.3)	15 (13.5)	3 (8.6)	0.564
Tachy-brady syndrome, n (%)	9 (6.2)	8 (7.2)	1 (2.9)	0.687
Bifascicular block, n (%)	4 (2.7)	4 (3.6)		0.573
Trifascicular block, n (%)	4 (2.7)	4 (3.6)		0.573
Symptoms on admission				
Syncope, n (%)	40 (27.4)	35 (31.5)	5 (14.3)	**0.046**
Fatigue, n (%)	28 (19.2)	23 (20.7)	5 (14.3)	0.399
Dizziness, n (%)	17 (11.6)	13 (11.7)	4 (11.4)	1.000
No symptoms, n (%)	13 (8.9)	12 (10.8)	1 (2.9)	0.191
Altered state of consciousness, n (%)	12 (8.2)	6 (5.4)	6 (17.1)	0.294
Pre-syncope, n (%)	8 (5.5)	5 (4.5)	3 (8.6)	**0.038**
Chest pain, n (%)	8 (5.5)	4 (3.6)	4 (11.4)	0.398
Dyspnea, n (%)	5 (3.4)	3 (2.7)	2 (5.7)	0.094
Fall, n (%)	4 (2.7)	3 (2.7)	1 (2.9)	1.000
Other, n (%)	8 (5.5)	5 (4.5)	3 (8.6)	0.398
Time-lag until PM implantation*, median (Q1-Q3), days	4 (0-30)	4 (1-21)	4 (0-30)	0.991
In-hospital stay duration, median (Q1-Q3), days	4 (1-79)	4 (1-45)	5 (1-79)	**0.023**
Procedural complications	3 (2.1)	3 (2.7)		1.000
Infectious complications	43 (29.5)	27 (24.3)	16 (45.7)	**0.015**
Community-acquired, n (%)	17 (11.6)	9 (8.1)	8 (22.9)	**0.031**
Nosocomial, n (%)	34 (23.3)	21 (18.9)	13 (37.1)	**0.026**
All-cause mortality, n (%)	22 (15.1)	11 (9.9)	11 (31.4)	**0.002**

AFib – Atrial Fibrillation; AFlutter – Atrial Flutter; AVB – Atrioventricular Block; SND – Sinus Node Dysfunction
* only urgent patients considered

Figure PO 95

PO 96. PHASE ANALYSIS OF SINGLE-PHOTON EMISSION COMPUTERIZED TOMOGRAPHY MYOCARDIAL PERFUSION IMAGING (SPECT-MPI): CLOSER TO THE ROOT OF LEFT BUNDLE BRANCH BLOCK CARDIOMYOPATHY?

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Introduction: Increasing relevance has been addressed to the need of a more comprehensive understanding of left ventricular dysynchrony (LVdy). This is particularly true for patients (pts) with idiopathic left bundle branch block (iLBBB) and LBBB-cardiomyopathy (LBBB-CMP). LVdy markers are needed to predict LV dysfunction (LVD) development in iLBBB carriers, as well as to better select LBBB-CMP pts for cardiac resynchronization therapy (CRT). In this context, phase analysis (PA) has emerged as a promising tool, based on single-photon emission computerized tomography myocardial perfusion imaging (SPECT MPI). Our aim was to describe and explore the potential role of PA in a cohort of iLBBB and LBBB-CMP pts.
Methods: Tertiary care centre retrospective study of pts with iLBBB and LBBB-CMP who underwent gated SPECT MPI studies between 2011 to 2017 (n = 30). The exams were performed according to a stress/rest protocol acquiring images with Tc 99m-tetrofosmin. Clinical and echocardiographic parameters were collected. Data was based on pts' review of medical records and SPECT results, namely PA (SyncToolTM software) for LVdy evaluation.
Results: Thirty pts were included: 40% female; mean age at first-ever LBBB report was 59 years-old; 43% and 57% were iLBBB carriers and LBBB-CMP pts, respectively. Median follow-up (FU) time was 8 years. Regarding SPECT data: median LV ejection fraction (LVEF) was 54%; 31% presented LVD; overall,

GATED SPECT MPI PHASE ANALYSIS		TOTAL (n=30)	LBBB		p-value	LVEF ON FU		p-value	CRT ON FU		p-value
			iLBBB (n=13)	LBBB-CMP (n=17)		≥40% (n=18)	<40% (n=12)		No (n=10)	Yes (n=7)	
Stress HSD (degrees)	Mean (SD)	37.6 (16.5)	32.1 (14.3)	37.4 (17.7)	0.4	30 (13.5)	42.6 (17.6)	0.037*	30.3 (14. 4)	47.5 (17.8)	0.04*
Rest HSD (degrees)	Mean (SD)	37.5 (17.8)	33.1 (17)	40.6 (18.3)	0.32	32.5 (15)	44.5 (19.8)	0.1	32.05 (14.77)	49 (20)	0.16
Stress HBD (degrees)	Median (IQR)	94.5 (84.8)	70.5 (40.3)	112 (108.5)	0.3	70 (36.5)	140 (135)	0.043*	93 (85.3)	149 (144)	0.1
Rest HBD (degrees)	Median (IQR)	80.5 (100.5)	66.5 (68.3)	92.5 (131.8)	0.26	72.5 (29.5)	114 (210.5)	0.096	77 (38.5)	149.5 (189.3)	0.08
Stress ES Eccentricity	Median (IQR)	0.46 (0.2)	0.4 (0.06)	0.5 (0.2)	0.004*	0.41 (0.08)	0.52 (0.19)	0.003*	0.46 (0.14)	0.64 (0.15)	0.003*
Rest ES Eccentricity	Median (IQR)	0.46 (0.14)	0.42 (0.07)	0.51 (0.21)	0.036*	0.42 (0.07)	0.58 (0.21)	0.036*	0.46 (0.12)	0.63 (0.07)	0.01*
Stress ED Eccentricity	Median (IQR)	0.56 (0.12)	0.55 (0.04)	0.59 (0.19)	0.059	0.55 (0.06)	0.64 (0.2)	0.027*	0.58 (0.07)	0.73 (0.16)	0.01*
Rest ED Eccentricity	Mean (SD)	0.6 (0.09)	0.54 (0.04)	0.64 (0.89)	0.002*	0.55 (0.04)	0.66 (0.1)	0.006*	0.59 (0.05)	0.71 (0.08)	<0.007*

CRT, cardiac resynchronization therapy; ED, end-diastolic; ES, end-systolic; FU, follow-up; HBD, histogram bandwidth; HSD, histogram standard deviation; iLBBB, idiopathic LBBB; IQR, interquartile range; LBBB, left bundle branch block; LBBB-CMP, LBBB-cardiomyopathy; LVEF, left ventricular ejection fraction; SD, standard deviation; SPECT MPI, single-photon emission computerized tomography myocardial perfusion imaging
** p-value<0.05; Non-parametric or parametric tests were used for statistical analysis*

Figure PO 96

pts presented with fixed small/moderate perfusion defects, mainly in the left anterior descending artery (LAD) territory (median summed stress score (SSS) and summed difference (SDS) of 11 and 1, respectively; median LAD-SSS and LAD-SDS of 8 and 1, respectively). Focusing PA data, histogram standard deviation (HSD) and bandwidth (HBD), as well as end-systolic (ES) and end-diastolic (ED) eccentricity values were evaluated (Table). ES and ED eccentricity values range between 0 and 1; lower values reflect a more normal/elliptical LV shape. All HSD and HBD summary values were higher than the described for presence of significant LVdy (HSD > 15.3°; HBD > 35°). Several PA variables pointed to significantly worse LVdy in LBBB-CMP pts (vs iLBBB carriers), as well as in pts who developed worse LVD during the FU. LVdy was also significantly worse in LBBB-CMP pts who later underwent CRT implantation (Table).
Conclusions: Our SPECT results of a cohort of iLBBB and LBBB-CMP pts showed the typical perfusion defects associated with LBBB, as well as significant LVdy. Interestingly, our findings raise the question about a possible PA role in predicting LVD development in iLBBB pts, as well as identifying pts with higher risk for worse LVD development. It is also worth noting that higher LVdy was present in pts who later needed to implant CRT, suggesting a potential role of PA to further improve current CRT selection criteria. Additional and larger studies are needed to explore PA full potential.

PO 97. FLUID OVERLOAD AT THE BEGINNING OF PERITONEAL DIALYSIS AND ITS ASSOCIATION WITH SERUM NT-PROBNP AND CA-125

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Introduction and objectives: Volume management in patients undergoing peritoneal dialysis (PD) is of major importance, as fluid overload has been associated with cardiovascular (CV) morbidity and mortality. Clinical examination has poor diagnostic accuracy for minor deviations from normohydration, highlighting the need for additional tools. This study aimed to evaluate the association between serum biomarkers (NT-proBNP and CA-125) and volume status, assessed by clinical and bioimpedance analysis, at the initiation of PD.
Methods: This single-center cross-sectional study included patients who started PD between 2017 and 2022. Demographic and clinical data were collected from electronic records. The parameters evaluated included clinical examination, serum biomarkers, bioimpedance, and dialysis adequacy.
Results: A total of 79 patients (64.6% male) with a mean age of 57 ± 15 years were included. All patients started with continuous ambulatory PD, and 51.9% were treated with icodextrin. Hypertension, CV disease, and diabetes were present in 93.7%, 50.6%, and 34.2% of the patients, respectively. The majority were under renin-angiotensin-aldosterone system inhibitors (91.1%), beta-blockers (48.1%) and diuretic therapy (93.7%). According to the baseline peritoneal equilibration test, 77.2% were high or high-average transporters. Mean weekly Kt/V was 2.4 ± 15. Mean residual renal function (RRF) and residual diuresis were 6.7 ± 15 mL/min/1.73 m^2 and 1.6 ± 0.8 L (3.8% anuric), respectively, and 11.4% had ultrafiltration (UF) failure (UF test < 400 mL). Median nPCR was 0.9 g/Kg/day (0.8-1.1). Median NT-proBNP and CA-125 were 1337 pg/mL (541.5-3942.5) and 14.6 U/mL (10.3-27.1), respectively. Bivariate analysis showed a positive association between NT-proBNP and CA-125 levels ($r = 0.27$, $p = 0.024$). Overhydration (OH > 2 L), UF failure, and icodextrin use were associated with significantly higher NT-proBNP levels ($p = 0.022$, $p = 0.018$, and $p = 0.002$, respectively). NT-proBNP was negatively associated with weekly Kt/V ($r = -0.35$; $p = 0.003$), RRF ($r = -0.36$; $p = 0.002$), and nPCR ($r = -0.28$; $p = 0.001$). CA-125 was negatively associated with weekly Kt/V ($r = -0.3$; $p = 0.01$), UF test ($r = -0.25$; $p = 0.03$), and nPCR ($r = -0.23$; $p = 0.04$). Patients treated with icodextrin had higher CA-125 levels ($p = 0.001$). Multivariate analysis showed that each 1 UI/mL increase in CA-125 was associated with a 10% increase in the odds of using icodextrin in patients with CV disease and diabetes (adjusted OR = 1.102; 95%CI 1.036-1.172).
Conclusions: Serum NT-proBNP and CA-125 were associated with worse dialytic efficacy, UF and poorer nutritional status at the beginning of PD. Further multicentric studies are warranted to validate the usefulness of these biomarkers in the early management of hydration in PD patients, thus improving personalized dialysis prescription and nutritional support.

PO 98. ACUTE AORTIC SYNDROMES IN A CENTER WITHOUT ON-SITE CARDIAC SURGERY

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Introduction: Acute aortic syndromes (AAS) are often the first form of presentation of aorta artery diseases, especially classic acute aortic dissection (AAD), with a high mortality rate. Distance to a surgical center and consequently treatment time delay may influence the prognosis of this syndrome.
Objectives: Characterize the population that suffered an AAS at a hospital without on-site cardiac surgery and without an established emergent pathway in AAS. Analyze global mortality and gender differences in in-hospital mortality (primary outcome) and cardiovascular mortality at 1 year. Try to identify independent predictors of in-hospital mortality in AAS patients.
Methods: Retrospective study between 2017/2020, composed of n = 57 patients who suffered AAS. Categorical variables are presented as frequencies and percentages, and continuous variables as means and standard deviations, or medians and interquartile ranges for variables with skewed distribution or a significant Shapiro-Wilk test. Multivariate analysis was performed using logistic regression. P value < 0.05 indicates statistical significance.
Results: A total of 57 patients were identified, with a mean age of 65.9 ± 16.2 years, 80.7% were male. 80.4% had hypertension, 48.2% dyslipidemia,

Table 1 – Baseline clinical characteristics of patients with acute aortic syndromes

			Male (n=46, 80,7%)	Female (n=11, 19,3%)	Total (n=57)	p value
Age	*Mean±SD - years*		64,9±15,9	70,2±17,5	65,9±16,2	0,336
Hypertension		n (%)	36,0 (80,0)	9,00 (81,8)	45,0 (80,4)	0,892
Dyslipidemia		n (%)	21,0 (46,7)	6,00 (54,5)	27,0 (48,2)	0,639
Smoker		n (%)	16,0 (35,6)	2,00 (18,2)	18,0 (32,1)	0,444
Obesity		n (%)	13,0 (28,9)	0,00 (0,00)	13,0 (23,2)	**0,042**
Type 2 diabetes		n (%)	5,00 (11,1)	1,00 (9,10)	6,00 (10,7)	0,846
Aortic valve disease		n (%)	5,00 (11,1)	1,00 (9,10)	6,00 (10,7)	0,846
Aortic dilation		n (%)	24,0 (53,3)	7,00 (63,6)	31,0 (55,4)	0,538
Aortic dilation > 50mm		n (%)	21,0 (46,7)	5,00 (45,5)	26,0 (46,4)	0,942
Ischemic heart disease		n (%)	10,0 (21,7)	0,00 (0,00)	10,0 (17,5)	0,089
Heart failure		n (%)	6,00 (13,3)	3,00 (27,3)	9,00 (16,1)	0,259
Chronic renal disease		n (%)	4,00 (8,90)	1,00 (9,10)	5,00 (8,90)	0,983
Stroke		n (%)	4,00 (8,90)	1,00 (9,10)	5,00 (8,90)	0,983
Disease						
Spontaneous aortic dissection		n (%)	24,0 (52,2)	7,00 (63,6)	31,0 (54,4)	
Penetrating ulcer		n (%)	1,00 (2,20)	0,00 (0,00)	1,00 (1,80)	
Intramural hematoma		n (%)	2,00 (4,30)	1,00 (9,10)	3,00 (5,30)	
Ruptured aneurysm		n (%)	10,0 (21,7)	1,00 (9,10)	11,0 (19,3)	
Complicated aneurysm		n (%)	9,00 (19,6)	2,00 (18,2)	11,0 (19,3)	0,813
Localization						
Ascending thoracic aorta		n (%)	10,0 (21,7)	3,00 (27,3)	13,0 (22,8)	
Descendent thoracic aorta		n (%)	2,00 (4,30)	2,00 (18,2)	4,00 (7,00)	
Ascending + Descendent aorta		n (%)	1,00 (2,20)	0,00 (0,00)	1,00 (1,80)	
Abdominal aorta		n (%)	17,0 (37,0)	1,00 (9,10)	18,0 (31,6)	
Thoracic + abdominal aorta		n (%)	16,0 (34,8)	5,00 (45,5)	21,0 (36,8)	0,264
Type of aortic dissection						
Type A		n (%)	17,0 (70,8)	4,00 (57,1)	21,0 (67,7)	
Type B		n (%)	7,00 (28,0)	3,00 (42,9)	10,0 (31,3)	0,495
Clinical presentation						
Chest pain		n (%)	21,0 (45,7)	7,00 (63,6)	28,0 (49,1)	
Dorsal pain		n (%)	19,0 (41,3)	2,00 (18,2)	21,0 (36,8)	
Syncope		n (%)	1,00 (2,20)	2,00 (18,2)	3,00 (5,30)	
Dispneia		n (%)	4,00 (8,70)	0,00 (0,00)	4,00 (7,00)	
Cardiac arrest		n (%)	1,00 (2,20)	0,00 (0,00)	1,00 (1,80)	0,117
Thoracic CT scan						
≤ 1h		n(%)	16,0 (34,8)	3,00 (27,3)	19,0 (33,3)	
> 1h		n(%)	30,0 (65,2)	8,00 (72,7)	38,0 (66,7)	0,635
Transfer to a reference center		n (%)	34,0 (73,9)	7,00 (63,6)	41,0 (71,9)	0,496
Time until transfer	*Mean±SD - hours*		12,6±16,8	27,6±14,7	15,5±17,3	**<0,001**
Time until transfer ≥ 6h		n (%)	34,0 (73,9)	11,0 (100)	45,0 (78,9)	0,057
Treatment						
Medical		n (%)	15,0 (40,5)	5,00 (83,3)	20,0 (46,5)	
Surgical		n (%)	22,0 (59,5)	1,00 (16,7)	23,0 (53,5)	0,051
Medical treatment						
Beta blocker		n (%)	7,00 (58,3)	1,00 (33,3)	8,00 (53,3)	
Antihypertensive		n (%)	2,00 (16,7)	1,00 (33,3)	3,00 (20,0)	
Beta blocker + Antihypertensive		n (%)	3,00 (25,0)	1,00 (33,3)	4,00 (26,7)	0,713

Figure PO 98

23.2% obesity, 32.1% were smokers and 55.4% had history of aortic dilation. Spontaneous aortic dissection (54.4%) affecting thoracic and abdominal aorta (36.8%) was the more common presentation. The majority of patients were transferred to a reference center (71.9%) with a mean time delay of 15.5 ± 17.3h. Time until transfer ≥ 6h occurred in 78.9% of patients. In-hospital mortality occurred in 41.2%, and 45.6% died after 1 year, without differences between gender. Independent predictors of mortality were time until transfer ≥ 6h (p = 0.048, OR 11.1, 95%CI 1.03 to 120), without transfer to a reference center (p = 0.005, OR 86.7, 95%CI 3.82 to 1969) and smoking status (p = 0.043, OR 5.02, 95%CI 1.05 to 24.1).

Conclusions: We report a pool of patients with a syndrome that affects especially males, with high mortality (almost half in our sample) but without differences between gender. Mortality predictors were patients without transfer to a reference center or with a transfer time delay ≥ 6h. By the exposed, an emergent pathway structured protocol in AAS and the existence of an on-site cardiac surgery team could be a reality.

PO 99. ACUTE STANFORD TYPE A AORTIC DISSECTIONS - THE EXPERIENCE OF AN ULTRA-PERIPHERAL CENTER

Inês Coutinho dos Santos, Fabiana Duarte, Maria Inês Barradas, André Monteiro, Luís Oliveira, Emília Santos, Santos Serena, António Fontes, Carina Machado, Nuno Pelicano, Anabela Tavares, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: Acute aortic dissections (AAD) are catastrophic life-threatening events that require emergent surgical care. We aim to describe the experience of an ultra-peripheral center without cardiac surgery in managing patients with AAD.
Methods: In this retrospective single-center study, we characterize all consecutive patients admitted to our hospital from 2007 to 2023 with diagnosis of Stanford type A AAD.
Results: A total of 20 patients were included (mean age 58.4 ± 14.1 years, 65% male), the majority presenting with DeBakey type I aortic dissection (95%). 75% of patients had overweight/obesity, 60% hypertension, 55% dyslipidemia, 20% known aortopathy (2 Marfan syndrome and 2 aortic aneurysm), and 5% family history of aortic dissection. At presentation, the most frequent signs and symptoms were chest pain (65%), abdominal pain (30%), hypertension (50%) and pericardial effusion (50%). 35% were hemodynamically unstable, with 15% presenting in cardiac arrest and 10% in shock. 25% had at least moderate to severe aortic regurgitation, there was 1 case of cardiac tamponade and 1 of acute myocardial infarction. All patients had chest CT for diagnosis and assessment of AAD's extension: the origin was in the aortic root (85%) or ascending aorta (15%), and it propagated to the aortic arch (25%), descending aorta (15%), abdominal aorta (10%) or iliac arteries or beyond (50%). Involvement of the aortic valve was found in 25%. The dissection reached all supra-aortic trunks in 65% and the renal arteries in 50%. 85% of patients were transferred to central hospitals with cardiac surgery. Average time admission-diagnosis was 12.7 ± 8.1h, admission-transfer 24.0 ± 9.6h and diagnosis-surgery 24.9 ± 26.7h. Cardiac surgery was conducted in 75% and the most frequent procedures were ascending aorta replacement (60%) and Bentall procedure (33%). Of these, 27% needed partial arch replacement and 13% coronary revascularization. Mean hospitalization duration was 14.9 ± 15.4 days. Postoperatively, there was 1 case of significant bleeding requiring surgical exploration. In-hospital mortality was 40% (3 deaths before transfer (15%), 2 before surgery, 1 intraoperatively and 2 postoperatively) and AAD was the cause of death in 87%. Post-surgical complications requiring additional intervention occurred in 33% (mediastinitis in 13%, aortic disease progression in 20%) at 4.0 ± 5.7meses. There were no cases of post-discharge 30-day mortality. At a mean follow-up of 66.1 ± 59.7 months, all-cause mortality occurred in 2 patients, there were no cases of cardiovascular mortality and 50% of patients were still alive.
Conclusions: Management of AAD at ultra-peripheral centers is a challenge. Its success depends on multidisciplinary teamwork to timely diagnose, refer and transfer these patients. Despite geographical limitations, our study suggests that cardiovascular mortality may be similar to other realities.

SEXTA-FEIRA, 19 ABRIL de 2024 | 15:00-16:00

Área de Posters 1 | Sessão de Posters 16 - Arritmologia

PO 100. 24H-HOLTER MONITORING IN MYOTONIC DYSTROPHY TYPE 1 FOLLOW-UP: IS IT REALLY NEEDED?

Sofia Nogueira Fernandes, Mónica Dias, Inês Macedo Conde, Rodrigo Silva, Carla Ferreira, Filipe Silva, Fernando Mané, Ricardo Maré, Jorge Marques, Sérgia Rocha

Hospital de Braga, EPE.

Introduction: Myotonic dystrophy (DM1) is a hereditary neuromuscular disease with frequent cardiac involvement. Cardiac conduction tissue involvement is frequent and is often progressive and asymptomatic. Therefore, regular 24h-Holter monitoring is recommended to identify conduction disturbances and arrhythmias.
Objectives: In this study, we aimed to evaluate the clinical effectiveness of 24h-Holter monitoring to screen for *de novo* conduction disturbances and arrhythmias in patients with genetic diagnosis of DM1 and evaluate its impact in patients' treatment.
Methods: A retrospective single-centre study was conducted including all adult patients with DM1 who received a 24h-Holter from January 2013 to September 2023. Holter findings were compared with the results of cardiac screening based on history taking and electrocardiography. Arrhythmias and/or conduction abnormalities that would have remained otherwise undiagnosed were considered *de novo* findings.
Results: A total of 46 genetically confirmed DM1 patients were included, 52.2% were male, and mean age was 48.0 ± 10.0 years. All patients were asymptomatic. A total of 144 Holter recording was analysed. An average of 3.1 ± 1.7 Holter recordings per patient were performed. Abnormal Holter results were found in 31 (67.4%) patients, including first and second-degree atrioventricular block, atrial fibrillation/flutter and non-sustained ventricular tachycardia. Mean follow-up of 70.8 ± 34.9 months. Abnormalities mainly consisted of conduction disorders (80.6%) such as AV block. Out of the 31 patients with abnormal Holter findings, 23 (74.2%) patients had *de novo* Holter findings, with clinical treatment consequences in five of them.
Conclusions: These results suggest that 24h-Holter monitoring may improve routine cardiac screening in patients with DM1. *De novo* Holter findings added value to disease management in 10.9% of our patients. Cardiac involvement screening in this population is challenging and DM1-specific recommendations are still needed to improve cardiac care of this population.

PO 101. CYBERNETIC GUARDIANS: REVOLUTIONIZING CARDIAC CARE THROUGH REMOTE MONITORING OF IMPLANTABLE DEVICES

Adriana Rei Pacheco, Andreia Fernandes, Pedro Cardoso, Simão Carvalho, Carlos Costa, Tiago Aguiar, Raquel Ferreira

Centro Hospitalar do Baixo Vouga, EPE/Hospital Infante D. Pedro.

Remote Patient Management (RPM) of individuals with implantable cardiac devices allows the clinician to monitor dysrhythmic events in these patients on a daily basis. Our aim was to assess whether the presence of non-sustained ventricular tachycardia (NSVT) alerts, device therapies or a decrease in the percentage of biventricular pacing (%BIV) would be a predictor of hospitalizations or visits to the emergency department (ED), due to cardiovascular events, heart failure or cardiac death. The sample consisted of 100 patients (77% men), aged between 40 and 83, and an average age of 67.98 (SD = 9,792), with Implantable cardioverter-defibrillators (ICDs) or Cardiac Resynchronization Therapy devices (CRT), in remote monitoring program. To assess whether the existence of NSVT or therapies after device enrollment predicted the visit to the emergency department, a Binary logistic regression was performed, with therapies and NSVT as predictors and the visit to the emergency department as the dependent variable. The results of this analysis showed that the existence of therapies was a significant predictor of visits to the emergency department, however the same did not happen with the NSVT. Additionally, even with only one significant predictor, the model had an area under the curve of 0.720. The type of prevention (primary vs. secondary) significantly predicts the existence of therapies, with patients who placed the device for secondary prevention having a higher probability of therapies. In addition to therapies, the drop in the percentage of BIV was also a significant predictor of visit to the emergency department after enrollment, with patients who had a drop in the% of BIV having a greater probability of going to the emergency department. The type of prevention was also a significant predictor of post-enrollment hospitalization, with patients who placed the device for secondary prevention having a higher probability of hospitalization. Device therapy, namely ICD shock, is a significant event in the patient's life, leading him to resort to the

emergency department. Remote monitoring is a useful tool in managing patients with NSVT episodes that would otherwise go unnoticed. Timely therapeutic intervention in patients with alerts due to a decrease in %BIV may prevent visits to the emergency department.

PO 102. PROGNOSTIC IMPACT OF MAXIMAL NOCTURNAL HEART RATE IN HEART FAILURE PATIENTS WITH AN IMPLANTABLE ELECTRONIC DEVICE

Fabiana Silva Duarte, Inês Santos, Maria Inês Barradas, Luís Oliveira, Sónia Oliveira, André Monteiro, Carina Machado, Raquel Dourado, Emília Santos, Nuno Pelicano, Anabela Tavares, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: Resting heart rate and daily heart rate variability are recognized markers of cardiac adverse events in heart failure patients. Nocturnal heart rate is also a relevant marker of cardiac autonomic function, but its prognostic impact on arrhythmic episodes and cardiac adverse events remains a subject of research.
Objectives: Investigate clinical significance of maximal nocturnal heart rate (mnHR) in a cohort of heart failure (HF) patients with remote monitoring electronic devices.
Methods: Single-center retrospective study including 68 HF patients with implantable devices (ICD or CRT-D) over a 5-year follow-up, focusing on life-threatening arrhythmias and HF hospitalizations.
Results: The mean age was 63.12 ± 12.07 years, and 82.3% were males. HF etiology was idiopathic in 25,0% and ischemic in 23,5%. Regarding comorbidities, 36,7% had hypertension, 41,2% had dyslipidemia, 42,6% were overweight or obese and 4,4% had sleep apnea. In relation to implantable electronic devices, 47,0% had an ICD and 52,9% had a CRT-D. In our cohort, mnHR was < 80 beats/minute in 46 (67,6%) patients (Group 1) and ≥ 80 beats/minute in 22 (32,3%) (Group 2). Group 1 patients had more frequent type 2 diabetes (p = 0.025). No other differences in baseline characteristics were detected between groups. Regarding outcomes, 14 (20,6%) patients experienced HF hospitalization during follow-up. Eight (11.8%) patients suffered at least one episode of monomorphic ventricular tachycardia, and 7 (10.3%) experienced ventricular fibrillation. Ventricular fibrillation episodes were more prevalent in Group 2 (HR 1.2, 95%CI 0.66 – 6.1, p = 0.011). The number of hospital admissions was also higher in Group 2 (HR 2, 95%CI 0.52 – 4.1, p = 0.009). Additionally, the number of atrial fibrillation episodes was higher in Group 2 (p = 0.021), but without correlation with embolic events (p = 0.08). No baseline characteristics independently predicted any of the reported adverse events (p = 0.89).
Conclusions: In remotely monitored patients with an implantable electronic device, the occurrence of a higher nocturnal heart rate was correlated with a higher rate of arrhythmic events and HF hospital admissions. Despite the limitations of a reduced number of patients included in our cohort and the lower incidence of adverse events, our analysis supports the impact of higher nocturnal heart rates on cardiac adverse events.

PO 103. PROLONGED ANTIBIOTIC THERAPY BEFORE LEAD EXTRACTION IN CARDIAC IMPLANTABLE ELECTRONIC DEVICE INFECTIONS AS A WAY FOR DIMINISHING THE RATE OF SEPTIC SHOCK

Tatiana Pavlenko[1], Bruno Valente[1], Hélder Santos[1], Ana Lousinha[1], Pedro Cunha[1], Guilherme Portugal[1], Paulo Osorio[1], Maria Bongiorni[2]

[1]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [2]University Hospital of Pisa, Pisa.

Introduction: Device-related infection is one of the most serious complications of cardiac implantable electronic devices (CIED) therapy with substantial clinical and economic burden. Complete CIED removal is recommended for all patients with confirmed CIED infection, but the optimal duration of antibiotic therapy (AT) before lead extraction (LE) is still debatable. The aim of this study was to estimate the impact of prolonged AT before LE regarding the rate of occurrence of septic shock.
Methods: Consecutive cases of LE due to CIED infection at our centre from 2013 to 2022 were reviewed. Our approach assumed the duration of AT for a minimum of 2 weeks for patients with pocket infection (PI), and 4 weeks for endocarditis with the exception of non-response to the AT. LE were performed using the «Pisa technique» in all cases.
Results: From a total of 256 LE, 202 (in 198 patients) were due to CIED infection. PI rate was 62.4%, endocarditis 24.7%, concomitant 12.9%. Systemic infection rate was 43.1%. The mean dwell time of the leads was 92.2 ± 5.0 months. In cases of PI, the mean time of AT before LE was 21.7 ± 1.0 days (n = 124), whereas it was 31.6 ± 1.7 days (n = 76) in cases of endocarditis (p < 0.05). In total, 60.4% of the patients had an identified microbiological agent: 41.6% before LE and an additional 18.8% after LE (Figure 1). The duration of AT after LE was 17.7 ± 0.8 days (n = 121) in cases of PI and 22.7 ± 1.4 days (n = 76) in cases of endocarditis (p < 0.05). Procedural success was achieved in 98.5% and the procedural failure rate was 1.5% (Figure 2). Complication rate was 2.5% for major and 8.9% for minor complications. There was no intraprocedural death. The number of septic shock episodes after LE was 3 cases (1.5%), all in systemic infection (2 with inadequate pre-procedural AT and 1 was non-responsive for AT before and after LE). Device re-implantation was performed in 68.8% with a mean time after LE of 43.7 ± 12 days (n = 138), the majority (57.6%) occurred within 7 days after LE. Total reinfection rate was 2% (4), 1.5% during the first year, all contralateral PI. Survival rate without reinfection was 94.1% and 80.2% at 1- and 12-month follow-up respectively. Mortality rate during the first 30 days was 5%.
Conclusions: Appropriate prolonged AT before LE led to a very low risk of septic shock, low risk of reinfection and similar survival rate amongst patients with CIED-related infections in comparison to the guideline-recommended «extraction without delay» approach.

PO 104. INCIDENTAL NON-INFECTIOUS MASSES ON CARDIAC IMPLANTABLE ELECTRONIC DEVICE LEADS

Sofia Nogueira Fernandes, Mónica Dias, Inês Macedo Conde, Rodrigo Silva, Filipe Silva Vilela, Carla Oliveira Ferreira, Fernando Mané, Jorge Marques, Catarina Vieira, Sérgia Rocha

Hospital de Braga, EPE.

Introduction: Incidentally detected masses on the leads of cardiac implantable electronic devices (CIED) present a clinical challenge, raising suspicion of infectious device endocarditis. Data on the prevalence of such findings are scarce and outdated.
Objectives: Our aim was to determine the prevalence and evaluate predisposing clinical factors of incidental non-infectious CIED lead masses during transoesophageal echocardiography (TOE).
Methods: In this retrospective single-centre study, we analysed all TOE examinations performed in patients with CIED leads between January 2010 and November 2023. Patients with suspected or confirmed infectious endocarditis were excluded from this study. Patients with and without incidental non-infectious lead masses were compared regarding clinical characteristics, anticoagulation, type of CIED, and indication for TOE.
Results: In total, 120 patients with CIED were included. Twenty-five patients (20,8%) presented with non-infectious CIED lead masses. Laboratory findings and cardiovascular risk factors, such as arterial hypertension, dyslipidaemia, diabetes mellitus or chronic kidney disease did not differ significantly between both groups. Moreover, no association was observed between the incidence of CIED lead masses and the type of CIED implanted. Of notice, patients without therapeutic anticoagulation had significantly higher prevalence of CIED lead masses (OR 2.59, 95%CI: 1.04-6.46; p = 0.02), whereas the distribution of CHA2DS2-VASc Scores did not differ significantly between both groups.
Conclusions: Non-infectious CIED lead masses in TOE is a frequent incidental finding. The absence of the oral anticoagulation seems to be the only clinical risk factor for such finding in our study, suggesting possible thrombogenic etiology. The high prevalence of incidental non-infectious lead masses should be kept in mind in order to avoid the overdiagnosis of CIED infection and unnecessary lead extraction.

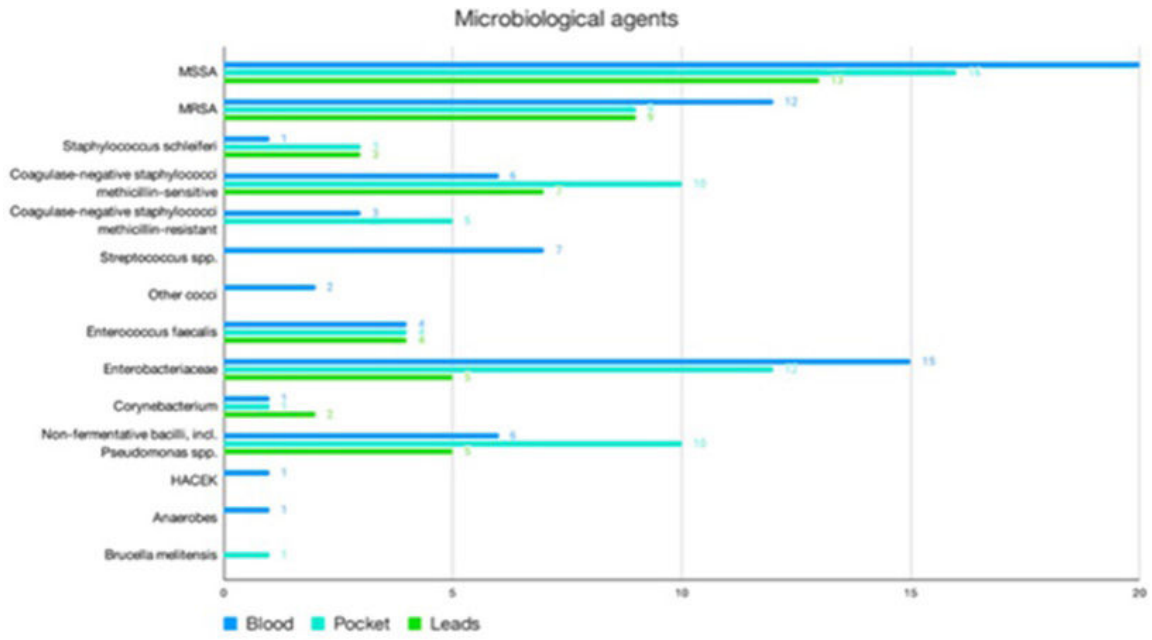


Figure 1.

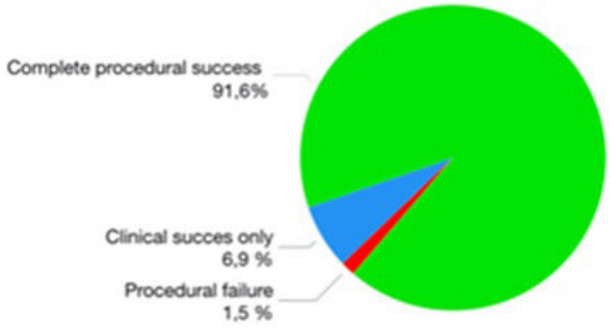


Figure 2.

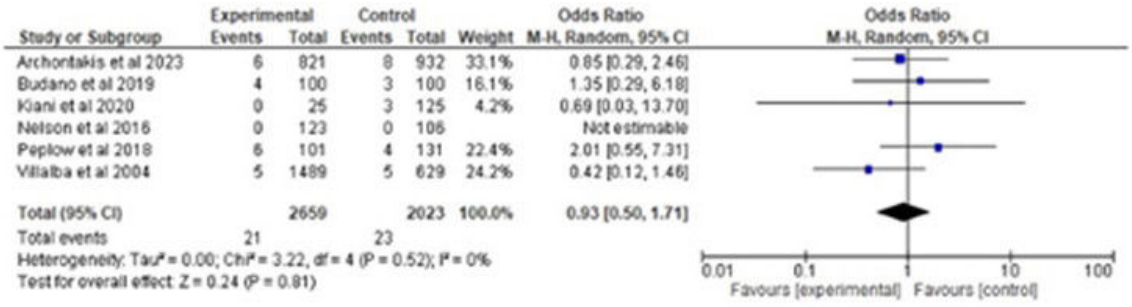
Figure PO 103

PO 105. EARLY DISCHARGE FOLLOWING CARDIAC IMPLANTABLE ELECTRONIC DEVICE IMPLANTATION: A SYSTEMATIC REVIEW AND META-ANALYSIS

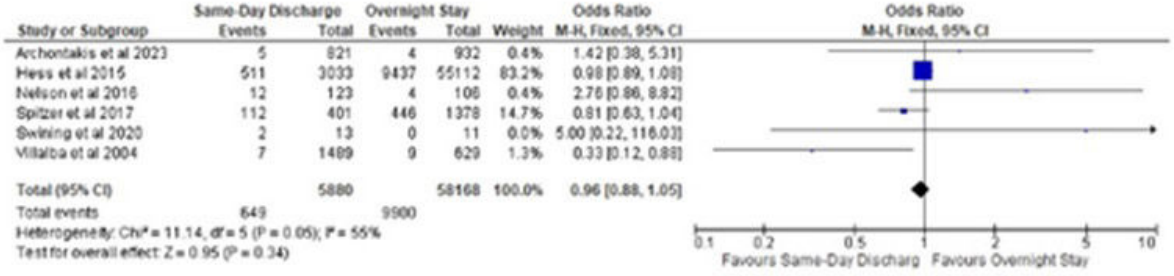
Vanda Devesa Neto[1], Gonçalo Costa[2], António Costa[1], Luís Ferreira Santos[1], Rogério Teixeira[3], Lino Gonçalves[3]

[1]Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio. [2]Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra. [3]Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra.

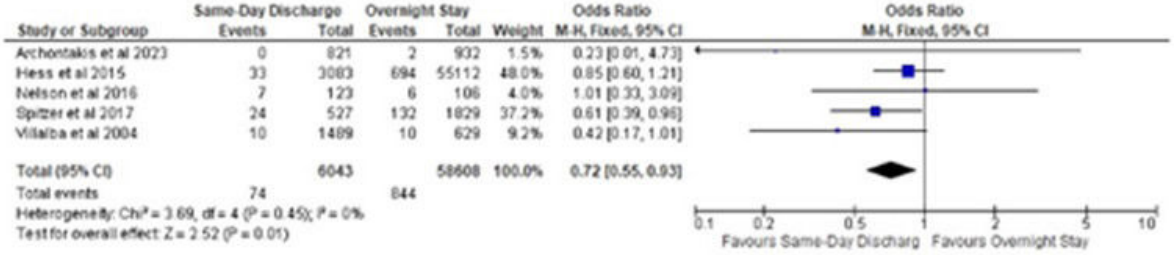
Introduction: As the demand for cardiac implantable electronic device (CIED) placement rises, healthcare expenses, including the post-procedure hospital stay costs, have been on the increase. This systematic review and meta-analysis were undertaken to evaluate the safety and viability of same-day discharge (SDD) following cardiac device implantations.
Methods: We conducted a systematic searched of PubMed, Embase and Cochrane database during November 2023 for studies comparing SDD versus discharge after overnight stay (OS) after CIED. Outcomes included all-cause mortality and complications after the procedure (lead/device dislodgment, re-hospitalization, pneumothorax, local hematoma and wound complications). Data from each study were combined using the random-effects model to calculate pooled odds ratio (OR) with 95% confidence interval (CI).
Results: Eleven studies, including two randomized clinical trials, were incorporated, with a total of 64,646 patients, providing 918 pooled death events (74 in SDD and 844 in OS). The meta-analysis revealed that SDD was associated with a significantly lower risk of all-cause mortality compared to OS (pooled HR 0.72; 95%CI: 0.55-0.93; I^2 = 0%) and no difference was found regarding re-hospitalization (pooled HR 0.96; 95%CI: 0.88-1.05; I^2 55%). SSD was not associated with higher lead/device dislodgement (pooled HR 0.93; 95%CI: 0.50-1.71; I^2 = 0%), pneumothorax (pooler HR 1.04; 95%CI: 0.31-3.50; I^2 0%) and wound complications (pooled HR 0.65; 95%CI 0.22-1.01; I^2 0%). SSD was associated with more episodes of local hematoma (pooled HR 0.31; 95%CI 0.09-1.05; I^2 0%).
Conclusions: Our meta-analysis suggests that SDD is associated with a decreased all-cause mortality compared to OS. Although associated with more episodes of local hematoma, SDD was not significantly different regarding lead/device dislodgment, pneumothorax, re-admissions and wound complications. SDD after CIED appears to be a safe and feasible alternative.



Lead/device dislodgement

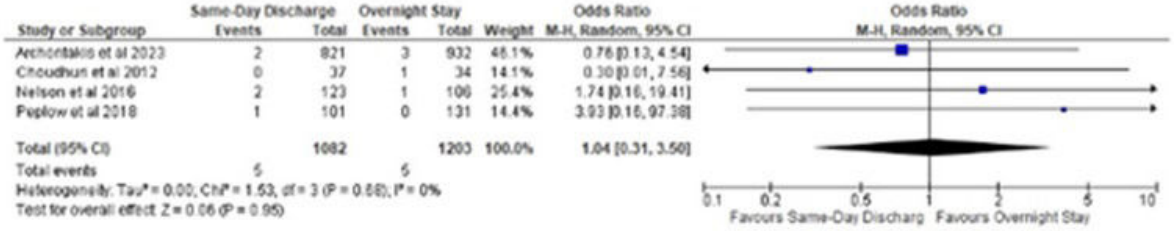


Readmission



All-cause mortality

Hematoma



Pneumothorax

Figure PO 105

SEXTA-FEIRA, 19 ABRIL de 2024 | 15:00-16:00

Área de Posters 2 | Sessão de Posters 17 - Genética em Cardiologia 2

PO 106. OUTCOMES OF FAMILY SCREENING FOR HEREDITARY CARDIAC DISEASES SCREENING – GENETIC CONFIRMED CARDIOMYOPATHY OR ARRHYTHMIA AS MODELS FOR PRIMARY PREVENTION

Susana Lemos Ferreira[1], Mariana Policarpo[2], Mafalda Melo[1], Inês Custódio Santos[1], Silvia Aguiar Rosa[3], Margarida Venâncio[1], Diana Antunes[3]

[1]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de D. Estefânia. [2]Instituto de Ciências Biomédicas Abel Salazar. [3]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Inherited cardiomyopathies and arrhythmias (ICAs) are a clinically heterogeneous and prevalent group of disorders characterised by high genetic and allelic heterogeneity, incomplete penetrance/ age-related penetrance and variable expressivity, and are associated with increased risk of sudden cardiac death and heart failure. Family screening is recommended by cardiovascular societies with clinical evaluation and genetic testing to identify at-risk relatives, and thus improving their surveillance and management.
Objectives: To report the outcome of family screening after identification of a (likely) pathogenic variant in a symptomatic patient with ICAs.
Methods: Retrospective review of genotype, phenotypic and clinical outcome data of 190 relatives of 65 probands with a clinical and molecular diagnosis of ICAs (hypertrophic cardiomyopathy [29], dilated cardiomyopathy [21], arrhythmogenic right ventricular cardiomyopathy [4], Non-compaction cardiomyopathy [3], long QT syndrome [5] and Brugarda syndrome [2]) referred to our Genetics Department (2016-2022) in a Portuguese tertiary hospital.
Results: After genetic counselling 190 at-risk relatives underwent a genetic testing and overall, 111/190 (58%) were genotype-positive (G+) and 79/190 were genotype-negative (G-) leading to discharge from clinical follow-up. 168/190 (88%) relatives were phenotype-negative (P-) at the first appointment and 22/190 (12%) were phenotype-positive (P+). After clinical evaluation, 18/168 (11%) of the previous P- received a clinical diagnosis consistent with G+ status, and 3/168 (2%) had other traits associated with ICAs. 89/168 (53%) of P- were G+ and 22/22 (100%) P+ were also G+. During follow-up, 7/111 (6%) received an implantable cardioverter defibrillator in primary prevention and 4/111 (4%) in secondary prevention, 1/111 (1%) required cardiac resynchronization therapy, 1/111 underwent septal reduction therapy, 1/111 (1%) cardiac transplantation. 19/111 (17%) started medical therapy, and 58/111 (52%) remained asymptomatic and maintained routine follow-up. Lastly, 2/111 of the G+P+ relatives died due to complications associated with their ICAs diagnosis.
Conclusions: Family screening allows an early identification of at-risk relatives and discharge of family members G-P-. Timely management of G+ relatives in an earlier disease stage might led to better clinical outcomes. Longer-term follow-up is necessary to better understand clinical outcomes, particularly of the G+P- patients.

PO 107. DIFFERENT VARIANTS, SAME GENE: SIMILAR OR DIFFERENT EVOLUTIONARY BEHAVIOR THROUGHOUT LIFE?

Catarina Gregório[1], Ana Beatriz Garcia[1], Marta Vilela[2], Daniel Cazeiro[2], Oana Moldovan[3], Hugo Madeira[4], Fausto J. Pinto[1], Dulce Brito[1]

[1] Department of Cardiology, Centro Hospital Universitário Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Cardiology, Centro Hospital Universitário Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa. [3] Department of Genetics, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa. [4] CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Pathogenic mutations in the *MYH7* gene are widely recognized as a cause of hypertrophic cardiomyopathy (HCM), demonstrating a spectrum of effect sizes, as evident in different penetrance and regarding the diverse phenotypic expression of HCM. Despite the knowledge about the different causal genes, the relationship between individual variants and phenotypes is incomplete.

Variant	Age at diagnosis (years)	Afib-FUP	PMK-FUP	FUP time (years)
A) p.Ile263Thr	24±2	1	1	19±3
B) p.Ala797Thr	38±7	2	1	6±2
C) p.Glu1356Lys	44±5	1	2	5±1
D) p.Arg663His	46±5	3	3	15±4

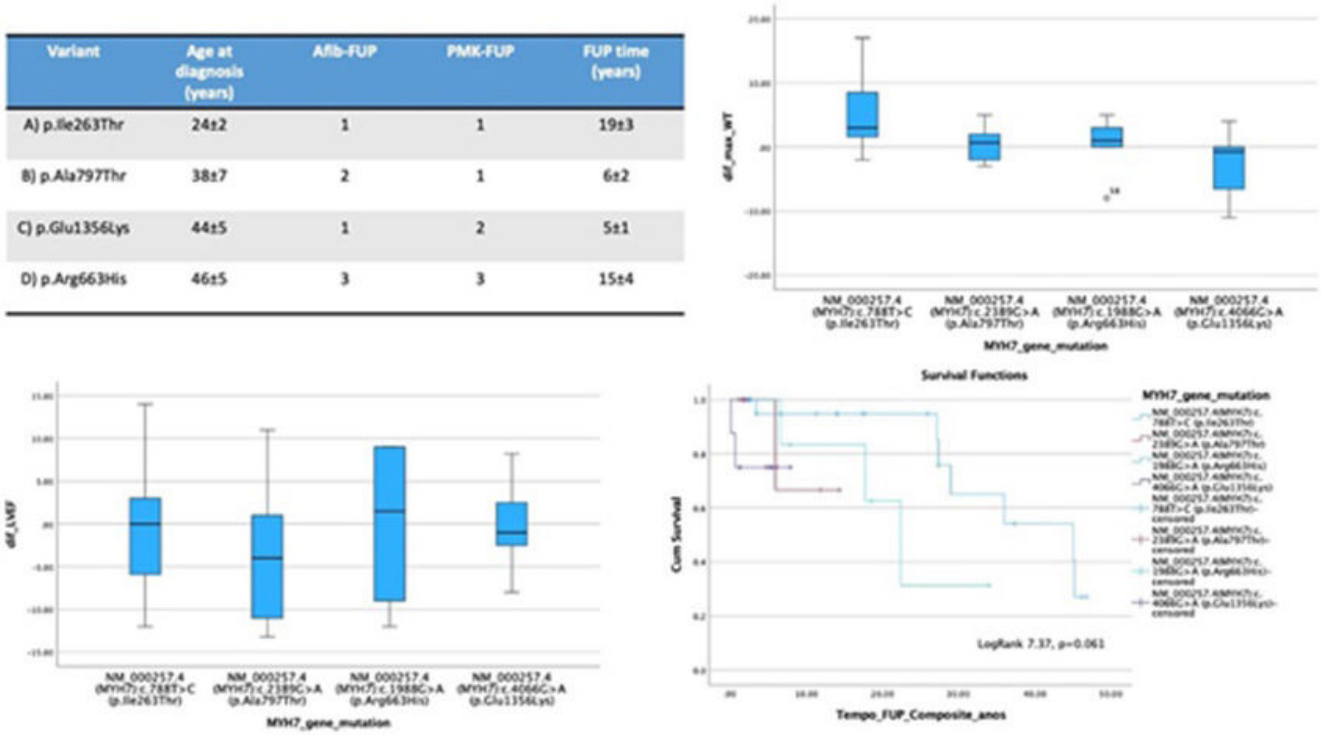


Figure PO 107

Objectives: The aim of this study was to determine the phenotype expression and outcomes of different variants in the *MYH7* gene.
Methods: This study was a single center retrospective/prospective analysis of 29 unrelated families with sarcomeric HCM and pathogenic or likely pathogenic (P/LP) mutations in the *MYH7* gene. We analyzed the most common variants identified in the cohort. Patient´s (pts) characteristics (clinical, ECG, echocardiographic) were evaluated at the time of diagnosis and at the last follow up (FUP) visit. Kaplan-Meier survival analysis was used to estimate disease progression.
Results: The authors studied 115 pts from 29 families with P/LP MYH7 gene mutations. From 75 genetic carriers (51 pts G+Ph+; 24 pts G+Ph-), the most common variants (16 in total) identified by Next Generation Sequencing were: A) p.Ile263Thr [4Families (F), n = 28]; B) p.Ala797Thr (4F, n = 8); C) p.Glu1356Lys (3F, n = 8); and D) p.Arg663His (1F, n = 7). Globally median follow up was 14.3 ± 2 years (0.2-47) years. In total population, 25 pts were male, mean age at diagnosis was 35.7 ± 2.5 years, and 7 pts present outflow left ventricular obstruction (LVOTO) at diagnosis. Median maximal wall thickness was 13.5 ± 9 mm and left atrial dimension was 37.2 ± 9 mm. Regarding functional capacity, 25.5% of pts were at class II or III of NYHA at diagnosis. Most pts were diagnosed in the context of family screening (30 patients, 59%). Comparation of clinical characteristics between variants is described in the Figure. Behavior of mutations were similar regarding atrial fibrillation (new diagnosis in 5 pts), PMK implantation (7 pts) and ICD implantation for primary prevention (A: 1 pt; C: 1 pt). In total, 3 pts progress to LVOTO (A: 1pt, B:1 pt). All pts evolved with mild progression of LV hypertrophy, independently of the variant (p = 0.06). No differences were observed between variants (p = 0.86) regarding LV ejection fraction during FUP. A clinical composite endpoint of Heart Failure hospitalization, CV hospital admission (arrythmia, acute coronary syndrome or stroke) and death were analyzed and no differences occurred between the 4 variants (log rank 7.3, p = 0.06; Figure), despite the different FUP time of pts with different variants. During the global mean follow-up time of 14.3 ± 2 years penetrance of all variants was 64.7%.
Conclusions: The four variants exhibit a similar evolutive pattern and a relatively benign prognosis showing progression to mild/moderate left ventricular hypertrophy during follow-up, accompanied by a limited number of clinical events.

PO 108. INTERPRETING GENETIC TESTING FOR INHERITED CARDIAC DISORDERS

Diana Antunes[1], Rafael Graça[2], Catarina Silveira[2], Yuri Chiodo[2], Silvia Aguiar Rosa[1], Maria Carmo Fonseca[3]

[1]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [2]GenoMed - Diagnósticos de Medicina Molecular SA. [3]Instituto Medicina Molecular-FMUL.

Introduction: The financial and societal impact of hereditary cardiac diseases (HCD) is widely acknowledged. One of the most prevalent of these conditions is Hypertrophic Cardiomyopathy (HCM) which affects 1:200 to 1:500 people. In 2022 it was published the "Expert Consensus Statement on the state of genetic testing for cardiac diseases", which appeared to be converging in a downgrade for genetic testing in hereditary cardiac diseases (HCD).
Methods: We conducted a retrospective analysis from the results of the genetic testing carried out for suspected HCD between November 2015 and August 2023. The primary goal was to validate in-house results, as well to evaluate the applicability of the 2022 Consensus.
Results: 978 genetic tests were categorized in: Hypertrophic Cardiomyopathy (HCM, N = 395), Dilated Cardiomyopathy (DCM, N = 274), Brugada Syndrome (BS, N = 117), Arrhythmogenic Cardiomyopathy (ACM, N = 48), Unspecified Cardiomyopathy (uCM, N = 40), Unexplained Cardiac Arrest (uCA, N = 27), Rhythm Disorders (RD, N = 26), Non-compaction cardiomyopathy (NCM, N = 24), and Long QT Syndrome (LQT, N = 23). Pathogenic (P) or likely pathogenic (LP) variants were identified in 209 patients with an overall diagnostic yield of 21.37% (N = 209): ACM 31.25% (N = 15), NCM 29,17% (N = 6), HCM 25.32% (N = 100), RD 23.08% (N = 6), DCM 22.71% (N = 62), uCA 18.52% (N = 5), uCM 12.5% (N = 5), LQT 17.39% (N = 4), and BS 4.27% (N = 5). P/LP variants were identified in the following genes for HCM: *ACTN2, ALPK3, CSRP3, FHOD3, GLA, KCNQ1, MYBPC3* (35%, N = 35), *MYH7* (31%, N = 31), *MYL2, PRKAG2, RBM20, RYR2, SLC25A4, TNNC1, TNNI3, TNNT2, TPM1, TRIM63* - and for DCM: *DSP, FLNC, GLA, LMNA* (11.29%, N = 7), *MYBPC3, MYH7, PKP2, RBM20, RYR2, SCN5A, TCAP, TNNT2, TPM1, TTN* (38.71%, N = 24), *TTR* (6.45%, N = 5).Double genetic diagnoses (GD) were found in 2.39% of cases (N = 5) - HCM 3% (N = 3) and DCM 3.23% (N = 2). P/LP Copy Number Variants (CNVs) were identified in 1,4% of cases (N = 3).
Conclusions: The results revealed GD for HCM and BS lower than expected. More than half of the HCM GD were attributed to *MYBPC3* and *MYH7*, while all BS cases were associated to *SCN5A*, as previouslyy reported. The most prevalent DCM GD was *TTN*, as anticipated. P/LP variants were found in genes not covered by the 2022 Consensus, such as *GLA* in HCM or *TTR* in DCM. Although the guidelines recommend restraining from genetic testing in non-well defined phenotypes, P/LP variants were detected at significant rates in conditions categorized as less consensual such as uCM, RD and NCM. An overall diagnostic yield > 20% for patients suspected of having HCD, underscores the urgency of mainstreaming genetic testing. The primary focus should be on empowering multidisciplinary teams, comprising cardiologists specialized in HCD, including rhythm disorders and cardiomyopathies, as well as clinical and laboratory geneticists, to facilitate discussions and enhance patient care.

PO 109. CARDIAC INVOLVEMENT AFTER LIVER TRANSPLANTATION IN FAMILIAL AMYLOID POLYNEUROPATHY - A CONTINUING CHALLENGE

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Introduction: Hereditary transthyretin (TTR) amyloidosis is an autosomal dominant disease caused by mutations in the TTR gene. Val30Met is the most common - the condition is called familial amyloidotic polyneuropathy (FAP). Individuals with the Val30Met mutation generally present early with neuropathy and may have late onset cardiac involvement. In light of evidence that the liver is the main source of circulating TTR, orthotopic liver transplantation (LT) was introduced as a radical treatment for FAP. However, current findings show that the cardiomyopathy associated with FAP may progress after LV in some patients.
Objectives: To evaluate cardiac involvement progression in liver transplanted Val30Met FAP patients.
Methods: A retrospective analysis was conducted by collecting data from clinical, laboratory, electrocardiographic, echocardiographic, and 24h-ambulatory blood pressure monitoring records. Descriptive and inferential statistics were performed to identify cardiac involvement in FAP patients submitted to liver transplantation that was suspected/assumed by the presence of left ventricular hypertrophy (LVH) in the absence of abnormal loading conditions such as arterial hypertension or significant valvular heart disease. LVH was defined by either 1) interventricular septum or posterior wall dimension ≥ 12 mm or 2) index left ventricular mass ≥ 95 g/m^2 in females and ≥ 115 g/m^2 in males.
Results: We enrolled 114 FAP patients (56% male), submitted to LT at a mean age of 38 years and followed for a mean time of 14 years at a FAP Referral Centre. Twenty-four percent of patients (27 patients) had LVH identified before LT (LT at a mean age of 40 years, mean baseline NT-proBNP of 211 pg/mL). Although not statistically significant, there was an increase in mean interventricular septum (from 12 to 13mm) and posterior wall (from 10 to 11mm) thickness after LT, possibly suggesting disease progression. At the time of pre-LT evaluation, 56% of patients did not meet the criteria for LVH. Among them, 59% did not develop LVH during the follow-up period (LT was performed at a mean age of 35 years and mean baseline NT-proBNP was 104 pg/mL), while 41% (26 patients) met the LVH criteria (LT was performed

at a mean age of 40 years and mean baseline NT-proBNP was 348 pg/mL). In patients where screening echocardiograms allowed for the identification of hypertrophy development, the median time from LT to LVH identification was 6.8 years. Through univariate Cox regression analysis, it was possible to identify an increased risk of cardiac involvement in those who undergo transplantation later, with a Hazard Ratio of 1.072 (95%CI, 1.023-1.123; p = 0.003). NT-proBNP did not predict LVH development.
Conclusions: Our results showed that cardiac involvement is a reality in FAP. It can be present prematurely in patients with early onset phenotype even before LT and it can progress or even develop after LT.

PO 110. RASOPATHIES - CARDIAC MANIFESTATIONS AND OUTCOMES IN A TERTIARY CENTER COHORT STUDY

Andreia Duarte Constante[1], Conceição Trigo[1], Diana Antunes[2], Fátima Pinto[1]

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Introduction and objectives: RASopathies are a clinical and genetic spectrum of disorders defined by germline mutations in components or regulators of the RAS/MAPK pathway. This work aimed to provide a comprehensive assessment of cardiac manifestations, morbidity, and mortality in a population of individuals with RASopathies in pediatric age.
Methods: Retrospective analysis conducted on medical records of patients with genetic and/or clinical diagnosis of RASopathies who received care at a Pediatric Cardiology tertiary center over a period of 40 years (1982-2022).
Results: Thirty-nine patients were included, the majority being male (64%). Noonan Syndrome (NS) was identified in 27 patients (69,2%), NS Multiple Lentigines in 4, Cardiofaciocutaneous syndrome in 2, Costello Syndrome and Noonan syndrome-like disorder with loose anagen hair 1 were present in 1 patient each. Four patients had overlap syndrome between Type 1 neurofibromatosis and NS. Pathogenic variants in the PTPN11 gene were the most frequent (17,9%). The median age at the initial evaluation was 3 years (4 days - 18 years), and the median follow-up duration was 14 years. Cardiac involvement was present in 84,6% of patients: the most common was pulmonary valve (PV) stenosis (59%), followed by hypertrophic cardiomyopathy (28,2%) and atrial septal defect (25,6%). PV stenosis was the most frequent cardiac lesion in NS while hypertrophic cardiomyopathy was more prevalent in the other groups. During follow-up, 36% underwent cardiac surgery (48% of the procedures included pulmonary valvuloplasty; 19% left ventricular outflow tract relief); 26% underwent interventional cardiac catheterization (9 out 10 for pulmonary valvuloplasty). Two patients died: one at 8 months, with PV stenosis, biventricular hypertrophy, due to multi-organ failure after pulmonary valvuloplasty and Morrow myomectomy; the second with moderate PV stenosis, at 10 months, due to respiratory insufficiency within the context of a polymalformative syndrome.
Conclusions: RASopathies have an important prevalence of cardiac disease with a spectrum that extends from mild to severe and potentially fatal disease. Overall, this study highlights the high prevalence of cardiac involvement in these patients with PV stenosis being the most common form. Due to the heterogeneity of clinical presentation and incomplete penetrance of phenotypes, genetic testing and careful long-term follow-up is essential.

PO 111. UPTAKE OF GENETIC COUNSELLING AND GENETIC TESTING IN INHERITED CARDIOMYOPATHIES AND ARRHYTHMIAS IN A PORTUGUESE REFERENCE GENETIC DEPARTMENT

Susana Lemos Ferreira[1], Mariana Policarpo[2], Mafalda Melo[1], Inês Custódio Santos[1], Ruxanda L. Baião[2], Margarida Venâncio[1], Diana Antunes[1]

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Introduction: Inherited cardiomyopathies and arrhythmias (ICAs) are a heterogeneous and prevalent group of genetic diseases that affect the function and structure of the heart muscle. ICAs are also an important cause of morbidity and mortality, particularly heart failure and sudden cardiac death at a young age and often without any previous symptoms. Family screening with clinical evaluation and genetic testing enables early identification of at-risk relatives, impacting the prevention and surveillance of these patients.
Objectives: To evaluate how often genetic counselling and testing are performed after identification of a (likely) pathogenic variant in a symptomatic patient with ICAs, assessment of current strategy of family screening and to analyze the yield of genetic testing.
Methods: Retrospective review of data from probands with clinical and molecular confirmed diagnosis of ICAs and their relatives referred for genetic evaluation to our Genetics Department (2016-2022) in a Portuguese tertiary hospital.
Results: After evaluation of 65 probands diagnosed with ICAs, a total of 396 relatives were eligible for counselling on predictive DNA testing (273 first-degree and 123 second-degree relatives). Only 88 attended genetic consultation during the first year after genetic testing was performed on the proband, and in total of 190 (48%) relatives were evaluated. The average time that the relatives attended the consultation is 567 days (7 days - 3837 days). Almost every relative that received genetic counselling underwent genetic testing (99,15%), and 58% of these were genotype-positive. Overall, 168 relatives (88%) were phenotype-negative at the first appointment and 22 (12%) were phenotype-positive. The percentage of the uptake to the genetic consultation is 51%.
Conclusions: Our results showed that almost half of at-risk relatives are not adequately screened, which prompts urgent discussion and reevaluation of actual cascade screening protocols. Molecular genetic testing is a fundamental step of the clinical care of patients with ICAs. Adequate genetic counselling, pre-test and after test, is fundamental to successful cascade screening of family members. Predictive genetic testing of at-risk relatives is crucial for early disease and adequate follow-up.

SEXTA-FEIRA, 19 ABRIL de 2024 | 15:00-16:00

Área de Posters 3 | Sessão de Posters 18 - Insuficiência cardíaca - Fatores preditores

PO 112. HEART FAILURE AND CHRONIC KIDNEY DISEASE: CHLORIDE AND MARKERS OF FLUID OVERLOAD AND DIURETIC RESISTANCE

Bruno Pepe[1], André Santos Silva[1], Gonçalo Pimenta[1], Maria Inês Roxo[1], Andreia Carnevale[1], Patrícia Matias[1], Cátia Sousa[2], Sofia de Azeredo Pereira[2], Cândida Fonseca[3], Carlos Aguiar[1], Patrícia Branco[1], Rita Calça[1]

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Introduction: Chronic Kidney Disease (CKD) and Heart Failure (HF) share various pathophysiological mechanisms that contribute to the progressive and bidirectional deterioration of the cardiorenal axis. Volume overload (VO) is one of the indicators of dysregulation of this axis, challenging therapeutic management and contributing to the morbimortality of these patients. New and more precise methods of assessing VO have been studied, including the use of new serum markers. While traditionally Sodium (Na) has been the focus of guidelines and clinical practice regarding HF, Chloride (Cl) has recently demonstrated a prominent contribution to its pathophysiology and prognosis. Recent studies have identified Cl as a factor of relevance in HF associated congestion, as well as a mechanism of loop diuretic resistance.
Methods: Retrospective single-center study, including 76 assessments between June 1, 2021, and March 31, 2023, of patients followed in a Reno-

Cardiac consult, an integrated multidisciplinary consult that focuses on patients with cardiorenal syndrome. Demographic data, was analysed, as well as: furosemide dose, Na, Cl, and congestion biomarkers (CA125 and NTproBNP). The Sodium-Chloride Differential (DNACL) was calculated as a method to estimate the chloride deficit. Hypochloremia was defined as serum Cl < 96 mEq/L.
Results: A total of 87% of the patients were male, with a mean age of 80 ± 11 years. The majority of patients had HF with reduced ejection fraction (71%) and were in NYHA class III (57%). The most common comorbidities were Diabetes Mellitus (53%) and Atrial Fibrillation (50%). Regarding chronic kidney disease (CKD), the majority were in stages G3b and G4 (44.7% and 47.4%, respectively). The mean serum chloride concentration was 101.16 ± 6.04 mEq/L, and 17% had hypochloremia. In a bivariate analysis, a positive association was found between chloride (Cl) and sodium (Na) values (r = 0.752; p < 0.001), and higher prescribed furosemide doses were associated with lower Cl values (r = -0.698; p < 0.001). Using the calculated Sodium-Chloride Differential (DNACL), a positive association was observed with the prescribed furosemide dose (r = 0.514; p < 0.001). Of note, is the positive association between CA125 and NTproBNP (r = 0.493; p < 0.001), both recognized markers of VO, as well as the negative association of Cl with both (respectively r = -0.429, p = 0.001 and r = -0.342, p = 0.009).
Conclusions: The increasing prevalence of patients with CKD and HF, along with the associated morbimortality, highlights the need to identify new biomarkers to recognize VO and diuretic resistance earlier. The use of Cl and DNACL appears to be useful as potential markers of diuretic resistance, which may enable the identification of patients requiring alternative therapeutic approaches for managing VO.

PO 113. NTPROBNP IS NOT A GOOD PROGNOSTIC MARKER IN PATIENTS WITH ADVANCED HEART FAILURE ON AMBULATORY LEVOSIMENDAN INFUSION PROGRAM

Ana Filipa Mesquita Gerardo, Mariana Passos, Inês Fialho, Ana Oliveira Soares, Carolina Mateus, Inês Miranda, Joana Lima Lopes, Mara Sarmento, David Roque

Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra.

Introduction: Intermittent levosimendan infusions have been shown to reduce heart failure (HF) hospitalizations in advanced heart failure (ADHF) patients (pts) including those who are not candidates for ADHF therapies.
Objectives: Assess the prognostic value of NTproBNP variations in ADHF pts undergoing intermittent levosimendan infusion.
Methods: Prospective registry of ADHF pts in a single-center ambulatory levosimendan program (May 2020 to Dec 2022). Inclusion criteria were HF with reduced ejection fraction (HFrEF) and recurrent HF hospitalizations or sustained clinical decline (NYHA ≥ 3, progressive intolerance to medical therapy or escalating diuretic dose). Levosimendan was administered as a 24-hour monthly infusion. NTproBNP levels before program initiation and after 1, 3, 6, and 9 months were registered, as well as NTproBNP variation immediately before and after levosimendan infusion (Δ NTproBNP).
Results: 32 pts were included, 75% males (n = 24), mean age of 65.8 ± 12.8 years. All pts had HFrEF, 56.3% (n = 18) of ischemic etiology. At admission, 96.9% (n = 31) was in NYHA class 3 and 3.1% (n = 1) in NYHA class 4. Median NTproBNP level before levosimendan initiation was 7004 (IQR 3,079 – 13,254) pg/mL. Levosimendan program significantly reduced HF hospitalizations at 6 months (median 1 [IQR 0-2] vs. 0 [IQR 0-1], p = 0.005). Median NTproBNP levels significantly decreased after the 1st month of therapy (7,004 [IQR 3,079 – 13,254] vs. 3720 [IQR 2,571 – 6,988], p = 0.04), and remained stable afterwards (Figure). Median NTproBNP decreased after each levosimendan infusion, but Δ NTproBNP was not different over time (median Δ NTproBNP at 1 month -988 [IQR -2,139 – 179] pg/mL, at 3 months -1771 [IQR -2,435 – -97] pg/mL, at 6 months -420 [-2,136 – 258] pg/mL, p = 0.287). Positive Δ NTproBNP variation after levosimendan infusion occurred in 31.6% [n = 6] of pts at 1 month and 30.0% [n = 3] at 6 months but was not a predictor of HF hospitalizations (OR = 2.8, CI 95 0.2 – 40, p = 0.448). Absolute NTproBNP values at 3, 6 and 9 months were not independent predictors of stable HF and subsequent levosimendan program interruption (OR = 1.00, CI 95 0.9 – 1.0, p = 0.715).
Conclusions: NTproBNP is not a good prognostic marker in ADHF on levosimendan intermittent infusion program and should not be used alone for decision of program discontinuation. The decrease and stabilization of NTproBNP initiation of the levosimendan program reflects disease stability, demonstrated by the reduction in HF hospitalizations.

PO 114. PHENOTYPING HEART FAILURE PATIENTS WITH SUBCLINICAL CONGESTION

Bruno Bragança, Rafaela G. Lopes, Mauro Moreira, Inês G. Campos, Ricardo Barbosa, Licínia Aguiar, Sónia Apolinário, Patrícia Silva, Magda Silva, Aurora Andrade

Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa.

Introduction: Achieving sustained euvolemia is the main goal to improve symptoms in heart failure (HF) patients. Insidious increase of interstitial fluid that precedes HF decompensation is often missed from clinical examination with a negative impact on the patient's prognosis and health costs. Despite the advances in the assessment of subclinical congestion with new biomarkers and imaging techniques, failure to identify subclinical congestion remains a problem in the daily management of HF patients.

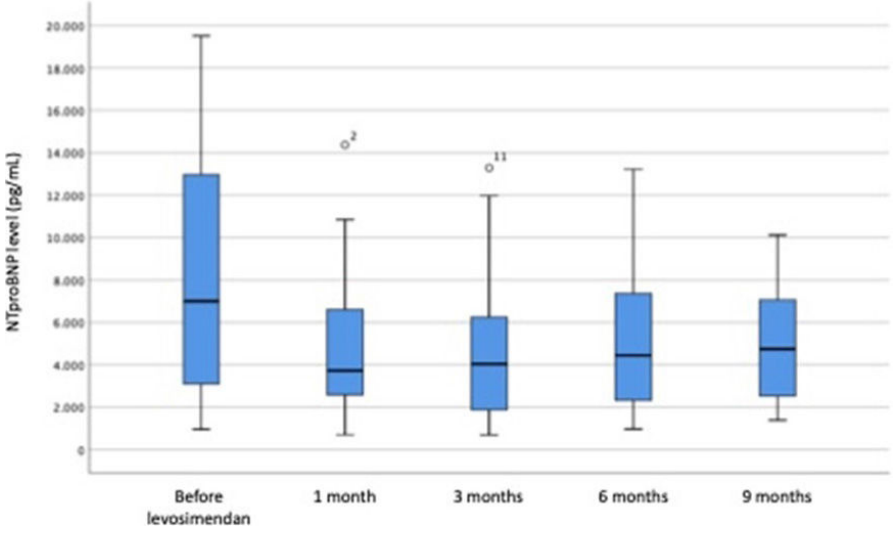

Figure PO 113

Methods: Fifty-six adult outpatients under guideline-directed medical therapy for HF with reduced ejection fraction (HFrEF) included in a single-center prospective study underwent comprehensive characterization of body's composition by multi-frequency bioimpedance spectroscopy (BIS, InBody BWA 2.0). BIS parameters were correlated with clinical, biochemical, and echocardiographic data. Subclinical hypervolemia was defined as a raised extracellular fluid (ECF) adjusted to total body water (ECF/TBW) above 38.6% (1st quartile) despite the absence of congestion signs by EVEREST score. Clinical evaluation of HF patients was blinded for BIS data. Data is presented as mean ± SD.
Results: Hypervolemia was identified in 37 patients (66%), with 29 patients of them (52%) having no evidence of clinical congestion. NT-proBNP levels were significantly lower in euvolemic (EUV) than in subclinical (SUB) congestion group (476 ± 509 vs. 4,490 ± 6,908 pg/mL, *p* = 0.037); left ventricular ejection fraction was equivalent between these two groups (36 ± 19 vs. 34 ± 10%). In comparison with EUV patients, SUB patients were older (71 ± 10 vs. 58 ± 9 years, p < 0.001); had a higher prevalence of diabetes (52 vs. 16%, p = 0.012), hypertension (72 vs. 42%, p = 0.036), coronary artery disease (16 vs. 5%, p = 0.049); and also lower levels of hemoglobin (13.4 ± 1.5 vs. 14.6 ± 1.8 g/dL, p = 0.023). Regarding other clinical variables of interest, no significant differences were identified between EUV and SUB groups for sex, chronic kidney disease, serum sodium or blood urea nitrogen. In segmental body composition analysis, SUB patients exhibited both lower fat-free mass (50.6 ± 10 vs. 56.6 ± 10 kg, p = 0.044) and skeletal muscle mass (27.1 ± 5.5 vs. 31.8 ± 6.1 kg, p = 0.009) in comparison with EUV patients, with no differences being found for body mass index (27.0 ± 3.8 vs. 28.0 ± 3.9 kg/m^2, p = 0.37) or body fat mass (21.8 ± 8.2 vs. 23.2 ± 10 kg/m^2, p = 0.60).
Conclusions: Older and metabolic unhealthy patients with low muscle mass characterize the phenotype with a higher prevalence of subclinical congestion. A careful and multimodal evaluation of this patient's phenotype will possibly improve the detection of hypervolemia and avoid HF decompensation.

PO 115. PREDICTING HEART FAILURE OUTCOMES WITH A NEW MALNUTRITION AND INFLAMMATION SEVERITY INDEX - MISI SCORE

Francisco Rodrigues dos Santos, Vanda Devesa Neto, António Costa, Inês Pires, Joana Correia, João Gouveia Fiúza, Oliver Correia Kungel

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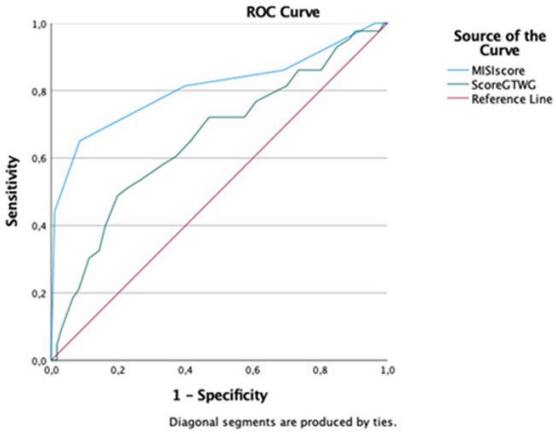
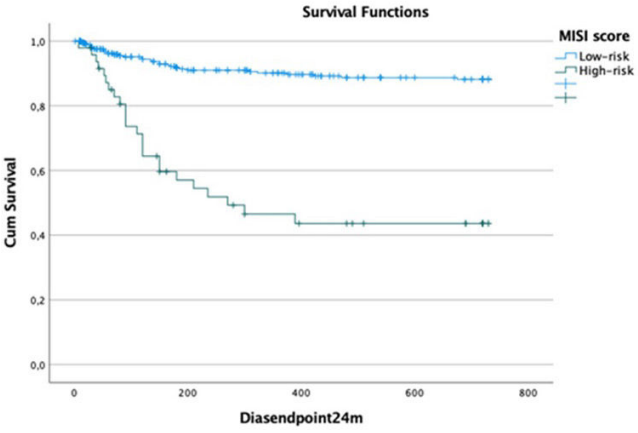
Introduction: Malnutrition and inflammation frequently coexist in chronic heart failure, with significant impact in morbidity and mortality. Despite their prevalence, these factors often go unnoticed in clinical assessments. The need for an accessible and accurate predictive tool prompted the development of a new score - Malnutrition and Inflammation Severity Index (MISI score). This study aims to assess the predictive capability of the MISI score for 24-month (24MM) mortality in patients with chronic heart failure and compare its effectiveness against a previously validated score – Get With The Guidelines (GWTG) score.
Methods: *R*etrospective analysis involving 1052 patients admitted in the cardiology department due to chronic heart failure. The MISI score, a novel index combining objective measures of malnutrition and inflammation, was calculated for each participant attributing points for each variable, according to the odds ratio on univariate analysis. MISI score (0-7) consists of body mass index values (2 points), albumin values (2 points), Ferritin levels (1 point), C-Reactive Protein levels (1 point) and age (1 point). Patients were considered high risk if they had a MISI ≥ 5. Kaplan-Meyer and Cox-regression analyses were performed to evaluate MISI score association with 24 months-mortality (24MM). ROC curve analysis was used to compare the predictive value compared to the previously validated GWTG score.
Results: Mean patient age was 77 (± 10) years; 51% were men. Mean left ventricle ejection fraction (EF) was 49% (± 16.4). EF < 40% was present in 31% of patients. In-hospital mortality and 24-MM were 6.5% and 17.1%, respectively. Kaplan-Meyer curve analysis revealed a significantly lower median time to 24MM in high-risk patients compared to low-risk patients (395 days vs. 665 days, χ^2 = 62.7, p < 0.01). ROC curve analysis revealed that the MISI score had a better predictive performance for 24MM in comparison to GWTG score (AUC 0.81 vs. 0.66; p < 0.01). Cox regression analysis demonstrated that MISI score independently predicts 24MM even after adjustment for other prognostic markers, such as the presence of atrial fibrillation, history of myocardial infarction, and diabetes.





Conclusions: The MISI score emerges as a promising and accessible tool for predicting 24MM mortality in patients with chronic heart failure. Its ability to capture the synergistic effects of malnutrition and inflammation highlights its potential clinical utility. Early identification and intervention based on the MISI score may lead to improved outcomes in this high-risk population. Further validation studies and prospective trials are warranted to establish the MISI score's robustness and reliability in diverse clinical settings.

PO 116. PREDICTORS OF MAJOR ADVERSE CARDIOVASCULAR EVENTS IN PATIENTS WITH HEART FAILURE – INSIGHTS FROM A REAL-WORLD POPULATION FOLLOWED IN A REGIONAL HOSPITAL

Adriana Vazão, Carolina Gonçalves, André Martins, Mariana Carvalho, Margarida Cabral, João Carvalho, Célia Domingues, Joana Correia, João Morais

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Introduction: Heart failure (HF) is a major global cause of cardiovascular morbi-mortality. Some HF patients (pts) undergo accelerated disease course marked by frequent exacerbations which are known to be associated with worse prognosis.
Objectives: Identify predictors of major adverse cardiovascular events (MACE) in pts with HF with ejection fraction (EF) < 50% followed in an HF clinic at a regional hospital in Portugal.
Methods: Retrospective single-center cohort study of adult pts followed up for ≥ 6 months from 2018 to 2022. Data regarding clinical characteristics, cardiac procedures and HF characterization was obtained. Expanded MACE

(A)

	Total (n=209)	MACE (N=33)	No MACE (N=176)	p-value
Sex - Male (%)	176 (84)	23 (70)	126 (72)	0,825[a]
Current Age (years) - mean ± SD	68 ± 12	72 ± 10	67 ± 12	0,041[c]
Past medical history				
Dyslipidemia (%)	142 (68)	28 (85)	114 (65)	0,026[a]
Hypertension (%)	130 (63)	22 (67)	108 (61)	0,564[a]
Prior decompensated HF admission (%)	110 (53)	22 (67)	88 (50)	0,078[a]
Atrial Fibrillation/atrial flutter (%)	91 (44)	19 (58)	72 (41)	0,076[a]
History of smoking (%)	85 (41)	13 (39)	72 (41)	0,871[a]
Overweight (%)	78 (37)	14 (42)	64 (36)	0,509[a]
History of CAD (%)	72 (34)	14 (42)	58 (33)	0,293[a]
Diabetes Mellitus (%)	71 (34)	18 (55)	53 (30)	0,007[a]
Alcohol abuse (%)	59 (28)	9 (27)	50 (28)	0,894[a]
Prior MI (%)	46 (22)	6 (18)	40 (23)	0,553[a]
Poor therapeutic compliance (%)	33 (16)	8 (24)	25 (14)	0,147[a]
Chronic Kidney Disease (%)	31 (15)	10 (30)	21 (12)	0,013[b]
Obstructive Sleep Apnea (%)	29 (14)	7 (21)	22 (13)	0,180[b]
History of cancer (%)	28 (13)	4 (12)	24 (14)	1,000[b]
Ischemic stroke/TIA (%)	24 (12)	4 (12)	20 (11)	1,000[b]
COPD (%)	21 (10)	9 (27)	12 (7)	<0,001[a]
Depression (%)	19 (9)	5 (15)	14 (8)	0,192[b]
Hypothyroidism (%)	18 (9)	2 (6)	16 (9)	0,744[b]
Valvular heart disease (%)	16 (8)	4 (12)	12 (7)	0,289[b]
Asthma (%)	8 (4)	3 (9)	5 (3)	0,115[b]
Dementia (%)	6 (3)	3 (9)	3 (2)	0,052[b]
Chronic liver disease (%)	6 (3)	1 (3)	5 (3)	1,000[b]
Family history of CV disease (%)	18 (9)	1 (3)	17 (10)	0,318[b]
Family history of SCD (%)	5 (2)	-	5 (3)	-

(B)

Variables	OR	CI 95%	p-value
DM	3.071	1.348-6.996	0.008
COPD	4.343	1.453-12.978	0,009
ARNI	0.296	0.118-0.746	0,010
Metolazone	13.006	1.025 - 165.017	0,048

Table 1. Patient baseline characteristics (A) and multivariate logistic regression (B) [[a]Chi-square test; [b]Exact's Fisher test [c] t-student test; ARNI - angiotensin receptor/neprilysin inhibitor; CAD - Coronary artery disease; COPD - Chronic obstructive pulmonary disease; CV - Cardiovascular; DM - Diabetes Mellitus; HF - Heart Failure; MI - myocardial infarction; PCI - Percutaneous coronary intervention; SCD - Sudden cardiac death; SD - Standard deviation; TIA - transient ischemic attack]

Figure PO 116

over 18-month period were defined as all-cause mortality, cardiovascular (CV) mortality, myocardial infarction, coronary revascularization, stroke and HF hospitalization. Pts who suffered MACE (group 1) were compared with those who did not (group 2).

Results: 209 pts were included (mean age 68 ± 12yrs, 84% male), of which 33 (16%) had MACE (group 1). Group 1 pts were older (72 ± 10 vs. 67 ± 12yrs, p = 0.041), more frequently had diabetes (DM) (55 vs. 30%, p = 0.007), dyslipidemia (85vs65%,p = 0.026), chronic kidney disease (30 vs. 12%, p = 0.013) and chronic obstructive pulmonary disease (COPD) (27 vs. 7%, p < 0.001). There were no differences in procedures - percutaneous coronary intervention (27 vs. 24%), coronary artery bypass graft (12 vs. 8%), implantable cardiac defibrillator (6 vs. 12%) or cardiac resynchronization therapy-defibrillator (12 vs. 10%) (p > 0.05). Regarding HF characterization, the majority of pts had EF < 40% (91 vs. 94%, p = 0.751) and ischemic cause was numerically more frequent in group 1 (49 vs. 39%, p = 0.290). Group 1 had lower prescription of angiotensin receptor-neprilysin inhibitor (ARNI) (64 vs. 86%, p = 0.002) but higher of furosemide (79 vs. 61%, p = 0.049) and metolazone (12 vs. 1%, p = 0.002). The primary driver of 18-month MACE was HF hospitalizations (70%) followed by all-cause mortality (27%). After multivariate logistic regression, DM (OR 3.07, CI 95% 1.35-6.99), COPD (OR 4.34, CI 95% 1.45-12.98) and medication with metolazone (OR 13.01, CI 95% 1.03-165.02) remained independent predictors of MACE in this population. Medication with ARNI appears to be a protective factor for MACE (OR 0.296, CI 95% 0.118-0.746).

Conclusions: In this HF population, predominantly with reduced EF, 18-months MACE occurred in 16% of pts. DM, COPD and medication with metolazone were found to be independent predictors of MACE and medication with ARNI appeared to be protective.

PO 117. PREDICTION OF INDIVIDUAL LIFETIME RISK IN PORTUGUESE PATIENTS WITH HFREF

Margarida G. Figueiredo[1], Pedro Freitas[2], Mariana Paiva[2], Gonçalo Cunha[2], Bruno Rocha[2], Pedro Lopes[2], Francisco Gama[2], Cláudia Silva[2], Sara Guerreiro[2], João Abecasis[2], António Ferreira[2]

[1]Centro Hospitalar Barreiro/Montijo, EPE/Hospital Nossa Senhora do Rosário.
[2]Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Many prediction models exist for patients with HF with reduced ejection fraction (HFrEF), estimating the 1 to 5-year risk of hospitalisation and mortality; however, few models are available to predict individual lifetime risk and treatment benefit. A recent model has been developed to close this gap in patients with HFrEF – the LIFEtime-perspective for Heart Failure (LIFE-HF) model.

Objectives: We aimed to validate this model in a cohort of HFrEF patients who underwent cardiac magnetic resonance (CMR).

Methods: Patients with known HFrEF who underwent CMR for clinical reasons between 2017 and 2019 were included. Using the interactive online LIFE-HF calculator, we estimated each patient's 2-year risk of all-cause mortality or HF hospitalisation at baseline (before performing the CMR). Then, the 2-year risk was recalculated according to therapy modifications made by the attending Cardiologist after reading the CMR report. Finally, the 2-year predicted risk of HF hospitalisation and all-cause mortality on optimal guideline-recommended pharmacological therapy was calculated. The primary endpoint was HF hospitalisation and all-cause mortality at 2 years.

Results: A total of 161 patients were analysed; mean age was 66 ± 10 years and 75% of patients were male. Ischemic aetiology of heart failure was present in 70% of cases. Most of the patients (82.6%) were in NYHA class I or II, and the median NT-ProBNP was 1,103 (IQR 337 – 3,013) pg/mL. Before CMR, 92.5% of patients were on β-blockers, 70.8% on ACEi/ARB, 19.9% on ARNI, 50.3% on MRA and 6.8% on SGLT2i. The median LVEF at CMR was 32% (range 24-39%). After knowing CMR results, attending Cardiologists decided to uptitrate or modify medical therapy in almost 50% of patients, with 2.5% of patients starting β-blockers, 6.8% sacubitril/valsartan, 5.0% MRA and 6.2% SGLT2i. Regarding devices, 13.0% received CRT and 32.9% an ICD. All patients had a complete 2-year follow-up. During this period, there were 25 events (21 HF hospitalizations and 4 deaths). The LIFE-HF model presented good discriminative ability, with an AUC of 0.77 (95%CI: 0.67 – 0.86, p < 0.001). Risk was consistently overestimated (calibration-in-the-large: -20%, p < 0.05) whether the 2-year risk of HF hospitalisation or all-cause mortality was calculated at baseline or after therapeutic optimization (Figure).

Conclusions: The LIFE-HF model to predict the 2-year risk of all-cause mortality or HF hospitalisation was validated in a Portuguese cohort of HFrEF patients. While providing good discriminative capacity, the LIFE-HF model tended to overestimate the risk of events.

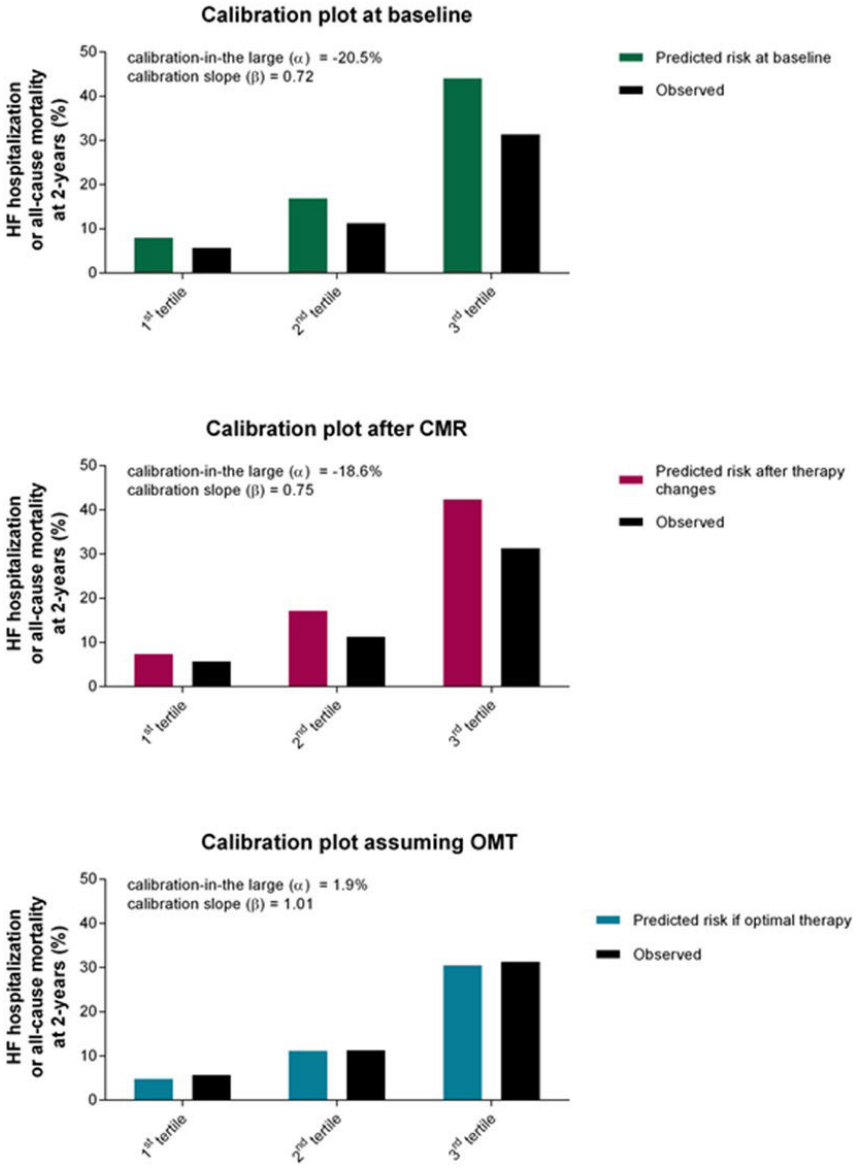


Figure PO 117

SEXTA-FEIRA, 19 ABRIL de 2024 | 16:00-17:00

Área de Posters 1 | Sessão de Posters 19 - Genética em Cardiologia 1

PO 118. FIBRINOGEN IS ASSOCIATED TO INCREASED ARTERIAL STIFFNESS ON HYPERTENSIVE INDIVIDUALS

Carolina Freitas Henriques[1], Ana Célia Sousa[1], Rui Fernandes[1], André Ferreira[1], Carolina Carvalhinha[1], Francisco Barreto[1], Mariana Rodrigues[2], Eva Henriques[3], Sofia Borges[3], Maria João Oliveira[4], Maria Isabel Mendonça[4], Roberto Palma dos Reis[5]

[1]Hospital dos Marmeleiros. [2]Hospital Dr. Nélio Mendonça. [3]Hospital Dr. Nélio Mendonça-Hospital Central do Funchal. [4]Hospital Dr. Nélio Mendonça. [5]Faculdade de Ciências Médicas de Lisboa/NOVA Medical School.

Introduction: Arterial elastic properties are important factors for the performance of cardiovascular function and predictors of cardiovascular risk. Increased blood pressure is a risk factor for cardiovascular disease. Arterial hypertension is the main risk factor for the development of arterial stiffness. Increased fibrinogen levels have been linked to target organ damage and cardiovascular outcomes. However, all these mechanisms at the arterial wall remain unknown.

Objectives: To evaluate whether fibrinogen levels are increased in a hypertensive population with high arterial stiffness.

Methods: In a sample of 860 hypertensive individuals, we determined the pulse wave velocity (PWV), using the Complior method, which is an index of arterial distensibility. A case-control study was performed depending on whether they had high PWV (n = 130) or not (n = 730). PWV was considered high when ≥ 10 m/s. Blood samples were collected from all individuals for biochemical analysis. The serum levels of fibrinogen were evaluated in both groups. A multivariate analysis was performed with other cardiovascular risk factors namely: diabetes, dyslipidemia, alcohol consumption and smoking to estimate which variables were significantly and independently associated with the arterial stiffness increase.

Results: Our results showed that, in a hypertensive population, individuals with higher PWV have increased serum fibrinogen levels than those with

lower PWV (402.77 ± 93.10 versus 380.28 ± 80.75; p = 0.004). After logistic regression analysis, the risk factors that remained in the equation as significantly and independently associated with PWV increase were: diabetes (OR = 2.138, 95%CI (1.400-3.264); p < 0.0001), alcohol (OR = 1.511, 95%CI (1.027-2.224), p = 0.036) and Fibrinogen (OR = 1.003, 95%CI (1.001-1.005), p = 0.006).

Table – Variables independently associated with the increase of PWV

Variables	OR (95% CI)	p-value
Diabetes	2.138 (1.400-3.264)	*<0.0001*
Alcohol	1.511 (1.027-2.224)	*0.036*
Fibrinogen	1.003 (1.001-1.005)	*0.006*

Conclusions: We have confirmed with our results that fibrinogen is associated with a significant and independent increase in arterial stiffness in a hypertensive population. Changes in fibrinogen in both physiological and pathological conditions can increase blood viscosity and favor the onset of cardiovascular events. Control measures must be implemented in hypertensive individuals to reduce arterial stiffness and consequently fibrinogen as a measure to prevent cardiovascular risk.

PO 119. THE GENETIC POLYMORPHISM OF ALPHA-ADDUCIN 1 IS ASSOCIATED WITH INCREASED ARTERIAL STIFFNESS IN A DIABETIC POPULATION

Rui Fernandes, Ana Célia Sousa, Fabiana Gouveia, Mauro Fernandes, André Ferreira, Eva Henriques, Mariana Rodrigues, Sofia Borges, Maria João Oliveira, Graça Guerra, Maria Isabel Mendonça, Roberto Palma dos Reis

Hospital Dr. Nélio Mendonça.

Introduction: Arterial stiffness is a well-known predictor of atherosclerosis, determining cardiovascular morbidity and mortality. Diabetes is one of the main risk factors for cardiovascular disease. Several studies have shown that diabetics have increased arterial stiffness. Some factors, including genetic, condition this increase. However, it is unknown which genetic factors are associated with increased arterial stiffness.
Objectives: 1. Study in a Portuguese population whether diabetes influence an increase in arterial stiffness assessed by carotid-femoral pulse wave velocity (PWV). 2. Whether the genetic variant alpha-adducin 1 (G460W, ADD1 rs4961) is associated with increased PWV in the diabetic group.
Methods: With a sample of 1,712 individuals, we constituted two groups depending on whether they had diabetes (n = 203) or not (n = 1,509). We determined the PWV for all individuals using the Complior method. Subsequently, the diabetic population was subdivided in 2 groups depending on whether they had high PWV (n = 44) or not (n = 159). PWV was considered high if PWV ≥ 10 m/s. Blood was collected from all individuals for biochemical and genetic analyses. The frequency of ADD1 rs4961 in the group of diabetics with high PWV was compared to that in diabetics with lower PWV. Finally, we calculated the Odds Ratio (OR) to assess the risk of diabetic individuals, carrying the ADD1 460WW polymorphism, of having increased arterial stiffness.
Results: Our results show that the diabetic population has a significantly higher mean PWV relatively to non-diabetic population (8.97 ± 2.03 versus 7.92 ± 1.37; p < 0.0001). The WW polymorphism of ADD1 was more frequent in the group of diabetics with high PWV compared to lower PWV (11.4% versus 2.5%; p < 0.024). Diabetic individuals carrying the ADD1 460WW genetic variant have an increased risk of having high PWV (OR = 4.97; 1.27-19.37) compared to the others (ADD1 460GG + ADD1 460GW); p = 0.012.
Conclusions: With our results, we proved that diabetes is associated with an increase in arterial stiffness. Diabetics who carry the ADD1 460WW genetic variant have a higher risk of developing arterial stiffness compared to those who do not have. They must take special care in behavioral terms, to counter this genetic tendency and thus reduce their cardiovascular risk.

PO 120. HOLTER MONITORING FINDINGS IN NEUROMUSCULAR DISORDERS: FREQUENCY AND IMPORTANCE IN CLINICAL MANAGEMENT

Sofia Nogueira Fernandes, Mónica Dias, Inês Macedo Conde, Rodrigo Silva, Fernando Mané, Carla Oliveira Ferreira, Filipe Silva Vilela, Ricardo Maré, Jorge Marques, Sérgia Rocha

Hospital de Braga, EPE.

Introduction: Cardiac involvement is a common manifestation in a variety of neuromuscular disorders (NMD) and initial cardiac manifestations in these patients are often asymptomatic. Hence, regular 24h-Holter monitoring is recommended to identify conduction disturbances and rhythm disturbances.
Objectives: In this study, we aimed to assess abnormal findings in 24h-Holter monitoring to screen for conduction disturbances and arrhythmias in patients with NMD and evaluate its impact in patients' treatment.
Methods: A retrospective single-centre study was conducted including all adult patients with NMD who received a 24h-Holter from January 2013 to September 2023. Holter recordings were analysed to identify rhythm disturbances and/or conduction abnormalities.
Results: A total of 76 patients with NMD were included, 39 (51.3%) were male, and mean age was 46.3 ± 11.5 years. A total of 220 Holter recording was analysed. An average of 2.9 ± 1.6 Holter recordings per patient was performed. Abnormal Holter results were found in 47 (61.8%) patients, and mainly consisted of conduction disorders such as atrioventricular block in 31 (65.9%) patients. Other abnormalities included atrial fibrillation/flutter in 6 (12.8%) of patients, supraventricular tachycardia in 4 (8.5%) patients, and non-sustained ventricular tachycardia in 6 (12.8) patients. Out of the group of the patients with abnormal Holter findings, ten patients had direct clinical treatment consequences, namely implantation of electronic cardiac devices or initiation of anticoagulation therapy.
Conclusions: In this study, Holter findings resulted had relevant clinical treatment consequences in 10 out of 76 patients (13.2%). These results suggest that 24h-Holter monitoring may improve routine cardiac screening in patients with NMD.

PO 121. RECURRENT TRANSFUSION THERAPY IN SICKLE CELL DISEASE - ARE THERE RELEVANT ECHOCARDIOGRAPHIC DIFFERENCES IN THE EVALUATION OF THESE PATIENTS?

Ana Raquel Carvalho Santos[1], Isabel Cardoso[1], Inês Vieira[2], Chritopher Saunders[2], Madalena Silva[2], Tânia Mano[1], Vera Ferreira[1], Pedro Rio[1], Ana Teresa Timóteo[1], Ana Galrinho[1], Patrícia Ribeiro[2], Rui Cruz Ferreira[1]

[1]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [2]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital Santo António dos Capuchos.

Introduction: Sickle cell disease (SCD) is the most common inherited blood disorder in the world. It is characterized by chronic hemolytic anemia. Life expectancy of patients (pts) with SCD is still reduced by more than 2 decades compared to the general population, and cardiovascular complications are a notable feature in the premature deaths. Identifying myocardial alteration at an early stage and improving management of this complication is an important step to improve quality of life and survival rate of the pts.
Objectives: Evaluate differences in echocardiographic parameters of adult pts with SCD submitted to recurrent transfusion therapy (RTT)
Methods: A retrospective, single centre analysis was made including pts with sickle cell disease referred to evaluation in hemoglobinopathies clinic. Echocardiogram was performed by Cardiology as part of usual follow up. Data were collected on population characteristics and echocardiographic

measurements with definition of 2 groups differenced by the presence or absence of RTT. Descriptive statistics are presented as absolute frequency (number) and relative frequency (percentage) for categorical variables and as median and interquartile range (IQR) for continuous variables. When testing hypothesis, Mann-Whitney and Chi-Square tests were performed. A p value of 0.05 was considered statistically significant.
Results: Data were collected of 128 pts followed in Hemoglobinopathies clinic with a median age was 31 years old (23-46). The majority were female, representing 53.9% of pts. Regarding comorbidities, 23.4% had a previous stroke, 11.7% hypertension, 3.1% diabetes, 17.2% kidney disease and 1.6% atrial fibrillation. RTT was necessary in 14.1%. When comparing echocardiographic differences between groups, indexed right atrium volume (20 mL/m² vs. 35 mL/m², p = 0.03), peak A velocity (80 cm/s vs. 62 cm/s, p = 0.00) and E/A ratio (1.2 vs. 1.9, p = 0.02) showed statistically significant differences between groups. Lateral e', medial e' and E/e' ratio also showed differences between groups, without achieving statistically significance. There were no significant differences between groups regarding age, hypertension, and kidney disease.
Conclusions: Diastolic dysfunction in SCD is an independent risk factor for premature death. Our data shows statistically significant differences in diastolic dysfunction parameters in pts submitted to RTT, without differences between groups regarding age, hypertension, and kidney disease.

PO 122. AJMALINE TESTING IN BRUGADA SYNDROME: A COMPARATIVE ANALYSIS OF DIAGNOSTIC PROTOCOLS AND CLINICAL OUTCOMES ACROSS TWO HOSPITALS

Cátia Oliveira[1], Mariana Tinoco[2], Ana Pinho[1], Luís Santos[1], Lucy Calvo[2], João Calvão[1], Ricardo Pinto[1], Gonçalo Pestana[1], Marta Madeira[1], Rui André Rodrigues[1], Luís Adão[1], Ana Lebreiro[1]

[1]Centro Hospitalar Universitário de S. João, EPE. [2]Hospital da Senhora da Oliveira, EPE - Guimarães.

Introduction: The diagnosis of Brugada Syndrome (BS) requires the presence of a type 1 Brugada pattern (BrP1) on an ECG, either spontaneously or induced through a provocative test using a sodium channel blocker. However, variations in protocols and management strategies exist across different medical centers.
Objectives: To characterize two groups of patients (pts) referred for ajmaline test (AT) in two distinct hospitals, evaluating patient baseline features, test protocols, and outcomes.
Methods: We performed a retrospective and observational analysis of adult pts who underwent AT between March 2020 and June 2023. One hospital (group A) used an infusion protocol and the other a bolus protocol (group B). Interruption criteria of tests were a positive result or the occurrence of any complications as described in the ESC guidelines.
Results: A total of 101 pts were included with a mean age of 45.6 ± 15.5 years-old, most were males (59.4%); 49 pts were included in group A and 52 pts in group B. While the groups were similar in age, group A had a higher proportion of male pts (73.5% vs. 46.2%, p = 0.005). In general, the most frequent indications for performing an AT was family screening (45.5%), type 2 Brugada pattern (BrP2) (33.7%), BrP2 and SCD/BS family history (6.9%) and syncope (4%). The majority of pts were asymptomatic in both groups (73.5% vs. 76.4%, p = 0.26). Overall, 57.4% of tests were positive, with Group A demonstrating a significantly higher rate of positive results than group B (69.4% vs. 46.2%, p = 0.018). Most pts in group A were referred due to a baseline ECG with BrP2 (group A: 55.1% vs. group B: 26.9%, p = 0.004), while in group B, most tests were performed for family screening (group A: 22.4% vs. group B: 73.1%, p = 0.004). Group-specific analyses revealed that positive tests in group B were often associated with a suspicious baseline ECG (76.9% of pts with a positive test had a BrP2 in their baseline ECG), suggesting its influence on test outcomes. No complications requiring test interruption were observed.
Conclusions: Consistent with previous studies, BrS was diagnosed in a significant proportion of patients that underwent ajmaline testing across diverse clinical scenarios. Also in line with former published results, a BrP2 in patients' baseline ECG was more prevalent in pts with a positive response. This study emphasizes the need for larger investigations to establish standardized indications and protocols for ajmaline testing in BrS diagnosis. Our findings contribute to the ongoing effort to enhance uniformity in clinical practices related to Brugada Syndrome.

SEXTA-FEIRA, 19 ABRIL de 2024 | 16:00-17:30

Área de Posters 2 | Sessão de Posters 20 - Doença coronária - marcadores de prognóstico

PO 123. PROGNOSTIC IMPACT OF COMPLETE REVASCULARIZATION DURING INDEX HOSPITALIZATION FOR NON-ST ELEVATION MYOCARDIAL INFARCTION

Catarina Ribeiro Carvalho[1], Marta Catarina Bernardo[1], Isabel Martins Moreira[1], Luís Azevedo[1], Pedro Mateus[1], Ana Baptista[1], Ilídio Moreira[1], On Behalf of The Portuguese Registry of Acute Coronary Syndromes[2]

[1]Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real. [2]CNCDC.

Introduction: patients with non-ST elevation acute myocardial infarction (NSTEMI) frequently present multivessel disease (MVD) with significant stenosis in non-infarct-related arteries (non-IRA). Unlike for ST elevation acute myocardial infarction, there is a paucity of studies evaluating the prognostic impact of complete revascularization in these patients. In fact, recommendation for complete revascularization is based in observational and non-randomized studies suggesting a possible benefit regarding mortality and major cardiovascular events.
Objectives: to evaluate the prognostic impact of complete revascularization during the index hospitalization in the Portuguese patients with NSTEMI and MVD.
Methods: patients hospitalized for NSTEMI with MVD included in a national multicentre retrospective study between October 2010 and December 2022 were divided into two groups: group 1 was submitted to complete percutaneous revascularization during the index hospitalization (IRA and non-IRA with diameter stenosis ≥ 50% on angiography), and group 2 performed IRA-only revascularization. The impact of complete revascularization on the probability of cardiovascular re-hospitalization, as well as on in-hospital and one-year mortality rates was evaluated.
Results: a total of 3084 patients was included, 74.8% were males, with a mean age of 67.8 ± 11.9 years. Most patients were submitted to IRA-only revascularization (72.9%). From the remaining, 81.4% performed complete revascularization during the index procedure and 18.6% staged during index hospitalization. Group 1 patients were younger (65.5 ± 11.8 vs. 68.6 ± 11.8 years, p < 0.001), with fewer comorbidities and slightly higher left ventricular ejection fraction (55 ± 11 vs. 51 ± 11%, p < 0.001). On the other hand, group 2 patients revealed a significantly higher percentage of previous, revascularization (14.8% vs. 1.6%), mostly surgical. Besides overall similar incidence of in-hospital complications, including recurrence of acute myocardial infarction, patients submitted to complete revascularization showed a non-significant trend to an inferior in-hospital mortality rate (0.7 vs. 1.6%, p = 0.06). Also, 1-year mortality rate was similar between groups (4.2 vs. 5.0%, p = 0.54). However, complete revascularization appeared to result in a long-term prognostic benefit, halving the incidence of unplanned cardiovascular re-hospitalizations at one year of follow-up (9.3 vs. 18.8%, p < 0.001).
Conclusions: complete revascularization led to an overall long-term benefit, mainly due to a reduction in cardiovascular re-hospitalizations, without a significant impact on 1-year mortality rate.

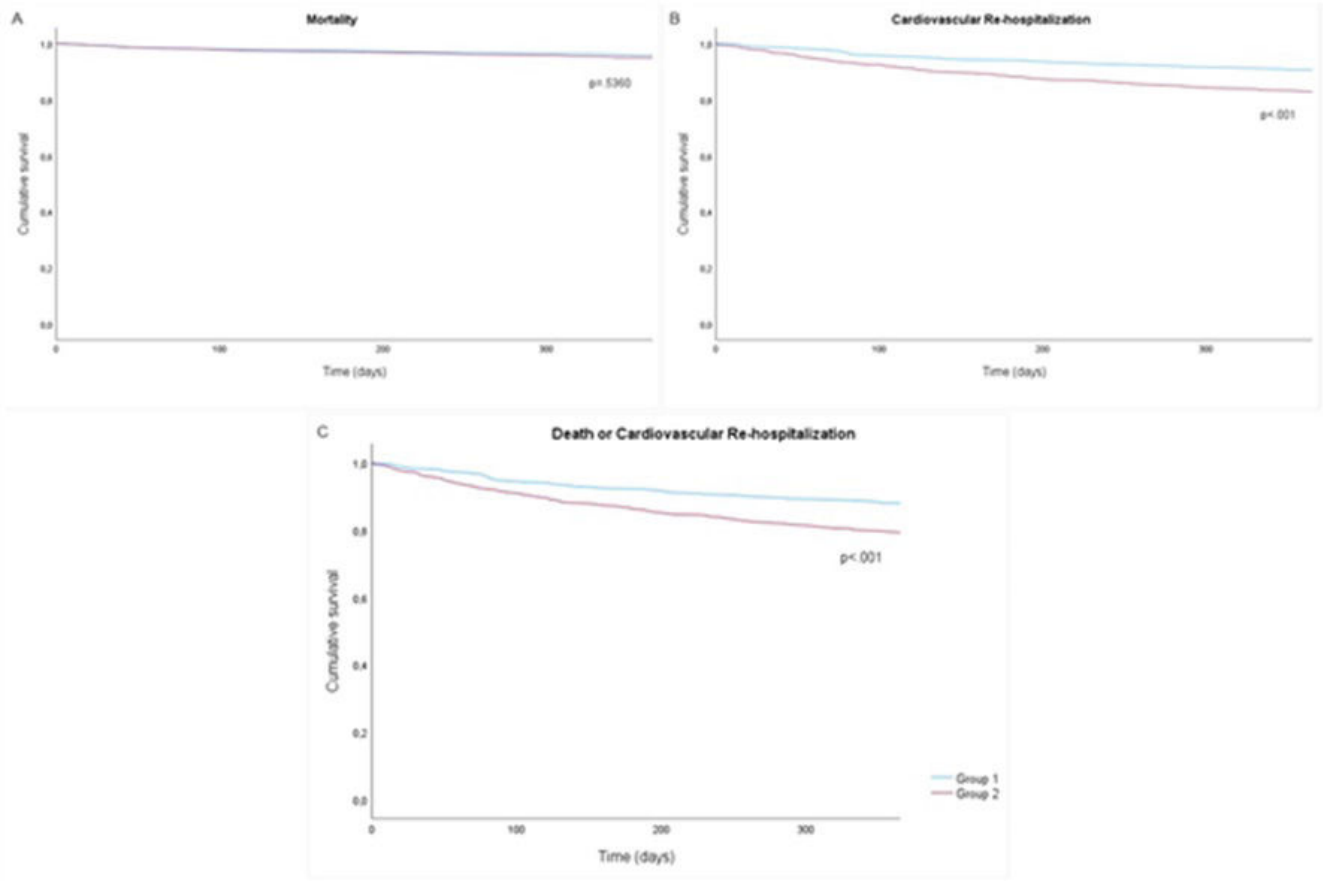


Figure PO 123

PO 124. IMPACT OF CANCER HISTORY ON NON-ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION (NSTEMI) PROGNOSIS – A PROPENSITY-SCORE MATCHING (PSM) ANALYSIS

Carla Oliveira Ferreira, Maria Manuela Gomes, Fernando Mané, Rodrigo Silva, Inês Macedo Conde, Ana Sofia Fernandes, Mónica Dias, Filipe Silva Vilela, Carlos Galvão Braga, Cátia Costa Oliveira

Hospital de Braga, EPE.

Introduction: The impact of cancer on patients' prognosis after NSTEMI is controversial. The incidence of acute coronary syndrome is higher in patients with cancer, however the current evidence on treatment and prognosis is scarce.
Objectives: To describe NSTEMI patients according to history of cancer, and to assess whether it is an independent predictor of mortality.
Methods: It was conducted a retrospective, observational and analytical longitudinal study with all patients admitted for NTSEMI between 2011 and June 2020 at a Portuguese intensive coronary care unit. Data on cancer, comorbidities, management, and 1-year outcomes were collected from hospital records.
Results: Among 3,011 patients, 234 (7.77%) had a documented history of cancer. They were older (71.5 ± 9.7 vs. 64.4 ± 12.5; p < 0.001) and showed greater comorbidity with diabetes (41.5% vs. 33.3%; p = 0.015), hypertension (73.1% vs. 66.4%; p = 0.044), stroke (12.0% vs. 6.1%; p = 0.001), previous bypass (9.0% vs. 5.1%; p = 0.019) and chronic kidney disease (12.4% vs. 5.2%; p < 0.001). Pain (89.3% vs. 93.4%; p = 0.028) and Killip class I (79.9% vs. 86.6%; p = 0.006) were less frequent at admission. Higher GRACE (145.5 ± 35.5 vs. 129.9 ± 36.4; p < 0.001) and CRUSADE (35.2 ± 17 vs. 28.2 ± 17.1; p = 018) scores, lower hemoglobin (13.1 ± 1.9 vs. 13.9 ± 1.7; p < 0.001), and higher creatinine levels (1.1 [0.9-1.4] vs. 0.9[0.8-1.1]; p < 0.001) were also observed. Multivessel disease was more common in the cancer group (52.6% vs. 45.6%; p = 0.047), but the use of percutaneous coronary intervention (43.2% vs. 50.5%; p = 0.038), stents (0.45 ± 0.59 vs. 0.56 ± 0.64; p = 0.005), and drug-eluting stents (40.6% vs. 49.0%; p = 0.016) was lower, as was aspirin (87.2% vs. 93.4%; p = 0.001) and statin (91.9% vs. 95.4%; p = 0.027) prescription at discharge. Cancer patients showed higher rates of 1-year all-cause (15.0% vs. 7.2%; p < 0.001), cardiovascular (CV) (9.0% vs. 5.6%; p = 0.042), and non-CV mortality (6.0% vs. 1.5%; p < 0.001). In multivariate analysis, cancer history increased the risk of 1-year non-CV death by almost three-fold (HR = 2.87[1.42-5.81]; p = 0.003), but not all-cause or CV mortality. Consistent results were found after PSM for baseline characteristics and in-hospital management.
Conclusions: Cancer patients had worse prognosis after NSTEMI, with most deaths being of CV origin; however, history of cancer did not independently predict 1-year all-cause or CV mortality. Therefore, an individualized cardio-oncologist approach may improve their short-term CV-outcome.

PO 125. EVALUATION OF DIAGNOSTIC ACCURACY OF THE MODIFIED CHA2DS2-VASC SCORE IN PREDICTING OBSTRUCTIVE CORONARY DISEASE AMONG PATIENTS SUSPECTED OF CHRONIC CORONARY SYNDROME

Joana Laranjeira Correia, Vanda Devesa Neto, Gonçalo R. M. Ferreira, João Gouveia Fiúza, Mariana Duarte Almeida, Oliver Correia Kungel, Francisco Rodrigues dos Santos, António Costa

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio.

Introduction: Coronary artery disease (CAD) is a pathological process characterized by the accumulation of atherosclerotic plaques in the epicardial arteries. The dynamic nature of the CAD process results in various clinical presentations, conveniently categorized as either acute coronary syndromes (ACS) or chronic coronary syndromes (CCS). The CHA2DS2-VASc Score is the most commonly utilized method to predict thromboembolic risk in atrial fibrillation. In this study, the authors used the CHA2DS2-VASc

modified score, with a change in punctuation assigned to the sex category (the Sc point is assigned to the male gender).
Objectives: To evaluate the diagnostic accuracy of the CHA2DS2-VASc modified score for predicting the presence of obstructive coronary disease among patients with suspected chronic coronary syndrome.
Methods: This was a retrospective cohort study that included patients with suspected chronic coronary syndrome admitted for elective coronary angiography from January to December 2021. The CHA2DS2-VASc modified score for each eligible patient was determined. A ROC curve for the CHA2DS2-VASc modified score to predict the presence of obstructive CAD was constructed, and the optimal cutoff was obtained (the value was 3 points, with a sensitivity of 60% and specificity of 80%). Patients were then stratified into two groups according to the CHA2DS2-VASc modified score: ≤ 3 (low) and > 3 (high). The authors finally analyzed the correlation between the two groups and the presence of obstructive CAD. The statistical analysis was performed in SPSS. A p-value < 0.05 was considered statistically significant.
Results: 150 patients were included in the study (67.3% male, mean age 67.5 ± 9.8 years). 13.3% of the patients had heart failure, 64% had hypertension, 30% had diabetes, 5.3% had a history of stroke, and 22.7% had a history of vascular disease. Around 41.3% of all patients were found to have obstructive coronary disease at coronary angiography. The mean CHA2DS2-VASc modified score was 2.96 ± 1.53 points. Through the analysis of the ROC curve, the CHA2DS2-VASc modified score showed a good predictive value of obstructive CAD (AUC 0.760, p < 0.001; CI 0.649-0.811). Furthermore, the high-risk group had a 5.4-fold increased risk of obstructive coronary disease (x2 22.145; p < 0,001; OR 5.4).
Conclusions: The CHA2DS2-VASc modified score accurately predicted the presence of obstructive CAD in this population. This simple and practical scoring system may be useful for the early identification of patients who should be referred more promptly to an invasive strategy.

PO 126. MODERATE TO SEVERE CHRONIC KIDNEY DISEASE AND ACUTE CORONARY SYNDROMES - APPROACH AND OUTCOMES

Adriana Rei Pacheco, Simão Carvalho, Carlos Costa, Tiago Aguiar, Raquel Ferreira, Mesquita Bastos

Centro Hospitalar do Baixo Vouga, EPE/Hospital Infante D. Pedro.

Introduction: Chronic kidney disease (CKD) is present in more than 30% of patients with acute myocardial infarction (AMI). Patients with AMI and concomitant CKD have a worse prognosis than patients with normal renal function.
Objectives: To evaluate the differences between patients with and without CKD during hospitalization for AMI, in terms of presentation, approach, in-hospital complications, and long-term events.
Methods: Retrospective study including patients admitted for AMI in a district hospital, over a period of 12 months between 2019 and 2020.
Results: 179 patients were included (76% men, mean age 67.3 ± 12.5 years). Average length of stay was 5.9 ± 3.8 days. 65.9% AMI without ST segment elevation and 34.1% AMI with ST segment elevation. The most frequent risk factors were dyslipidemia (60.3%) and hypertension (72.1%). 30.7% patients had CKD (GFR < 60 mL/min/1.73m2) and 10.6% had a history of atrial fibrillation (AF). Patients without CKD had a mean age of 64.3 ± 12.6 years and BNP of 219 ± 26.3, and patients with CKD had a mean age of 73.9 ± 9.4 and a BNP of 580.9 ± 841.3. Individuals with CKD were less likely to undergo invasive management (96.8 vs. 87.3%, p < 0.001) or were referred to catheterization later in the hospitalization - more than 72 hours after the admission - (16.4% vs. 4.0%, p < 0.001), and had lower odds of complete revascularization (67.0% vs. 47.2%, p < 0.039).The presence of CKD correlated with the development of complications during hospitalization (χ^2 14.81, p < 0.001), namely new onset AF (χ^2 7.37, p = 0.007), acute hemorrhage (χ^2 12.68, p < 0.001) and heart failure (χ^2 9.89, p = 0.002). In a Kaplan-Meier survival analysis, CKD also correlated with events at 3 years (Log Rank 24.8, p < 0.001). The creatinine value at admission was an independent predictor of long-term events (HR 3.16; CI 1.70-5.89, p < 0.001), even after adjusting for confounders (age, sex, history of chronic coronary syndrome, smoking, dyslipidemia, hypertension, diabetes and previous AF).
Conclusions: This study highlights the significant impact of CKD on AMI outcomes, both during hospitalization and after discharge. CKD patients, comprising 30.7% of the cohort, faced distinct challenges, including less frequent invasive management and delayed catheterization. Elevated creatinine at admission emerged as a strong predictor of long-term outcomes, underscoring the need for tailored strategies in managing AMI patients with CKD.

PO 127. RISK STRATIFICATION OF CHEST PAIN IN A PORTUGUESE EMERGENCY DEPARTMENT: IS THE HEART SCORE APPROPRIATE?

Margarida Cabral, André Martins, Carolina Gonçalves, Adriana Vazão, Mariana Carvalho, Catarina Ruivo, João Morais

Centro Hospitalar de Leiria/Hospital de Santo André.

Chest pain (CH) is one of the main symptoms of all emergency department (ED) admissions in developed countries. Early rule in or rule out of acute

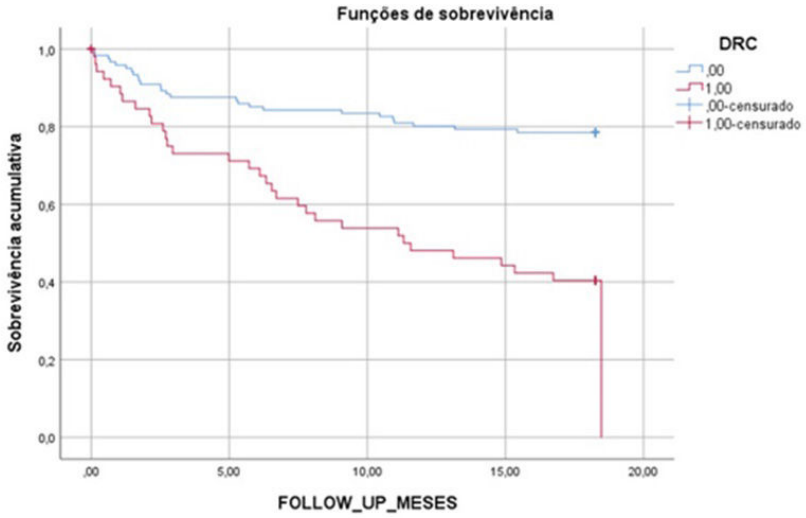


Tabela 1 Kaplan-Meier survival analysis in patients with CKD vs with normal or near normal kidney function

Figure PO 126

TABLE 1. BASELINE CHARACTERISTICS

	Overall (n=195)	Group 1 (n=13)	Group 2 (n=182)	*p*-value
Male, n (%)	95 (48.7)	8 (61.5)	87 (47.8)	0.34
Age in years, mean (dp)	57.6 (18.6)	65.0 (9.1)	57.1 (19.0)	0.01
Arterial hypertension, n (%)	88 (45.1)	8 (61.5)	80 (44.0)	0.22
Diabetes, n (%)	27 (13.8)	4 (30.8)	23 (12.6)	0.06
Dyslipidemia, n (%)	75 (38.5)	10 (76.9)	65 (35.7)	<0.01
HFpEF, n (%)	27 (13.8)	3 (23.1)	24 (13.2)	0.32
HFmrEF, n (%)	1 (0.5)	0 (0.0)	1 (0.5)	1.00
HFrEF, n (%)	4 (2.1)	1 (7.7)	3 (1.6)	0.24
Coronary artery disease, n (%)	25 (12.8)	9 (69.2)	16 (8.8)	<0.01
Valvular heart disease, n (%)	13 (6.7)	0 (0.0)	13 (7.1)	0.32
Atrial fibrillation, n (%)	18 (9.2)	0 (0.0)	18 (9.9)	0.23
Previous stroke, n (%)	8 (4.1)	0 (0.0)	8 (4.4)	1.00
Peripheral arterial disease, n (%)	4 (2.1)	1 (7.7)	3 (1.6)	0.24
Chronic kidney disease, (%)	10 (5.1)	3 (23.1)	7 (3.8)	0.02
Pulmonary disease, n (%)	10 (5.1)	0 (0.0)	10 (5.5)	1.00
Depression/anxiety, n (%)	51 (26.2)	2 (15.4)	49 (26.9)	0.36
Demency, n (%)	3 (1.5)	0 (0.0)	3 (1.6)	1.00

HFpEF - heart failure with preserved ejection fraction; HFmrEF - heart failure with mildly-reduced ejection fraction; HFrEF - heart failure with reduced ejection fraction
Smoking habits, obesity and family history had more than 150 missing values, therefore they are not presented.

TABLE 2. HEART SCORE RESULTS

	Overall (n=195)	Group 1 (n=13)	Group 2 (n=182)	*p*-value
Total scoring, mean (dp)	3.3 (2.1)	6.2 (2.5)	3.1 (2.0)	<0.01
Low risk, n (%)	106 (54.4)	2 (15.4)	104 (57.1)	<0.01
Intermediate risk, n (%)	73 (37.4)	4 (30.8)	69 (37.9)	0.61
High risk, n (%)	16 (8.2)	7 (53.8)	9 (4.9)	<0.01

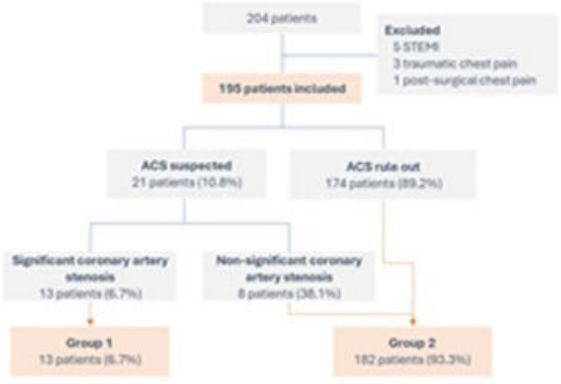


Fig. 1 – Flow chart of patient selection.
ACS – acute coronary syndrome, STEMI – ST-segment elevation myocardial infarction

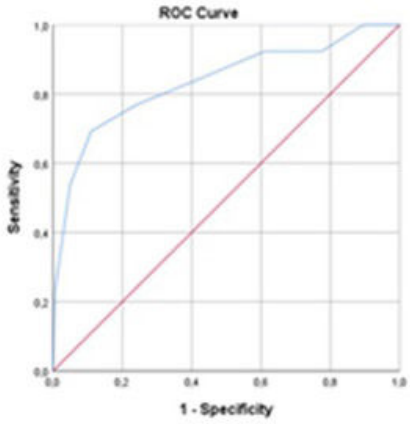


Fig. 2 – Receiver operating characteristic curves of HEART score for significant coronary artery stenosis: area under the curve=0.835 (95% confidence interval, 0.700-0.971)

Figure PO 127

coronary syndrome (ACS) is the crucial step in patient evaluation. There are several risk stratification scoring systems for ACS, with the HEART score being an easy and quick score, originally developed in an ED setting. A retrospective study analysed the first two hundred and four patients admitted to the ED of a health local unit in Portugal with CP and classified by the Manchester system with very urgent (orange) priority in 2022. ST-segment elevation myocardial infarction, traumatic CP, and those associated with the postoperative period of cardiothoracic surgery were excluded. Patients are divided into low-risk (score 0–3), intermediate-risk (score 4–6), and high-risk (score 7–10) according to the HEART score. Patients diagnosed with unstable angina and myocardial infarction were classified in the ACS group and all others were classified as non-ACS. According to cardiac catheterization, patients were also classified in the significant coronary artery stenosis (SCS) group (Group 1) with 70% or greater coronary artery stenosis and the non-SCS group. Group 2 includes the non-SCS and the non-ACS patients. Group comparisons were performed. A p-value less than 0.05 is statistically significant. In 2022, 1,662 patients were admitted due to "very urgent" CP, which corresponded to 4.5 patients by day. Of the 195 patients, 48.7% (95) were male and the mean age was 57.6 years. The baseline characteristics are described in Table 1. Twenty-one (10.8%) had ACS suspected, and 13 (6.7%) presented an SCS (Figure 1). The heart score system revealed adequate discrimination for the presence of SCS (area under the curve = 0.835 [95% confidence interval, 0.700–0.971], p-value < 0.01), with a sensitivity of 53.8% and specificity of 95.10% to a score higher than 6.5 (Table 1 and Figure 2). It is not suitable for discriminating patients with an intermediate score, in whom high-sensitivity troponin measurement is essential. In conclusion, in our population, the Heart Score is a very useful prediction tool for SCS. Taking into account the high number of non-ischemic chest pain in our ED, this score may be a useful tool to identify patients who truly require earlier angiography and revascularization. These results should be confirmed on a large scale and in a multicenter manner.

PO 128. EXPLORING THE SIGNIFICANCE OF PROCALCITONIN IN CARDIOGENIC SHOCK FOR THE PREDICTION OF INFECTION AND MORTALITY OUTCOMES

Débora da Silva Correia, Samuel Azevedo, João Presume, Ana Rita Bello, Rita Barbosa Sousa, Miguel Domingues, Joana Certo Pereira, Maria Rita Lima, Catarina Brízido, Christopher Strong, Jorge Ferreira, António Tralhão

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Both insult severity and treatment invasiveness of cardiogenic shock (CS) increase patients' infectious risk, which in turn may worsen an already adverse baseline prognosis. However, the frequent inflammatory response associated with some CS phenotypes makes the distinction between sterile inflammation and infection troublesome. To this end, procalcitonin (PCT), an infection biomarker validated in other critical illness contexts, could provide useful mechanistic and prognostic information.

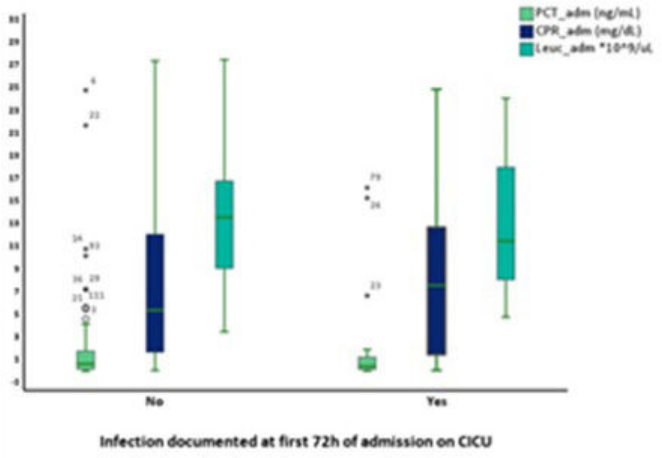


Figure 1- Admission PCT, CRP and Leuc in those with and without positive culture at first 72 h of hospitalization in CICU

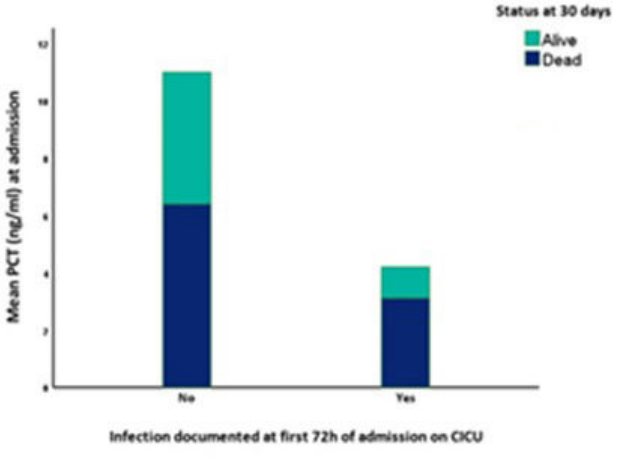


Figure 2- Mean PCT levels at admission discriminated by status at 30 days and documented infection at 72h

Figure PO 128

Objectives: To explore the role of PCT in distinguishing between inflammation and infection in early-stage CS and evaluate its prognostic value.
Methods: This was a single-center, retrospective study, including all consecutive CS patients admitted to a cardiac intensive care unit (CICU), between June 2020 and October 2023, with PCT measurement on admission. Patient records were screened for value of biomarkers at admission and selected infections over the first 72 hours: bacteraemia based on positive blood cultures, and hospital-acquired or ventilator-associated tracheobronchitis or pneumonia, according to a composite of clinical and radiologic criteria. Discriminative power of admission PCT, leucocyte count (Leuc) and C-reactive protein (CRP) for the occurrence of infection over the first 72-hours was analysed through ROC curve analysis. Finally, PCT predictive value on 30-day mortality was analysed through Cox regression and Kaplan-Meier curves, according to the best PCT cut-off for death prediction.
Results: A total of 115 patients had at a PCT evaluation available (mean age 61 ± 16 years; 71% male; 31% with SCAI ≥ D at admission; 46% with acute myocardial infarction). Median PCT was 0.66 (IQR 0.18-0.66) ng/mL. The rate of infection diagnosis during the first 72-hours was 22% (n = 25). ROC curve analysis revealed poor discriminative power of the considered biomarkers for predicting infection at 72 hours (PCT_{AUC} 0.467 [CI 95% 0.345-0.586], p = 0.598; CRP_{AUC} 0.507 [CI 95%0.375-0.639], p = 0.915; $Leuc_{AUC}$ 0.411 [CI 95% 0.281-0.0553], p = 0.206). 30-day mortality was 39% (n = 45) and was numerically higher in patients with infections (48 vs. 37%, p = 0.302). Dichotomous survival analysis based on the most discriminative PCT cut-off for 30-day mortality (0.47 ng/mL, obtained through ROC curve inspection), did not show differences between subgroups (36% vs. 27%, p = 0.367). Even after adjusting for the severity of CS according to SCAI class, PCT levels still did not show an association with increased 30-day mortality [HR 1.176 (CI 95% 0.646-2.142), p = 0. 596].
Conclusions: Within this group of patients with CS, an elevated PCT was unable to correctly identify the presence of infection or correlate with increased mortality. Prospective, larger studies are required to assess the reproducibility of these findings.

PO 129. LIPOPROTEIN (A): WHAT ROLE IN LONG-TERM PROGNOSIS OF PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

Jéni Quintal, Rui Antunes Coelho, Catarina Lagoas Pohle, Joana Silva Ferreira, Patrícia Bernardes, Tatiana Duarte, Sara Gonçalves, Filipe Seixo

Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo.

Introduction: Lipoprotein(a) is a known risk factor for atherosclerotic coronary heart disease. This genetically regulated protein is constant throughout the individual lifetime and therefore a single measurement may estimate the individual risk of coronary artery disease (CAD). Nonetheless, its impact on long-term prognosis of patients (pts) with acute myocardial infarction (AMI) is not well stablished.
Objectives: To assess whether lipoprotein(a) (Lpa) level can predict long-term prognosis of pts hospitalized for acute myocardial infarction, based on all-cause mortality, readmission due to acute coronary syndrome (ACS) and readmission due to major cardiovascular disease (CVD).
Methods: We performed a single-center retrospective cohort study. Consecutive pts admitted in our center between 1 November 2021 and 31 October 2022 with ACS were included (n = 390). Patient without Lpa measurement at admission were excluded (n = 62). Patients were divided in 2 groups according to Lpa level upon hospital admission: gA - normal Lpa level (Lpa < 30 mg/dL) - and gB – high Lpa level (Lpa ≥ 30 mg/dL). Cardiovascular risk factors and relevant comorbidities were assessed in both groups. The type of ACS, the number of affected coronary arteries, left ventricle ejection fraction (LVEF), Kilipp Kimball (KK) class, the presence of significant arrhythmias, high-sensitivity troponin (hs-TnI) and NT-proBNP levels were evaluated in both groups. Long term prognosis analysis included long-term all cause mortality, hospital readmission due to ACS and hospital readmission due to major CVD.
Results: The study included 328 pts, with a mean age of 66 (± 12) years-old and a 71.6% male prevalence. Regarding baseline characteristics of individuals, gB had a higher prevalence of dyslipidemia (31.3% vs. 28.9, p = 0.015), chronic kidney disease (11.6 vs. 5%, p = 0.029) and CAD (32.7 vs. 22.9%, p = 0.049). There were no significant differences in ACS type, LVEF, KK class, hs-TnI and NT-proBNP levels. Group B had a higher prevalence of 3 vessel disease (26.9 vs. 17.6%, p = 0.045) while 1 vessel disease was more common in gA (48.9 vs. 37.9%, p = 0.05). There was a higher tendency for arrythmias within 48h of ACS in gA (22.2 vs. 13.6%, p = 0.045). In-hospital mortality was similar between the groups (gA 3.9 vs. gB 3.4%, p = 0.816). During a median follow-up time of 18 (0-25) months, 27 deaths were verified. Mortality was not statistically different between the groups (gA 10.6 vs. gB 6.5%, p = 0.816). Readmissions due to ACS (gA 2.3 vs. gB 6.4%, p = 0.073) and CVD (gA 9.9 vs. gB 12.2%, p = 0.477) were also similar in both groups.
Conclusions: This study suggests that, although lipoprotein(a) is a well-known risk factor for CAD development, a single measurement above the cut-off of 30 mg/dL may not be associated with a poorer long-term cardiovascular prognosis in pts with AMI. Further studies are needed to provide robust data and reliable recommendations on this theme.

Table 1. Baseline, clinical and follow-up data of the included individuals

Variables	Overall sample n= 328	Lipoprotein (a) level A – Normal Lp(a) n= 180	Lipoprotein (a) level B – High Lp(a) n = 147	P value
Age, mean (±Q1-Q3), years	66 (±12)	66 (±13)	67 (±11)	0.696
Male gender, n (%)	235 (71.6)	127 (70.6)	108 (73.5)	0.560
Cardiovascular risk factors, n (%)				
Hypertension	221 (67.4)	113 (62.8)	107 (72.8)	0.055
Diabetes mellitus	98 (29.9)	52 (28.9)	46 (31.3)	0.637
Dyslipidemia	170 (51.8)	83 (46.1)	87 (59.6)	**0.015**
Smoking history	167 (50.9)	86 (47.8)	81 (55.1)	0.188
Obesity	72 (22.0)	39 (21.7)	32 (21.8)	0.982
Comorbidities, n (%)				
CKD	26 (7.9)	9 (5.0)	17 (11.6)	**0.029**
COPD	15 (4.6)	7 (3.9)	8 (5.4)	0.504
CVA	21 (6.4)	13 (7.2)	8 (5.4)	0.514
PAD	20 (6.1)	11 (6.1)	9 (6.1)	0.997
CAD	89 (27.2)	41 (22.9)	48 (32.7)	**0.049**
PCI	78 (23.9)	36 (20.1)	42 (28.6)	0.075
CABG	15 (4.6)	7 (3.9)	8 (5.4)	0.504
Family history of CVD, n (%)	8 (2.5)	5 (2.8)	3 (2.1)	0.735
ACS classification, n (%)				
STEMI	158 (48.2)	93 (51.7)	64 (43.5)	0.143
NSTEMI	160 (48.8)	80 (44.4)	80 (54.4)	0.073
MINOCA	14 (4.3)	10 (5.6)	4 (2.7)	0.208
Number of affected vessels, n (%)				
One	142 (44.1)	86 (48.9)	55 (37.9)	**0.050**
Two	93 (28.9)	48 (27.3)	45 (31.0)	0.460
Three	70 (21.7)	31 (17.6)	39 (26.9)	**0.045**
LVEF classification, n (%)				
Normal	190 (58.3)	106 (59.2)	83 (56.8)	0.667
Mildly reduce	79 (24.2)	37 (20.7)	42 (28.8)	0.091
Reduced	57 (17.5)	36 (20.1)	21 (14.4)	0.177
Killip Kimball classification, n (%)				
KK at Admission				
I	295 (89.6)	165 (91.7)	128 (87.1)	0.176
II	15 (4.6)	4 (2.2)	11 (7.5)	**0.024**
III	13 (4.0)	6 (3.3)	7 (4.8)	0.511
IV	6 (1.8)	5 (2.8)	1 (0.7)	0.229
Worst KK				
I	281 (85.7)	156 (86.7)	124 (84.4)	0.553
II	17 (5.2)	7 (3.9)	10 (6.8)	0.238
III	15 (4.6)	7 (3.9)	8 (5.4)	0.504
IV	15 (4.6)	10 (5.6)	5 (3.4)	0.354
Arrythmias within 48h, n (%)	60 (18.3)	40 (22.2)	20 (13.6)	**0.045**
High sensitivity troponin I				
Admission, median (Q1-Q3), pg/mL	545 (4-135342)	496 (4-135342)	651 (5-67973)	0.309
Highest value, median (Q1-Q3), pg/mL	14344 (25-1277443)	17143 (25-13x10^6)	12881 (78-238978)	0.200
NT-proBNP, median (Q1-Q3), pg/mL	1283 (35-35000)	1181 (45-35000)	1325 (35-35000)	0.471
In-hospital mortality, n (%)	12 (3.7)	7 (3.9)	5 (3.4)	0.816
Long-term mortality, n (%)	27 (8.7)	18 (10.6)	9 (6.5)	0.203
Readmission due to ACS, n (%)	13 (4.2)	4 (2.3)	9 (6.4)	0.073
Readmission due to CV disease, n (%)	34 (10.9)	17 (9.9)	17 (12.2)	0.477

ACS – Acute Coronary Syndrome; CABG – Coronary Artery Bypass Grafting; CAD – Coronary Artery Disease; CDK – Chronic Kidney Disease; COPD – Chronic Obstructive Pulmonary Disease; CVA – Cerebral Vascular Accident; CVD – Cardiovascular Disease; MINOCA - Myocardial infarction with nonobstructive coronary arteries; NSTEMI – Non-ST-Elevation Myocardial Infarction; PAD – Peripheral artery disease; PCI – Percutaneous Coronary Intervention; STEMI – ST-elevation myocardial infarction.

Figure PO 129

PO 130. GENE-GENE AND GENE-ENVIRONMENT INTERACTION IN CORONARY ARTERY DISEASE RISK

Francisco Sousa[1], M. I. Mendonça[2], D. Sá[1], E. Henriques[2], M. Rodrigues[2], S. Freitas[2], S. Borges[2], G. Guerra[2], G. Abreu[1], A. Drumond[1], A. C. Sousa[3], R. Palma dos Reis[4]

[1]Hospital Dr. Nélio Mendonça. [2]Research Centre Dra. Maria Isabel Mendonça, SESARAM EPERAM. [3]Research Centre Dra. Maria Isabel Mendonça, SESARAM EPERAM; Madeira University. [4]Faculdade de Ciências Médicas de Lisboa/NOVA Medical School.

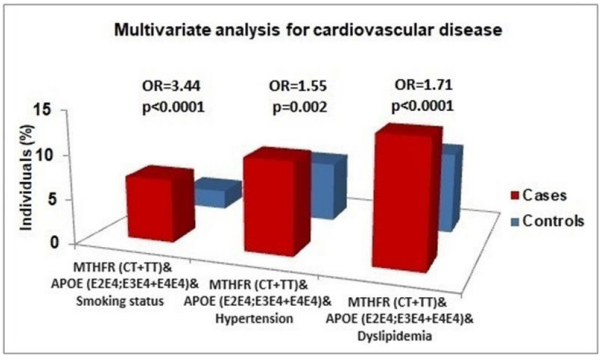
Introduction: Coronary Artery Disease (CAD) is a lethal illness that kills millions of individuals each year worldwide. This disorder is multifactorial, resulting in the complex interplay of genetic, epigenetic, and environmental factors. Exploring gene-gene and gene-environment interactions is essential to understanding the aetiology of common complex diseases like CAD.

Objectives: We proposed investigating the interaction between two genetic variants robustly associated with CAD by GWAS (MTHFR rs1801133 and APOE rs7412/rs429358) in cardiovascular susceptibility. After that, consider whether there was a new interaction between this genetic association and and environment (hypertension, dyslipidemia and smoking).

Methods: A case-control study enrolled 3,157 individuals, 1,721 coronary patients (with at least 70% stenosis of one or more major coronary arteries or its primary branches on the coronary angiography) and 1,436 controls without CAD. Traditional risk factors were investigated, and the two polymorphisms were performed by TaqMan real-time PCR. Bivariate analysis was used to study genotypic proportions between CAD and non-CAD patients with respective odds ratios (OR). Logistic regression analysis displayed the interaction between the two genetic variants each other and with some important environmental risk factors.

Results: In bivariate analysis, the genetic models were studied for both genes, being the dominant model the one which showed significance for CAD. In MTHFR, 57.8% of the patients and 53.4% of the controls presented the CT+TT

genotype (OR = 1.20; p = 0.013). In APOE, 26.5% of the patients and 22.3% of the controls had E2E4;E3E4+E4E4 (OR = 1.26; p = 0.006). The first multivariate logistic regression showed a synergistic interaction between the two genetic variants (OR = 1.50; p = 0.001). After adjusting for conventional risk factors, the logistic regression analysis entered the MTHFR rs1801133 and APOE rs7412/rs429358, showing a combined interaction effect between those genes and smoking status with an OR of 3.44 (p < 0.0001), with hypertension (OR = 1.55; p = 0.002) and with dyslipidemia (OR = 1.71; p < 0.0001).



Conclusions: According to our results, the genetic interaction between APOE and MTHFR synergistically affected the susceptibility to CAD. This interaction, linked to conventional risk factors, consistently increased the risk of CAD in our population, particularly in the group of genetic carriers who did not quit smoking.

PO 131. PROGNOSTIC IMPACT OF ESTIMATED GLOMERULAR FILTRATION RATE IN PATIENTS WITH ACUTE CORONARY SYNDROME – WHICH IS THE BEST FORMULA?

Catarina Ribeiro Carvalho[1], Marta Catarina Bernardo[1], Isabel Martins Moreira[1], Luís Azevedo[1], Fernando Fonseca Gonçalves[1], Pedro Mateus[1], Ana Baptista[1], Ilídio Moreira[1], On Behalf of The Portuguese Registry of Acute Coronary Syndromes[2]

[1]Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real. [2]CNCDC.

Introduction: chronic kidney disease is a known predictor of poor prognosis in patients with acute coronary syndrome (ACS). For that reason, nowadays is recommended the calculation of the estimated glomerular filtration rate (eGFR) on admission, aiming to predict prognosis. However, there is a paucity of studies regarding the most adequate formula.
Objectives: to assess and compare the prognosis of patients hospitalized with ACS according to the formula used to calculate the admission eGFR.
Methods: this was a national multicentre retrospective study of patients hospitalized for ACS between October 2010 and October 2022. A total of 32944 patients was included. eGFR was evaluated based on the modification of diet in renal disease (MDRD), Chronic Kidney Disease Epidemiology Collaboration (CKD EPI) and Cockcroft-Gault (CG) formulas. In-hospital and 1-year mortality rates were compared for the three groups.
Results: A total of 23198 patients was selected, 73.0% were males with a mean age of 66 ± 13 years. Mean body mass index (BMI) was 27.4 ± 4.4 kg/m^2, with 30.0% having normal BMI, 45.4% overweight, 23.9% obesity and 0.7% underweight. Serum creatinine on admission was 1.1 ± 1 mg/dL, and 6.9% of the patients had previous history of chronic kidney disease. Median eGFR was 82.2 ml/min/1.73 m^2 (IQR 62.6-102.8) using the MDRD, 86.5 ml/min/1.73 m^2 (IQR 63.4-100.2) with the CKD EPI and 80.9 ml/min/1.73 m^2 (IQR 55.6-107.4) using the CG formula. In-hospital mortality rate was 3.1%. Regarding short-term prognosis, both CKD EPI and CG formulas showed similar discriminatory capacity (p = 0.18), with sensitivity of 73.3% and 73.4%, and specificity of 72.2% and 73.4%, respectively. MDRD formula revealed the worst discriminatory capacity (p < 0.001), with sensitivity of 69.8% and specificity of 74.9%. Mortality rate increased to 6.1% at 1 year follow-up. When considering long term prognosis, CG formula proved to better predict 1 year mortality (p < 0.001), with sensitivity and specificity of 66.8 and 74.4%, respectively. CG formula showed the best discriminatory capacity, with an area under the curve (AUC) of 0.76 (95%CI 0.75 – 0.78). By the other hand, CKD EPI and MDRD formulas presented significantly lower AUC, of 0.75 and 0.73 (p < 0.001).
Conclusions: CG revealed to be the best eGFR formula to predict prognosis of SCA patients.

SEXTA-FEIRA, 19 ABRIL de 2024 | 16:00-17:30

Área de Posters 3 | Sessão de Posters 21 - Insuficiência cardíaca aguda

PO 132. EARLY POST-DISCHARGE NTPROBNP LEVELS AS A MARKER OF PROGNOSIS IN HEART FAILURE PATIENTS

Mariana Passos, Filipa Gerardo, Joana Lima Lopes, Carolina Mateus, Inês Miranda, Mara Sarmento, Inês Fialho, Ana Oliveira Soares, David Roque

Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra.

Introduction: N-terminal pro-brain natriuretic peptide (NTproBNP) is a commonly used biomarker for diagnosing heart failure (HF) and its decompensation. Current HF guidelines advocated for a follow-up visit within

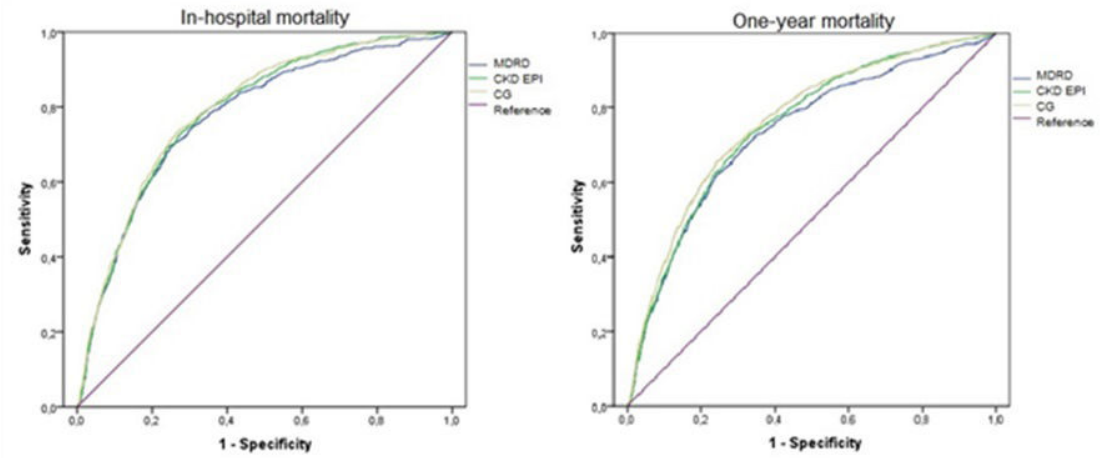
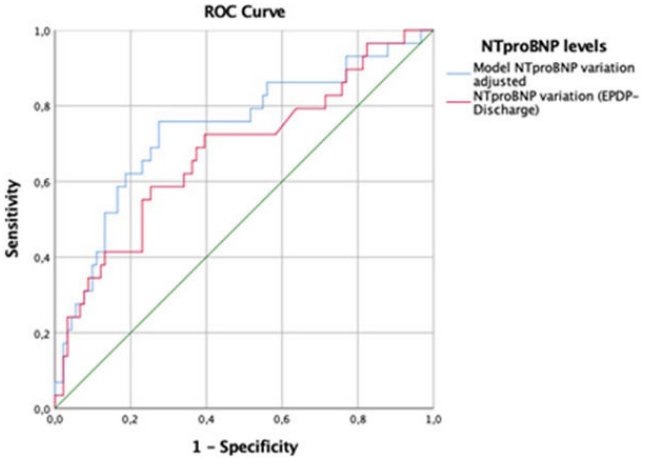


Figure PO 131

14 days post-hospital discharge to assess HF signs, optimize treatment, and prevent decompensation. The prognostic significance of NTproBNP up to 14 days after discharge is not established.

Objectives: To assess the prognostic value of NTproBNP levels early post-discharge in patients with HF.



Methods: We conducted a single-center study on 284 consecutive patients who underwent an early post discharge appointment (EPDA) between March 2021 and September 2023. Patients without NTproBNP levels assessment both at discharge and at EPDA were excluded. The primary endpoint was a composite of HF-related readmissions and all-cause death at 90 days.

Results: A total of 121 patients (median age 68 [IQR 57-76] years, 34.2% female) were suitable for analysis. The median time to EPDA was 13 [IQR 11-17] days after discharge. The median NTproBNP levels at discharge were 1893 [IQR 925-3,930] pg/ml and at EPDA were 2,580 [IQR 1,046-5,601] pg/ml. The median decrease during hospitalization was 59.9 [IQR 29.4-80.5]% and the increased after discharge was 26.9 [IQR -12.8-116.3]%. The primary endpoint occurred in 23.7% (n = 27) patients. Both NTproBNP levels at EPDA (2140 vs. 4,008 pg/ml) and its increase (13.9% vs. 85.5%) were significantly higher in patients with the primary endpoint (p = 0.008 and p = 0.002, respectively). No significant differences were observed in the median NTproBNP variation during hospitalization or NTproBNP discharge levels (p = 0.8 and p = 0.378, respectively). Logistic regression analysis revealed that only NTproBNP variation after discharge remained independently associated with the primary outcome, after adjusting for estimated glomerular filtration rate (eGFR) (OR 1.4; 95%CI 1.01-2.16; p = 0.043), while NTproBNP absolute levels at EPDA showed no significant association (OR 1; 95%CI 1.0-1.0; p = 0.2). Receiving operator characteristics curve analysis of NTproBNP variation adjusted for both NTproBNP at EPDA and eGFR (AUC 0.775; 95%CI 0.67-0.88; p = 0.0001) yielded a better prediction score than its variation alone (AUC 0.716; 95% 0.001; p = 0.001) (Figure).

Conclusions: NTproBNP levels, mainly its variation, measured around 2 weeks after discharge following an acute HF episode, are valuable prognostic indicators for predicting HF-related readmissions and all-cause death at 90 days. This allows for the identification of high-risk patients who should be reassessed earlier.

PO 133. UREA LEVELS AT ADMISSION: A FORGOTTEN YET CRUCIAL PROGNOSTIC MARKER IN HOSPITALIZED HEART FAILURE PATIENTS

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Centro Hospitalar do Baixo Vouga, EPE/Hospital Infante D. Pedro.

Introduction: Heart failure represents a significant health concern marked by heightened morbidity and mortality, with each hospital admission posing potential risks for adverse outcomes. Identifying predictors of these outcomes

Table 1. Baseline Characteristics of the Patients

	Urea < 80 mg/dL	Urea ≥ 80 mg/dL
Age - yr	77.9 ± 11.2	81.8 ± 9.1
Male sex – no. (%)	218 (60.6)	142 (39.4)
Female sex – no. (%)	160 (61.4)	96 (37.5)
Creatinine (mg/dL)	1.0 ± 0.3	1.3 ± 0.4
Hemoglobin (g/dL)	12.7 ± 2.1	11.6 ± 2.2
Systolic Blood Pressure at admission	138.7 ± 30.8	129.4 ± 32.7
Diastolic Blood Pressure at admission	75.4 ± 18.4	68.2 ± 20.2
NT-proBNP (pg/mL)	5975.7 ± 9444.6	13053.7 ± 15667.3
Left Ventricle Ejection Fraction	43.6 ± 13.0	42.1 ± 15.9
Systolic Pulmonary Artery Pressure	46.0 ± 17.9	53.3 ± 17.9

Table 2. Results – Average Urea for mortality endpoint

	Serum Urea at admission	P value
Intra-hospitalar death		<.001
• Yes	106.58 ± 56.23	
• No	80.20 ± 54.30	
30-days death for all-causes		<.001
• Yes	105.77 ± 61.59	
• No	77.53 ± 51.79	
1-year death for all-causes		.048
• Yes	92.02 ± 58.83	
• No	81.21 ± 54.00	
Total death during follow-up		<.001
• Yes	98.68 ± 60.60	
• No	72.64 ± 48.22	

Table 3. Results – Composite endpoint analysis by Urea 80 mg/dL cutoff

Composite endpoint – N [% of total]	Urea < 80 mg/dL	Urea ≥ 80 mg/dL	P value
Individuals at risk	378 (100)	238 (100)	
• 30 days	115 (30.5)	109 (46.4)	<.001
• 90 days	180 (47.7)	143 (60.9)	<.001
• 6 months	221 (58.6)	156 (66.4)	.060
• 1 year	254 (67.4)	177 (75.3)	.037

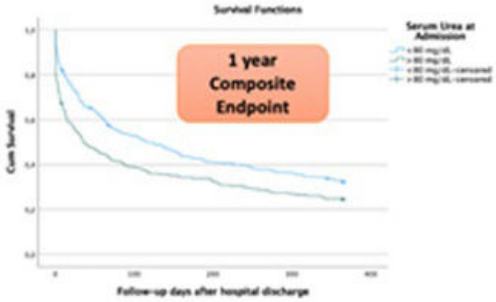

Figure PO 133

holds vital importance, shaping healthcare decisions regarding hospitalization necessity and optimal care. Renal function intricately intertwines with the cardiovascular system, influencing cardiac function. Elevated urea levels often manifest in contexts linked to heart failure decompensation, reflecting impaired renal function and heightened cardiac stress.
Objectives: Evaluate the prognostic significance of urea levels upon admission in hospitalized patients experiencing decompensated heart failure.
Methods: A single-center cross-sectional study comprised 619 hospitalized patients experiencing decompensated heart failure. Statistical analyses, including Independent-Samples T Test, Chi-square, and Kaplan-Meier analysis, were performed using SPSS software. A ROC analysis was conducted to classify groups based on a urea cutoff for the 1-year composite endpoint. This composite endpoint encompassed readmission, return visits to the Emergency Department attributable to heart failure, and mortality.
Results: A total of 619 patients were evaluated, with a mean age of 79.4 years, and 40.9% were female. The average length of hospital stay was 4.1 days. The mean Nt-proBNP at admission was 8,651 pg/mL. Among the patients, 45.2% had heart failure with reduced ejection fraction, with a mean left ventricular ejection fraction of 43.1%. The average follow-up time was 244.5 days. ROC analysis demonstrated the highest accuracy for the 1-year composite endpoint with a Urea cutoff of approximately 80 mg/dL. Patients above the 80 mg/dL urea cutoff exhibited higher creatinine (1.3 vs. 1.0 mg/dL), lower systolic/diastolic blood pressure at admission (129.4/68.2 vs. 138.7/75.4 mmHg), and elevated NT-proBNP (13,053 vs. 5,975). While LVEF was similar, Systolic Pulmonary Artery Pressure (SPAP) was higher (53.3 vs. 46.0 mmHg). Elevated urea levels consistently correlated with higher risk across intra-hospital mortality, 30-day, 1-year, and total follow-up analyses. Kaplan-Meier analysis for the composite endpoint revealed a significant difference ($p < 0.001$), indicating shorter time-to-event in patients with higher admission urea levels.
Conclusions: The findings suggest a strong link between elevated urea levels and adverse clinical indicators (blood pressure, NT-proBNP, SPAP), consistently associated with worse outcomes across different follow-up durations. Patients with elevated urea levels experienced faster occurrence of the composite primary endpoint. Further validation of the cutoff's clinical relevance is warranted, yet the initial urea measurement shows promise in predicting prognosis for hospitalized Heart Failure patients.

PO 134. HIGH-FLOW NASAL CANNULA VERSUS CONVENTIONAL OXYGEN THERAPY IN ACUTE HEART FAILURE: A META-ANALYSIS

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Introduction: High-Flow Nasal Cannula (HFNC) can deliver high oxygen (O2) flow rates, with a low level of positive end-expiration pressure; being an alternative to non-invasive ventilation in patients not able to tolerate it. While non-invasive ventilation in acute heart failure (AHF) patients has shown to reduce the need for endotracheal intubation, the role of HFNC in this setting is not well stablished.
Objectives: This meta-analysis examined the efficacy of HFNC versus conventional O2 therapy in hypoxemic patients with AHF.
Methods: We searched MEDLINE, Google Scholar and the Cochrane Library databases using the key terms "HFNC" and "AHF" without language or date restriction. Articles were considered for inclusion in the analysis if they comprised a population of hypoxemic AHF patients submitted to treatment either with HFNC or conventional O2 therapy. The primary endpoint was a composite for the need of endotracheal intubation or death. Secondary endpoints included respiratory rate and oxygen saturation 60 minutes after the initiation of treatment. Pooled mean differences and pooled odds ratios (OR) and their 95% confidence intervals (CI) were estimated based on a random effects meta-analysis, obtained from the pooled adjusted means and standard deviations, and OR of primary studies.
Results: Three studies including 307 patients were included (mean age 73 ± 11 years old, 59% female gender). Two studies were randomized controlled trials (1,2) and the other study was a prospective cohort (3). Of the total 307 patients included, 159 received HFNC treatment and there were 11 pooled adverse events (endotracheal intubation [n = 7] and death [n = 4]). HFNC did not reduce the composite endpoint (pooled OR: 0.78, 95%CI: 0.15–3.95, I^2 = 27%) compared to conventional O2 therapy; neither reduced the rates ofendotracheal intubation (pooled OR: 0.69, 95%CI: 0.15–3.29, I^2 = 0%) or death (pooled OR: 0.84, 95%CI: 0.12–6.02, I^2 = 2%), when analyzed in isolation. There was no significant heterogeneity observed between these studies. The pooled data for respiratory rateshowed an overall weighted raw mean difference of -3.16 cycles per minute (95%CI: CI -4.05, -2.27, $p < 0.001$) favoring HFNC. There was no heterogeneity (I2 = 0%). For O2 saturation, the standardized mean difference was 0.97% (95%CI 0.31, 1.63, p = 0.004) higher for the HFNC (I^2 89%).
Conclusions: According to our data, HFNC significantly improved oxygenation and decreased the respiratory rate in patients with acute heart failure. No significant effect on endotracheal intubation or death rates were observed.

PO 135. PERFORMANCE OF FENNIX SCORE IN POST-DISCHARGE HEART FAILURE APPOINTMENT: A PREDICTOR OF FUTURE HOSPITALIZATION

Ana Filipa Mesquita Gerardo, Mariana Passos, Inês Fialho, Ana Oliveira Soares, Carolina Mateus, Inês Miranda, Joana Lima Lopes, Mara Sarmento, Daniel Faria, David Roque

Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra.

Introduction and objectives: Several scoring systems have been developed to predict mortality and decompensations in heart failure (HF) patients recently hospitalized. We aimed to develop a simple scoring system to predict HF decompensation and cardiovascular (CV) mortality in heart failure early post discharge-appointment (EPDA).
Methods: We conducted a retrospective single center study from February 2021 to September 2023 on hospitalized acute HF patients. Patients were included if they had an EPDA within 2 weeks after discharge, and laboratorial data available at discharge and at EPDA. Binary logistic regression analysis was applied to relate a broad range of admission parameters to the study endpoints. Variables with a p-value < 0.05 or deemed clinically relevant were selected. A score-based prediction rule for the primary endpoint was developed using a

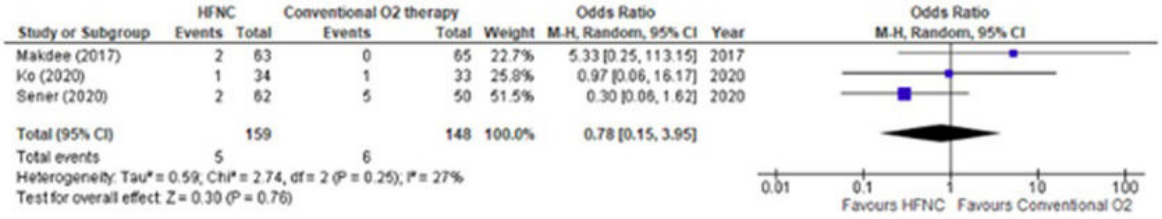
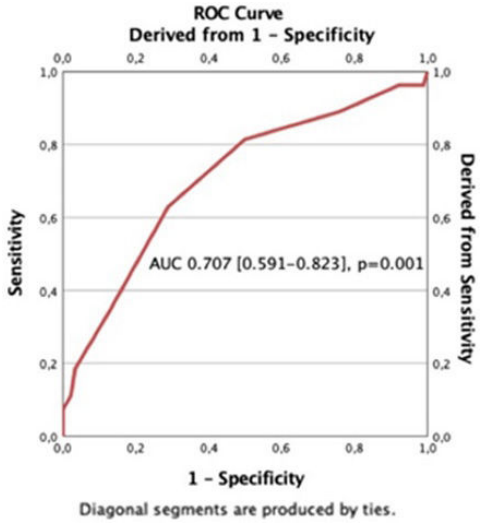


Figure 1 – Forrest plot for high-flow nasal canula (HFNC) vs conventional oxygen (O2) therapy for the primary endpoint. There was no difference between strategies to avoid the need for endotracheal intubation or mortality - pooled OR: 0.78, 95% CI: 0.15–3.95, I^2=27%.

Figure PO 134

regression coefficient-based scoring method. The primary endpoint was heart failure decompensation or CV mortality in a 3-month follow-up period.



Results: A total of 283 electronic charts were reviewed. Of these 119 met the inclusion criteria. Median age was 68 [IQR 57-75] years, 65.5% (n = 78) males, mean left ventricle ejection fraction (LVEF) was 29.5 ± 11,61% and median NYHA score at EDPA was II [IQR II-II]. The primary endpoint occurred in 28 patients (23.6%). Our model (FENNIx score) included five variables weighted as follows: glomerular Filtration rate ≤ 60 mL/min/m² (1 point) (odds ratio [O.R.] 0.973; 95% confidence interval [CI] 0.96-0.99; p < 0.0001); LVEF < 35% (1 point), if LVEF < 20% (2 points) (O.R. 2.057; 1.07-3.95; p = 0.03); NYHA class at EPDA (1-4 points depending on the NYHA class) (O.R. 1.62; 1.05-2.509; p = 0.028); NTproBNP Increase at EDPA (2 points); and diminished creatinine eXcretion indicated by an elevation ≥ 0.3 mg/dL from discharge to appointment (1 point), or an elevation ≥ 0.6 mg/dL (3 points) (O.R. for creatinine clearance 2.63, 1.49-4.64; p = 0.001). The prognostic ability was good for receiving operator characteristics (ROC) curve with area under the curve [AUC] of 0.707 [0.591-0.823], p = 0.001) (Figure). For a one-unit increase in the score, the odds of HF decompensation or cardiovascular mortality in a 3-month follow-up period are 1.5 times higher.
Conclusions: The FENNIX score (https://www.calconic.com/calculator-widgets/fennix-score/657ef47ab85e7d001eb8ff1f?layouts = true) is an easy tool with good prediction of HF decompensations and mortality in a 3-month period.

PO 136. ACETAZOLAMIDE EFFICACY AND SAFETY IN PATIENTS WITH ACUTE HEART FAILURE WITH VOLUME OVERLOAD: A SYSTEMATIC REVIEW AND META-ANALYSIS

Bernardo Lisboa Resende, Gonçalo Ferraz Costa, Rafaela Fernandes, Tomás M. Carlos, Luísa Gomes Rocha, Mafalda Griné, Gonçalo Terleira Batista, Ana Luísa Silva, Mariana Simões, Tatiana Santos, João Gameiro, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

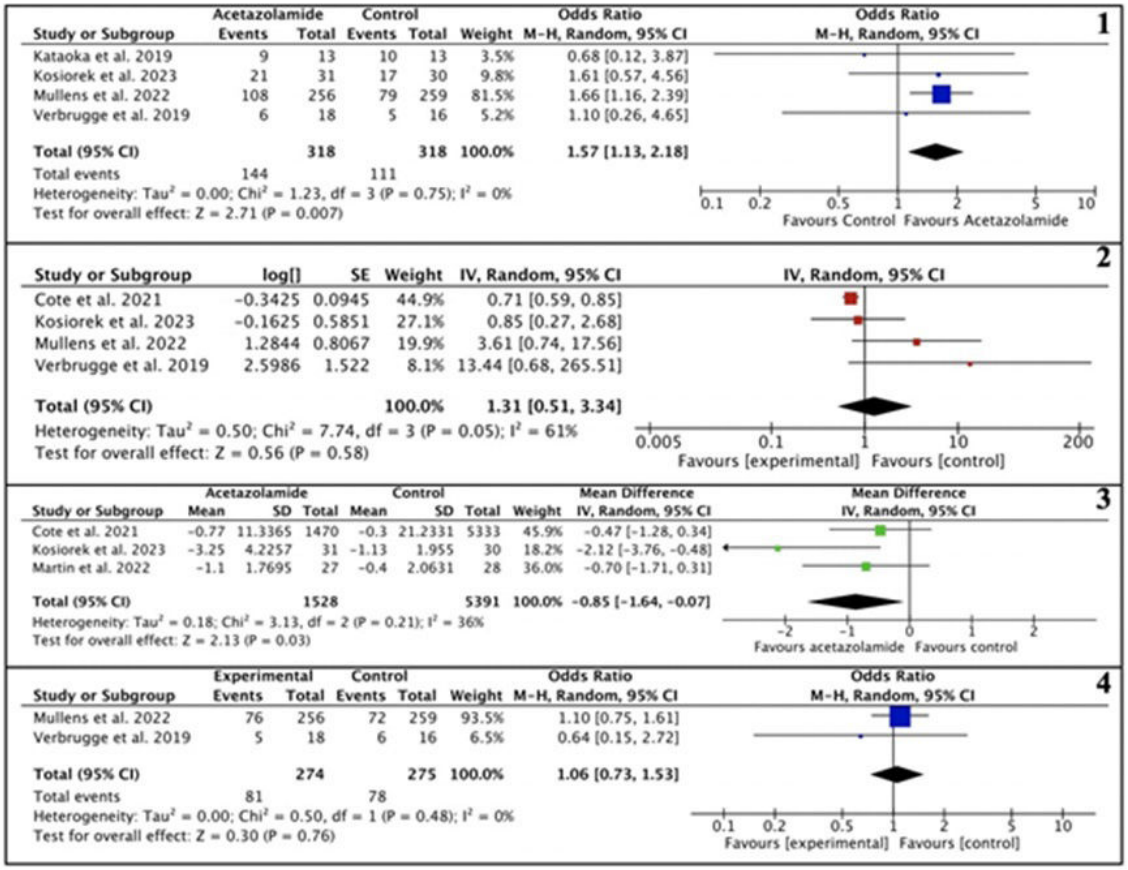


Image 1. Forest plot graphics of the analyzed outcomes. 1.1 Successful clinical decongestion; 1.2 Worsening renal function or acute renal injury; 1.3 Weight loss at 48 hours; 1.4 Rehospitalization for heart failure or all-cause mortality at 3 months.

Figure PO 136

Introduction: Diuretics are the cornerstone therapy in acute heart failure (AHF) with fluid overload, and loop diuretics are the favoured drugs, due to their efficacy and rapid onset. Insufficient diuretic response remains a clinical challenge, and current guidelines behold the concomitant administration of other diuretics. In a recent randomized clinical trial, the addition of acetazolamide to conventional diuretic therapy increased clinical decongestion, however evidence supporting its use in AHF is still limited.
Objectives: Evaluate the efficacy and safety of acetazolamide addition to intravenous diuretic therapy, in patients with acute decompensated heart failure.
Methods: We systematically checked the Cochrane Controlled Register of Trials, EMBASE and PubMed for both interventional and observational studies comparing acetazolamide on top of conventional loop diuretic therapy versus conventional loop diuretic regimens. Primary outcomes were successful clinical decongestion and worsening renal function or acute renal injury (AKI). Secondary endpoints were weight loss at 48 hours and rehospitalization for heart failure or all-cause mortality at 3 months. We excluded studies reporting other experimental strategies and that didn't encompass full-text article or the selected outcomes. Our meta-analysis was conducted on a random effects model, considering a 95% confidence interval.
Results: Of the 670 records from our search strategy, 7 studies were included, providing a total of 3.421 patients. Our meta-analysis revealed increased rates of successful clinical decongestion (pooled odds ratio (OR) 1,57 [1,13-2,18], $p < 0,75$, $I^2 = 0\%$), without statistical significance in worsening renal function or AKI (pooled instrumental variables 1,31 [0,51-3,34], $p = 0,05$, $I^2 = 61\%$), despite a tendency favouring the control group. Regarding secondary outcomes, the addition of acetazolamide revealed increased weight loss (pooled mean difference -0,70 [(-1,64)-(-0.07)] kg, $p = 0,21$, $I^2 = 36\%$), although there was no statistical significance between groups concerning rehospitalization for heart failure or all-cause mortality at 3 months (pooled OR 1,06 [0,73-1.53], $p = 0,48$, $I^2 = 0\%$).
Conclusions: In general, our study provides important data regarding the clinical benefits of introducing acetazolamide in the management of patients with acute heart failure with volume overload, respecting to increased rates of successful decongestion and weight loss.

PO 137. WHAT DOES THE RATIO UREA-TO-CREATININE IN HEART FAILURE HOSPITALIZATIONS TELL US?

Simão de Almeida Carvalho, Carlos Costa, Adriana Pacheco, Tiago Aguiar, Diana Carvalho, Andreia Fernandes, Mesquita Bastos, Ana Briosa

Centro Hospitalar do Baixo Vouga, EPE/Hospital Infante D. Pedro.

Introduction: Heart failure significantly affects morbidity and mortality, with each hospitalization posing risks for adverse outcomes. Identifying predictors of these outcomes shapes healthcare decisions, guiding hospitalization necessity and required care levels. Renal function is pivotal in bodily balance, intricately connected to cardiac function. Elevated urea levels, often linked to kidney disease and hypovolemia, signify various physiological contexts.
Objectives: To evaluate the influence of the urea-to-creatinine ratio upon admission on individuals admitted for decompensated heart failure.
Methods: A cross-sectional study conducted at a single center, encompassing 619 hospitalized patients diagnosed with decompensated heart failure. Statistical analyses, such as Independent-Samples T Test and Chi-square, were performed utilizing SPSS.
Results: 619 patients underwent assessment, averaging 79.4 years in age, with 40.9% being female. The average hospital stay duration was 4.1 days. Upon admission, the mean Nt-proBNP measured 8,651 pg/mL. Within this cohort, 45.2% presented heart failure with reduced ejection fraction, featuring an average left ventricular ejection fraction of 43.1%. For two groups comparison we used a urea-to-creatinine ratio of 50, because that was the average in our sample, with the higher accuracy for the outcome analysis by ROC analysis. In the analysis there were relevant significant statistical differences between the group of patients with a urea-to-creatinine ratio less than 50 and higher. For the higher ratio group, the systolic blood and diastolic blood pressure at admission and hemoglobin were lower. In contrast a higher ratio was associated to incremental NT-proBNP and Systolic Pulmonary Artery Pressure (PSAP), estimated by transthoracic echocardiography. Lastly, we conducted an outcomes analysis, for death, that showed statically significant differences, for an average higher urea-to-creatinine ratio in patients with increased death in the intra-hospitalar

Table 1. Differences stratified by urea-to-creatinine ratio

	Urea-to-creatinine ratio < 50	Urea-to-Creatinine ratio ≥ 50	P value
Age - yr	78.2 ± 11.3	80.8 ± 9.8	*
Male sex – no. (%)	140 (54.7)	116 (45.3)	*
Female sex – no. (%)	173 (47.7)	190 (52.3)	*
Systolic arterial pressure at admission (mmHg)	138.01	132.19	.026
Diastolic arterial pressure at admission (mmHg)	74.21	70.91	.038
Mean Arterial Pressure at admission (mmHg)	95.16	91.34	.029
Pulse pressure at admission (mmHg)	63.80	61.28	.228
Hemoglobin (g/dL)	12.45	12.08	.095
NT-proBNP (pg/mL)	7584.18	9852.50	.043
Systolic Pulmonary Artery Pressure estimated by echocardiography (mmHg)	45.85	51.98	.023
Left Ventricle Ejection Fraction (% of patients)			.813
• LVEF <40%	55.0	45.0	
• LVEF >40%	53.5	46.5	

Table 2. Results – Average Urea-to-creatinine ratio at admission for mortality endpoint

	Urea-to-creatinine ratio	P value
Intra-hospitalar death for all-causes (%)		.040
• Yes	56.78 ± 19.52	
• No	51.68 ± 21.15	
30-days death for all-causes (%)		.014
• Yes	56.35 ± 20.28	
• No	51.21 ± 21.08	
1-year death for all-causes (%)		.368
• Yes	53.79 ± 20.36	
• No	51.89 ± 21.17	
Total death during follow-up (%)		.007
• Yes	55.03 ± 20.35	
• No	50.36 ± 21.30	

Figure PO 137

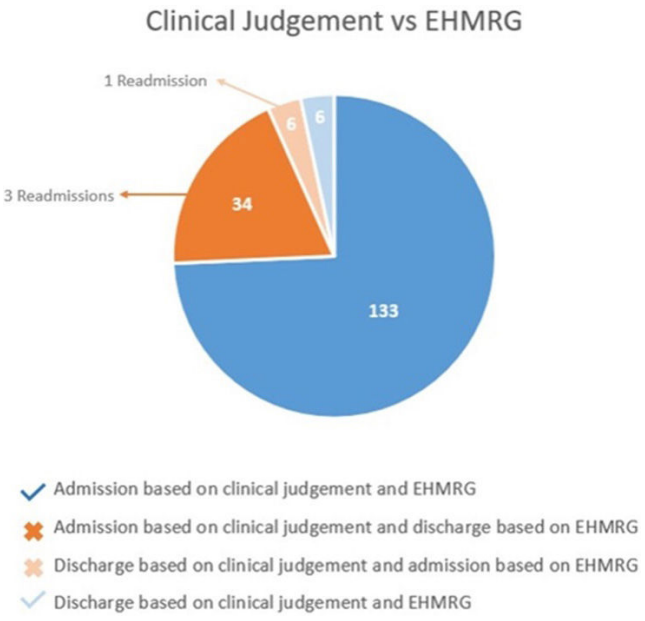
period, 30-days and within the total follow-up. In contrast the average value of urea-to-creatinine ratio showed a tendency to be higher in the group with an outcome of death at 1 year, but that difference as not statistically significant.
Conclusions: In heart failure acute decompensation a higher urea-to-creatinine ratio was associated with other biomarkers of negative outcomes and directly associated with death after acute heart failure decompensation and hospitalization.

PO 138. REAL-WORLD APPLICABILITY OF THE EMERGENCY HEART FAILURE MORTALITY RISK GRADE IN REDUCING HOSPITALIZATION

Mariana Passos, Filipa Gerardo, Carolina Mateus, Joana Lima Lopes, Inês Miranda, Mara Sarmento, Ana Oliveira Soares, David Roque

Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra.

Introduction: Hospitalizations for heart failure (HF) are common and impose a heavy burden on healthcare resources. Efforts to decrease potentially avoidable hospital admissions are crucial. The Emergency Heart failure Mortality Risk Grade (EHMRG) initially design to predict mortality within 7 days of presentation, allows risk assessment for acute HF in the emergency department (ED) aiding the stratification of care levels (admission versus early discharge).
Objectives: To assess the ability of the EHMRG to identify low risk patients and reduce the number of hospital admissions for decompensated HF.
Methods: We conducted a single-center study on 253 patients who attended the ED for decompensated HF between March 2021 and September 2023. Patients with history of chronic dialysis and without available information about at least one of the EHFMRG variables were excluded. The EHMRG was calculated retrospectively, and according to it, patients were stratified in risk groups.



Results: A total of 179 patients were included (age 68 [IQR 57-76] years, 34% female). Based on clinical judgement, 167 (93.3%) patients were hospitalized. Applying the EHMRG, patients were stratified in 5 risk groups: 43.6% (n = 78) very high; 25.7% (n = 46) high; 14% (n = 25) intermediate; 12.3% (n = 22) low; 4.5% (n = 8) very low. According to the EHMRG, discharge is considered safe in very low and low risk groups; therefore 16.8% (n = 30) could have been discharged. In the intermediate group, we decided to assesse whether there were any criteria for hospitalization in the coronary care unit or intensive care, and exclude those with an acute coronary syndrome (n = 8), requiring oxygen supplementation (n = 6) and hemodynamically unstable (n = 1). Therefore, if decision-making had been based on EHMRG, only 139 (77.6%) patients would have been hospitalized (p = 0.028). There were no deaths in the 30 days post-discharge, however 14.5% (n = 26) patients were readmitted for HF worsening. In 34 patients (18.9%) hospitalization was deemed necessary based on clinical judgement, while the EHMRG indicated that discharge would have been safe. However, of those 3 (1.7%) were readmitted within 30 days after discharge, all of them were classified as intermediate risk based in the additional referred criteria. In contrast, discharge was considered safe based on clinical judgement in 6 patients (3.4%), while the EHMRG indicated that hospitalization would have been advised. Of those 1 (0.6%), that was classified as high risk, was readmitted for HF worsening.
Conclusions: The EHMRG accurately differentiates between high and low-risk acute HF patients visiting the ED. In our population, according to the EHMRG, the number of admissions for HF can be reduced by 16.8%, reducing costs and potentially prevent iatrogenic complications, ideally with an cardiology appointment scheduled.

PO 139. BEYOND NT-PROBNP: CA-125'S DISTINCTIVE ROLE IN HEART FAILURE - INSIGHTS INTO RIGHT VENTRICULAR PREDOMINANCE AND TRICUSPID REGURGITATION

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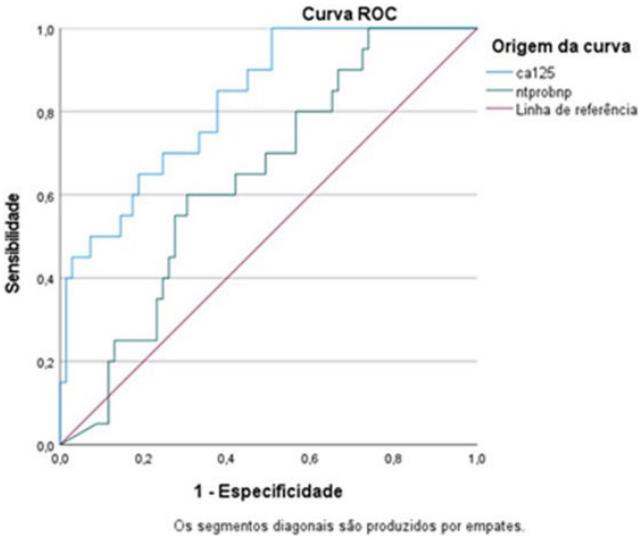
Introduction: Recent studies have identified Ca-125 as a biomarker for congestion and prognosis. Ca-125 demonstrates a correlation with serosal effusions and peripheral edema, potentially holding greater significance compared to NT-pro-BNP in cases involving right heart predominant heart failure (HF).
Objectives: The objective was to assess the potential correlation with right versus left-dominant congestion, the association with the severity of tricuspid regurgitation (TR) and the association with the risk of hospital readmission and mortality.
Methods: A prospective study involving 89 hospitalized patients with the diagnosis of HF in hemodynamic profile B between February and November 2023. Demographic, clinical, analytic, echocardiographic and outcome data were collected. Serum levels of Ca-125 and NTproBNP were obtained within the initial 3 days of admission. Elevated Ca-125 levels were defined as > 35 U/mL, while NT-proBNP levels were interpreted according to the 2021 ESC guidelines. We investigated the association between Ca-125 and NT-proBNP with HF predominance patterns, TR severity and other relevant parameters.



Results: The analyzed group presented a median age of 75 (IQR: 15.5) years and 64% were male. Half of patients (50.6%) had a preserved left ventricle

ejection fraction (LVEF), 36% had moderate to severe LVEF depression and 13.6% had mildly reduced LVEF. Elevated Ca-125 was significantly associated with right heart predominant HF (211.5 (IQR: 325.3) vs. 58.4 (IQR:103.7) in non-right HF, p < 0.001), the presence of moderate and severe TR (Ca-125 – 93.7 (IQR: 207.1) vs. 39.6 (IQR: 88) U/mL in mild TR, p < 0.001) and peripheral edema above the knees (135.7 (IQR:137.3) vs. 26.1 (IQR: 54.3) U/mL below the knees, p < 0.001). Lower levels were associated with left heart predominant HF (25.9 (IQR: 26.7) U/mL vs. 132.5 (IQR: 137.3) in non-left HF, p < 0.001). The predictive accuracy analysis demonstrated superior performance of Ca-125 compared to NT-proBNP for right heart HF (AUC 0.83 vs. 0.61, p = 0.02; Figure). Both biomarkers exhibited robust negative predictive accuracy for left heart HF (AUC 0.11 and 0.18, respectively) and positive predictive accuracy for moderate or severe TR (AUC 0.71 and 0.73, respectively). Unlike NT-proBNP, Ca-125 elevation exhibited a statistical trend towards increase in hospital readmissions and all-cause mortality at follow-up (94.5 (QRS: 152.3) vs. 67.1 (IQR: 132) U/mL, p = 0.072). Elevated CA125 and NTproBNP independently associated with both right (p = 0.001 and p < 0.001, respectively) and left HF (p = 0.001 and p < 0.001, respectively).
Conclusions: Ca-125 demonstrated superior predictive accuracy for right heart HF compared to NT-pro-BNP. The findings suggest Ca-125 potential as a valuable biomarker in assessing ventricular involvement and TR severity, paving the way for improved prognostication.

PO 140. PATIROMER AS A CORNERSTONE FOR HYPERKALEMIA MANAGEMENT IN SPIRONOLACTONE-UNTREATED PATIENTS - A REAL-WORLD PERSPECTIVE

Filipa Gerardo, Mariana Passos, Inês Fialho, Inês Miranda, Carolina Mateus, Mara Sarmento, Joana Lima Lopes, David Roque

Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra.

Introduction and objectives: Heart failure (HF) remains a leading cause of morbidity and mortality worldwide. The DIAMOND trial (Patiromer for the Management of Hyperkalemia in Subjects Receiving RAASi for HFrEF) showed that patiromer was effective at maintaining lower serum potassium levels among patients with HF with reduced ejection fraction (HFrEF) receiving RAASi therapy. This study aims to investigate the potential use of patiromer, in real-world HF pts.
Methods: We conducted a retrospective study of hospitalized acute HF patients from February 2021 to September 2023. Among this cohort, we applied the enrollment criteria of the DIAMOND trial. Patients with ≥ 18 years, in New York Heart Association (NYHA) Class II–IV and a left ventricular ejection fraction (LVEF) ≤ 40% were considered for inclusion. Patients were excluded if they had an estimated glomerular filtration rate (GFR) < 30 ml/min/1.73 m^2, systolic blood pressure < 90 mmHg or symptomatic hypotension. Patients were then eligible to start patiromer therapy if 1) they had hyperkalemia (serum potassium [K+] > 5.0 mmol/l) while receiving an angiotensin-converting enzyme inhibitor (ACEi), angiotensin receptor blocker (ARB), angiotensin receptor-neprilysin inhibitor (ARNi), and/or MRA therapy, or 2) if they were normokalemic at screening but had a history of dose reduction or discontinuation of the RAASi therapy due to hyperkalemia in the previous 12 months.
Results: A total of 283 electronic medical charts were reviewed. Of these 179 HF patients met the inclusion criteria and exclusion criteria for patiromer therapy. 68.2% (n = 122) were males, mean age was 64.2 ± 3.2 years, mean LVEF 28.9 ± 11.6%, median GFR 64 [IQR 49-86.5] ml/min/1.73 m^2 and median K+ was 4.5 [IQR 4.1-4.8]. Regarding the 1st eligibility criteria, 23.46% (n = 42) of patients were discharged without spironolactone due to hyperkalemia at discharge or during hospital stay, and 5 of these (11.6%) did not receive ACEI/ARB/ARNi for the same reason. Regarding the 2nd eligibility criteria, 3.5% (n = 6) of patients were discharged with a reduction of MRA dose due to hyperkalemia. In total, 27.8% (n = 48) patients could have been started on patiromer therapy and were discharged with suboptimal MRA treatment.
Conclusions: This study validates that in the real-world, the incorporation of potassium binders like patiromer may contribute to optimizing the therapeutic landscape for a significant proportion of HF patients receiving suboptimal MRA treatment due to hyperkalemia

SEXTA-FEIRA, 19 ABRIL de 2024 | 17:30-18:30

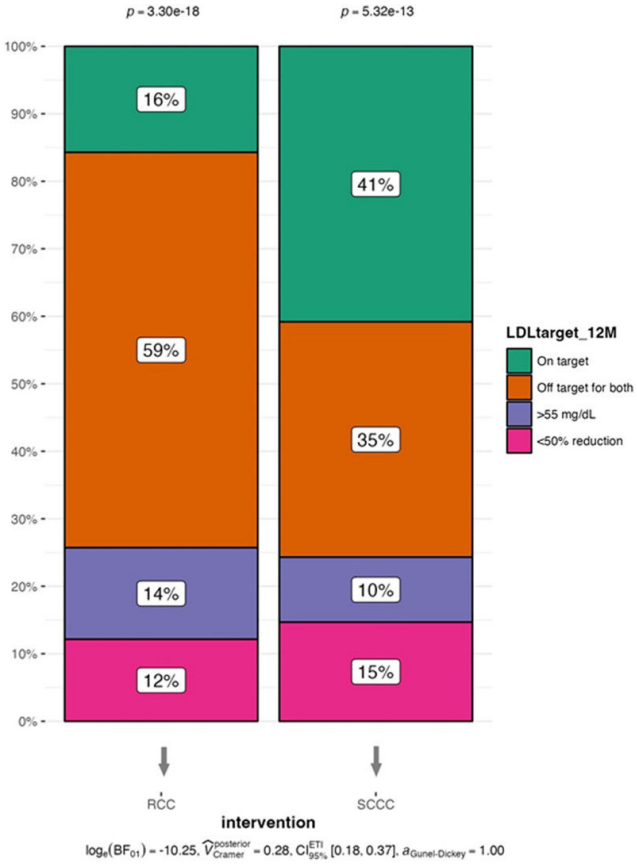
Área de Posters 2 | Sessão de Posters 22 - Risco cardiovascular

PO 141. BEYOND GUIDELINES: ACHIEVING RISK FACTORS THERAPEUTIC GOALS THROUGH A STRUCTURED FOLLOW-UP PROGRAM

Marta Leite[1], Maksym Baburko[2], Eduardo Vilela[1], Sílvia O. Diaz[2], António Barros[2], Francisca Saraiva[2], Ricardo Fontes-Carvalho[1]

[1]Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE. [2]Faculdade de Medicina da Universidade do Porto.

Introduction: Patients with a history of acute coronary syndrome (ACS) face elevated risks of recurrent cardiovascular (CV) events. This study aims to evaluate the impact of a structured coronary disease follow-up program in achieving the guideline's recommended target goals for CV risk factors in secondary prevention.
Methods: In order to assess whether our follow-up program led to a greater number of patients with controlled CV risk factors, we defined two distinct patient cohorts: the Structured Coronary-Disease Cardiology Consultation (SCCC) group (237 patients, August 2021 to July 2022) and the control group - the Regular Cardiology Consultation (RCC) group (284 patients, January to December 2018). Over a 12-month observation period following the ACS event, parameters such as lipid profile, glycated hemoglobin (HbA1c) in diabetic patients, and systolic blood pressure (SBP) were collected in both groups. CV risk factors goals were defined in accordance with the recommended target values outlined in the most recent European Society of Cardiology (ESC) guidelines: LDL-C < 55 mg/dL (< 1.4 mmol/L) and an LDL-C reduction of > 50% from baseline, HbA1c < 7%, and Bp < 140/90 mmHg. Statistical analysis employed Chi-Square, Fisher's exact test, and Wilcoxon tests.



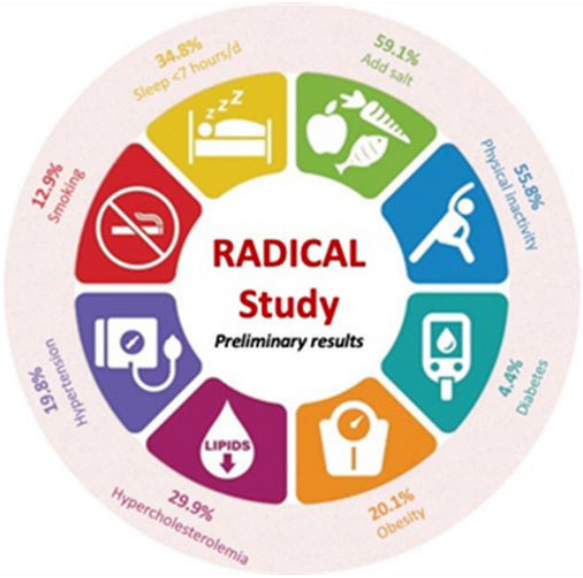
Results: SCCC group exhibited more patients with controlled LDL-C levels after 12 months of follow-up (16% RCC group vs. 41% SCCC group, p < 0.001) (Figure), and more than a half of the diabetic patients in the SCCC group achieved the therapeutic goal for HbA1c (35% RCC group vs. 59% SCCC group, p = 0.02). Although no significant difference was observed in the number of patients considered "on target" for SBP (63% RCC group vs. 70% SCCC group, p = 0.10), over two-thirds of patients in the SCCC group achieved the established goal. SCCC facilitated more intensive medication regimens, namely combination therapies. The combination of high-intensity statin and ezetimibe was used in 10.6% of patients in the RCC group and in 72.1% in the SCCC group. Among the diabetic patients, 28% of the RCC group were medicated with metformin monotherapy, and in comparison, in the SCCC group the percentage of patients medicated with monotherapy was low (0% metformin, 1.5% with insulin, 1.5% DPP4 inhibitors, 6.2% SGLT2 inhibitors). When considering only the most used antihypertensive medication, about 45.9% of patients in the RCC group and 43.8% the SCCC group were medicated with a combination of ACEI/ARA and BB.
Conclusions: Implementing the SCCC program significantly increased the number of post-ACS patients with controlled CV risk factors. Standardized monitoring, extensive patient-physician interaction, early referrals, and specialized follow-up contributed to positive outcomes. This study advocates for adopting structured cardiology programs to optimize post-ACS patient care.

PO 142. DIGITAL SELF-REPORTED CARDIOVASCULAR RISK FACTORS IN A SAMPLE OF THE PORTUGUESE POPULATION - PRELIMINARY RESULTS FROM THE RADICAL STUDY

Hélder Dores[1], José Ferreira Santos[2], Sara Gamboa Madeira[3], Sofia Furtado[4], Hugo Pereira[4], Diana Teixeira[1]

[1]Faculdade de Ciências Médicas de Lisboa/NOVA Medical School. [2]Hospital da Luz Setúbal. [3]Faculdade de Medicina da Universidade de Lisboa. [4]Hospital da Luz Lisboa.

Introduction: Cardiovascular (CV) diseases remain the worldwide leading cause of death. Risk stratification and early intervention with lifestyle changes and therapeutic measures are essential to overcome this reality. In this preliminary baseline data analysis of the RADICAL Study *(*RA*streio* D*igital do r*Isco CA*rdiovascu*L*ar)*, we aimed to evaluate the prevalence of self-reported CV risk factors in a sample of the Portuguese adult population, using a digital tool, in the first month of this ongoing study.
Methods: A self-reported CV risk stratification digital tool integrating 23 questions about classical and lifestyle CV risk factors, including age, sex, smoking, body mass index (BMI), blood pressure, lipid profile, diabetes, sleeping and eating habits, and physical activity, was previously developed and validated. Individuals were invited to complete the questionnaire through social media and other online platforms. Adults aged 40-69 without known CV disease are being recruited during a planned enrollment period of 6 months.
Results: To date, a total of 2,820 answers were received from participants with a mean age of 53.4 ± 7.7 years old, and 74.7% were female. After the exclusion of 710 due to know CV disease, the final sample included 2110 answers. Among the classical CV risk factors, 29.9% of participants reported hypercholesterolemia and 14.2% were on cholesterol-lowering medication, 19.8% hypertension and 17.1% were on antihypertensive drugs, 12.9% smoking, 4.4% diabetes and 3.8% were on medication for glycemia control. Only 44.2% of participants referred regular physical activity (median 5.0 [3.0; 6.0] hours per week), the mean BMI was 26.4 ± 4.7 kg/m^2 (20.1% with obesity) and the mean sleeping hours per night was 6.9 ± 1.0 hours (34,8% sleeping less than 7 hours). Among the eating habits, 35.9% reported a daily consumption of 5 portions of vegetables/fruit and 16.6% a daily consumption of red/processed meat. In comparison, the majority (59.1%) reported adding salt to main meal preparation. A third of the participants (33.4%) measured their blood pressure in the previous 24 hours (mean systolic 122 ± 15 mmHg and diastolic 76 ± 12 mmHg blood pressure), and 40.1% had a lipid profile evaluation in the last six months (mean total cholesterol 189 ± 47 mg/dl and non-HDL cholesterol 120 ± 48 mg/dl).



Conclusions: The preliminary results of the RADICAL Study show a high prevalence of CV risk factors in adults without known CV disease. Beyond the relevance of traditional risk factors, such as hypercholesterolemia and hypertension, the results regarding physical activity, BMI, and sleep are concerning. A self-reported CV risk stratification digital tool could be feasible and improve CV prevention.

PO 143. WHICH IS BETTER FOR PREDICTING AND DISCRIMINATING CARDIOVASCULAR EVENTS: A TRADITIONAL RISK SCORE, A CALCIUM SCORE OR A GENETIC RISK SCORE?

Francisco Sousa[1], M. I. Mendonça[2], M. Serrão[1], D. Sá[1], E. Henriques[2], S. Freitas[2], M. Rodrigues[2], S. Borges[2], G. Abreu[1], A. Drumond[1], A. C. Sousa[3], R. Palma dos Reis[4]

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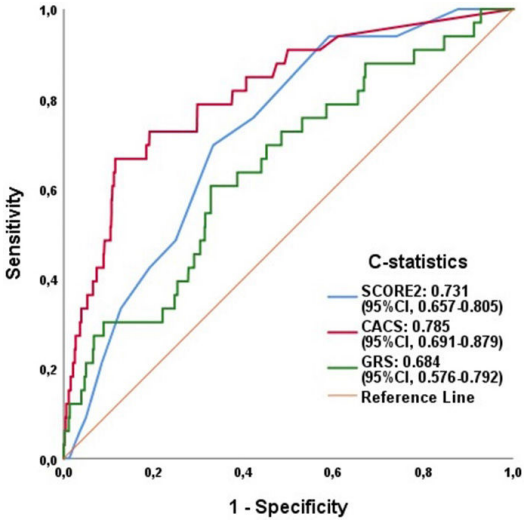
Introduction: The most effective approach to prevent coronary artery disease (CAD) in the general population remains to quantify the individual risk of CAD followed by controlling risk factors. There has been a lot of curiosity to investigate several scores individually for improving risk prediction. However, whether one would be better than the other in the same population is still unclear.
Objectives: To evaluate the performance of the three individual scores (European SCORE2, Coronary artery calcium score (CACS) and a Genetic risk score (GRS) in predicting and discriminating cardiovascular (CV) events in an asymptomatic Portuguese population.
Methods: Prospective, observational population-based study, including 1,002 asymptomatic subjects (mean age 53.1 ± 6.8 years, 73.8% male) selected from a normal population, without apparent CAD and diabetes at baseline. Data were recorded at the end of an extended follow-up (average 6.5 ± 4.9 years). The European SCORE2, a computed tomography coronary artery calcium score (CACs), and a genetic risk score (GRS) were created to evaluate CV events' predictive and discriminative ability through Receiver Operating Characteristics (ROC) analysis and Harrell's C-statistics.
Results: ROC curve analysis showed 0.723 for SCORE2, 0.815 for CACs and 0.649 for GRS. Harrell's C-statistics were 0.731 in the SCORE2, 0.785 for CACs and 0.684 for GRS.



Conclusions: The CAC score was the best individual score to predict and discriminate CV events in our asymptomatic population. Its capacity to identify high-risk individuals and those asymptomatic with subclinical atherosclerosis may improve CV risk management strategies to prevent future cardiovascular events. This result can be explained because CAC score, more than a risk marker, represents the existence of disease in the vessel wall.

PO 144. SECONDARY PREVENTION IN YOUNG PATIENTS AFTER ACUTE ST SEGMENT ELEVATION MYOCARDIAL INFARCTION: MISSING THE GOALS AND SUFFERING THE PENALTIES

Miguel Azaredo Raposo[1], Ana Abrantes[1], Graça Araújo[2], Daniela Roxo[2], José Costa[2], José Poupino[2], Rita Pinto[3], Madalena Lemos Pires[4], Sílvia Fiuza[1], Inês Ricardo[5], Ana Abreu[5], Fausto J. Pinto[5]

[1]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Physical and rehabilitation Medicine, CHULN. [3]Centro Cardiovascular da Universidade de Lisboa (CCUL@RISE), Faculdade de Medicina, Universidade de Lisboa. [4]Centro Cardiovascular da Universidade de Lisboa (CCUL@RISE), Faculdade de Medicina, Universidade de Lisboa. [5]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Young patients that suffer an acute ST segment elevation myocardial infarction (STEMI) are an especially vulnerable population that requires close monitoring. Therefore, secondary prevention in these pts is key to prevent event recurrency during their lifetime.
Objectives: To evaluate efficacy of risk factor control in a population of young pts with STEMI.
Methods: Retrospective, single-center study of consecutive pts, aged below 50 years, admitted with STEMI between 2017 and 2021. Demographics, clinical characteristics and outcomes were analyzed. Parametric and non-parametric tests were performed as appropriate.
Results: We included 306 pts, 81.7% were men, mean age of 43.9 ± 5.1 years, the majority was admitted with anterior followed by inferior STEMI. Only 26 pts were previously under statin therapy, median cLDL at admission was 105 ± 47. At discharge all pts were under statins however only 63% received high intensity statin and 4% ezetimibe. Only 20% of pts completed a cardiac rehabilitation program.During a mean follow-up (FUP) of 3.8 ± 1.7 years, 52.3% of pts had less than optimal controlled hypertension, 20.7% had diabetes, 53% still smoked, cLDL was significantly lower, (mean of 86 ± 39, $p < 0.001$), with a mean reduction of 26.8% ± 46.6. High intensity statin was prescribed to 54% of pts, ezetimibe to 33%, the combination of high intensity statin and ezetimibe to 22%, no one was under iPCSK9 or bempedoic acid. However, only 16.8% of pts met guideline-oriented goal of cLDL < 55 mg/dl, and only 26.9% presented a 50% reduction from baseline cLDL. In pts with cLDL > 55 mg/dl only 47.7% were under high intensity statin, 33% under ezetimibe and 30.4% under high intensity statin plus ezetimibe, up titration occurred in about 30% of these pts. When considering pts under high intensity statin and ezetimibe only 23.7% met cLDL goal. During FUP, 19 pts had reinfarction and of these only 5.3% of pts met target cLDL and half were under therapy with high intensity statin and ezetimibe. When considering the 25 pts who died, no one had cLDL < 55 nor anyone was under high intensity statin plus ezetimibe.
Conclusions: Secondary prevention in coronary patients, namely young ones, must be strengthened; cardiac rehabilitation referral and completion of programs has to be optimized and special focus on cardiovascular risk factors control must be made in order to achieve guideline recommended targets and reduce adverse events during follow-up.

PO 145. CARDIOGAP: BRIDGING THE GAP BETWEEN PATIENT IDENTIFICATION AND THERAPY IMPLEMENTATION IN CARDIOVASCULAR RISK

João Fonseca E Sousa[1], Carla Araújo[1], Irene Guimarães[2], Vanessa Carvalho[2], Álvaro Gouveia[3], Helga Lima[4], Rui Baptista[1]

[1]Faculdade de Medicina da Universidade de Coimbra. [2]Câmara Municipal de São João da Madeira. [3]CEI. [4]Centro Hospitalar de Entre Douro e Vouga, EPE/Hospital de S. Sebastião.

Introduction: In the face of escalating medical complexity, the need for streamlined resource optimization in healthcare has never been more urgent. This imperative is particularly evident in cardiovascular diseases (CVD), where despite successful risk stratification and mitigation strategies, elevated mortality rates persist among socioeconomically disadvantaged groups. Efforts to prevent CVD events rely on early identification of at-risk individuals and timely implementation of risk-mitigating measures. Persistent challenges in health systems to identify and intervene with high-risk patients underline the growing importance of implementation science. Operating in the real-world context, this field scrutinizes the capacity of health systems to deliver healthcare, bridging the gap between identifying at-risk individuals and implementing tailored therapeutic strategies. This approach facilitates the clinical assimilation of diagnostic and therapeutic advancements, providing timely preventive therapies for diseases with substantial societal burden.
Methods: The CARDIOGAP project emerges as a prospective solution to this challenge. By focusing on the secondary sector community, it seeks to achieve the early identification of high-risk individuals through data routinely collected in Occupational Medicine (OM) appointments, which occur biennially (or annually for individuals aged 50 or over). Patients will be risk stratified using the SCORE2 system using the data collected on the OM appointments on lipid profile, blood pressure and tobacco usage, allowing a systematic and prompt recognition of individuals at heightened cardiovascular (CV) risk. Patients with high or very-high risk will be referred to a CV risk hospital consultation within 14 days, where therapeutic interventions fostering adherence will be rigorously implemented. We will include 10 industrial corporations of São João da Madeira municipality, a universe of around 1,000 industrial workers. After the first hospital appointment, patients will be followed-up to 1 year and lipid profile, blood pressure and therapeutic adherence will be measured.
Conclusions: CARDIOGAP represents a pioneering, population-based screening initiative applying implementation science principles. Leveraging existing community resources and data, particularly those within the OM framework, the project aims to reduce the prevalence of CVD risk factors through pragmatic and cost-effective planning and procedures.

PO 146. ENHANCING CARDIOVASCULAR HEALTH POST-ACUTE CORONARY SYNDROME: A SPECIALIZED FOLLOW-UP PROGRAM

Marta Leite[1], Maksym Baburko[2], Eduardo Vilela[1], Sílvia O. Diaz[2], António Barros[2], Francisca Saraiva[2], Ricardo Fontes-Carvalho[1]

[1]Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE. [2]Faculdade de Medicina da Universidade do Porto.

Table 3: Changes in LDL, HbA1C, and SBP, from baseline to end of intervention.

Group	Characteristic	N	Beta	95% CI[1]	p-value
LDL	LDL Baseline	354	-0.73	-0.81, -0.66	**<0.001**
	Woman		0.18	-6.5, 6.9	>0.9
	Age	354	-0.03	-0.28, 0.22	0.8
	Intervention	354			
	RCC		—	—	
	SCCC		-13	-19, -7.4	**<0.001**
HbA1C (only DM patients)	HbA1c Baseline	101	-0.53	-0.70, -0.37	**<0.001**
	Woman		0.13	-0.33, 0.59	0.6
	Age	101	-0.01	-0.03, 0.01	0.4
	Intervention	101			
	RCC		—	—	
	SCCC		-0.46	-0.87, -0.05	**0.029**
SBP	SBP Baseline	497	-0.53	-0.60, -0.46	**<0.001**
	Woman		-2.3	-5.7, 1.1	0.2
	Age	497	0.08	-0.04, 0.20	0.2
	Intervention	497			
	RCC		—	—	
	SCCC		-3.7	-6.5, -0.84	**0.011**

[1]CI = Confidence Interval

Figure PO 146

Introduction: In the domain of cardiovascular (CV) health, where Acute Coronary Syndrome (ACS) significantly influences morbidity and mortality, addressing the multifaceted challenges posed by this critical cardiac event demands tailored care strategies. This study investigates the comprehensive impact of a Structured Coronary-Disease Cardiology Consultation (SCCC) program on secondary prevention and CV risk factor control in the first year following an ACS.
Methods: A retrospective analysis scrutinized outcomes in two distinct patient cohorts: the SCCC group as the intervention group (August 2021 to July 2022) and the Regular Cardiology Consultation (RCC) group as the control group (January to December 2018). Over a 12-month observation period post-ACS, parameters such as lipid profiles, specifically low-density lipoprotein-cholesterol (LDL-C) levels, glycated hemoglobin (HbA1c), systolic blood pressure (SBP), and smoking habits were assessed. The intervention effectiveness was confirmed through an analysis of covariance (ANCOVA).
Results: Our study included 521 patients, 284 in the RCC group and 237 in the SCCC group. Baseline characteristics were comparable between the groups. The SCCC group exhibited lower LDL-C values at the end of the follow-up compared to the RCC group [RCC group: 66 (53, 84) mg/dL vs. SCCC group: 52 (43, 66) mg/dL, $p < 0.001$], a significant reduction in HbA1C among diabetic patients [RCC group: 7.00% (6.30, 7.80) vs. SCCC group: 6.40% (6.10, 6.85), $p = 0.007$], and no significant differences in SBP [RCC group: 130 (120, 141) mmHg vs. SCCC group: 130 (117, 140) mmHg, $p = 0.2$]. Though not statistically different between the SCCC and RCC groups ($p = 0.14$), nearly two-thirds of active smokers quit in the first year post-ACS in the SCCC group, underlying the positive influence of cardiology consultation programs on smoking behaviors. According to our ANCOVA analysis (Table 1), the SCCC group exhibited a marked and statistically significant decrease in low-density lipoprotein cholesterol (LDL-C) levels [$\beta = -13$ (-19, -7.4), $p < 0.001$], with almost two-thirds of diabetic patients achieving and maintaining the established HbA1c goals [$\beta = -0.46$ (-0.87, -0.05), $p = 0.029$], and a statistically significant reduction in SBP was also observed in the SCCC group [$\beta = -3.7$ (-6.5, -0.84), $p = 0.011$].
Conclusions: Implementing an SCCC program emerges as a multifaceted intervention leading to lower median values for LDL-C, improved glycemic control, reduced blood pressure, and successful smoking cessation one year after ACS. The multidisciplinary approach and standardized monitoring of CV risk factors contributed to these positive results, underscoring the importance of structured follow-up protocols in managing CV risk factors after acute coronary events.

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Área de Posters 1 | Sessão de Posters 23 - *Pacing* após TAVI

PO 147. RISK FACTOR ANALYSIS OF PERMANENT PACEMAKER IMPLANTATION AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT

Gonçalo Bettencourt Abreu, Débora Sá, Francisco Sousa, Margarida Temtem, Bruno Silva, Ricardo Rodrigues, Graça Caires, Diogo Rijo, Marco Serrão, Nuno Santos, Flávio Mendonça, António Drumond Freitas

Hospital Dr. Nélio Mendonça.

Introduction: Permanent pacemaker implantation (PPI) after transcatheter aortic valve implantation (TAVR) has been one of the major complications related to this procedure. The need for pacemaker after TAVR occurs in 9 to 26% percent of patients. Taking to account the rapid increase of TAVR procedures and its expansion to younger and lower risk patients, this is a growing problem with elevated clinical and economic burden.
Objectives: Analyze possible risk factors for pacemaker implantation after TAVR.
Methods: 109 consecutive patients (mean age 80.44 ± 5.77 43.1% male) who underwent TAVR were studied for the need for PPI. Patients were divided into two groups (Group A: PPI; Group B: No PPI). A 12 lead ECG and a computed tomography with aortic calcium score determination was performed in each patient. Bivariate and multivariate analysis evaluated the association between age, gender, QRS width, left bundle branch block (LBBB), right branch block (RBBB), aortic calcification, valve type (self-expandable vs. ballon expandable) and valve size with the need for PPI.
Results: 22 patients required PPI (Group A: 20.1%). After bivariate analysis only QRS width (A: Median: 119 ms; B: Median 94 ms) ($p = 0.013$) and RBBB (A: 36%; B:2%) ($p < 0.0001$) were associated with PPI after TVR. After logistic regression only the presence RBBB before TAVR has remained has strong independent risk factor for PPI.

Conclusions: RBBB remains the main risk factor for PPI after TAVR, which is supported by current literature. New preventive strategies are needed to address the high incidence of PPI in this specific subgroup. On the other hand, multiple centers have opted for prophylactic pacemaker implantation in patients with RBBB undergoing TAVR but still with no clear long-term benefit.

PO 148. UNMET NEEDS IN TRANSCATHETER AORTIC VALVE REPLACEMENT: A NOVEL TELEMETRY PATCH FOR MONITORING CONDUCTION DISTURBANCES

Sofia B. Paula[1], Margarida Figueiredo[1], Sandra Alves[2], Sofia Jacinto[2], Ana Raquel Santos[2], Hélder Santos[2], Paulo Osório[2], Guilherme Portugal[2], Bruno Valente[2], Ana Lousinha[2], Pedro Silva Cunha[2], Mário Oliveira[2]

[1]Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo. [2]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Despite technical advances and operator experience, the rate of patients requiring permanent pacemaker implantation (PPI) after transcatheter aortic valve replacement (TAVR) has not decreased. With the continuous downward trend in post-TAVR length of hospital stay, ambulatory electrocardiographic (AECG) monitoring during the early post-discharge period has emerged as a useful tool for the diagnosis and treatment of delayed arrhythmic events following TAVR.
Methods: Single-centre retrospective study aiming to detect rhythm abnormalities after TAVR discharge. Monitoring of these patients was achieved using the ePatch continuous monitoring, implanted at the moment of discharge after TAVR (4-5 days in-hospital stay). The cardiac monitoring system was systematically provided to patients developing slight intra−/peri-procedural conduction disturbances, without guideline indication for PPI at discharge. Data was collected between August 2022 and August 2023.
Results: We included a total of 27 patients, mean age 82.2 (± 7.8) years, 55.6% female. In baseline, 66.7% were in sinus rhythm and 33,3% in atrial fibrillation. Mean recording time was 111.3 (± 27.3) hours, with a mean heart rate (HR) of 73.6 (± 9.9) bpm. During the AECG monitoring, 33.3% and 3.7% of the patients developed new onset LBBB and RBBB, respectively. Paired analysis between baseline and post-discharge recordings detected a significant widening of the QRS and PR interval in these patients (114 vs. 135 ms; $p < 0.001$, and 192 vs. 237 ms; $p < 0.001$, respectively). Significant sinus pauses were identified in 40.7% of the patients, from which 3 cases had pauses > 3s. Alternating bundle branch block and 1st-degree atrioventricular block were detected in 4 patients who underwent PPI afterwards. In one patient, AF episodes were detected with a burden of 3% and high-rate periods. Another case had numerous episodes of self-limited ventricular tachycardia and was admitted for ICD implantation. In total, AECG showed clinically relevant rhythm abnormalities in > 50% of the patients after TAVR, with 5 out of 27 patients receiving an implantable electronic device.
Conclusions: Early outpatient cardiac rhythm monitoring using an E-patch is a safe solution to allow timely recognition of conduction and rhythm disturbances requiring PPI or other devices.

PO 149. *DE NOVO* CONDUCTION DISTURBANCES AFTER TAVI: WHAT TO EXPECT?

Débora da Silva Correia, Maria Rita Lima, Afonso Félix de Oliveira, Rita Barbosa Sousa, Samuel Azevedo, Miguel Domingues, Daniel Gomes, Francisco Albuquerque, Marisa Trabulo, Pedro Adragão, Manuel Sousa Almeida, Rui Campante Teles

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: *De novo* conduction disturbances represent the most prevalent complication post-TAVI attributed to conduction system injury. While only a minority of patients with *de novo* conduction abnormalities require permanent pacemaker implantation (PPI), the consequences and progression of conduction abnormalities in patients without the need for PPI has not been fully characterized. Therefore, we studied TAVI patients without PPI at index hospitalization and *de novo* conduction abnormalities assessing the rate of PPI at one-year and predictors of conduction system disease progression.
Methods: We analysed our prospective single centre registry including 766 consecutive patients undergoing TAVI between January 2014 and August 2021. A total of 109 patients had undergone PPI in index admission and were excluded. We defined a cohort of patients with new onset conduction abnormalities, i.e. *de novo* 1st degree AV block or *de novo* left/right bundle brunch block (LBBB and RBBB), without need for PPI at hospital discharge.

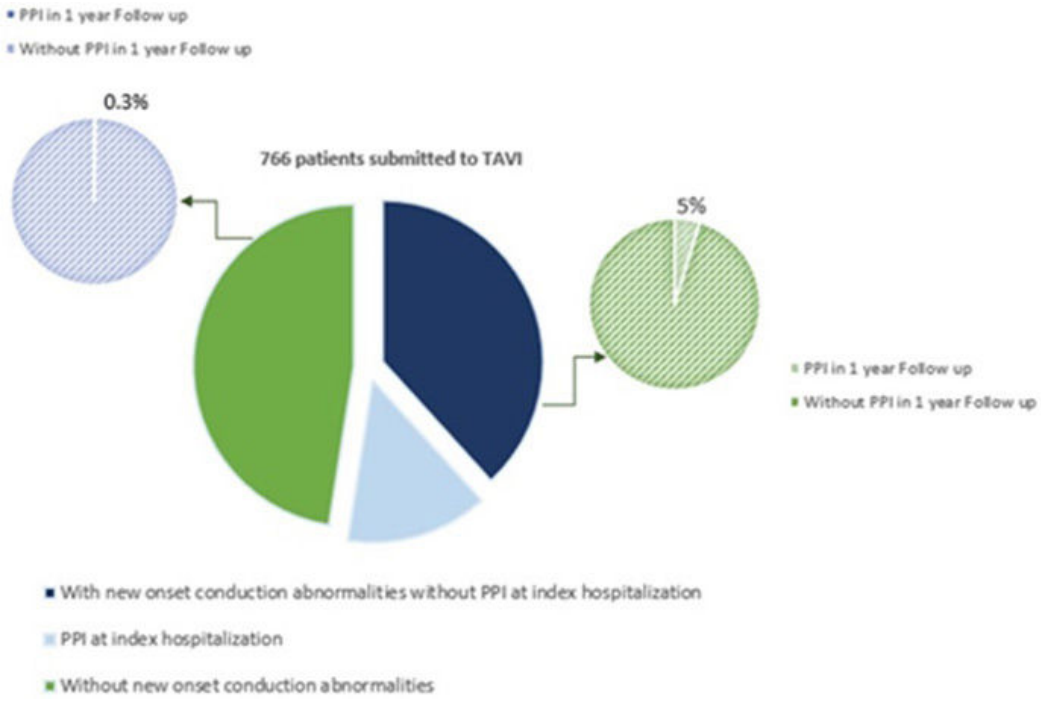

Figure PO 149

Baseline data was recorded prospectively, and follow-up data was retrieved using electronic health records. Risk factors for PPI at one year after index hospitalization were assessed using logistic regression.
Results: The 657 pts study population mean age was 83 ± 6 years and 46% were male. A total of 37% had previous RBBB, 11% had previous LBBB, 45% had new onset conduction abnormalities and 55% did not. The median aortic valve calcium score (AVCS) was 2,529 [1,730-3,500] AU. A self-expandable valve was implanted in 459 (71%) patients and 221 (34%) underwent pre-dilation. Transvenous pacing was used and removed in 121 (18%) patients. A total of 89 pts (14%) had prolonged PQ (mean PQ interval at discharge of 196 ± 44 ms), 150 pts (23%) had new-onset LBBB and 12 pts (2%) new onset RBBB. At 1-year FUP, 15pts (2%) underwent PPI with a mean time interval of 92 ± 36 days after TAVI. Among these, 14 had presented *de novo* conduction abnormalities TAVI (0.3% vs. 5%, p < 0.001). In the cohort of patients with new onset conduction abnormalities, only the presence of previous RBBB (23% vs. 5%, OR 5.746 [1.409-23.431]) and non-sustained complete AV block (57% vs. 25%, OR 2.985 [1.077-8.272]) increased the risk of PPI at 1-year in univariate analysis. In multivariate analysis using logistic regression, previous RBBB remained the only predictor of late PPI at 1-year.
Conclusions: New-onset conduction abnormalities without PPI after TAVI occur in 45% patients and 2% require PPI at one year. Those with previous RBBB warrant a closer surveillance.

PO 150. NON-CORONARY CUSP ASYMMETRICAL CALCIFICATION AS A PREDICTOR OF COMPLETE ATRIOVENTRICULAR BLOCK POST-TAVI

Marta Paralta de Figueiredo, Miguel Carias, Diogo Brás, David Neves, Rita Rocha, Renato Fernandes, Ângela Bento, Gustavo Sá Mendes, Lino Patrício

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Introduction: Conduction disturbances are an important complication after transcatheter aortic valve implantation (TAVI), frequently requiring permanent pacemaker (PPM) implantation. Mechanical injury of atrioventricular node (AV) and/or membranous septum (MS) is a described mechanism for AV block post-TAVI. Predictors of AV block requiring PPM are extensively studied. However, distribution of calcium at aortic annulus as a protective or harmful factor for AV or MS injury is understudied and not homogenous for type of valve (self-expandable vs. balloon-expandable).
Objectives: This study aims to determine if asymmetrical non-coronary cusp (NCC) calcification is related to the need of PPM after TAVI with self-expandable valves.
Methods: We performed a single-centre retrospective analysis of consecutive data collected prospectively of patients submitted to TAVI. To avoid bias we excluded those who received other than Medtronic Evolut® valve and those with prior PPM. We collected demographic factors, personal history and ECG data before the procedure. We analyzed data derived from contrast-enhanced CT scan and TAVI procedure. Development of conduction disorders and PPM implantation was recorded, and univariate and multivariate analysis was performed to identify independent predictors.
Results: Out of 231 patients that undergone TAVI, 47 patients were excluded. We selected those who developed complete AV block and required PPM implantation. Demographic factors between groups weren't significantly different and overall median aortic valve calcium score was 2547 AU (IQR 1,867-3,684). Univariate analysis revealed that prior RBBB (52,9% vs. 19,6%, p = 0,02), pre-dilation (30,7% vs. 17,7%; p = 0,039) and deeper prosthesis implantation (> 15 mm: 30,8% vs. 15 to 5 mm: 29,6% vs. < 5 mm: 11,7%, p = 0,025) were associated with higher odds of complete AV block. Asymmetrical NCC calcification was significantly more associated with complete AV block than symmetrical calcification of all cusps (36,2% vs. 20,5%; p = 0,044). In multivariate logistic regression analysis only prosthesis depth > 15 mm remained significant (p = 0,034).
Conclusions: In patients submitted to TAVI with self-expandable valves besides the prior well-known predictors (RBBB, predilation and prosthesis depth > 15 mm), asymmetrical NCC calcification is associated with PPM implantation post-TAVI. Further studies are necessary to evaluate the real impact of NCC calcium volume and ratio of MS height/NCC calcium height.

PO 151. NEW-ONSET LEFT BUNDLE BRANCH BLOCK AFTER TAVI: UNVEILING ITS TRUE CLINICAL IMPACT

André Lobo, Marta Catarina Almeida, Rafael Teixeira, Fábio Nunes, Inês Neves, Marta Leite, Inês Rodrigues, António Gonçalves, Pedro Braga, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE.

Introduction: Cardiac conduction abnormalities frequently follow Transaortic Valve Implantation (TAVI). The need for definitive pacemaker (PM) is a concerning outcome, but development of left bundle branch block (LBBB) also merits attention due to its high prevalence and potential clinical impact.
Objectives: To assess the incidence and persistence of new-onset LBBB after TAVI, its impact on Left Ventricular Ejection Fraction (LVEF) and the effect on survival.
Methods: Single-center retrospective cohort analysis including patients undergoing TAVI from January 2010 to January 2022. The primary outcomes were LBBB development, LBBB persistence, 1-year LVEF variation and all-cause mortality.
Results: Out of 552 patients, we assessed 431 patients without previous PM (n = 52), LBBB (n = 30), or RBBB (n = 39), which were excluded. Following TAVI, during in-hospital stay, 165 patients (38.3%) developed LBBB, 43 (10.1%) required PM implantation, and 7 (1.6%) developed RBBB. At the one-month evaluation, LBBB persisted in 69 (41.8%) of the 165 cases, with an additional 2 patients developing persistent LBBB. Among other new-onset LBBB patients, 38 (23%) underwent PM implantation, while LBBB had resolved in 58 patients (35.8%), at the 1-month evaluation. Patients with persistent LBBB exhibited on average a 6.2% inferior LVEF variation (95%CI: -8.1%, -4.5%, p < 0.001) at 1-year follow-up compared to those without any rhythm disturbances. Furthermore, the presence of new-onset left ventricular dysfunction at 1-year follow-up was higher in those with new-onset persistent LBBB (16.9%) compared to a minimal 0.01% in patients without any rhythm disturbances (p < 0.001). In contrast, patients with only transitory LBBB showed no significant impact on LVEF evolution (p = 0.295). In patients with persistent new-onset LBBB, the median survival was 58 months (± 5.4), significantly lower than the 94 months (± 10.4) observed in those without any significant rhythm disturbance development (p < 0.001). When assessing patients with both persistent and transitory LBBB together, no significant differences in mortality were identified (p = 0.431). Demographic parameters and comorbid conditions exhibited equivalent balance across both groups. The median age was 81 years [IQR: 75-85], with females constituting 56% of the population.
Conclusions: Our study underscores the significance of new-onset LBBB post-TAVI, highlighting its prevalence and clinical impact. With nearly half of new-onset LBBB cases exhibiting persistence, its correlation with worsened LVEF and increased mortality is evident. Recognizing LBBB risk pre-TAVI is crucial for informed treatment decisions, while closer monitoring post-TAVI is also key to the timely identification of those who may benefit from resynchronization therapy.

PO 152. IMPACT OF RHYTM DISTURBANCES IN PATIENTS WITH LEFT VENTRICULAR DYSFUNCTION UNDERGOING TAVI

André Lobo, Rafael Teixeira, Marta Catarina Almeida, Inês Neves, Marta Leite, Fábio Nunes, Inês Rodrigues, António Gonçalves, Pedro Braga, Ricardo Fontes-Carvalho

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Introduction: Transaortic Valve Implantation (TAVI) has demonstrated significant benefits in patients with severe aortic stenosis and left ventricular dysfunction. However, the concurrent presence of bundle branch

block (BBB) or pacemaker (PM) is associated with a potential decrease in left ventricular ejection fraction (LVEF), and the occurrence of rhythm disturbances is prevalent in the TAVI context.
Objectives: Evaluate the influence of pre-existing and newly developed Left Bundle Branch Block (LBBB), Right Bundle Branch Block (RBBB) or PM implantation on LVEF progression and overall survival in patients undergoing TAVI with reduced LVEF (< 50%).
Methods: Single-center retrospective cohort analysis including patients with reduced LVEF undergoing TAVI from January 2010 to January 2022. The primary outcomes evaluated were 1-year LVEF variation and all-cause mortality.
Results: A total of 148 patients underwent evaluation, with a median LVEF of 40% [IQR: 35%-45%]. Prior to TAVI, 10.8% exhibited pre-existing left bundle branch block (LBBB), 10.8% demonstrated right bundle branch block (RBBB), and 13.5% had undergone PM implantation. At 1-month post-TAVI follow-up, 22.3% exhibited LBBB, 8.1% RBBB, and 31.7% PM presence, encompassing both prior and new-onset rhythm disturbances. At 1-year follow-up, patients with rhythm disturbances (RBBB, LBBB, or PM) at the 1-month evaluation showed a 5.4% lower LVEF variation compared to those without rhythm disturbances (95%CI: -8.1%, -2.7%; p < 0.001). Excluding pre-existing rhythm disturbances, this difference increased to 6.7% (95%CI: -10.1%, -3.9%; p < 0.001). LVEF recovery rates differed significantly, with 53.5% of patients without rhythm disturbances achieving an LVEF > 50% 1 year after TAVI, contrasting with 15% in the rhythm disturbance group (p < 0.001). For new-onset rhythm disturbances patients, median survival was 48 months (95%CI: 24.1, 72.0) compared to 82 months (95%CI: 52.5, 111.5), in those without previous or new rhythm disturbance (p = 0.007). Most of the population was male (62%) with a median age of 80. Patients with rhythm disturbances at 1-month had higher rates of arterial hypertension (p = 0.037) and Atrial Fibrillation/Flutter (p = 0.035).
Conclusions: Rhythm disturbances in TAVI patients extend beyond the consideration of PM implantation, impacting LVEF recovery and overall survival. Our findings underscore the significant influence of rhythm disturbances on TAVI benefits, highlighting the need to explore strategies for post-TAVI disturbance mitigation. Close monitoring of this population is essential to evaluate the potential advantages of resynchronization therapy.

SEXTA-FEIRA, 19 ABRIL de 2024 | 17:30-18:30.

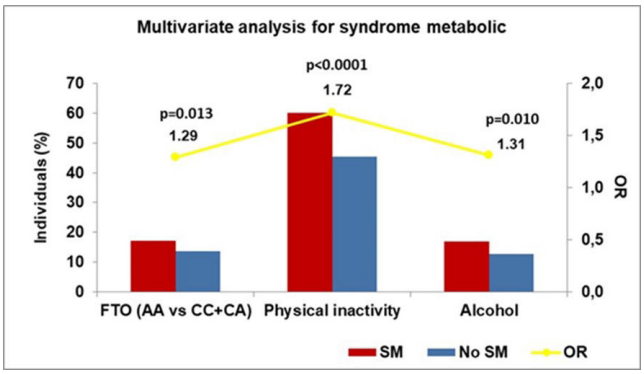
Área de Posters 3 | Sessão de Posters 24 - Biomarcadores em Cardiologia

PO 153. FTO RS8050136 C > A VARIANT IS A RISK FACTOR FOR METABOLIC SYNDROME IN A PORTUGUESE POPULATION

Ana Débora Câmara de Sá[1], M. I. Mendonça[2], F. Sousa[1], G. Abreu[1], S. Freitas[2], E. Henriques[2], M. Rodrigues[2], S. Borges[2], A. Drumond[1], A. C. Sousa[2], R. Palma dos Reis[3]

[1]Hospital Dr. Nélio Mendonça. [2]Research Centre Dra. Maria Isabel Mendonça, SESARAM EPERAM. [3]Faculdade de Ciências Médicas de Lisboa/NOVA Medical School.

Introduction: Metabolic Syndrome (MetS) involves complex genetic, environmental, lifestyle, and metabolic interactions. FTO rs8050136 encodes an RNA demethylase, which may affect many biological and metabolic processes. However, this genetic variant has never been investigated in Portuguese populations.
Objectives: To investigate whether FTO gene variant rs8050136 C>A is a risk factor for Metabolic Syndrome in a Portuguese population.
Methods: We performed a case-control study with 3,157 individuals. 1,787 had MetS criteria, and 1370 did not. MetS was diagnosed according to the International Diabetes Federation (IDF) criteria. FTO gene variant were genotyped by TaqMan real-time PCR. We evaluated bivariate analysis to calculate the relative risk of MetS (OR and 95%CI) and a multivariate logistic regression to display the independent variables associated with MetS.
Results: CC genotypic percentages were 36.2% in the cases vs. 36.7% in controls, CA was 46.6% vs. 49.6%, and AA (risk) was 17.2% vs. 13.7%. We investigated three genetic models, and the recessive AA vs. (CC+CA) presented the best association with MetS (OR = 1.31; 95%CI: 1.08-1.59, p = 0.007). After multivariate logistic regression, this genetic model remained in the equation independently associated with MetS (OR = 1.29; 95%CI: 1.06-1.58, p = 0.013), together with physical inactivity (OR = 1.72; p < 0.0001), alcohol ingestion (OR = 1.31; p = 0.010) and age (OR = 1.05; p < 0.0001).



Conclusions: In our population, genetic predisposition (FTO) played a role in susceptibility to MetS. However, it is just one piece of a much larger puzzle, with other factors, such as overall lifestyle, having the most significant impact on the risk of developing this condition.

PO 154. METABOLOMICS AND POOR CARDIOVASCULAR OUTCOMES IN PATIENTS WITH HEART FAILURE (HF): A SYSTEMATIC REVIEW AND META-ANALYSIS

Leonel Sousa Neves, Francisca Saraiva, Adelino Leite-Moreira, António S. Barros, Sílvia O. Diaz

Faculdade de Medicina da Universidade do Porto.

Introduction: While the association of plasma lipids and the risk of poor cardiovascular (CV) outcomes are known, other plasma circulating metabolites might add value to the prognosis of CV-associated events. Metabolomics may help uncover metabolic dysregulations underlying such associations.
Objectives: To compile risk associations between metabolites and poor CV outcomes in patients with Heart Failure (HF) through a systematic review and meta-analysis.
Methods: We performed a systematic review using the PubMed database (last searched on 31/12/2022). Studies that used blood (plasma or serum) metabolomics, in HF patients to predict poor cardiovascular outcomes (death or hospitalization), irrespective of follow-up time, were included. Time-to-event outcomes were collected for each metabolite through adjusted Hazard Ratio (HR) along with its variance. Fixed and random effects models were used to compute statistical combined measures (HR) and 95% confidence intervals (CI) of individual metabolites.
Results: We identified 78 studies that used metabolomics in patients with HF. Of these, 4 articles, totalizing 1,560 patients from 5 independent cohorts, computed and reported the HR of 83 metabolites and 37 metabolites ratios. Forty-two metabolites and three ratios, present in at least two cohorts, were assessed through meta-analysis. The mean/median follow-up period ranged from 1.0 to 6.3 years, and the rate of events ranged from 13-38% of the included sample (n varying from 136 and 479). Using random-effect models, we identified 7 metabolites and 1 metabolite ratio relevantly associated ($p < 0.05$ and $I^2 < 50\%$) with poor CV outcomes. Higher histidine (HR 0.74 95%CI [0.64-0.86]) and tryptophan (HR 0.82 [0.71-0.96]) seem to be protective of CV events, while higher symmetric dimethylarginine

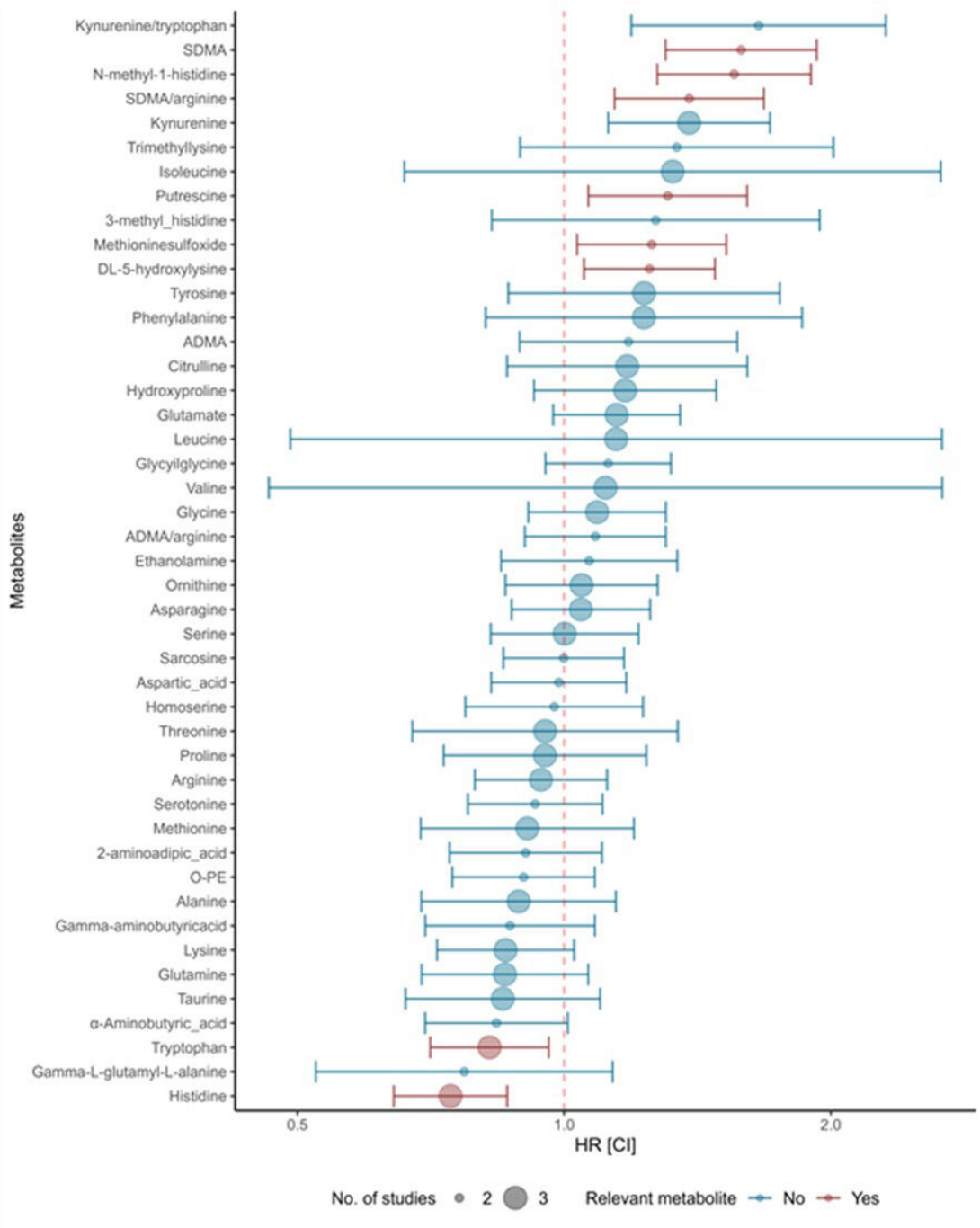


Figure PO 154

(SDMA) (HR 1.58 [1.30-1.93]), N-methyl-1-histidine (HR 1.56 [1.27-1.90]), SDMA/arginine (HR 1.38 [1.14-1.68]), putrescine (HR 1.31 [1.06-1.61]), methionine sulfoxide (HR 1.26 [1.03-1.52]) and 5-hydroxylysine (HR 1.25 [1.05-1.48]) associate with higher risk of CV events. Of these metabolites, tryptophan and histidine were reported in 3 cohorts, while the remaining metabolites were reported in only 2.

Conclusions: Despite the limited data available, we identified 7 metabolites and 1 ratio associated with CV events in HF patients. Our findings corroborate a derangement in the inflammatory response and in the NO synthesis pathways which need to be further explored. However, the lack of standardization in metabolomic studies and data reporting hampers the combination and comparison of different studies. In the long run, taking metabolomics into a clinical scenario could greatly benefit from harmonizing analytical analysis procedures.

PO 155. LEFT EJECTION FRACTION FOLLOWING CHRONIC TOTAL CORONARY OCCLUSION RECANALIZATION - APPROPRIATE PATIENT SELECTION NEEDED?

Gonçalo Terleira Batista, Ana L Silva, Mariana Rodrigues Simões, Tatiana Pereira dos Santos, Gonçalo Ferraz Costa, Diogo Fernandes, Rafaela Fernandes, Vanessa Lopes, José Luís Martins, Joana Delgado Silva, Marco Costa, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Despite theoretical rationale, recanalization trials for chronic coronary disease and chronic complete coronary occlusions (CTO) have

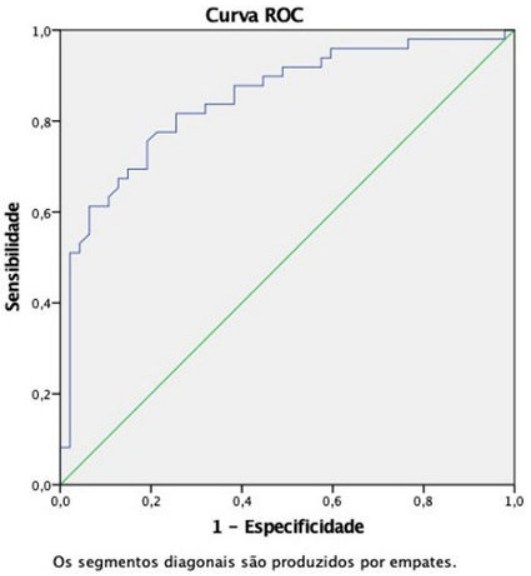
yielded disappointing results, often demonstrating negligible or no impact on clinical or echocardiographic endpoints related to heart failure.
Objectives: To evaluate differences on left ventricular ejection fraction (LVEF) following CTO recanalization.
Methods: This retrospective study at a tertiary center involved 40 patients undergoing CTO angioplasty (January 2017 to May 2023). Baseline and follow-up data and pre/post-procedural echocardiographic data were gathered from hospital and primary care center's records. The most recent echocardiogram conducted prior to the procedure was designated as the pre-procedural assessment, while the post-procedural echocardiogram was the first performed at least three months after the procedure. LVEF variations were calculated using paired-samples T-test. Subpopulation analyses were conducted for gender, diabetes, hypertension, complex disease, complete revascularization, past MI or angioplasty, age and body mass index, using appropriate tests based on distribution normality. An additional analysis excluded patients who started optimal medical therapy (OMT) for heart failure (HF) with reduced LVEF between echocardiograms. Statistical significance was set at $p < 0.05$.
Results: A total of 40 patients were included and followed for a mean 4.7 years. Mean age at time of procedure was 65.3 years, with 80% being male, mean BMI of 28.2 Kg/m^2 and high rates of hypertension (90%), diabetes (65%) and dyslipidemia (85%). Mean LVEF significantly increased from baseline (47.5%) to post-procedure (51.5%), showing a mean increase of 4% ($p = 0.001$; 95% Confidence Interval: 1.7%-6.2%). This increase remained statistically significant for diabetics ($p = 0.037$) and hypertensives ($p = 0.009$). Individuals over 65 years did not experience a significant increase ($p = 0.44$), while those under 65 years showed the highest increase in LVEF (mean 6.3%; 95%CI: 3.6%-8.9%, $p < 0.001$). Additionally, individuals with BMI > 30 Kg/m^2 did not exhibit an increase in LVEF ($p = 0.097$), while those with BMI < 30 Kg/m^2 did, by a mean 4.6% ($p = 0.005$). After excluding patients with LVEF < 40% who initiated OMT for HF, the association between CTO recanalization and increased LVEF remained significant ($p = 0.004$).
Conclusions: Our findings imply potential advantages of CTO angioplasty, particularly for younger and non-obese patients.

PO 156. CORRELATION BETWEEN AUTOMATICALLY OBTAINED LONGITUDINAL SHORTENING OF THE LEFT VENTRICLE AND THE PRESENCE OF LATE ENHANCEMENT ON CMR

Miguel Carias de Sousa, Marta Paralta, António Almeida, Rafael Viana, Bruno Piçarra, Ângela Bento, Manuel Trinca

Hospital do Espírito Santo, EPE, Évora.

Introduction: Artificial intelligence (AI) plays a crucial role in the assessment of left ventricular (LV) function in cardiac magnetic resonance (CMR) due to its ability to streamline and enhance the analysis of complex imaging data. The generation of automatic parameters for LV function can revolutionize the way cardiac imaging data is analyzed, offering greater efficiency, accuracy, and potential for early detection and personalized treatment strategies.
Objectives: This study aims to determine if there is a relationship between the measurement of longitudinal LV shortening and other functional parameters in CMR within a clinical setting.
Methods: We retrospectively analyzed a population of patients submitted to CMR and divided them into three groups: those without structural disease, those with dilated cardiomyopathy (DCM) and those with hypertrophic cardiomyopathy (HCM). We documented demographic factors, LV ejection fraction (LVEF), presence of late-gadolinium enhancement (LGE) and the longitudinal LV shortening obtained through AI in CMR for all groups. We then performed univariate analysis by Pearson correlation to establish the relationship between variables and ROC curves to evaluate diagnostic sensitivity.
Results: Out of 103 patients, 22.3% (n = 23) had no structural disease, considered the control group, 37.9% (n = 39) had HCM and 39.8% (n = 41) had DCM. 59.2% were male, with mean age of 55 ± 16 years, with no differences between groups. When evaluating a combined group of both cardiomyopathies, the presence of LGE was associated with significantly lower LVEF (53.9% vs. 42.5%, $p = 0.007$) and lower the longitudinal LV shortening (-11.8% vs. -8.1%, $p < 0.001$). When considering separate groups, although there were no relevant differences in LVEF, the presence of LGE is associated with lower the longitudinal LV shortening in HCM (-13.0% vs. -10.0%, $p = 0.007$), failing to reach significancy in DCM group probably due to reduced sample size. A ROC curve was evaluated in the combined group revealing a strong sensitivity for longitudinal LV shortening as an early diagnostic marker of LGE (AUC = 0.848), with a cutoff value under -12.93% for being a predictor of presence of LGE.



Conclusions: There is an association between longitudinal LV shortening and the presence of LGE in patients with HCM and DCM, although with greater significance in patients with HCM. This AI generated parameter is a sensitive diagnostic marker for presence of LGE, possibly contributing to earlier diagnosis and arrythmia and sudden death risk stratification of patients with cardiomyopathies.

PO 157. IS HOMOCYSTEINE AN INDEPENDENT RISK FACTOR FOR SUBCLINICAL CORONARY ATHEROSCLEROSIS IN ASYMPTOMATIC INDIVIDUALS?

Gonçalo Bettencourt Abreu[1], Maria Isabel Mendonça[2], Marco Serrão[1], Débora Sá[1], Francisco Sousa[1], Sónia Freitas[2], Eva Henriques[2], Mariana Rodrigues[2], Sofia Borges[2], António Drumond Freitas[1], Ana Célia Sousa[2], Roberto Palma dos Reis[3]

[1]Hospital Dr. Nélio Mendonça. [2]Centro de Investigação Dra. Maria Isabel Mendonça, SESARAM EPERAM. [3]Faculdade de Ciências Médicas de Lisboa/NOVA Medical School.

Introduction: Homocysteine (Hcy) has been known as a risk factor for coronary artery disease (CAD). However, several randomised trials did not demonstrate the clinical benefit of Hcy-lowering therapy in CAD prevention.
Objectives: Evaluate the influence of Hcy on the risk of subclinical coronary atherosclerosis, assessed by coronary artery calcium score (CAC score), in a cohort of asymptomatic individuals.
Methods: We evaluated 1,284 asymptomatic individuals with a mean age of 59.3 ± 8.9, 73.6% males, without apparent prior CAD. CAC score was performed by cardiac computed tomography, reported as Agatston units, and stratified in low, moderate and high-risk categories, which assesses the degree and extent of subclinical coronary atherosclerosis. Biochemical analyses were done, and the Hcy levels were stratified into terciles. The bivariate analysis evaluated the association of the Hcy levels with the CAC score categories. After adjusting for confounder variables, a multivariate logistic regression assessed the independent association of the Hcy levels and CAC score.

Hcy levels associated with CAC severity (univariable and multivariable analysis)

Hcy levels	Univariable analysis		Multivariable analysis adjusted for traditional risk factors	
	Odds ratio (95% CI)	P value	Odds ratio (95% CI)	P value
1st tercile	Reference	0.002	Reference	0.232
2nd tercile	1.42 (1.08 – 1.88)	0.013	1.30 (0.96 – 1.75)	0.089
3rd tercile	1.63 (1.23 – 2.15)	0.001	1.18 (0.87 – 1.61)	0.290

Legend: Covariables included in the multivariable model were sex, age, dyslipidemia, diabetes, smoking status, hypertension, physical inactivity and CAD family history.

Figure PO 157

Results: Bivariate analysis showed that the Hcy levels increased as the percentage of individuals with CAC score severity increased (p = 0.002). After an unadjusted logistic regression analysis, Hcy levels (terciles) were significantly associated with CAC score categories (low vs. moderate/high). After adjusting to traditional and clinical risk factors, Hcy did not remain in the equation, not showing an independent association with the CAC score. Only diabetes (OR = 2.45, p < 0.0001), smoking (OR = 1.86; p < 0.0001), hypertension (OR 1.59; p < 0.0001), CAD family history (OR = 1.56; p = 0.012), dyslipidemia (OR = 1.31; p = 0.046) and age (OR 1.04; p < 0.0001) were independently associated with CAC severity.
Conclusions: Homocysteine levels were not an independent risk factor for subclinical coronary atherosclerosis (represented by CAC score) in the asymptomatic population. Modifying lifestyle and reducing traditional CV risk factors may be more significant to prevent future CV events.

PO 158. REVASCULARIZATION STRATEGIES IN ELDERLY PATIENTS WITH MULTIVESSEL DISEASE: A COMPARATIVE ANALYSIS OF COMPLETE AND INCOMPLETE INTERVENTIONS

Oliveira Baltazar, Marian Martinho, Bárbara Ferreira, Diogo Cunha, Nazar Ilshynshy, João Luz, Liliana Brochado, Cristina Martins, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: In recent years, the elderly population has seen significant growth, constituting a substantial portion of ACS patients admitted to emergency hospital units. Registry data indicate that up to 65% of patients aged over 75 with AMI present with multivessel disease, associated with an unfavorable prognosis. In this age group, the annual incidence of adverse events, such as death and recurrent AMI, ranges from 15% to 30%. Despite trials on antiplatelet therapy duration and stent choice, robust evidence on revascularization in elderly patients with multivessel disease was limited until recently. Clinical trials like MULTISTAR AMI and FIRE demonstrated benefits in complete revascularization, beyond the culprit lesion, with a significant reduction in MACE. This study aims to compare complete versus incomplete revascularization efficacy in patients aged 75 and older admitted for ACS (STEMI and non-STEMI) at a tertiary institution.
Methods: A retrospective single-center cohort study involved 140 patients aged over 75, admitted for AMI with and without ST-segment elevation, and presenting with multivessel disease from 2017 to 2022. The primary outcome investigated a combination of events, including all-cause mortality, recurrent AMI, urgent revascularization, and stroke. Demographic data were collected, and follow-up extended until November 2023. Variables with a p value < 0.05 in univariate analysis were considered for identifying independent predictors of cardiac events.
Results: Median age was 80 years (interquartile range, 76-84), with 64.3% (90) males. Additionally, 60.7% were admitted due to STEMI, and median follow-up was 20 months (interquartile range, 10-25). Primary outcome occurred in 30.3% (30) undergoing incomplete revascularization and 17.1% (7) undergoing complete revascularization (OR, 0.47; 95%CI, 0.18-1.18; p = 0.11). Regarding all-cause mortality, it was observed in 20.2% (7) and 12.2% (5) in incomplete and complete revascularization groups, respectively, without statistical significance (p = 0.29). During the first year, Acute Myocardial Infarction events occurred in 4 and 3 patients in incomplete and complete revascularization groups, respectively. Emergent revascularization was observed in 13.1% (13) and 7.3% (7) in incomplete and complete revascularization groups, respectively. Ischemic stroke occurred in only one patient in the incomplete revascularization group.

Table 1. General characteristcs

Characteristcs	Incomplete Revascularization (N =99)	Complete Revascularization (N = 41) Revascularization
Median age (IQR) — yr	80 (76-84)	78 (77-83)
Male sex* - n (%)	66 (66.7)	24 (58.5)
Coexisting illness — no. (%)		
Hypertension	85 (85.9)	36 (90.0)
Dyslipidemia	61 (61.6)	29 (72.5)
Diabetes	38 (38.4)	13 (32.5)
History of smoking	31 (31.3)	10 (25.0)
Previous myocardial infarction	17 (17.2)	5 (12.5)
Atrial fibrillation	22 (22.2)	10 (25.0)
Stroke	9 (9.1)	4 (10.0)
Clinical presentation — no. (%)		
ST-segment elevation myocardial infarction	59 (59.6)	25 (62.5)
Non–ST-segment elevation myocardial infarction	40 (40.4)	15 (37.5)
Killip class >=II	24 (24.2)	7 (17.5)
Median length of hospital stay (IQR) — days	9 (4-12)	8 (4-12)
Medication at discharge — no. (%)		
Aspirin	92 (92.9)	36 (87.8)
Clopidogrel	55 (55.6)	23 (56.1)
Ticagrelor	37 (37.8)	18 (43.9)
Vitamin K antagonist	2 (2.0)	2 (4.9)
Non–vitamin K antagonist oral anticoagulant	17 (17.3)	9 (22.0)
Angiotensin-converting–enzyme inhibitor	65 (66.3)	32 (78.0)
Angiotensin-receptor blocker	16 (16.3)	5 (12.2)
Beta-blocker	78 (79.6)	30 (73.2)
Statin	96 (98.0)	40 (97.8)
Median follow up (IQR) — months	20 (10-25)	20 (11-36)

Table 3. Univariate Analysis of Outcomes

Outcome	Culprit-Only Revascularization (N =99)	Complete Revascularization (N =41)	p
All cause death	20 (20.2)	5 (12.2)	0,26
Primary outcome			
Composite of death, myocardial infarction, stroke, or ischemia-driven revascularization	30 (30.3)	7 (17.1)	0,11
Key secondary outcomes			
Ischemia-driven revascularization	13 (13,1)	3 (7.3)	0.26
Myocardial infarction in 1 year follow up	4 (4.0)	2 (4.9)	0,82
Stroke	1 (1)	-	0,99

Conclusions: Although our study did not reveal a statistically significant association between revascularization and the composite outcome, there

is an observable trend toward a higher incidence of events in the group undergoing incomplete revascularization.

SÁBADO, 20 ABRIL de 2024 | 08:00-09:00

Área de Posters 1 | Sessão de Posters 25 - Cirurgia cardíaca

PO 159. LONG-TERM SURVIVAL AFTER CORONARY ARTERY BYPASS GRAFTING: COMPARING BILATERAL VERSUS SINGLE INTERNAL MAMMARY ARTERY IN A WOMEN COHORT

Inês Sousa[1], Rui Cerqueira[2], Sílvia O. Diaz[1], Ana Filipa Ferreira[1], Mário J. Amorim[2], Paulo Pinho[2], André P. Lourenço[2], António S. Barros[1], Francisca Saraiva[1], Adelino Leite-Moreira[2]

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Introduction: Although neutral results from the ART randomized controlled trial, observational studies have been supporting better survival after bilateral internal mammary artery (BIMA) vs. single internal mammary artery (SIMA) coronary artery bypass grafting (CABG). However, for some specific subgroups, like women patients, more doubts remain about BIMA benefits.
Objectives: To compare long-term survival and early results in women after SIMA vs. BIMA.
Methods: Longitudinal, retrospective, single-center study including consecutive women with at least 2 left-coronary system (LCS) vessel disease who underwent primary isolated CABG with at least 1 internal mammary artery (IMA) conduit and a minimum of 2 conduits targeting the LCS, between 2004-2014. Emergent or salvage surgeries, on-pump beating-heart, BIMA in which 1 IMA targeted the right coronary artery territory were excluded. The primary outcome was all-causes mortality (checked on February 2023). Time-to-event outcomes were studied using Kaplan-Meier Curves, Log-Rank test and multivariable Cox Regression. Median follow-up was 11 years, maximum of 19 years.
Results: From 539 women selected for this study, BIMA CABG was performed in 30%. SIMA patient's were older (mean age 68.95 ± 8.39 vs. 62.75 ± 9.82 years, p < 0.001), but the prevalence of cardiovascular risk factors were similar between groups (arterial hypertension, p = 0.693, dyslipidemia, p = 0.111; diabetes mellitus, p = 0.462 and obesity, p = 0.109). Peripheral artery disease (p = 0.707), left ventricular dysfunction (p = 0.727), cerebrovascular disease (p = 0.730), active smoking habits (p = 0.05) and chronic obstrutive pulmonary disease (p = 0.537) were also similar. Severe chronic kidney disease (27% vs. 14%, p < 0.001) and Canadian Coronary Society - grade IV (74% vs. 63%, p = 0.011) were more frequent in SIMA group. In the univariable survival analysis, SIMA had worse survival results than BIMA (Log Rank test p < 0.01). At 5-, 10- and 15- years of follow-up, cumulative survival for SIMA vs. BIMA were 88% vs. 90%, 68% vs. 75%, 42% vs. 58%, respectively. However, the multivariable Cox regression showed that BIMA was not associated with long-term survival (HR [95%CI]: 1.09 [0.75-1.59], p = 0.6). Most of post-operative outcomes were similar between groups, with the exception of atrial fibrilation (25% vs. 16%, p = 0.031) and time to discharge (median days [min-max]: 7 [4-128] vs. 7 [4-59]) that were higher in SIMA. No differences were found in immediate reexploration of thorax (sternal infection – 0.3% SIMA vs. 1.2% BIMA, p = 0.219; bleeding - – 1.6% SIMA vs. 0.6% BIMA, p = 0.681). Redo CABG occurred in 1 SIMA and 1 BIMA women, at 41 and 84 months of follow-up, respectively.
Conclusions: In this study, revascularization with BIMA seems to be safe in women and provides similar results than SIMA. More studies in women are needed to establish the better approach for this specific subgroup.

PO 160. CORONARY ARTERY BYPASS GRAFTING COULD EXTEND SURVIVAL IN OCTOGENARIAN PATIENTS

Inês Sousa[1], Sílvia O. Diaz[1], Rui Cerqueira[2], Ana Filipa Ferreira[1], Mário J. Amorim[2], Paulo Pinho[2], André P. Lourenço[2], António S. Barros[1], Francisca Saraiva[1], Adelino Leite-Moreira[2]

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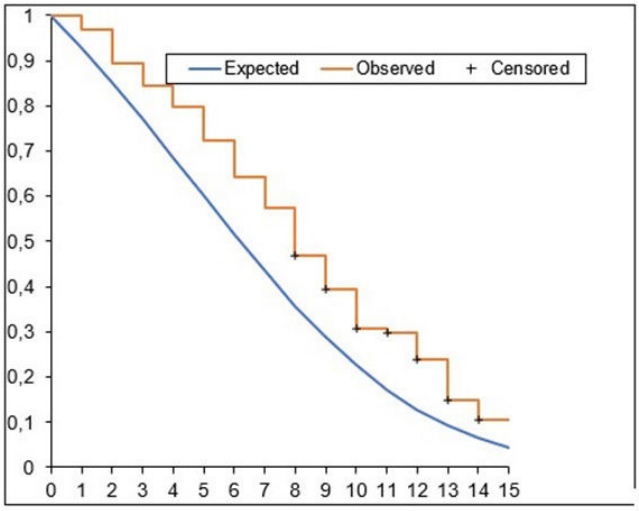
Introduction: Coronary artery bypass grafting (CABG) is gradually increasing in the octogenarian population due to increasing life expectancy.
Objectives: To compare long-term survival in octogenarian patients after CABG with a sex and aged-matched general population.
Methods: Longitudinal, retrospective, single-center study including consecutive patients who underwent primary isolated CABG at an age of 80 or older, between 2004 and 2014. The primary outcome was all-causes mortality accessed in February 2023. Long-term survival was evaluated through survival curve in the octogenarian cohort and general population. Portuguese life tables were taken from the INE (Instituto Nacional de Estatística), specifically for the study period plus follow-up (2004-2022), to estimate the expected number of deaths, using the age-specific death rate. To construct the survival curve for the reference population, estimate standardized mortality ratio (SMR = observed deaths/expected deaths) and to conduct the 1-sample Log-Rank test, comparing expected with observed deaths, we used the software provided by Massachusetts General Hospital Biostatistics Center. The median follow-up was 8 years, maximum of 15 years.



	Followup	Expected	Observed
expected number of deaths:	1	0,927537	0,969136
190,764	2	0,850986	0,895062
	3	0,770487	0,845679
logrank test pvalue:	4	0,686666	0,796296
5,51E-06	5	0,601198	0,722222
	6	0,516062	0,641975
Standardized Mortality Ratio:	7	0,43409	0,574074
0,670986	8	0,357211	0,469136
	9	0,287178	0,39306
SMR Confidence interval (95%):	10	0,225202	0,307301
0,550572 0,817736	11	0,171882	0,298521
	12	0,127582	0,238817
SMR Confidence interval (99%):	13	0,091944	0,149261
0,523885 0,859392	14	0,064231	0,106615
	15	0,043426	0
SMR Confidence interval (99.9%):			
0,493879 0,911604			

Results: Between 2004-2014, 184 octogenarian patients underwent primary isolated CABG, 68% being male, with age between 80 and 88.

The majority of patients (73%) presented 3-vessels disease, 76% were classified as class IV according to CCS and 54% had experienced a recent myocardial infarction (< 90 days). With respect to surgical techniques, the median [min-max] of implanted grafts was 2.0 [1.0- 5.0], 16% had bilateral internal mammary grafting and 48% were off-pump. Hospital mortality (within 30 days or before hospital discharge) occurred in 5%, the cumulative 1-year survival was 88% and overall mortality occurred in 82% patients. Of note, from the surviving patients in February 2023 (n = 34), the median follow-up time was 10 years (ranging from 8 to 14). After excluding patients who had deceased earlier, i.e. before 1-year of follow-up (n = 22), survival analysis comparing octogenarian CABG with the expected survival among an age/gender matched sample of the Portuguese population revealed that CABG could extend survival (SMR = 0.67, 95%CI: 0.55-0.82; p < 0.01).

Conclusions: This single-center retrospective study evidenced that CABG could offer a significant survival benefit in carefully selected octogenarian patients. Further analyses, with a larger sample, are needed to better understand which clinical characteristics and/or operative details are playing a relevant role on this result.

PO 161. BRIDGING THE GAP: A COMPREHENSIVE META-ANALYSIS ON SURGICAL REVASCULARIZATION FOR CHRONIC CORONARY TOTAL OCCLUSIONS

Ana L. Silva, Gonçalo Ferraz Costa, Gonçalo Terleira Batista, Tatiana Pereira dos Santos, Mariana Rodrigues Simões, Joana Guimarães, Diogo de Almeida Fernandes, Eric Monteiro, Luís Leite, José Luís Martins, Marco Costa, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Chronic coronary total occlusions (CTOs) optimal therapeutic management remains a topic of debate despite its association with adverse clinical outcomes.

Objectives: To compare the clinical outcomes of patients with CTO treated with surgical revascularization versus medical therapy (MT), assessing the effect of CTO revascularization in patients with multivessel disease undergoing coronary artery bypass graft (CABG).

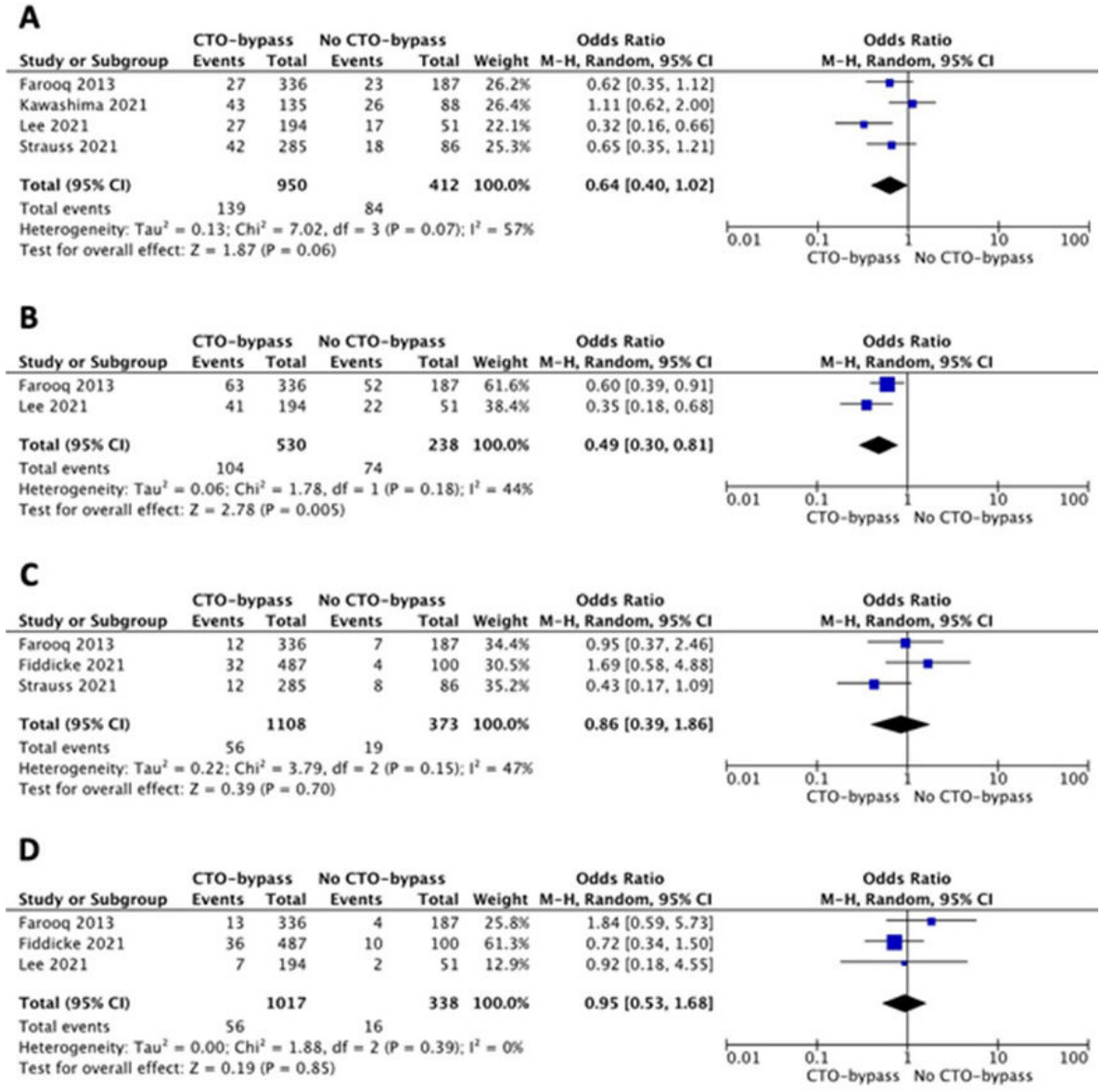


Figure 1. *Forest plots of (A) All-Cause Mortality, (B) Major Adverse Cardiovascular Events (MACE), (C) Myocardial Infarction, and (D) Stroke comparing CTO-bypass versus No CTO-bypass in patients undergoing coronary artery bypass grafting (CABG). CI, Confidence Interval; M-H, Mantel-Haenszel.*

Figure PO 161

Methods: In July 2023, PubMed, Embase, Cochrane, and Web of Science databases were systematically searched for observational and interventional studies comparing CTOs treated with CABG versus MT. We then performed a sub-analysis of studies with patients submitted to CABG comparing complete surgical revascularization, including CTO bypass, versus revascularization without CTO bypass. A pooled odds ratio meta-analysis was conducted for four main outcomes: mortality, myocardial infarction (MI), stroke, and major adverse cardiovascular events (MACE). Random-effects meta-analysis was performed with Review Manager 5.4.
Results: Ten observational studies, including 6,458 patients, compared CABG-CTO with MT-CTO (65.9% MT; 34.1% CABG). Meta-analysis indicated significantly lower all-cause mortality in the CABG group (OR 0.31, 95%CI 0.24-0.40, p < 0.001, I^2 = 36%). Despite high heterogeneity, CABG exhibited reduced CV mortality and MACE (OR 0.37, 95%CI 0.24-0.57, p < 0.001, I^2 = 59%; OR 0.37, 95%CI 0.15-0.92, p = 0.03, I^2 = 80%, respectively). Additionally, the MI rate was lower in the CABG group (OR 0.41, 0.30-0.56, p < 0.001, I^2 = 0%). The stroke rate did not differ significantly between the two treatment groups (OR 3.54, 95%CI 0.73-17.17, p = 0.12, I^2 = 71%). In the comparative analysis between the bypassed and non-bypassed CTO groups involving five studies (1,949 patients, 73.7% vs. 26.3%, respectively), the bypassed-CTO group exhibited a statistically significant lower MACE (OR 0.49, 95%CI 0.30-0.81, p = 0.005, I^2 = 44%). All-cause mortality nearly reached statistical significance (OR 0.64, 95%CI 0.40-1.02, p = 0.06, I^2 = 57%). No differences were found in MI (OR 0.86, 95%CI 0.39-1.86, p = 0.70, I^2 = 47%) and stroke (OR 0.95, 95%CI 0.53-1.68, p = 0.85, I^2 = 0%) between the abovementioned groups.
Conclusions: Our study suggests a clinical benefit of bypassing a CTO lesion in patients with multivessel disease undergoing CABG, with a significantly lower MACE and a marginally close value observed for all-cause mortality. The improved clinical outcomes of CABG over MT of CTO lesions further underscore the potential advantages of revascularizing a CTO during CABG rather than leaving it untreated, warranting careful consideration by the Heart Team during their decision-making.

PO 162. LONG-TERM OUTCOMES OF DELAYED PERCUTANEOUS INTERVENTION VERSUS SAPHENOUS VEIN GRAFT FOR REVASCULARIZING THE RIGHT CORONARY ARTERY

Inês Sousa[1], Rui Cerqueira[2], Mário J. Amorim[2], Sílvia O. Diaz[1], Ana Filipa Ferreira[1], Paulo Pinho[2], André P. Lourenço[2], António S. Barros[1], Francisca Saraiva[1], Adelino Leite-Moreira[2]

[1]Faculdade de Medicina da Universidade do Porto. [2]Centro Hospitalar Universitário de São João.

Introduction: The optimal strategy to revascularize the right coronary artery (RCA) can vary depending on the patient's clinical condition and the extent of coronary artery disease. Different perspectives have been raised in the literature regarding the best approach to revascularize the RCA.
Objectives: To compare long-term survival, need for redo CABG and postoperative outcomes among 3 alternatives for RCA revascularization: saphenous vein graft (SVG) anastomosed to the ascending aorta [SVAo]; right internal mammary artery prolongation with SVG-aortic no-touch technique [SVrima]; and post-operative percutaneous intervention - Hybrid approach [PCI].
Methods: Longitudinal, retrospective, single-center cohort including consecutive patients that underwent primary isolated multivessel (≥ 2 vessels disease, with indication for RCA revascularization) off-pump CABG (2009-2014). Emergent/salvage surgeries were excluded. The primary outcome was all-causes mortality (February 2023). Time-to-event outcomes were represented using Kaplan-Meier Curves, Log-Rank test and multivariable Cox Regression (SVAo as the reference). Median follow-up was 10 years, maximum of 14 years.
Results: We included 412 patients (81% male), 65% SVAo, 12% PCI and 23% SVrima. PCI's group had older patients (mean age PCI 65 ± 10 years, SVAo 64 ± 10 years, SVrima 61 ± 10 years, p = 0.02). The prevalence of cardiovascular risk factors was well balanced between groups (arterial hypertension-p = 0.88; dyslipidemia-p = 0.65; diabetes *mellitus*-p = 0.33, obesity-p = 0.77). Coronary artery disease was similar between groups (Canadian Coronary Society-grade IV, p = 0.55 and recent myocardial infarction, p = 0.20). Concerning intervention characteristics, complete revascularization was higher in SVrima group than in SVAo and PCI (97%,80% and 82% respectively, p < 0.001). Univariable survival analysis reported no differences between groups (log-rank test p = 0.68). At 5- and 10- years of follow-up, cumulative survival for SVAo vs. PCI vs. SVrima were 91% vs. 84% vs. 90% and 72% vs. 66% vs. 69%, respectively. Multivariable adjustment showed that the RCA approach did not impact on long-term survival (HR [95%CI]: 1.41 [0.75-2.65], p = 0.30 and HR: 1.20 [0.64-2.26], p = 0.60). Most of post-operative outcomes were similar between groups including hospital mortality, except for time to discharge that was higher in PCI patients (median time [min-max] PCI: 8.00 [5-29] days; SVrima: 6 [5-64]; SVAo: 6 [4-142], p < 0.001). Reoperation for redo-bypass was not performed in any of the patients.
Conclusions: The approach for RCA revascularization did not seem to be associated with all-causes of death and hospital mortality after 14 years of follow-up. However, for establishing an optimal approach is necessary to also explore data from other events, including need for percutaneous re-revascularization and graft patency.

PO 163. PREDICTORS OF PROLONGED HOSPITALIZATION AFTER CARDIAC SURGERY: INSIGHTS FROM A RETROSPECTIVE STUDY

Adriana Rei Pacheco[1], Simão Carvalho[1], Diana Carvalho[1], Margarida Cabral[2], Rita Veiga[3], Raquel Ferreira[1], Nuno Ferreira[4], Rita Faria[4]

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From a clinical standpoint, there is extensive documentation indicating that individuals with an extended stay in hospital after cardiac surgery exhibit elevated rates of both in-hospital and long-term morbidity and mortality. Some of the risk factors for prolonged hospitalization have already been established, although others remain unclear. We sought to characterize predictors of prolonged hospitalization among cardiac surgery patients in an effort to guide future improvement efforts, and especially to clarify the role of aortic calcification in this context. Retrospective study including patients submitted to cardiac surgery who underwent prior CT scan. Thoracic aortic calcification was quantified using a volume-rendering method. Demographic data and comorbidities were also assessed.148 patients were included (mean age 70.5 ± 4.9; 60.8% men). The most frequent comorbidities were dyslipidemia (75%), hypertension (77%) and diabetes (DM) (39.9%). The mean value of the thoracic aortic calcification volume (TACV) was 2.079 ± 2.390 cm^3. The mean value of EuroSCORE II was 3.2 ± 10.4. The average length of stay was 9.5 ± 8.2 days and the median was 7 days. The sample was divided into 2 groups: patients with hospitalization < 1 week and > 1 week (group A and B, respectively), according to the median number of days of hospitalization. When compared, there was a statistically significant difference in relation to the presence of chronic kidney disease (CKD) (GFR < 60 mL/min/1.73) (p = 0.009), atrial fibrillation (AF) (p = 0.002), anemia (p = 0.022) and coronary artery disease (CAD) (p = 0.042), which were more frequent in group B. The average creatinine (Cr) on admission of patients in group A was 0.99 mg/dL, and 1.33 in group B (p = 0.024). Calcification of the descending aorta also correlated with length of stay > 7 days (p = 0.025). Patients with higher TACV had longer hospitalization than patients with lower TACV (13.6 vs. 8.0 days, p = 0.001). Patients with a history of DM had an average length of stay of 15.6 days, compared to patients without, who on average were hospitalized for 8.7 days (p < 0.001). In summary, CKD, AF, anemia and CAD were more prevalent in patients with stays exceeding 7 days. Elevated Cr levels, descending aorta calcification, and higher TACV were linked to prolonged hospital stays. Importantly, patients with DM had significantly longer hospitalization periods. These findings contribute valuable insights to guide future efforts in optimizing post-cardiac surgery care.

PO 164. THE IMPACT OF SEX ON LONG-TERM SURVIVAL AFTER CORONARY ARTERY BYPASS GRAFTING: 19-YEARS OF FOLLOW-UP

Inês Sousa[1], Sílvia O. Dias[1], Rui Cerqueira[2], Ana Filipa Ferreira[1], Mário J. Amorim[2], Paulo Pinho[2], André P. Lourenço[2], António S. Barros[1], Francisca Saraiva[1], Adelino Leite- Moreira[2]

[1]Faculdade de Medicina da Universidade do Porto. [2]Centro Hospitalar Universitário de São João.

Introduction: Patient´s sex has been studied as a determining element in the prognosis after CABG but results are conflicting and focused on the first 5-years of follow-up.
Objectives: To evaluate the impact of sex on long-term survival after CABG, according to age subgroups and compare immediate post-operative outcomes.
Methods: Longitudinal, retrospective, single-center study including consecutive patients who underwent primary isolated CABG between 2004-2014. Exclusion criteria: emergent or salvage surgeries or use of on-pump beating-heart. The included patients were divided in subgroups of age: ≤ 60, 60-70 and ≥ 70 years old. The primary outcome was all-causes mortality (February 2023). Time-to-event outcomes were studied using Kaplan-Meier Curves, Log-Rank test, multivariable Cox Regression and time-split analysis. Median follow-up was 11 years, maximum of 19 years.
Results: From 3977 patients who underwent primary isolated CABG the percentage of women (W) in each subgroup of age varied between 13% and 27. They were older (mean age 66 ± 9 vs. 63 ± 9 years, p < 0.001), had higher prevalence of arterial hypertension, diabetes mellitus, obesity and severe chronic kidney disease than men (M). M had more often peripheral artery disease, smoking habits and chronic obstructive pulmonary disease. Although the prevalence of 3-vessels disease was similar between W and M (p = 0.112), the median number of grafts was higher in M (2.67 ± 0.89 vs. 2.49 ± 0.89, p < 0.001), probably at the expense of more bilateral internal mammary artery utilization (36% vs. 24% p < 0.001). Of note, completeness of revascularization was similar between groups (55% vs. 55%, p = 0.93). At 5-, 10- and 15- years of follow-up, cumulative survival for M vs. W were 89% vs. 88%, 73% vs. 67%, 56% vs. 46%, respectively, Log Rank test p < 0.001. After stratifying by age subgroups, Log-Rank tests did not show differences between sexes (< 60: p = 0.29; 60-70: p = 0.51; > 70: p = 0.65). Multivariable adjustment showed that patient's sex was not associated with long-term survival, irrespective of age subgroup (HR [95%CI] within ≤ 60: 1.28 [0.87-1.87], p = 0.2; 60-70: 1.12 [0.88-1.41], p = 0.4; ≥ 70:1.01 [0.86-1.20], p = 0.9). However, a time-split analysis, performed due to non-proportional hazards of sex in the subgroup ≥ 70 years, showed that M present lower risk than W after 10 years of follow-up (HR: 0.70 [0.50-0.98], p = 0.038).
Conclusions: In this study, men older than 70 years undergoing isolated CABG evidenced better survival than women of the same age, in the longest follow-up period, i.e. only 10-years after surgery. No significant differences were evidenced within the other age subgroups.

SÁBADO, 20 ABRIL de 2024 | 08:00-09:00

Área de Posters 2 | Sessão de Posters 26 - TAVI: acessos vasculares

PO 165. VIABAHN STENTS FOR TREATING TAVI-RELATED VASCULAR ACCESS COMPLICATIONS – A SINGLE-CENTRE EXPERIENCE

André Paulo Ferreira, Rita Teixeira, André Grazina, Inês Rodrigues, Alexandra Castelo, Tiago Mendonça, Luís Morais, Rúben Ramos, António Fiarresga, Rui Cruz Ferreira, Duarte Cacela

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Vascular access complications (VACs) remain one of the biggest challenges when performing transcatheter aortic valve implantation (TAVI). Historically, concerns regarding stent placement in flexing points have been a deterrent to the percutaneous treatment of VACs, due to the potential development of claudication over time. The Viabahn stent, being a covered stent that offers flexibility and conformability, may be well-suited for deployment in these anatomies.
Objectives: This study aimed to evaluate the safety and efficacy of the iliofemoral Viabahn stenting for treating TAVI-related VACs.
Methods: Retrospective analysis of patients submitted to Viabahn stenting in the iliofemoral sector for TAVI-related VACs in a single tertiary centre between January 2017 and October 2023. Baseline characteristics, procedure data and complications were noted according to the Valve Academic Research Consortium-2.
Results: A total of 722 patients were submitted to transfemoral TAVI during the study period. Of these, 25 (3.6%) underwent Viabahn stenting to treat TAVI-related VACs and were included in this study. Patient mean age was 82.1 ± 6.13 years, 61.2% were male. At the baseline, patients had a mean

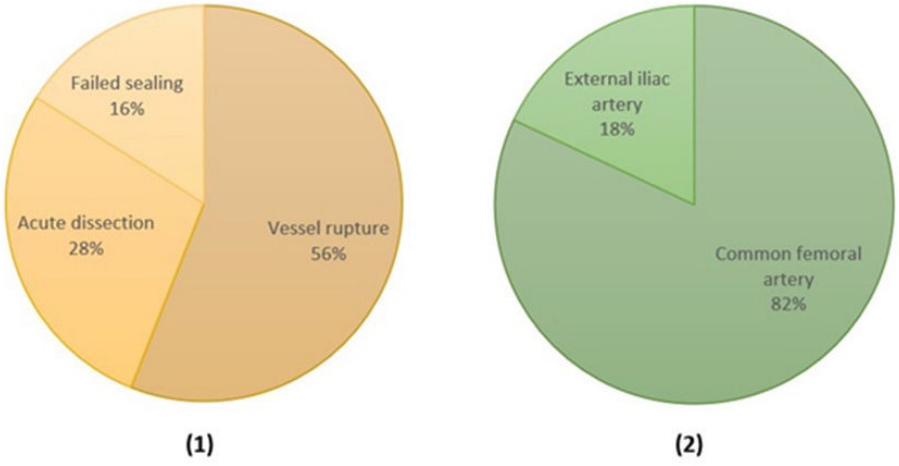

Fig. 1 – TAVI-related vascular access complications (1) and stented artery (2)

Figure PO 165

Euroscore II of 2.73 ± 1.91. A unilateral access approach was used in 40% of cases. The median size of the main access sheath was 14 Fr [IQ 14-16], and the closure devices deployed were Manta® in 72%, and Perclose® in 28%. The Viabahn stent treated different types of VACS, including vessel rupture in 56%, acute dissection in 28% (12% with no antegrade flow), and failed sealing in 16%. The complicated artery was the common femoral in 82%, and the external iliac in 18%. Percutaneous treatment with Viabahn stenting was successful in 92% of cases. In two cases (8%), one of acute occlusion and one of vessel rupture, vascular surgery was required. During the hospital stay, there were no further vascular or hemorrhagic complications. After a mean follow-up of 15 months, 20% of patients were evaluated by Doppler which showed no signs of restenosis or stent complications. Only one patient experienced lower limb claudication at 1 year due to stent restenosis detected in the CT scan, which was managed with medical therapy. There were no other adverse vascular events during follow-up.
Conclusions: Our study suggests that Viabahn stenting emerges as a valuable therapeutic option, ensuring long-term safety and efficacy, in the complex realm of TAVI-related vascular complications.

PO 166. SECONDARY ACCESS IN TAVR: ENHANCING SAFETY AND SIMPLIFYING VASCULAR COMPLICATIONS RESOLUTION

Tatiana Pereira dos Santos, Gonçalo Terleira Batista, Mariana Rodrigues Simões, Ana L. Silva, Joana Guimarães, Vanessa Lopes, Rafaela Fernandes, Diogo Fernandes, Vera Marinho, Elisabete Jorge, Marco Costa, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: The number of patients undergoing transcatheter aortic valve replacement (TAVR) has increased significantly. Access site complications are an important measure of the safety of these procedures. Complications can result in potentially life-threatening situations. Regarding the secondary access, it is controversial whether the contralateral femoral artery should be used as the standard approach or, for safety reasons, operators should switch to radial access.
Objectives: To analyze the complications rates of secondary access sites and closure devices in patients undergoing TAVR for severe aortic stenosis and its possible impact on mortality.
Methods: We retrospectively analyzed all patients who underwent TAVR in a Portuguese tertiary center between March 2020 and June 2023. We then assessed vascular complications associated with secondary access. Echography guidance was employed for all arterial punctures.
Results: Of the 579 patients who underwent TAVR, the median age was 82 years (IQR 7), 51.3% were male,84.5% had hypertension and 35.1% diabetes. For the TAVR procedure, 97.5% used mainly transfemoral (6 French) as secondary access. The remainder included: 1.8% radial artery, 0.7% brachial artery. Secondary site closing devices were mainly Angio-Seal® in 66.2% and Mynx Control™ in 18.1%. Other methods included: ProGlide™ in 8.7%, ObturaTM in 0.2%, mechanical compression (TR Band™ 3.1% and FemoStop™ 0.2%) and manual compression. Major vascular complications from the secondary access were very rare, with only three patients presenting with pseudoaneurysm (0.5%). Minor complications as hematomas didn't need any specific intervention. However, regarding the primary access site, more complications were observed. In 23 patients (4%), complication as arterial occlusion (30.4%), bleeding (39.1%), pseudoaneurysm (8.7%), hematoma (4.3%), dissection (4.3%), perforation (8.7%) and guide wire loss (4.3%) were found.
Conclusions: Given the rare occurrence of vascular complications linked with secondary femoral access, likely attributable to echo-guided arterial punctures, the transition to radial access as the default strategy remains a matter of debate. However, complications arising from the primary access are more prevalent and typically addressed through contralateral transfemoral access. Consequently, the use of a secondary femoral access doesn't appear to compromise overall safety and may streamline the resolution of complications linked to the primary access.

PO 167. VASCULAR COMPLICATIONS AFTER TRANSFEMORAL TRANSCATHETER AORTIC VALVE IMPLANTATION IN PATIENTS WITHSMALL PERIPHERAL VESSELS

Ana Inês Aguiar Neves, Marta Leite, Rafael Teixeira, Fábio Nunes, Marta Catarina Almeida, André Lobo, Gustavo Pires de Morais, Bruno Melica, Lino Santos, Alberto Rodrigues, Pedro Braga, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE.

Introduction: The transfemoral route is the most frequently employed option for transcatheter aortic valve implantation (TAVI). We aimed to characterise a population of patients with small peripheral vessels who underwent TAVI in a high-volume centre and determine factors associated with vascular complications and all-cause mortality.
Methods: Clinical and computerized tomography angiography (CTA) data was collected from a selection of 209 patients undergoing transfemoral TAVI between January and December 2017 (fluoroscopy-guided access) and between June 2018 and May 2019 (ultrasound-guided access). Small peripheral vessels were defined by a common femoral artery with a minimal luminal diameter (MLD) of ≤ 5.5 mm on CTA imaging.
Results: In this study, 122 patients (58% of all patients, 63% women; mean age 83 ± 5 years; median EuroScore II 4.4 ± 2.4; median STS mortality score 4.5 ± 2.1) had a common femoral artery MLD of ≤ 5.5 mm. Patients with small peripheral vessels were more likely to be female (63% vs. 38%, $p < 0.001$), have lower body mass index (27.4 vs. 25.9, $p = 0.004$), have higher STS mortality scores (3.38 vs. 4.47, $p = 0.010$) and have anaemia (57% vs. 38%, $p = 0.007$); they were less likely to have chronic obstructive pulmonary disease (28% vs. 16%, $p = 0.045$), carotid disease (5% vs. 18%, $p = 0.004$), atrial fibrillation or flutter ($p = 0.026$). Ultrasound-guided access was less frequently used (63% vs. 43%, $p = 0.006$). Access-related complications were more frequent in patients with small peripheral vessels (34% vs. 19%, $p = 0.020$). Thirty-nine patients (32%) had an access-related complication: 20 (51%) had a bleeding complication; 38 (97%) had a vascular complication; and 30 (77%) had a major complication according to the Valve Academic Research Consortium-2 (VARC-2) criteria. No differences were found between the ultrasound-guided and fluoroscopy-guided access groups. Patients with vascular complications were more likely to have a lower body mass index (26.6 vs. 25.1, $p = 0.038$) and dyslipidaemia (87% vs. 67%, $p = 0.021$). They also had smaller maximum luminal diameters (6.4 vs. 6.9 mm, $p = 0.034$), increased sheath-to-femoral artery ratio (SFAR) ratios (1.17 vs. 1.06, $p = 0.012$), lower total iliofemoral calcium volume ($p = 0.036$) and higher external iliac artery calcium volume ($p = 0.023$). During follow-up, patients with small peripheral vessels had higher mortality rates at 30 days post-TAVI (1% vs. 8%, $p = 0.028$), but not at one year post-TAVI. Higher 30-day mortality was observed in patients who did not have a vascular complication (12% vs. 0%, $p = 0.030$); these patients also tended to present higher EuroScore II values (median 10.3 vs. 4.3, $p = 0.019$).
Conclusions: Patients with small peripheral vessels are more likely to have access-related complications. Thirty-day mortality in patients with small peripheral vessels is more frequent in patients with higher EuroScore II values.

PO 168. VALVE-IN-VALVE TRANSCATHETER AORTIC VALVE IMPLANTATION IN PATIENTS WITH FAILED BIOPROSTHETIC AORTIC VALVES: AN ANALYSIS OF SAFETY, FEASIBILITY AND CLINICAL OUTCOMES

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Introduction: With the improved durability of newer generations of bioprosthetic valves alongside with the lower bleeding and thromboembolic

Baseline characteristics			
Age in years – mean±SD	81.0 ± 4.3	Atrial fibrillation – % (n)	32.4% (11)
Female – % (n)	52.9% (18)	Permanent PM – % (n)	11.8% (4)
BMI in Kg/m2 – mean±SD	27.5 ± 3.9	Peripheral artery disease – % (n)	11.8% (4)
Arterial hypertension – % (n)	85.3% (29)	Pulmonary disease – % (n)	26.5% (9)
Dyslipidemia – % (n)	58.8% (20)	NYHA class – mean±SD	3.1 ± 0.6
Diabetes – % (n)	35.3% (12)	Euroscore II – mean±SD	14.3 ± 11.1
CKD, KDIGO stage ≥ 3 – % (n)	61.8% (21)	STS Score – mean±SD	8.1 ± 5.6
Coronary artery disease – % (n)	35.3% (12)	LVEF, % - mean±SD	53.3 ± 8.7
Characteristics of the dysfunctioned valve			
Type of dysfunction - % (n)		Bioprosthetic valves - % (n)	
Stenosis	38.2% (13)	Mitroflow (Sorin)	32.4% (11)
Regurgitation	47.1% (16)	Trifecta (St Jude Medical)	20.6% (7)
Mixed	14.7% (5)	Perimount (Edwards Lifesciences)	23.5% (8)
		Carpentier (Edwards Lifesciences)	11.8% (4)
Mean gradient, mmHg – mean±SD	47.2 ± 16.9	Soprano (Sorin)	8.8% (3)
		Portico (Abbott)	2.9% (1)
Valve size, mm		Valve ring diameter (CTA), mm	
Mean±SD	20.6 ± 1.7	Mean±SD	18.7 ± 2.4
Min - max	19 – 25	Min - max	14.3 – 22.5
TAVI valve-in-valve characteristics			
Corevalve Evolut (Medtronic) - % (n)	88.8% (30)	Coronary protection techniques	11.7% (4)
Sapien 3 (Edwards Lifesciences) - % (n)	5.9% (2)	Basilica technique - % (n)	8.8% (3)
Portico (Abbott) - % (n)	2.9% (1)	Chimney technique - % (n)	2.9% (1)
Allegra (Biosensors) - % (n)	2.9% (1)	Wiring only - % (n)	0
Valve size, mm		Periprocedural PCI	14.7% (5)
Mean±SD	20.6 ± 1.7		
Min - max	19 – 25	Urgent procedure	11.7% (4)

Table 1. Baseline characteristics and procedural data.

Procedural success and clinical outcomes			
Device success - % (n)	73.5% (25)	30-day major vascular complication - %(n)	0
Intraprocedural death	0	30-day stroke - %(n)	0
Malposition of valve	0	30-day major bleeding - %(n)	0
Poor valve performance	26.5% (9)	30-day permanent pacemaker - %(n)	0
mean gradient >20mmHg	23.5% (8)	1-year prosthetic thrombosis - %(n)	0
moderate-to-severe PVL	2.9% (1)	1-year severe dysfunction - %(n)	0
Coronary occlusion %(n)	0	30-day mortality - %(n)	0
Any paravalvular leak - %(n)	14.7% (5)	1-year overall mortality - %(n)	11.7% (4)
Mean aortic gradient, mmHg - mean±SD	18.1 ± 12.2	1-year CV mortality - %(n)	5.9% (2)
Post NYHA class - mean±SD	1.6± 0.6	Follow-up overall mortality - %(n)	20.6% (7)
Follow-up		Follow-up CV mortality - %(n)	11.8% (4)
Median (IQR)	32 (56)		
Min - max	2 – 96		

Table 2. Procedural success and clinical outcomes (according to VARC-2)

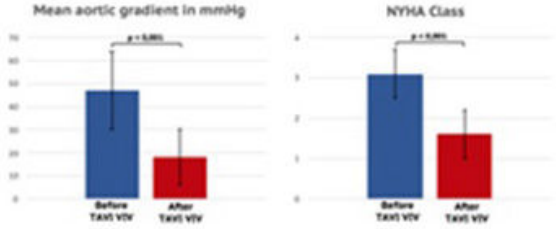

Image 1. Comparison of mean aortic gradient and NYHA class at baseline and at follow-up.

Figure PO 168

risks over mechanical valves, they are becoming an attractive alternative to treat severe aortic stenosis in younger patients. As a direct consequence, there is a growing need for redo aortic valve replacement procedures. As redo surgical aortic valve replacement (SAVR) carries a higher risk of procedural complications and intraoperative mortality, valve-in-valve (VIV) transcatheter aortic valve implantation (TAVI) has emerged as an alternative. However, despite the rising frequency of aortic VIV interventions, comprehensive data on their outcomes remains scarce.

Objectives: This analysis aims to evaluate the safety, feasibility and clinical outcomes of valve-in-valve TAVI in patients with failed bioprosthetic aortic valves.

Methods: Retrospective analysis of patients submitted to VIV TAVI in single tertiary center. Baseline characteristics, failed bioprosthesis characterization and procedure data were noted. Procedural success and clinical outcomes were defined according to the Valve Academic Research Consortium-2 (VARC-2).

Results: From 2015 to 2022, 34 patients (52.9% female, mean age 81 years old) underwent VIV TAVI for symptomatic failed bioprosthetic aortic valves (38% stenosis, 47% regurgitation, 15% mixed dysfunction), with intermediate to high surgical risk (Euroscore II 14.3 ± 11.1 and STS score 8.1 ± 5.6). Baseline characteristics and procedure data are depicted in the Table. Among our cohort, more commonly found degenerated valves were Mitroflow (Sorin), Trifecta (St Jude Medical) and Perimount (Edwards Lifesciences). The most used TAVI valve was the Corevalve (Medtronic) in 88% and the most used valve sized was nr 23. Periprocedural percutaneous coronary intervention was performed in 15% of the cases and coronary protection techniques were performed in 12%. Procedural success and outcomes are shown in table 2. As described in previous studies, device success rate is lower than in non-VIV procedures, at cost of valve performance, mainly higher mean gradients. No intraprocedural deaths, valve malposition/migration or coronary occlusion were registered. Overall mortality at 30-day and 1-year was 0% and 11.7%, with only 5.9% cardiovascular mortality. No major vascular complication, major bleeding, stroke or permanent pacemaker implantation were registered at 30 days after the procedure. No prosthetic dysfunction or thrombosis was seen at 1 year.

Conclusions: In a real word cohort of intermediate- and high- surgical risk patients with failed bioprosthetic valves, VIV TAVI procedure has showed to be a feasible, safe and efficient treatment, with good clinical outcomes and low rates of peri-procedural complications.

PO 169. LONG-TERM CLINICAL AND IMAGING OUTCOMES OF PATIENTS UNDERGOING PERCUTANEOUS FEMORAL INTERVENTION FOLLOWING TAVI-RELATED VASCULAR ACCESS COMPLICATIONS

Maria Rita Giestas Lima[1], Rita Reis Santos[1], António Rocha Almeida[2], Afonso Félix de Oliveira[1], Henrique Mesquita Gabriel[1], João Brito[1], Sérgio Madeira[1], Sílvio Leal[1], Luís Raposo[1], Pedro Araújo Gonçalves[1], Rui Campante Teles[1], Manuel Sousa Almeida[1]

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Introduction: Vascular access complications (VAC) are the most common in-hospital adverse event following transcatheter aortic valve implantation (TAVI). Often, ileo-femoral VAC requires bail-out percutaneous interventions with either prolonged balloon inflation and/or stent implantation. The long-term outcomes of these procedures have not been characterized. We aim to assess the clinical and imaging outcomes of patients who underwent bailout percutaneous vascular interventions due to VAC following TAVI.

Methods: Single-centre prospective study including all consecutive patients with a VAC following trans-femoral TAVI, between 2015-July 2023. VAC was defined as uncontrolled bleeding, acute occlusion or flow limiting stenosis of the femoral vessel leading to percutaneous treatment. Clinical and imaging follow-up was performed with bilateral arterial ultrasound (US) Doppler to assess patency and peak systolic velocity of common femoral arteries.

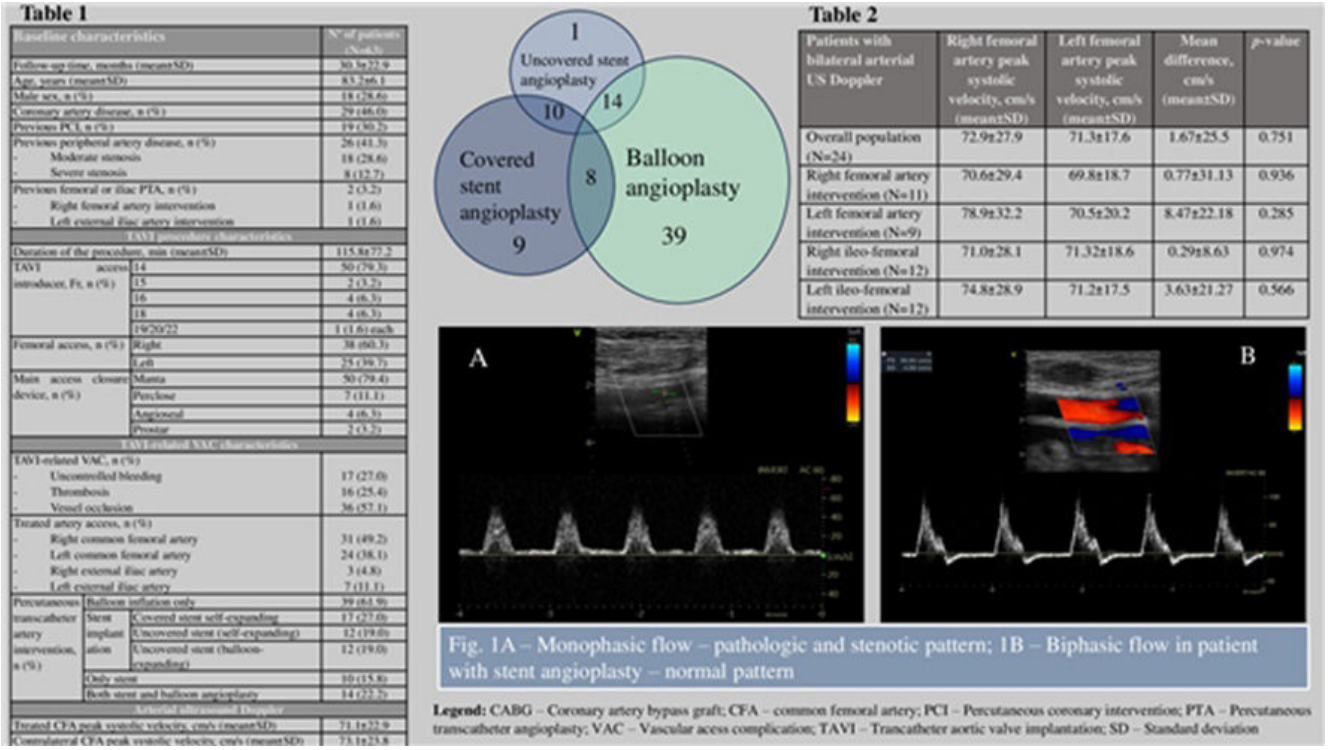

Table 1

Baseline characteristics		N° of patients (N=63)
Follow-up time, months (mean±SD)		30.3±23.9
Age, years (mean±SD)		83.2±6.1
Male sex, n (%)		18 (28.6)
Coronary artery disease, n (%)		29 (46.0)
Previous PCI, n (%)		19 (30.2)
Previous peripheral artery disease, n (%)		26 (41.3)
- Moderate stenosis		18 (28.6)
- Severe stenosis		8 (12.7)
Previous femoral or iliac PTA, n (%)		2 (3.2)
- Right femoral artery intervention		1 (1.6)
- Left external iliac artery intervention		1 (1.6)
TAVI procedure characteristics		
Duration of the procedure, min (mean±SD)		115.8±77.2
TAVI access introducer, Fr, n (%)	14	50 (79.3)
	15	2 (3.2)
	16	4 (6.3)
	18	4 (6.3)
	19/20/22	1 (1.6) each
Femoral access, n (%)	Right	38 (60.3)
	Left	25 (39.7)
Main access closure device, n (%)	Manta	50 (79.4)
	Perclose	7 (11.1)
	Angioseal	4 (6.3)
	Prostar	2 (3.2)
TAVI-related VAC characteristics		
TAVI-related VAC, n (%)		
- Uncontrolled bleeding		17 (27.0)
- Thrombosis		16 (25.4)
- Vessel occlusion		36 (57.1)
Treated artery access, n (%)		
- Right common femoral artery		31 (49.2)
- Left common femoral artery		24 (38.1)
- Right external iliac artery		3 (4.8)
- Left external iliac artery		7 (11.1)
Percutaneous transcatheter artery intervention, n (%)	Balloon inflation only	39 (61.9)
	Stent implantation	Covered stent self-expanding 17 (27.0)
		Uncovered stent (self-expanding) 12 (19.0)
		Uncovered stent (balloon-expanding) 12 (19.0)
	Only stent	10 (15.8)
	Both stent and balloon angioplasty	14 (22.2)
Arterial ultrasound Doppler		
Treated CFA peak systolic velocity, cm/s (mean±SD)		71.1±22.9
Contralateral CFA peak systolic velocity, cm/s (mean±SD)		73.1±23.8

Table 2

Patients with bilateral arterial US Doppler	Right femoral artery peak systolic velocity, cm/s (mean±SD)	Left femoral artery peak systolic velocity, cm/s (mean±SD)	Mean difference, cm/s (mean±SD)	p-value
Overall population (N=24)	72.9±27.9	71.3±17.6	1.67±25.5	0.751
Right femoral artery intervention (N=11)	70.6±29.4	69.8±18.7	0.77±31.13	0.936
Left femoral artery intervention (N=9)	78.9±32.2	70.5±20.2	8.47±22.18	0.285
Right ileo-femoral intervention (N=12)	71.0±28.1	71.32±18.6	0.29±8.63	0.974
Left ileo-femoral intervention (N=12)	74.8±28.9	71.2±17.5	3.63±21.27	0.566

Figure PO 169

Results: A total of 1,518 patients underwent TF-TAVI, of which 7% (N = 107) underwent concomitant ileo-femoral percutaneous angioplasty (PTA) intervention in the same day as TAVI. In patients submitted to PTA, 7 were treated to gain access for TAVI, and 100 (7%) were performed to treat vascular access complications. At a mean follow-up time of 23 ± 3 months, 37 patients died (37%), 6 (16%) from in-hospital complications and 31 (84%) from non-vascular causes after discharge. From the surviving 63 patients (study group) – mean age 83 ± 6 years-old, 29% male, 46% with previous peripheral arterial disease –, 24 underwent bilateral US. Unable to perform imaging on 39 patients due to geographical or mobility issues. At a mean follow-up time of 30 ± 23 months, only 6 patients (10%) reported intermittent claudication, of which 4 (67%) had pre-TAVI symptoms. No patient had at rest symptoms or amputation history. All but one had patent vessel on US. The mean peak systolic velocity of the treated vessel and the contralateral vessel were 71.1 ± 22.9 cm/s and 73.1 ± 23.8cm/s, respectively, with no statistically significant difference between them in each patient (mean difference 1.9 ± 25.4, p = 0.709). We found no statistically significant differences between peak systolic velocities between both vessels in each patient, accordingly with the treated vessel (Table 2).

Conclusions: This prospective study shows that patients submitted to percutaneous bailout iliofemoral interventions have a very low rate of lower limb adverse events with very good patency rates at mean follow up of 2.5 years.

PO 170. MANTA VASCULAR CLOSURE DEVICE: CARDIOVASCULAR RISK FACTORS AND COMPLICATIONS IN A SINGLE-CENTER STUDY

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Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Transcatheter aortic valve replacement (TAVR) involves large-bore arterial cannulation, often leading to significant bleeding and vascular complications. Collagen-based vascular closure devices (VCD), like MANTA VCD, can help address these issues. This study explores the correlation between cardiovascular risk factors and bleeding/vascular complications in MANTA VCD procedures.

Methods: A retrospective study at a large single-center analyzed TAVR patients with MANTA VCD closure between July 2020 and February 2022. Efficacy endpoints included immediate hemostasis and safety outcomes involved VARC-3 criteria for bleeding and vascular complications. Baseline characteristics investigated cardiovascular risk factor correlations.

Results: 245 consecutive TAVR patients with MANTA VCD closure were included. Successful closure occurred in 92.2% (n = 226). Device failure (7.8%) resulted in one patient requiring secondary surgery (due to occlusion of the femoral artery unresolved with balloon dilatation). Per VARC-3, no major complications occurred, 8.6% of patients (n = 21) had minor VARC-3 vascular complications. Minor bleeding at the primary access site (closed with MANTA) was 2.9% (n = 7). Cardiovascular risk factors as coronary artery disease (CAD), arterial hypertension, and chronic kidney disease (CKD) correlated with bleeding/vascular complications. CAD patients (n = 83) had a 13.4% complication rate, compared to 8.6% without CAD (n = 162) with an odds ratio of 1.35 (95%CI 1.08 – 3.81, p < 0.040). Arterial hypertension (n = 195) showed a 12.2% complication rate versus 7.1% without arterial hypertension (n = 107) with an odds ratio of 3.44 (95%CI 1.02 – 11.64, p < 0.042). CKD patients (n = 45) had a 20.0% complication rate versus 6.0% without CKD (n = 200), odds ratio 8.45 (95%CI 2.63 – 27.16, p < 0.001). No significant differences occurred for other cardiovascular risk factors (peripheral vascular disease, atrial fibrillation, obesity, diabetes, smoking history, or chronic obstructive pulmonary disease).

Conclusions: The MANTA vascular closure device proves to be a secure and efficient tool for closing arterial access in procedures like TAVR. Device failure was infrequent and rarely associated with severe complications. The presence of CAD, arterial hypertension and CKD is linked to an increased risk of bleeding and vascular complications according to VARC-3 criteria. To enhance outcomes, it is imperative to conduct additional multicenter studies to delve into the correlation between cardiovascular risk factors and complications in vascular access site closure.

SÁBADO, 20 ABRIL de 2024 | 08:00-09:00

Área de Posters 3 | Sessão de Posters 27 - Reabilitação cardíaca

PO 171. OPTIMIZING CARDIAC REHABILITATION ADHERENCE: UNVEILING THE POTENTIAL OF REMOTE CARDIAC TELEREHABILITATION.

Sofia Esteves[1], Pedro Alves da Silva[2], Ana Margarida Martins[2], João Fonseca[2], Paula Sousa[1], Sílvia Fiuza[1], Edite Caldeira[1], Mariana Cordeiro Ferreira[1], Nelson Cunha[2], Inês Aguiar-Ricardo[3], Fausto J. Pinto[3], Ana Abreu[3]

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Introduction: Participation in Cardiac Rehabilitation (CR) has shown to enhance both morbidity and mortality outcomes in patients (pts) with cardiovascular disease (CV). The socio-demographic (SD) analysis is a crucial part of pt evaluation process to optimize CR adherence.
Objectives: Analyze the influence of SD status on CR adherence and CV risk factors control.
Methods: A single-center prospective cohort study was conducted, involving consecutive pts enrolled in a phase 2 CR program, from 2015 to 2023. SD variables were defined as education level (raging from completion of middle-school to doctorate), marital and employment status. Clinical, laboratory and cardiopulmonary exercise testing (CPET) data, program participation and progression to phase 3 program (CR center, local gym, home gym or no exercise during follow-up) were examined.
Results: A total of 446 pts were included (80% male; mean age 60.5 ± 11.5 years). Overall pts completed on average 14 CR sessions, which corresponds to 92% of scheduled sessions. Among the SD variables, 71% of pts were married, 58% completed their education up to high-school, 42% held at least a Bachelor's degree and 52,1% were employed. Regarding clinical data, 72.1% of pts had arterial hypertension, 72.2% had dyslipidemia, 26.6% were diabetic and 62.9% were active or past smokers. Regarding exercise program methodologies, 59,5% of pts were enrolled in a CR center and 24,5% of pts were not involved in any physical program. Subgroup analyses revealed that married pts were more likely to complete phase 2 (p = 0.031) with a tendency to proceed to a phase 3 program in a CR Center (p = 0.056). Similarly, the subgroup of pts with an education up to high-school had a higher% of adherence to phase 2 sessions (p = 0,014) and a propensity to CR Center adhesion (p = 0,06) and CR Center/Local gym at FUP (p = 0,028). Retired/unemployed pts were more likely to complete phase 2 compared to employed pts (p = 0.06). Finally, CV risk factor control and improvement in CPET parameters were independent of SD status.
Conclusions: Our study demonstrated a high adherence rate to phase 2 CR program, especially in patients with lower levels of education, likely associated with a less demanding work schedule and in married patients. This work highlights the importance of developing strategies, particularly cardiac telerehabilitation, for certain patient subgroups to optimize adherence.

PO 172. IMPROVED EXERCISE CAPACITY AND CARDIAC EVENTS AFTER REHABILITATION IN POST-ACUTE CORONARY SYNDROME PATIENTS

Miguel Rocha, Helena Santos Moreira, Pedro Mangas Palma, Paula Dias, Joana Rodrigues, Afonso Rocha, Ana Pinho, Luís Santos, Cátia Oliveira, André Cabrita, Catarina Marques, Rui Rodrigues

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Cardiac rehabilitation (CR) is a comprehensive intervention involving physical training and risk factor modification. Following acute coronary syndrome (ACS), CR has been shown to enhance exercise capacity, improve quality of life, and potentially reduce cardiovascular (CV) events.
Objectives: Our aim was to examine the association between exercise capacity at the end of CR and CV outcomes. The primary endpoint was a composite of mortality and CV events.
Methods: We conducted a retrospective analysis of ACS patients who were subsequently enrolled in CR at our centre, from 2008 to 2019. Clinical data from the hospital admission, the initial and the final CR visit was collected from medical records. Exercise capacity at CR completion was assessed using treadmill stress test metabolic equivalents (METs). Subsequent CV events or death during follow-up were compared with METs at the end of CR. Statistical data was analysed using the SPSS software.
Results: In this study of 713 patients (mean age 54 ± 9.4 years; 85.4% male), smoking was the predominant CV risk factor (78%) and ST elevation myocardial infarction the most prevalent initial CV event (50.4%). The average follow-up time was 9.5 (± 2.54) years. There was a significant improvement in exercise capacity as indicated by the increase in average METs from baseline to post-CR (10.6 ± 2.3, p = 0.01). The primary endpoint occurred in 199 (27.9%) patients overall during follow-up, with unstable angina (9%) being the most frequent event. There were 25 (3.5%) deaths during follow-up. The average METs post-CR showed a significant association with the primary endpoint (p = 0.01), indicating that higher METs correlated with fewer CV events or deaths. This association remained robust in the multivariate logistic regression model, even after adjusting for possible confounding factors (odds ratio [OR] 0.829; 95%CI [0.753, 0.912]).
Conclusions: Our study emphasizes the importance of CR in the ongoing care of post ACS patients. In our cohort with a relatively extended follow-up, we showed that improved exercise capacity after CR may predict fewer cardiovascular events, which is consistent with previous research. Further large randomized trials are needed to better understand the long-term effects and safety of high-intensity training in high-risk cardiovascular or chronic heart failure patients.

PO 173. BEYOND PHASE 2: THE IMPACT OF PHASE 3 CARDIAC REHABILITATION ON PHYSICAL ACTIVITY

João Mendes Cravo[1], Ana Margarida Martins[2], Ana Beatriz Garcia[1], Pedro Bártolo[3], Rita Pinto[4], Mariana Borges[4], Madalena Lemos Pires[4], Gonçalo Sá[5], Nelson Cunha[6], Inês Aguiar-Ricardo[6], F. J. Pinto[6], Ana Abreu[6]

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Introduction: Phase 3 Cardiac Rehabilitation (CR) is a maintenance exercise program for which clinical benefits are less well defined comparing to phase 2.
Objectives: To assess impact of phase 3 CR on physical activity (PA) levels.
Methods: A single-center cohort study was conducted, involving patients (pts) who completed a phase 2 CR program at least 6 months prior to the study and who answered the International Physical Activity Questionnaire (IPAQ) short form version 2.0. The patients were divided in 2 groups according to progression to phase 3 program to a specialized CR center (group 1) and non-CR center (group 2). The populations were compared.
Results: A total of 110 pts were included (78% male; mean age 61,5 ± 11 years). Regarding clinical data, 59% had hypertension, 10% were diabetic, 79% had dyslipidemia and 20% were smokers, 86% pts with ischemic heart disease. Concerning exercise program methodologies, only 25,5% of pts enrolled a structured phase 3 CR center (group 1). Regarding the intensity of PA, the group 1 had a higher number of minutes (min) per week undertaking moderate to vigorous activity (211 ± 108 min vs. 147 ± 132 min, p = 0,028) and a higher energy requirement in total metabolic equivalents (METs) per week (1,033 ± 356 vs. 734 ± 684), p < 0,001) comparing to group 2. Concerning the categorical score, a higher proportion of pts were attributed a moderately or

higher level of total PA (OR 4.485 [CI 1.549-12.984]) after computing activity on all domains accessed by the IPAQ form in group 1. These positive outcomes were consistent across gender and body mass index categories. The subgroup analysis of younger pts (< 70 years) showed similar results when evaluating min/week of moderate-vigorous PA, total MET/week (p = 0,018 and p = 0,002 respectively) and categorical score of total PA (OR 5.9 [CI 1.6-22.4]), while the older population did not exhibit significant differences.
Conclusions: These findings are promising, suggesting that continuing with a structured phase 3 program may contribute to sustained physical activity and potentially better overall cardiovascular health, especially for the younger population. This underscores the importance of continued research in this area, namely whether there are specific factors influencing the outcomes in different age groups.

PO 174. CHRONOTROPIC INCOMPETENCE - STILL ON TIME TO MAKE A DIFFERENCE?

João Fernandes Pedro[1], Ana Margarida Martins[1], Ana Beatriz Garcia[1], Catarina Gregório[1], Paula Sousa[1], Bruno Bento[1], Laura Santos[1], Maria Clarissa Rodrigues[1], Nelson Cunha[2], Inês Aguiar-Ricardo[2], Fausto J. Pinto[2], Ana Abreu[2]

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Introduction: Chronotropic incompetence (CI) is prevalent among individuals with cardiovascular disease. This phenomenon is frequently noted in cardio-pulmonary exercise testing (CPET) in patients participating in cardiac rehabilitation (CR) programs and often attributed to a combination of factors, notably the administration of beta-blockers (BB). Recent evidence casted doubt over long term beta-blocker use on ischemic pts with preserved ejection fraction and some large scale trials as BETAMI and DANBLOCK are undergoing to clarify BB role in this specific population.
Objectives: This study aimed to evaluate alterations in the chronotropic response observed in consecutive patients undergoing CPET and to explore the impacts of BB on this physiological parameter.
Methods: We conducted a single centre, prospective study of consecutive patients who were submitted to CPET. CI was defined as chronotropic index (max HR-resting HR/predicted HR-resting HR) < 0.8 and chronotropic deficit ((predicted HR-max HR)/predicted HR) < 0.2.

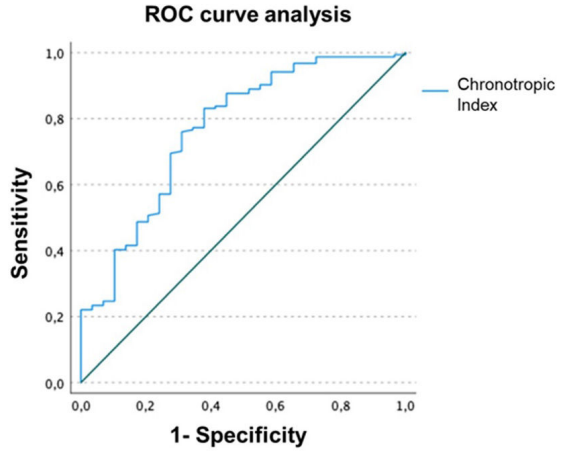


Figure 1 – Chronotropic index in discriminative ability for estimating a peakVO2 <12mL/kg/min, ROC curve analysis

Results: 446 patients were analysed (80.5% males; mean age of 60.11; 83.4% ischemic patients). In our population, 95.8% had CI assessed during the CPET. 79% (n = 347) were under BB therapy, from which 68.3% (n = 222) without heart failure with reduced ejection fraction. Most pts used either low (bisoprolol 2.5 mg or equivalent) or intermediate (bisoprolol 5 mg or equivalent) BB dose (30% and 28.7% respectively). During a mean follow-up of 2.5 ± 1.8 years, most pts (60.7%) maintained drug dosage, 8.7% increased and only 4.9% stopped. The use of BB was associated with CI (p = 0.002), chronotropic index < 80% (p < 0.001) and with chronotropic deficit > 20% (p = 0.019). This was independent of the dosage of BB used. All of these pts were associated with a poorer exercise capacity as assessed by CPET and measured by VO2/kg (AUC: 0.767 95%CI 0.67-0.87, p < 0.001) (Figure), a known strong prognostic surrogate in this pts. There was however no significant difference regarding VO2/kg between pts with low or high BB dosage (mean 17.3 vs. 17.8 mL/kg, p = 0.513).
Conclusions: As mentioned, recent meta-analysis questioned the benefit for long term beta-blocker use on ischemic pts with preserved ejection fraction; indeed most patients with preserved ejection were under beta-blocker therapy. In this subpopulation the rate of CI was similarly high and positively associated with BB use and lower values of oxygen consumption. CI is highly prevalent in our population and it is directly related to related to BB use. Its broad use in pts with coronary artery disease and preserved LVEF is being questioned and those who display CI may be ideal candidates to halt this therapeutic.

PO 175. CARDIOVASCULAR REHABILITATION - DETERMINANTS OF LONG-TERM OUTCOMES

Catarina Sena Silva[1], Catarina Simões de Oliveira[1], Ana Beatriz Garcia[1], Ana Margarida Martins[1], Daniela Roxo[2], Marta Ramalhinho[2], José Poupino[3], Margarida Alves[3], Nelson Cunha[3], Inês Aguiar-Ricardo[3], Fausto J. Pinto[3], Ana Abreu[3]

[1]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Physical and rehabilitation Medicine, CHULN. [3]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Recent clinical evidence reinforces cardiac rehabilitation as a cornerstone for patient recovery and improvement after a serious cardiovascular event. Therefore it's important to study what are the measures with the highest impact on outcomes.
Objectives: To study determinants of long-term success in cardiovascular rehabilitation.
Methods: A retrospective study in patients involved in a cardiovascular rehabilitation program at a tertiary hospital from 2013 to 2023. The main endpoint of major events was a composite of: hospital admission, hospital admission due to cardiac disease, re-infarction, death and death from cardiac causes. Statistical analysis was conducted using SPSS 29.
Results: This study involved 446 patients, the majority were male (80.5%) and the average age was 60.5 ± 11.5 years [28; 90]. Patients were followed, on average, for 30.5 ± 21.2 months [1.2; 109.3]. In terms of comorbidities: 72.2% had dyslipidemia, 72.1% hypertension, 26.4% diabetes, 15.3% atrial fibrillation, 13.0% pulmonary disease, 5.9% chronic kidney disease (CKD); nad 31.2% were smokers. The average initial values for: body mass index was 27.6 ± 4.3 Kg/m², low density lipoprotein was 88.8 ± 41.8 mg/dL, glycated hemoglobin was 6.1 ± 1.1%. Overall, patients attended 13.3 ± 4.3 sessions (92.1 ± 12.2% of the target). Fifty-four (12.1%) patients reached the composite endpoint; 44 (9.9%) were admitted to the hospital, 26 (5.8%) of which due to CV disease; 4 (0.9%) had a re-infarction; 17 (3.8%) died, 9 (2.0%) of which due to a cardiac cause. Mean time to reach the composite endpoint was 6.3 ± 3.3 months. The major determinants of the composite endpoint were: being a smoker at baseline (p = 0.009), number of coronary arteries affected (p = 0.027), CKD (p = 0.023), peripheral artery disease (PAD) (p = 0.005), LDL at follow-up (FU) (p = 0.050), final arm strength (p = 0.021), final metabolic equivalent of task (MET) (p = 0.010), and initial end-tidal carbon dioxide pressure (EtCO2) (p = 0.045).
Conclusions: In this study, it was possible to identify initial smoker status, number of coronary arteries affected, CKD, PAD, LDL level at FU, final arm strength, final MET and initial EtCO2 as determinants of cardiovascular rehabilitation success. Smoking plays a pivotal role in cardiac diseases, making it mandatory to address it in a preemptive way; lipid lowering measures must be taken aggressively and programs ought to include activities to improve a patient's physical conditioning.

PO 176. POST-CARDIAC REHABILITATION CONCERNS: CAN CHRONIC HEART FAILURE PATIENTS SUSTAIN HEALTH GAINS DURING PHASE III?

Bernardo Lisboa Resende, Rafaela Fernandes, Gonçalo Ferraz Costa, Tomás M. Carlos, Gonçalo Terleira Batista, Mafalda Griné, Luísa Gomes Rocha, Ana Luísa Silva, Tatiana Santos, Mariana Simões, João Gameiro, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Current guidelines provide clear recommendations regarding the benefits of a structured cardiac rehabilitation (CR) program after an acute cardiovascular event and in chronic heart failure (CHF) patients. Despite strong benefits of CR, maintenance of a healthier lifestyle and medication adherence after phase II remains key points in obtaining optimal clinical results.
Methods: Single-center transversal and retrospective observational study of consecutive patients with CHF that successfully finished a supervised exercise-based CR program, between January and October of 2023. We aimed to assess the impact of CR in exercise and medication adherence 3 months after transitioning to phase III CR supervised program. Primary endpoint was to evaluate weekly exercise habits (defined by, at least, 30 minutes of moderate intensity exercise), and correct medication adherence. Subgroup analysis of patients with CHF was performed, with secondary endpoints being rehospitalization or emergency department visit, exercise tolerance, weekly blood pressure evaluation and weight change before and after CR through Wilcoxon Signed Rank Test. Data was collected by a specialized nurse team of our Centre, and reported medication was cross-checked with prescription records.
Results: 23 patients were enrolled. Mean age was 55.5 ± 15.2 years, 18 (78.3%) were male and 17 (73.9%) had CHF. After 3 months of phase III CR, most patients (19/82.6%) practiced exercise more than 3 times per week and the totality (23/100%), fulfilled the respective medical prescription. Only 1 (4.30%) patient had a hospitalization due to acute heart failure. Overall, there was good exercise tolerance, with 22 (95.7%) patients reporting no difficulties during exercise practice and 20 (87.0%) checked blood arterial pressure at least once per week. Subgroup analysis of CHF patients showed a significant weight loss in the 3 months after CR (p-value = 0.017).
Conclusions: Despite a small sample, our study revealed a tendency that supports the benefit of CR after the first 3 months of phase III CR. Patients are more willing to maintain exercise and medication compliance, with a favorable weight loss in CHF patients.

SÁBADO, 20 ABRIL de 2024 | 09:00-10:30

Área de Posters 1 | Sessão de Posters 28 - Morte súbita cardíaca

PO 177. CONTRIBUTES OF GENETIC TESTING TO UNDERSTANDING THE AETIOLOGY OF SUDDEN CARDIAC ARREST: 4-YEAR EXPERIENCE OF GENETIC LABORATORY

Susana Lemos Ferreira[1], Inês Custódio Santos[1], Rafael Graça[2], Catarina Silveira[2], Yuri Chiodo[2], Maria do Carmo-Fonseca[3], Diana Antunes[2]

[1]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de D. Estefânia. [2]GenoMed - Diagnósticos de Medicina Molecular SA. [3]Instituto Medicina Molecular -FMUL.

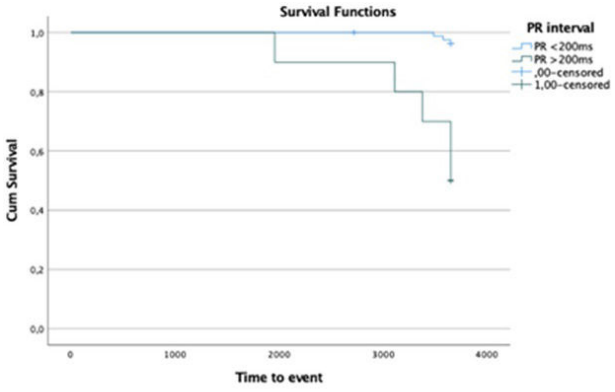
Introduction: Sudden cardiac arrest (SCA) at a young age can be the first manifestation of an underlying genetic disorder, namely an inheritable primary arrhythmia, a cardiomyopathy, an aortopathy or other hereditary cardiac disease (HCD). The combined prevalence of HCD can be high as 1:200 and globally represents 15-20% death causes in developed countries, affecting in particularly males under 50 years of age. Genetic testing is essential for establishing an aetiology and providing personalize follow-up and adequate family screening. Our previous works revealed an overall 21.37% genetic diagnosis (GD) rate (N = 209) from a total of 978 genetic analysis performed for confirmed or suspected HCD in our laboratory.
Objectives: Identify and characterise cases of SCA or sudden cardiac death (SCD) that underwent a genetic testing. Compare the GD rate of the individuals tested with direct family history of SCA/SCD with the overall GD previously obtained to further validate this variable as a relevant marker of HCD.
Methods: Retrospective review of the results of genetic testing performed in both probands for SCA/ SCD or probands with suspected HCD and direct family history of SCD from 2019 until 2023 and calculation of their respectively GD rate.
Results: A total of 32 genetic analyses were carried out for individuals referred for SCA or SCD. From the total of these cases, after subsequent clinical evaluation, it was identified an underlying disease in 20 cases of SCA: primary arrhythmia syndrome (6), cardiomyopathy (5) and congenital cardiopathy (1). A (likely) pathogenic variant was found in 5 samples on *TPM1, DSP, DSC2, RYR2, TTN* genes with a diagnostic yield of 16%. Additionally, we reviewed further 77 genetic analyses performed for individuals with suspected or confirmed HCD where there was a direct family history of SCD: 36 cases of hypertrophic cardiomyopathy, 20 dilated cardiomyopathy, 1 arrhythmogenic right ventricular cardiomyopathy, 12 unspecified cardiomyopathy, 6 primary arrhythmia syndrome, 1 familial hypercholesterolemia, and 1 coronary artery disease. A (likely) pathogenic variant was found in 21 cases, namely on *MYH7* (4), *MYBPC3* (4), *LMNA* (3), *TTN* (2), *FBN1* (1), *TPM1* (1), *FHOD3* (1), *TTR* (1), *LAMA2* (1), *FLNC* (1), *RYR2* (1), *DSP* (1) genes, with a diagnostic yield of 27%. Our results revealed a higher GD rate in the cohort of individuals with a family history of SCD, validating the relevance.
Conclusions: This work aims to add further evidence on the utility of genetic testing on case of SCA/SCD and validate that protocols of investigation of SCA/SCD should include performing routinely genetic analysis, performed in a multidisciplinary setting. Given that many cases result of HCD only identifying an underlying genetic cause can allow patients and their relatives an adequate management and screening of at-risk relatives.

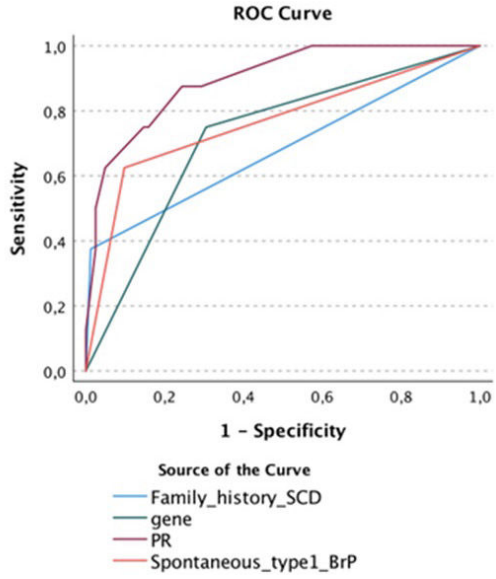
PO 178. UTILITY OF RESTING ELECTROCARDIOGRAM IN SCREENING AND RISK STRATIFICATION OF BRUGADA SYNDROME

Vanda Devesa Neto, João Fiúza, Gonçalo Ferreira, Mariana Almeida, Inês Pires, Júlio Gil Pereira, António Costa, Luís Ferreira Santos

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio.

Introduction: Identifying high-risk patients in Brugada Syndrome (BrS) remains challenging. This study aims to determine which intervals in resting ECG differentiate between healthy and affected individuals and correlate these baseline ECG intervals with cardiovascular events over a 10-year period.
Methods: Prospective, longitudinal study that included 107 consecutive patients with first-degree relatives diagnosed with Brugada Syndrome, submitted to an ECG in 2009 for screening of type 1 BrS in a Portuguese center. Patients with a normal baseline ECG were submitted to provocative test with flecainide to diagnose an induced type 1 Brugada pattern based on the clinician judgment at the time. Genetic tests were performed for BrS diagnosis. Quantitative ECG parameters of interest included PR, QRS and QTc interval (ms), and presence of QRS fragmentation. After subgroup stratification (spontaneous type 1 (SBr), induced type 1 (IBr) or normal ECG) patients were submitted to clinical follow-up for 10 years, assessing cardiac events (CE), which were defined as sudden cardiac death (SCD), ICD implantation and ICD shocks. Clinical records were used characterize time to event and type of event. Chi-square and Mann-Whitney U tests were used for group comparisons; survival analysis used Kaplan-Meier curves; Cox regression analysis was used for multivariable analysis.





Results: 107 patients; 16 SBr and 11 IBr. Mean age 29.9 ± 16 years; 51 male. Genetic test positive in 36%. 6.5% implanted CDI at baseline. Both SBr (202.5 ± 32.8 vs. 150.2 ± 29.3 ms; p < 0.01) and IBr (177.3 ± 33.5 vs. 150.2 ± 29.3 ms; p = 0.02) patients had significantly higher PR intervals vs. normal ECG. No differences were found in PR interval between SBr and IBr (p = 0.93). QRS interval was significantly higher in patients with SBr vs. normal ECG (110.0 ± 16.3 vs. 89.5 ± 15.6; p < 0.01). In SBr CE occurred in 41.5% (3 ICD implantation, 1 ICD shock, and 1 SCD). In IBr 18.2% experienced CE (2 ICD implantation). No CE were reported in the population with a normal ECG and normal provocative test. Cox Regression analysis demonstrated that PR interval was an independent predictor of earlier CE [HR 1.06 CI95% (1.02;1.10); p < 0.01], adjusted to other significant clinical variables such as familiar SCD, SBr and positive genetic test. Mean time taken for a CE was significantly shorter in the group with PR > 200 ms (283 vs. 304 months, p < 0.01). ROC analysis demonstrated that the PR interval exhibits highly predictive effect concerning CE (AUC 0.896; p < 0.01; 95%CI 0.79; 1.00) and emerged as a superior predictor of CE when compared to familiar SCD (AUC 0.681) and positive genetic test (AUC 0.723).
Conclusions: Resting ECG, particularly the PR interval, proves valuable in identifying individuals at risk for BrS-related cardiac events. Early detection and risk stratification using baseline ECG findings can guide individual risk stratification management.

PO 179. SHANGAI SCORE AS AN OUTCOME PREDICTOR FOR BRUGADA SYNDROME PATIENTS

Ana Beatriz Garcia[1], Ana Margarida Martins[2], Catarina Simões de Oliveira[2], Ana Abrantes[2], Catarina Gregório[1], Miguel Azaredo Raposo[3], Joana Brito[3], Afonso Ferreira[1], Gustavo Lima da Silva[1], Nuno Cortez Dias[1], Fausto J. Pinto[1], João de Sousa[1]

[1]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa. [3]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Brugada syndrome (BS) is a rare but potentially life-threatening heart rhythm condition. Shangai Brugada Scoring System for (BS) diagnosis considers electrocardiographic (ECG) recordings, genetic results, clinical characteristics, and family history. Diagnosis of probable and/or definite BS, possible or nondiagnostic were assigned scores of ≥ 3.5, 2 to 3, and < 2 points, respectively.
Objectives: This study was designed to evaluate the value of Shangai Score (SS) in Brugada patient's prognosis.
Methods: A prospective analysis of Brugada patients followed in a tertiary hospital was conducted. We examine each item of SS at initial evaluation

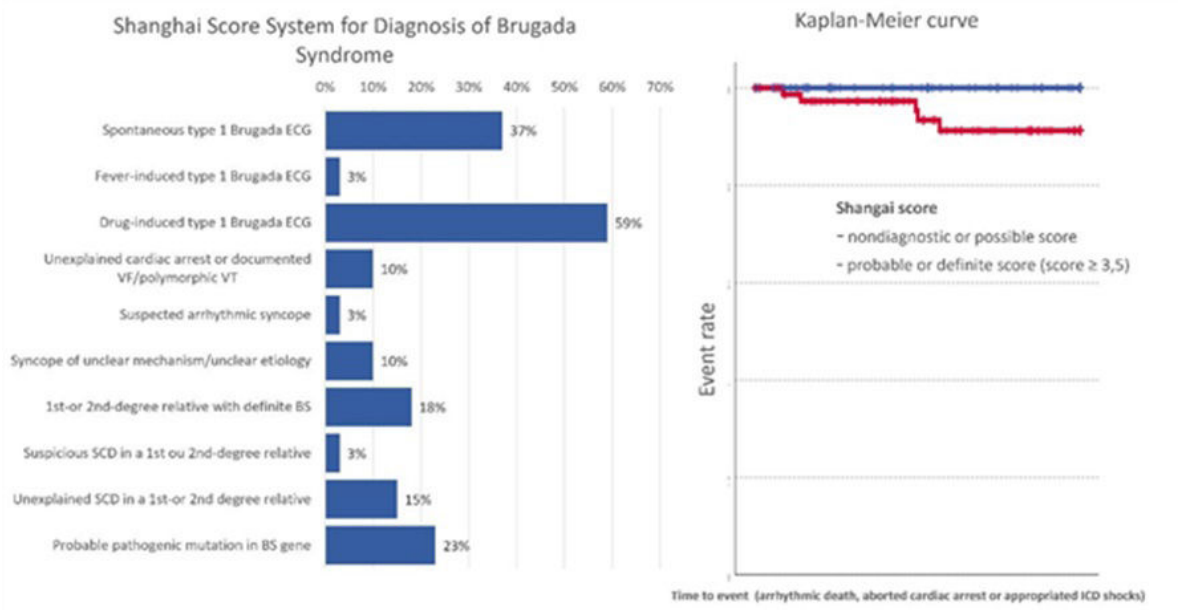


Figure PO 179

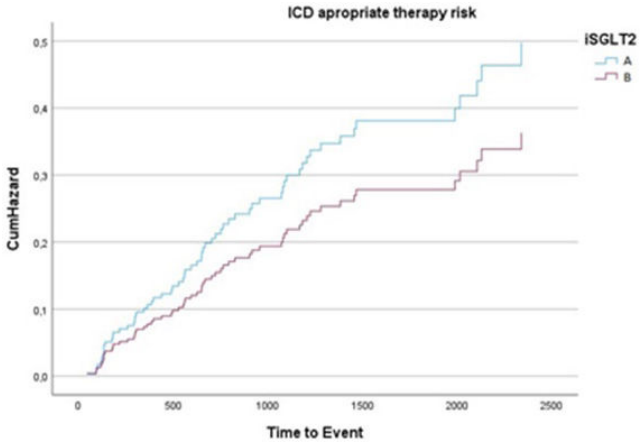
and calculate the point score. The association of the SS with outcomes was assessed using Kaplan-Meier survival analysis with risk estimation through univariate Cox regression analysis. The primary outcome was a composite of arrhythmic death, aborted cardiac arrest and appropriately triggered implantable cardioverter-defibrillator (ICD) shock.
Results: We enrolled 163 patients in our analysis (68% male, mean age 53 ± 13.6 years) with a mean follow-up (FUP) time of 7 years. All patients exhibited type 1 ECG patterns, which occurred spontaneously in 38% of patients. Thirteen percent of the patients were symptomatic: 10% had aborted cardiac arrest or documented ventricular tachycardia/fibrillation (VT/VF) and 3% had suspected arrhythmic syncope. An ICD was implanted in 25% of patients due to history of VF, arrhythmic syncope or judgement of being at high risk. Main categories of SS are summarized in figure 1a. During the follow-up, potentially fatal cardiac events and deaths occurred in 10 patients (1 aborted cardiac arrest, 1 arrhythmic death, and 8 appropriately triggered ICD shocks). The enrolled patients were categorized based on the SS score into two groups: those with a possible or nondiagnostic result (48%) and those with a probable or definite result (≥ 3.5) (52%). Patients presenting with an SS score ≥ 3.5 had a significantly higher arrhythmogenic event rate during the follow-up compared to others, as indicated by the Kaplan-Meier curve (p = 0,044) with an Hazard Ratio 44,9 (95%CI, 0.03-77.141, p = 0.028) (Figure 1b).
Conclusions: Our analysis found out that SS can be a potential tool to risk stratification in BS patients, being a valuable tool in clinical decision-making.

PO 180. EFFECT OF SGLT2 INHIBITORS IN SUSTAINED VENTRICULAR TACHYARRHYTHMIAS IN PATIENTS WITH IMPLANTABLE CARDIOVERTER DEFIBRILLATORS FOR PRIMARY PREVENTION

Julien Lopes, Inês Ferreira Neves, Guilherme Portugal, Rita Teixeira, Pedro Silva Cunha, Bruno Valente, Ana Lousinha, Paulo Osório, Hélder Santos, André Monteiro, Rui Cruz Ferreira, Mário Martins Oliveira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Current guidelines recommend implantable cardioverter-defibrillators (ICD) in primary prevention for patients with heart failure (HF) and left ventricular ejection fraction (LVEF) ≤ 35%, and at least three months of optimal medical therapy. Recently, new pharmacologic treatments have been approved for patients with HF and reduced LVEF. We aimed to assess if the current treatment with sodium-glucose co-transporter 2 inhibitors (SGLT2i) has an impact on the long-term incidence of ventricular arrhythmias treated with appropriate ICD therapy in primary prevention patients.
Methods: Retrospective study of a cohort of patients submitted to ICD implantation for primary prevention from January 2015 to December 2022. Appropriate ICD therapy (shocks or anti-tachycardia pacing) was noted during follow-up. We analyzed time to event (ICD therapy) between patients with (group A) and without SGLT2i (group B) treatment, using a Cox hazard regression model.



Results: 289 patients were included (male 82.4%, age 62 ± 11 years, 67.5% ischemic heart disease, mean LVEF 28.1 ± 5.2%). The median follow-up was 4.15 (IQR 3.85) years. Forty-five patients were on iSGLT2 (15.6%) and 241 were not on iSGLT2 (84.4%). There were no statistically significant differences between the two groups regarding comorbidities, LVEF and NYHA class. Statistically significant variables between the two groups where treatment with ACEi/ARB (group A - 18.2% vs. group B - 75.1%, p < 0.001); ARNI (group A - 80% vs. group B - 20%, p < 0.001) and MRA (group A - 91.1% vs. group B - 75.1%, p = 0.018). Sixty-three patients received appropriate ICD therapy during follow-up (group A - 15.6% vs. group B - 23.2%, p = 0.254). Cumulative hazard for appropriate ICD therapy estimations using cox regression was not statistically significant, despite a tendency for separation of the curves between groups.
Conclusions: In our long-term study, treatment with SGLT2i had no statistically significant impact on the incidence of ventricular arrhythmias treated via ICD.

PO 181. PROGNOSTIC VALUE OF PROGRAMMED ELECTRICAL STIMULATION IN BRUGADA SYNDROME: A SINGLE-CENTER STUDY

João Gouveia Fiúza, Vanda Devesa Neto, Júlio Gil Pereira, João Primo, Luís Ferreira dos Santos, António Costa

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio.

Introduction: Prognostic value of programmed electrical stimulation (PES) in Brugada Syndrome (BrS) remains controversial. Implantation of an implantable cardioverter-defibrillator is this population is the only reliable form of sudden cardiac death (SCD) prevention.
Objectives: To determine if induction of sustained ventricular arrhythmia (VA) in PES predicts cardiac events (CE), defined as the composite of SCD, ICD shocks, or unexplained syncope.
Methods: A retrospective analysis of 34 patients with spontaneous or pharmacologically induced type 1 Brugada pattern, submitted to an electrophysiology study with PES in a 5-year period at a Portuguese Center, was performed. The electrophysiological study (EPS) followed a protocol comprising PES at the right ventricle apex with two pacing cycle lengths (600 and 400 ms) and the introduction of up to three ventricular extrastimuli with a minimum coupling interval of 200 ms. A positive test result was defined as the induction of sustained ventricular arrythmia lasting for more than 30 seconds or requiring termination due to hemodynamic compromise. The inducibility at programmed ventricular stimulation was considered a valid indication for the implantation of an ICD. Patients were followed until the end of 2022. Hospital records and monitoring data from cardiac devices were consulted. The Mann-Whitney U test was used for comparison between groups. Binary logistic regression through the stepwise method was performed to evaluate categorical features.
Results: 35% (n = 12) and 27% (n = 9) had spontaneous type 1 and type 2 Brugada patterns in basal electrocardiography, respectively. 23% (n = 8) had VA induced by PES. The mean age was 51.2 ± 12.3 years. 71% (n = 24) were male. 15% (n = 5) had history of cardiac syncope, and 27% (n = 9) had a family history of SCD. 9% (n = 3) were tested for SNC5A mutation and were positive. Mean AH time and HV time were 105 ± 31.9ms and 49 ± 8.5 ms. During the follow-up, 9% (n = 3) suffered a CE (2 unexplained syncope and 1 SCD). None of the patients who suffered CE had VA inducible in PES study. There was no statistical significance in the occurrence of cardiac events when comparing both groups (VA induced in PES vs. no induced arrhythmia) (p = 0.49, OR 0.89, 95%CI 0.70;1.02). Through binary logistics, adjusted for potential confounders (gender, history of syncope, history of family SCD and identification of a genetic variant), patients with spontaneous type 1 Brugada pattern in basal electrocardiography were 2.2 times more likely to have a CE (95%CI 0.12;40.2).
Conclusions: In this population, VA induced by PES was not a predictor of CE during the follow-up period, highlighting the difficulty of risk stratification in patients with BrS. New risk-stratification tools are urgently needed to select those patients at higher risk of SCD, who are candidates for prophylactic ICD implantation.

PO 182. ROLE OF PROGRAMMED VENTRICULAR STIMULATION IN RISK STRATIFICATION OF TYPE 1 ASYMPTOMATIC BRUGADA PATIENTS

Diogo de Almeida Fernandes[1], João Sanfins[2], Vanda Neto[3], Gonçalo Costa[1], Sílvia Ribeiro[4], Luís Santos[3], Natália António[1], Nuno Cortez Dias[5], Victor Sanfins[4], João de Sousa[6], Luís Elvas[1], Lino Gonçalves[1]

[1]Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra. [2]Faculdade de Medicina da Universidade de Coimbra. [3]Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio, EPE. [4]Hospital da Senhora da Oliveira, EPE-Guimarães. [5]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria. [6] Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: The role of programmed ventricular stimulation (PVS) in identifying Brugada syndrome patients who are most at risk of sudden death remains controversial. Our aim was to assess outcomes in patients with asymptomatic spontaneous type 1 Brugada syndrome who underwent PVS.
Methods: Multi-centre retrospective study including all patients with Brugada syndrome with a spontaneous type 1 pattern on the electrocardiogram (ECG) who underwent PVS. Patients with a follow-up time shorter than 1 year post-PVS were excluded and it was considered positive if arrhythmias or if the ventricular effective refractory period (VERP) inferior to 200ms. The primary outcome was defined as any cardiovascular event (CVe). Clinical and procedural data, as well as ICD implantation were recorded.
Results: 118 patients from 4 centres were included, with a median follow-up time post PVS of 58 months (interquartile range [IQR] 39). The mean age at PVS was 49.7 ± 12.5 years and 72.9% were male. Most patients had no history of syncope (73.4%) and were diagnosed following a routine ECG (61.2%). 19.6% of patients had a history of sudden death in a 1st degree relative and only 16.7% had a family history of Brugada syndrome. 84.3% of patients underwent genetic testing, 37.2% had a pathogenic mutation and 4.7% had a probable pathogenic mutation. Fragmented QRS complexes were found in 24.3% of cases, aVR sign in 40% and large S wave in lead I in 33.3%. Regarding PVS, extrastimuli were delivered at the right ventricular (RV) apex in 55.4% of patients and in both the RV apex and outflow tract in 42.9%. Most patients underwent a protocol with 3 extrastimuli (75%). Arrhythmias were induced in 39.1% of cases and a VERP inferior to 200 ms was present in 14.5%. ICD was implanted in 46.2% of patients (85.7% with positive PVS). CVe occurred in 11.5% with positive PVS (vs 8.2%, p 0.688). The primary outcome occurred

Table 1 – Baseline characteristics

	Total	CV event	No CV event	p-value
Follow-up time – median months (AIQ)	58.3 (39.3)	58.3 (28.0)	60.4 (36.5)	0.978
Age (years)	49.7 ± 12.5	45.3 ± 10.5	50.7 ± 12.7	0.278
Male – n (%)	58 (69.0%)	8 (72.7%)	50 (68.5%)	1.000
Non-arrhythmogenic syncope – N (%)	19 (22.6%)	4 (36.4%)	15 (20.5%)	0.259
Context of Dx – n (%)				
Family history	7 (8.3%)	1 (9.1%)	6 (8.2%)	
Family history of SCD < 35 years	2 (2.4%)	0 (0.0%)	2 (2.7%)	0.790
Routine examination	60 (71.4%)	7 (63.6%)	53 (72.6%)	
CV symptoms	15 (17.9%)	3 (27.3%)	12 (16.4%)	
Family History of SCD – n (%)	21 (25.6%)	6 (54.5%)	15 (21.1%)	**0.028**
1st Degree relative with SCD – n (%)	13 (15.9%)	2 (20.0%)	11 (15.3%)	0.497
Family history of BrS – n (%)	16 (19.3%)	1 (9.1%)	15 (20.8%)	0.325
Family History of SCD in BrS – n (%)	6 (7.4%)	1 (9.1%)	5 (7.1%)	0.596
Index case – n (%)	72 (86.7%)	10 (90.9%)	62 (86.1%)	0.553
Genetic test – n (%)	67 (80.7%)	8 (72.7%)	59 (81.9%)	0.357
Result of Genetic test – n (%)				
Negative	28 (41.8%)	6 (75.0%)	22 (37.3%)	
Pathogenic	25 (37.3%)	2 (25.0%)	23 (39.0%)	0.198
Likely pathogenic	4 (6.0%)	0 (0.0%)	4 (6.8%)	
Uncertain significance	10 (14.9%	0 (0.0%)	10 (16.9%)	
Atrial fibrillation – n (%)	3 (3.8%)	2 (20.0%)	1 (1.4%)	**0.040**
Fragmented QRS – n (%)	5 (22.7%)	2 (50.0%)	3 (16.7%)	0.210
aVR sign – n (%)	10 (50.0%)	1 (33.3%)	9 (52.9%)	0.500
Large S wave in I – n (%)	6 (30.0%)	0 (0.0%)	6 (35.3%)	0.319
QRS – ms	111 ± 24	98 ± 27	110 ± 22	0.157
PR interval – ms	169 ± 29	177 ± 21	173 ± 27	0.740
PVS arrhythmia – n (%)	18 (40.0%)	2 (40.0%)	16 (40.0%)	
VT	1 (1.2%)	0 (0.0%)	1 (1.4%)	1.000
VF	12 (14.3%)	2 (18.2%)	10 (13.7%)	
VERP <200ms – n (%)	6 (11.5%)	1 (11.1%)	5 (11.6%)	0.725
ICD – n (%)	34 (41.5%)	9 (81.8%)	25 (35.2%)	**0.005**
Type of CV event – n (%)				
Syncope		3 (27.3%)		
VT		2 (18.2%)		
Polymorphic VT	-	3 (27.3%)	-	
VF		1 (9.1%)		
SCD		1 (9.1%)		

Table 2 – Programmed Ventricular Stimulation Protocols

	Total	Positive PVS	Negative PVS	p-value
Extrastimuli – n (%)				
2	10 (18.2%)	5 (23.8%)	5 (14.7%)	0.308
3	45 (81.8%)	5 (76.2%)	29 (85.3%)	
Site of extrastimuli – n (%)				
RV apex	31 (55.4%)	14 (70.0%)	17 (47.2%)	0.228
RVOT	1 (1.8%)	0 (30.0%)	1 (2.8%)	
Both	24 (42.9%)	6 (30.0%)	18 (50.0%)	
ICD implantation – n (%)	35 (38.5%)	30 (85.7%)	5 (8.9%)	**< 0.001**

Figure PO 182

in 11 patients (9.3%) and polymorphic ventricular tachycardia was the most frequent CVe (27%). Sudden death occurred in 1 patient with negative PVS. Family history of sudden death was the only marker significantly increased in patients with CVe (54.5% vs. 45.5%, p 0.028). After adjusting for relevant variables, a positive PVS was not linked to CVe (p 0.448).
Conclusions: PVS failed in identifying high-risk patients with spontaneous type 1 Brugada syndrome. These results may have been negatively influenced by the low number of events.

PO 183. PROGNOSTIC SIGNIFICANCE OF PROGRAMMED VENTRICULAR STIMULATION IN BRUGADA PATIENTS

Ana Margarida Martins, Ana Beatriz Garcia, Catarina Oliveira, Miguel Raposo, Ana Abrantes, Catarina Gregório, Joana Brito, Afonso Nunes Ferreira, Gustavo Lima da Silva, Nuno Cortez-Dias, Fausto J. Pinto, João de Sousa

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Introduction: Brugada Syndrome (BS) is an inherited cardiac arrhythmogenic syndrome associated with an increased risk for ventricular tachyarrhythmias and sudden cardiac death. Risk assessment in BS is controversial, which makes the decision to use an implantable cardioverter-defibrillators (ICD) in these patients difficult. Indication and prognostic significance of programmed ventricular stimulation (PVS) is still a matter of debate.
Objectives: To determine the association between electrophysiological study (EFS) results and arrhythmic endpoints. A prospective analysis of asymptomatic BS patients followed in a tertiary hospital was conducted, considering those who have performed PVS for risk stratification. The endpoint of interest was a composite of arrhythmic death, aborted cardiac arrest and appropriately triggered ICD shock.
Results: We enrolled 71 asymptomatic BS patients (65% male, mean age 53 ± 13 years) with a mean follow-up time of 7 years. All patients exhibited type 1 ECG pattern, which occurred spontaneously in 61% of patients. Programmed ventricular stimulation (PVS) was performed in both right ventricular apex (RVA) and right ventricular outflow tract (RVOT) in 55% of patients and isolated in RVA or RVOT in 41% and 4%, respectively. The protocol was performed using ventricular paced drive trains at two cycles (600 and 400 ms), adding 2 or 3 premature stimulations to ventricular refractory period. Ventricular fibrillation was induced in 32% of patients and non-sustained polymorphic ventricular tachycardia in 3% of them. Patients with sustained or non-sustained ventricular tachycardia induced by PVS had a significantly higher arrhythmogenic event rate (arrhythmic death, aborted cardiac arrest or appropriately triggered ICD shock) during follow-up, as indicated by the Kaplan Meier curve (p = 0,028, Figure). Seventy-two percent of these patients had an ICD implanted. No patient suffered arrhythmic death. These data suggest that in asymptomatic BS patients, inducible ventricular tachyarrhythmias during PVS are associated with arrhythmogenic events during follow-up, being of importance in risk stratification.

PO 184. USEFULNESS OF SUBCUTANEOUS IMPLANTABLE LOOP RECORDER IN BRUGADA SYNDROME: A SINGLE CENTER EXPERIENCE

Mariana Tinoco, Margarida Castro, Luísa Pinheiro, Lucy Calvo, Silvia Ribeiro, Filipa Almeida, Filipa Cardoso, Bernardete Rodrigues, Cláudia Mendes, Assunção Alves, Victor Sanfins, António Lourenço

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Introduction: Risk stratification in Brugada syndrome (BS) can be challenging. Useful variables in determining patient (P) risk include cardiogenic syncope and positive electrophysiological study (EPS) in spontaneous type 1 B pattern. Controversially, there is some evidence that a family history of sudden cardiac death and ECG markers may be predictors.
Objectives: To evaluate the importance of implantable loop recorder (ILR) in BSP risk stratification.
Methods: Single-center retrospective study of BSP who implanted an ILR between 2000 and 2023. Demographic, clinical and follow-up data were analyzed.
Results: A total of 53 BSP were included (60% male, mean age of 51 ± 14 years). All P had undergone ECG, transthoracic echocardiogram, and 24-h Holter monitoring as part of the previous study. 29P (55%) had previously undergone an EPS and 7P (14%) had undergone tilt test. No complications related to the procedure were recorded. Among this population, 45% (24P) underwent ILR implantation for syncope of uncertain etiology. Of these, 50% (12P) underwent an EPS prior to implantation, and 25% (6P) underwent a tilt test. Additionally, 42% (22P) underwent ILR implantation for palpitations, and 13% (7P) had ILR implantation for risk markers on EPS (low ventricular refractory period). During a median follow-up of 31 (IQR 10-42) months, events were documented in 12P (22%); 4P with ILR for palpitations were diagnosed with supraventricular tachycardia (SVT), of which 3 were referred for an EPS. Another P had one episode of symptomatic atrial fibrillation (AF) that lasted for 11 hours. 2P who had ILR implanted for syncope had one episode of asymptomatic AF (43h and 10min). All 3P started anticoagulation therapy (CHA2DS2-VASc score of 2 in 1P and 3 in 2P). Symptoms without diagnostic findings were reported in 3P (6%). 2P with syncope under investigation (uncertain clinical

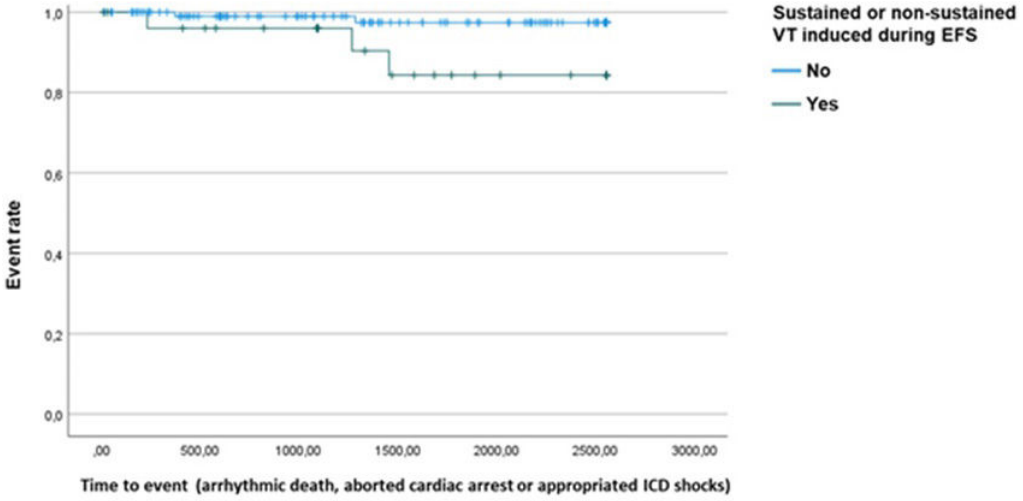

Figure 1 – Survival analysis of Brugada patients with and without VT induced during EFS

Figure PO 183

characteristics and negative previous EPS) were diagnosed with VT and an ICD was implanted. One patient recorded asymptomatic non-sustained ventricular tachycardia. Another patient had episodes of nocturnal complete heart block with subsequent sleep apnea diagnosis and started CPAP therapy.
Conclusions: Two P had an episode of VT when the previously performed EPS did not trigger any arrhythmia. This reveals the controversy regarding the prognostic applicability of EPS in BSP risk stratification. In practice, it was the ILR that allowed the documentation of the arrhythmic event, forcing us to reflect on the importance and usefulness of this device in risk stratification for these P.

PO 185. PREDICTORS OF IMPLANTABLE CARDIO-DEFIBRILLATOR ACTIVATION IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY AT PRIMARY PREVENTION OF SUDDEN CARDIAC DEATH

Miguel Marques Antunes, André Ferreira, Pedro Garcia Brás, Inês Grácio Almeida, José Viegas, Isabel Cardoso, Guilherme Portugal, Pedro Silva Cunha, Ana Lousinha, Rui Cruz Ferreira, Mário Martins Oliveira, Sílvia Aguiar Rosa

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Hypertrophic cardiomyopathy (HCM) is a prevalent and potentially life-threatening condition. Albeit current advances in its treatment and characterization, prediction and prevention of sudden cardiac death (SCD) and ventricular arrythmias (VA) remain sub-optimal. Implantable cardioverter-defibrillators (ICDs) have robust evidence supporting their use in the reduction of cardiovascular mortality in patients (P) in secondary prevention. However, the decision process of using these devices in primary prevention remains a matter of debate.

Objectives: To evaluate the prevalence and predictors of SCD and VA in a population of HCM P with an ICD in primary prevention.
Methods: We retrospectively analysed data from P followed at a Cardiomyopathy Clinic in which a decision to implant an ICD in primary prevention was made. P characteristics, remote monitoring, echocardiographic, and cardiac magnetic resonance (CMR) imaging data were recorded. We stratified the P according to their baseline risk following the HCM SCD risk prediction calculator, and we recorded factors that are known to increase SCD risk, such as the presence of > 15% late gadolinium enhancement in CMR and a LVEF < 50% (Table 1). Continuous variables were reported as mean ± SD or median and IQR depending on data distribution pattern and categorical data as frequencies and percentages. A Kaplan-Meier curve was derived from the survival data. We performed a time-to-event analysis using a Cox proportional-hazards regression model, to determine predictors of appropriate ICD therapy.
Results: We included a total of 42 P with a median age of 56 [46-67] years, 26 (46%) of which were male (Table 1). The median HCM SCD risk score was 4.75 [3.33-5.9], classifying as an intermediate-risk group. Study follow-up amounted to a total of 26 568 days (72 years) at risk, and an average of 1.7 patient/years (Table 1). The largest follow-up period was 1401 days (3.8 years) (Figure). There were 4 (10%) ICD therapy interventions recorded – 3 shocks and 1 anti-tachycardia pacing. ICD activation rhythms consisted of ventricular fibrillation (n = 1) and ventricular tachycardia (n = 3) (Table 2). We tested the separate individual components of the HCM SCD risk score and the presence of LGE > 15% (Table 1), and found no association between these and ICD therapies. The HCM SCD risk score correlated positively with the incidence of arrhythmic events, with an HR 1.48 (95%CI 1.09-2.1, p = 0.019), with a 48% increase in baseline risk of events per 1% increase in the risk score.
Conclusions: In our patient cohort, retrospective classification of ICD risk classification led to an estimated 4.5% median risk at 5 years. At an average 1.7 patient/year follow-up, we have found a 10% incidence of ICD activation. The HCM Risk Score was a statistically significant predictor of ICD activation.

Table 1 – General patient characteristics and risk prediction features

Baseline characteristics	n = 42
Age - yr [IQR]	56 [46-67]
Male sex - n (%)	26 (62%)
Hypertension - n (%)	24 (57%)
Dyslipidemia - n (%)	19 (45%)
Atrial fibrillation- n (%)	16 (38%)
Active smoker - n (%)	7 (17%)
Angina – n (%)	11 (26%)
NYHA class [IQR]	2 [1-2]
Drugs	**n = 42**
Beta-Blocker - n (%)	32 (76%)
Calcium channel blockers – n (%)	10 (23%)
SCD risk assessment	**n = 42**
HCM SCD 5 year risk score	4.75 [3.33-5.9]
High risk - n (%)	10 (24%)
Intermediate Risk - n (%)	14 (33%)
Low risk - n (%)	18 (43%)
Score features	**n = 42**
Maximum wall thickness [IQR]	21 [18-24]
Left atrial diameter mm	48 [43-52]
Family history of sudden cardiac death - n (%)	11 (26%)
Unexplained syncope - n (%)	6 (14%)
Non-sustained ventricular tachycardia - n (%)	23 (55%)
Left ventricular outflow tract [IQR]	43 [2-87]
SCD risk effect modifiers	
LGE > 15% - n (%) , 35 patients	30 (85%)
LVEF < 50% - n (%) , 42 patients	3 (7%)
Apical aneurysm - n (%) , 42 patients	3 (7%)
Presence of Sarcomeric Mutation - n (%), 26 patients	13 (50%)

Table 2 – Implantable cardiac defibrillator data

ICD activation	n = 42
Number of appropriate ICD activations	4 (10%)
Ventricular fibrillation	1 (2%)
Ventricular tachycardia	3 (7%)
Unexplained syncope - n (%)	6 (14%)
Number of inappropriate ICD activations	3 (7%)

Figure 1 – Kaplan-Meier curve of ICD activation events

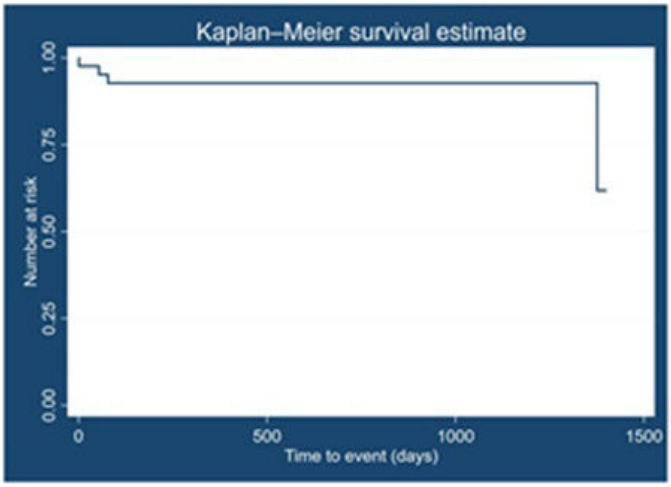

Figure PO 185

SÁBADO, 20 ABRIL de 2024 | 09:00-10:30

Área de Posters 2 | Sessão de Posters 29 - Intervenção coronária percutânea

PO 186. INVASIVE TREATMENT WITHOUT STENTING IN ACUTE MYOCARDIAL INFARCTION: "NO STENT" EXPERIENCE IN SINGLE CENTRE

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Hospital do Espírito Santo, EPE, Évora.

Introduction: Percutaneous coronary intervention (PCI) is the gold standard for treatment of patients with acute coronary syndrome (ACS). However, the need and timing of stent implantation remains controversial, especially in patients with high thrombotic burden and with intermediate lesions.
Objectives: To characterize a population of patients admitted with an ACS, who were submitted to PCI without immediate stenting.
Methods: Retrospective analysis of patients admitted with ACS over the past 3 years at a single centre submitted to coronary angiography. We selected those treated with PCI without immediate stenting. We documented age, sex, and personal history, as well as ECG presentation, coronary anatomy and lesions. Mortality and reinfarction on follow-up were documented.
Results: We analysed 1,974 patients, and those without immediate stenting represented 1.2% of the population (n = 46 patients). Mean follow-up time was 1.43 ± 1.1 years. They were mostly male (80.4%), with a mean age of 61.0 ± 13.3 years. 45.6% had history of arterial hypertension, 39.1% of dyslipidaemia, 15.2% of diabetes and 52.2% of active or previous smoking. 8.70% had history of previous ACS and 6.5% had family history of coronary disease. No patients had history of cancer or previous arrhythmias. When admitted, 67.4% presented with ST-segment elevation on admission, with the remainder being non-ST-segment elevation AMI. On angiography, the right coronary artery was the culprit lesion on 52.2% of patients, while the left coronary artery represented 39.1% and circumflex artery 8.7%. All patients presented with large thrombi on the culprit artery, with TIMI 3 flow after aspiration. 69.6% were submitted to revision angiography (either by coronary angio-CT or angiography), with deferred stenting being performed on 23.9%. We recorded 6.5% of mortality, all by non-cardiovascular causes. There were no records of reinfarction to the present date. 76.1% patients ended up not implanting any stent and all were event-free on follow-up.
Conclusions: PCI with stent implantation remains the preferential option for patients with ACS, especially STEMI. However, on a subgroup of patients, no immediate stenting, with the possibility of a later re-evaluation, seems to be a safe option. This should be considered especially in the presence of a high thrombotic burden, coronary ectasia or in intermediate/non-significant lesions. On a 1.43-year mean follow-up post-ACS, there was no record of reinfarction or cardiovascular death on any patient.

PO 187. INTRAVASCULAR LITHOTRIPSY EFFECTIVENESS AND SAFETY IN A LARGE REAL-WORLD COHORT

Catarina Simões de Oliveira[1], Ana Beatriz Garcia[1], Ana Margarida Martins[1], Ana Abrantes[1], Miguel Raposo[1], Luís Bispo[1], Alexandra Lopes[1], José Marques da Costa[1], José António Duarte[1], João Silva Marques[2], Pedro Pinto Cardoso[2], Fausto J. Pinto[2]

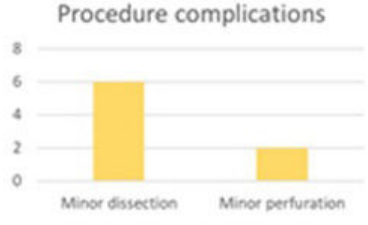
[1]Department of Cardiology, Centro Hospitalar Universitário de Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa.
[2]Department of Cardiology, Centro Hospitalar Universitário de Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Coronary artery calcification is predictor of early and late adverse outcomes after percutaneous coronary angioplasty (PCI). Intravascular Lithotripsy (IVL) is a promising tool for improving the treatment of calcified lesions.
Objectives: to assess effectiveness and safety of IVL in clinical practice.
Methods: Single-center descriptive study of the PCI procedure with prospective assessment of outcomes of consecutive patients that underwent PCI using IVL from March 2021 to October 2023. Procedural success was used as primary effectiveness endpoint. The primary safety endpoint was defined as a composite incidence of cardiac death, myocardial infarction (MI), and target vessel revascularization within 30-days.
Results: A total of 111 patients (80.2% male, mean age 72 ± 9 years) underwent PCI utilizing an IVL. Comorbidities included hypertension (91%), diabetes (55.9%), dyslipidemia (78.4%) and smoking (38.7%). Chronic kidney disease (eGFR < 60 ml/min/1.73) was present in 40.5% of patients and 17.8% were on renal replacement therapy. Indications for PCI spanned the sprectum of chronic (53.2%) and acute coronary syndromes (NSTEMI 20.7%, STEMI 13.5%, unstable angina 9%). Cardiogenic shock accounted for 2.7% of the indications

LM lesions treated with IVL	9
ostial/proximal	3
distal	6
LAD lesions treated with IVL	49
ostial	5
proximal	23
medium	18
distal	3
Cx lesions treated with IVL	15
ostial	1
proximal	9
distal	5
RCA lesions treated with IVL	40
ostial	5
proximal	23
medium	9
distal	3
Vessel diameter (mm)	3±0.5
Syntax score	23±13
Stent number	1.39±0.8
Stent length (mm)	39.75±24.5
Femoral access (%)	36.9

Table 1: Procedure characteristics. **LM** left main; **LAD** left descendente artery; **Cx** circumflex; **RCA** right coronary artery

Graphic 1: Lesion preparation. **SC** semi-compliant balloons; **NC** non-compliant balloons.



Graphic 2: Procedure complications

Figure PO 187

for PCI and arrhythmic storm 0.9%. Target lesions were complex including stent restenosis (18%), bifurcations (8.1%) and chronic total occlusions (10.8%) (Table). The majority of patients (84.7%) received IVL following lesion preparation with other calcium-modifying modalities (Graphic 1). Intravascular imaging was used in 21.6% of procedures. More than one IVL balloon were used in 5,4% of the cases. An average of 80 IVL pulses were aplied. Stents were implantated in 93.7% of cases and the remaining were treated with drug-eluting balloons. The primary effectiveness endpoint was achieved in 99.1%, while the primary safety endpoint incidence was 3.6%. Cardiovascular death occurred in 3 patients and there was a case of acute stent thrombosis. Periprocedural complications, including coronary dissections and perforations, were minimal and resolved following stent implantation (Graphic 2).

Conclusions: This real-world large cohort data of a single center suggests that IVL is an effective and safe technique for the treatment of heavily calcified coronary lesions. These findings contribute to the growing body of evidence supporting the use of IVL in the management of challenging coronary lesions.

PO 188. PHYSIOLOGY VERSUS ANGIOGRAPHY-GUIDED CORONARY ARTERY BYPASS GRAFTING: A SYSTEMATIC REVIEW AND META-ANALYSIS

Ana L. Silva, Mariana Rodrigues Simões, Tatiana Pereira dos Santos, Gonçalo Terleira Batista, Diogo de Almeida Fernandes, Joana Guimarães, Gonçalo Ferraz Costa, Eric Monteiro, Rafaela Fernandes, José Luís Martins, Marco Costa, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: While invasive coronary angiography is considered the gold standard for the diagnosis of coronary artery disease (CAD) involving the epicardial coronary vessels, coronary physiology-guided revascularization represents a contemporary gold-standard practice for the invasive management of patients with intermediate CAD. Nevertheless, the long-

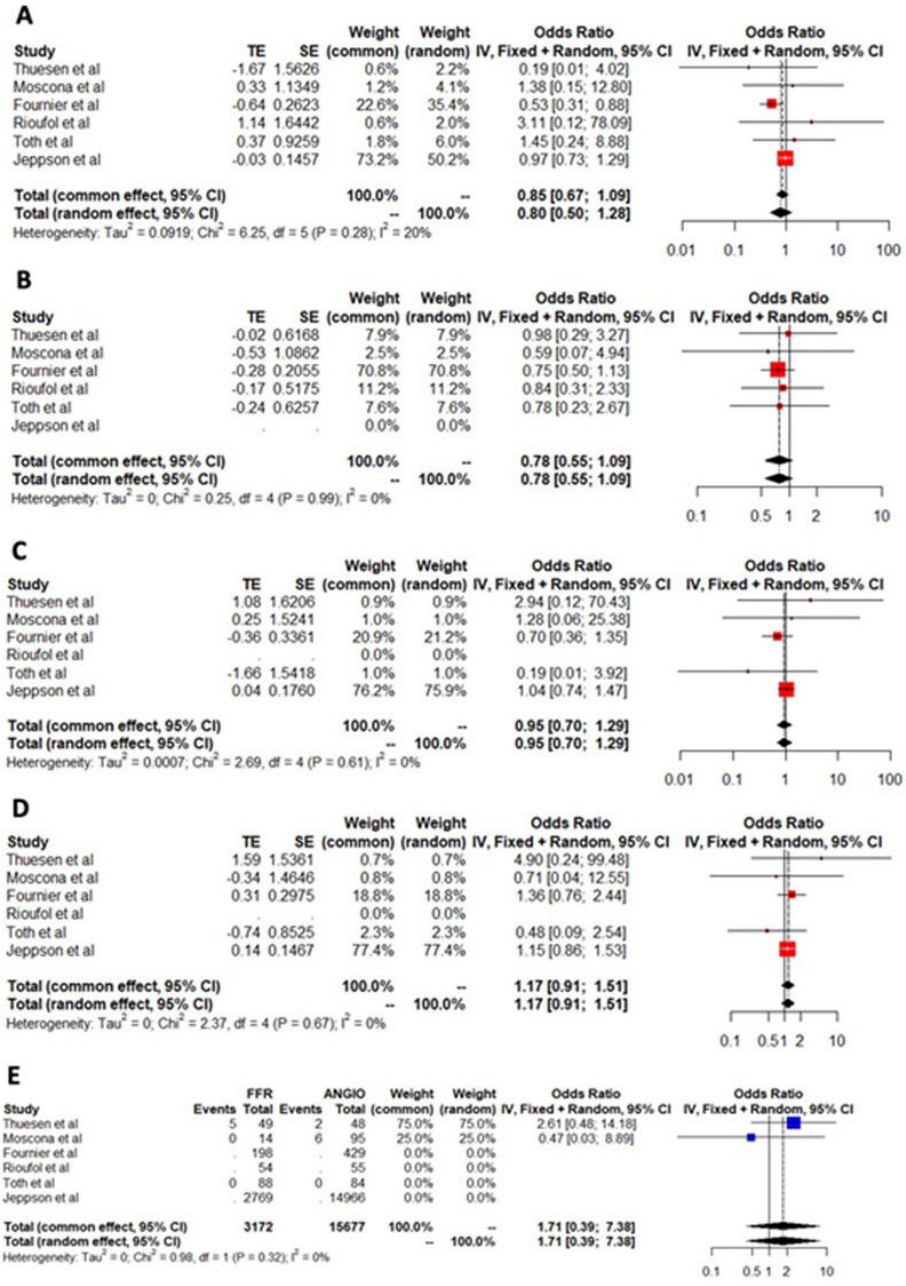


Figure 1. Forest plot of the pooled odds ratio for the outcomes: (A) All-cause death; (B) MACE; (C) MI; (D) TVR; (E) Angina. CI: confidence interval; MI: myocardial infarction; TVR: target vessel revascularization.

Figure PO 188

term results of assessing the severity of stenosis through physiology compared to the angiogram as the guide to bypass surgery – coronary artery bypass grafting (CABG) are still uncertain.
Methods: We searched Medline, EMBASE, and the Cochrane Library until December 2023, including all previous studies. We aimed to assess the clinical outcomes of a physiology-guided CABG compared to the angiography-guided CABG. A pooled odds-ratio meta-analysis was conducted focusing on five main outcomes: all-cause death, myocardial infarction (MI), target vessel revascularization (TVR), major adverse cardiovascular events (MACE), and postoperative angina. A pooled effect estimates meta-analysis was performed with MetaXL 2.0.
Results: We identified six studies that included a total of 18,849 patients. The follow-up ranged from 6 months to 6 years. A pooled meta-analysis showed no significant difference between physiology and angiography-guided strategies in all-cause death (odds ratio [OR] = 0.80, 95%CI = 0.50–1.28, I^2 = 20%; p = 0.28), MACE (OR = 0.78; 95%CI = 0.55–1.09; I^2 = 0%; p = 0.99), MI (OR = 0.95; 95%CI, 0.70–1.29; I^2 = 0%; p = 0.61), and TVR (OR = 1.17; 95%CI = 0.91–1.51; I^2 = 0%; p = 0.67). The rates of postoperative angina were also similar in both approaches (OR = 1.71; 95%CI = 0.39-7.38; I^2 = 0%; p = 0.32).
Conclusions: This meta-analysis suggests that physiology-guided and angiography-guided CABG strategies exhibit comparable clinical outcomes, questioning the role of coronary physiology in surgical patients. Further research is needed to address this clinical concern.

PO 189. AMBULATORY PCI ANALYSIS - INSIGHTS FROM SINGLE CENTER EXPERIENCE

António Maria Rocha de Almeida, Miguel Carias de Sousa, Marta Paralta Figueiredo, Rafael Viana, Francisco Cláudio, Renato Fernandes, Ângela Bento, David Neves, Diogo Brás, Kisa Congo, Manuel Trinca, Lino Patrício

Hospital do Espírito Santo, EPE, Évora.

Introduction: Percutaneous coronary intervention (PCI) has undergone rapid evolution lately and is currently generalized as a therapeutic option. It was associated with significant rate of complications, yet, with the improvement of new generation drug eluting stents, and introduction of radial access (RA), PCI has become safer, with a minimum number of complications. This allows earlier hospital discharge, helping to ease the pressure on wards management. The evolution of PCI urged the development of outpatient PCI programs. This study aims to describe our center four-year experience of ambulatory PCI program, in terms of safety and efficacy.
Methods: Single center, retrospective, cohort of 749 ambulatory PCI from 2019 till 2022 was evaluated. We excluded patients with acute coronary syndromes or admitted for other non-PCI related reasons. Outcomes assessed were non-planned hospital admission and early PCI complications.
Results: From the total of 2,142 PCI, 749 (35%) were performed in ambulatory setting. Patients' mean age was 67 ± 10 years, and 22% (n = 165) patients were female. In 24% of the cases, the coronary anatomy was previously known, and 30% had history of myocardial infarction. 65% had a normal left ventricle ejection fraction (LVEF), 6% had a moderate depression of LVEF and 3% had LVEF severe depression. Before PCI median creatinine value was 0.9 (IQ 0.58-1.2). RA was possible in 83% cases, and access size was 6Fr in 73%. The RA hemostasis was obtained by external compression device and femoral access (FA) hemostasis was first intended by closing device, but in 17% of the transfemoral PCI access had to be manual compressed, due to device failure or not suitable. PCI was successful in 95% of the cases, with revascularization of the target lesion. 27% were complex PCI. The unsuccessful PCI procedures (5%) were attributed to uncrossable lesions in 4% and no reflow/slow flow after PCI in 1% and < 0.1% death (n = 1). 2.4% patients had to be admitted, after planned outpatient PCI, 1.3% to surveillance of access site (100% FA, after closing device and manual compression failure), 0.5% due to PCI complication, with small coronary perforation and 0.6% to hydrate due to risk of contrast induced nephropathy. There was a higher risk of unplanned hospital admission in patients submitted to transfemoral PCI (p < 0.05, OR 6.8 [2.5-18.7]), and there was no statistically significant relation between unplanned admission and patient's LVEF (p = 0.6), creatinine value (p = 0.09) and complex PCI (p = 0.1). There were no early episodes of death, MACE, non-planned hospital readmission and stent failure.
Conclusions: PCI has become a predictable and reliable technique, capable to treat outpatients. Patients undergoing successful, either complex or not, PCI, without events, can safely be discharged on the same day. Outpatient PCI helps with the functioning of inpatient care, allowing beds to be freed up for other situations.

PO 190. PERCUTANEOUS TREATMENT OF SAPHENOUS VEIN GRAFTS- A REAL LIFE ANALYSIS

Isabel Cruz[1], Rafaela Lopes[1], Bruno Bragança[1], Inês Campos[1], Rui Santos[1], Lino Santos[2], Alberto Rodrigues[2], Pedro Braga[2], Aurora Andrade[1], Ricardo Fontes-Carvalho[2]

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Introduction: Saphenous vein grafts (SVGs) are frequently used as conduits during surgical revascularization of coronary arteries but present a poor long-term patency due to the accelerated atherosclerosis and intimal fibrosis. Percutaneous coronary intervention (PCI) of SVGs has been associated with a worse outcome compared with native coronary vessels, due to higher rates of in-stent restenosis, target vessel revascularization (TVR), myocardial infarction (MI), and death. It has been advocated that direct stenting may trap debris as well as decrease distal embolization and, in this way, reduce the occurrence of adverse cardiovascular events.
Methods: Unicentric, retrospective analysis of consecutive patients (pts) submitted to coronary stenting in SVGs from January 2015 to December 2023. Pts were characterized regarding baseline characteristics (sex, age and comorbidities). Clinical, angiographic, procedure-related variables and incidence of adverse events (all-cause mortality, cardiovascular mortality, MI, and TVR) were evaluated.
Results: A total of 56 pts were included in the analysis (mean age of 73.4 ± 8.8 years and 76.8% male). Regarding baseline characteristics, 66.1% of pts were hypertensive, 64.3% presented dyslipidaemia, 53.6% were diabetic, and 21.4% presented previous PCI. The most frequent indication for SVGs PCI was acute coronary syndrome (60.7%), followed by chronic coronary syndrome refractory to medical therapy (30.4%) and de novo heart failure (3.6%). The mean time of coronary revascularization was 14.5 ± 6.8 years and the mean time of follow-up was 4.8 ± 2.2 years. The receptor vessel was circumflex/marginal obtuse artery in 50.5% cases, right coronary artery/posterior descending artery in 41.1% cases and left anterior descending artery/diagonal branch in 8.9% cases. Most pts were treated with drug-eluting stents (92.9%), of which 60.7% were submitted to pre-dilation and 33.9% to direct stenting. No-reflow was observed in 5.4% of pts, while procedure success was observed in 85.7% of the cases. Regarding late follow-up, the composite endpoint of all-cause mortality, acute myocardial infarction and target vessel revascularization was observed in 37.5% of pts. The individual endpoints of all-cause mortality, AMI and TVR were identified in 19.6%, 7.1% and 8.9% of pts, respectively. Comparing the strategy of treatment with pre-dilation versus direct stenting no statistically significant differences were identified regarding the composite (p = 0.241) and individual endpoints (AMI, p = 0.524, TVR, p =.079; all-cause mortality, p = 0.862).
Conclusions: In this cohort, patients treated by PCI of lesions in SVGs presented a high rate of mid-term adverse events. No differences were observed regarding long-term follow-up in the stent-only group versus the balloon-stent group.

PO 191. LONG-TERM OUTCOMES OF A DEDICATED CHRONIC TOTAL OCCLUSION – PERCUTANEOUS CORONARY INTERVENTION (CTO-PCI) PROGRAM

Rita Amador, Rita Carvalho, Catarina Brízido, Henrique Mesquita Gabriel, Rui Campante Teles, Afonso Félix Oliveira, Sérgio Madeira, Sílvio Leal, João Brito, Manuel Almeida

Hospital de Santa Cruz.

Introduction: The success and safety of Percutaneous Coronary Intervention (PCI) for Chronic Total Occlusion (CTO) has made great progress over the

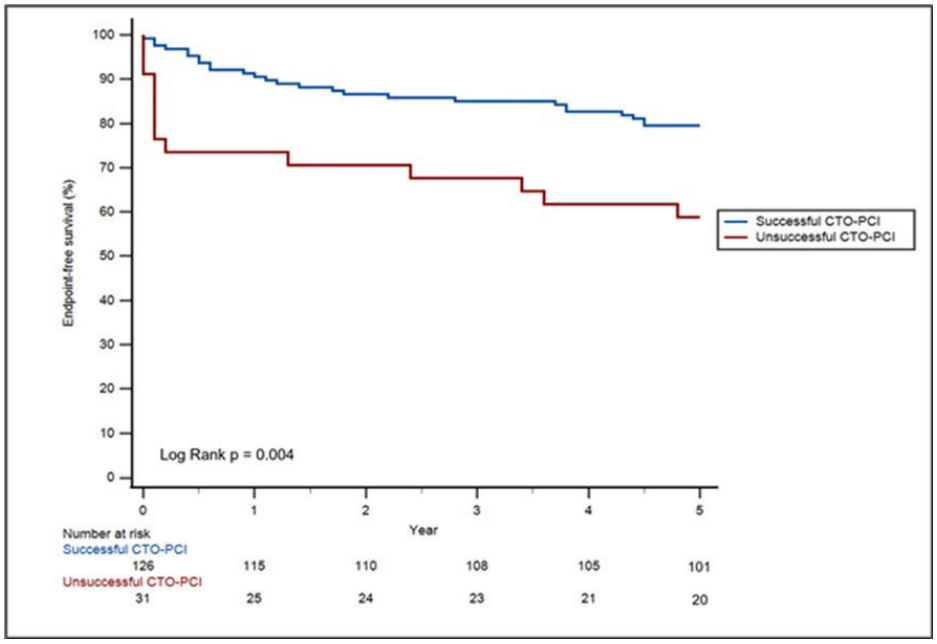


Figure PO 191

past decades, with dedicated CTO-PCI programs expanding operator experience and improving patient outcomes. Our aim was to evaluate the 5-year-outcomes of patients treated in a high-volume dedicated CTO-PCI centre.

Methods: We performed a single-centre retrospective analysis of patients included in a CTO-PCI dedicated program between January 2011 and December 2018. Baseline characteristics, procedural-related features and patient status at 5 years regarding symptoms, myocardial infarction (MI), target lesion revascularization (TLR) and all-cause mortality were analysed. Our primary endpoint was a composite of all-cause mortality, MI and target lesion revascularization (TLR).

Results: During our study period, 161 patients were included in our CTO-PCI dedicated program (mean age 64 ± 9 years, 78% male). There were 156 patients with single vessel CTO and 11 patients with double vessel occlusion (6 treated within the same procedure). CTO-PCI was attempted in 172 lesions with a median J-CTO Score of 2 (IQR 1 – 2), with 64% of lesions showing a J-CTO Score ≥ 2. Success rate was 81% per CTO and 79% (n = 127) per patient. Higher J-CTO scores predicted procedural failure (HR 2.7, 95%CI 1.3-5.7; p < 0.001). We verified a total of 5 severe complications, with a procedural mortality of 1%. At 5 years, Most patients were asymptomatic (83%), and 9% showed CCS I angina, displaying a significant improvement in CCS Class since the procedure (from a median of 2 [IQR 2 - 2] to 0 [IQR 0 - 0], p < 0.001). All-cause mortality rate was 14.8% (n = 23), the incidence of MI was 3.5% and TLR was 11.5%. Successfully treated CTO-PCI patients had better outcomes at 5-years regarding our primary composite endpoint (Figure).

Conclusions: We report favourable PCI success rates without significant safety concerns in a cohort of patients with chronic total occlusions. At 5-years, these patients showed long-lasting symptom improvement and a lower rate of coronary events and death comparing to unsuccessfully treated patients.

PO 192. SAME DAY DISCHARGE FOR PERCUTANEOUS CORONARY INTERVENTION – A 4-YEAR SINGLE-CENTER EXPERIENCE

Mónica Dias, Fernando Mané, Rodrigo Silva, Inês Conde, Sofia Fernandes, Carla Ferreira, Filipe Vilela, Catarina Quina, João Costa, Jorge Marques, Carlos Galvão Braga

Hospital de Braga, EPE.

Introduction: Percutaneous coronary intervention (PCI) is a broadly performed procedure worldwide. Radial access and technical advances have increased safety, maintaining a high degree of efficacy. Consequently, same-day discharge (SDD) can be considered for a significant number of patients who otherwise would have required overnight stay.

Objectives: To evaluate safety and feasibility of elective outpatient PCI in low-risk selected patients.

Methods: A retrospective single-centre observational study of patients with chronic coronary syndromes who underwent elective PCI from October 2019 to November 2023. Patents who qualified SDD were defined according to clinical, angiographic, and sociodemographic characteristics. Patient and procedure characteristics were collected from local databases and SDD-PCI adverse events (all-cause mortality, acute coronary syndrome (ACS), stent thrombosis, reintervention, major bleeding, stroke, contrast-induced renal failure, vascular access complications) at 30-days were analysed.

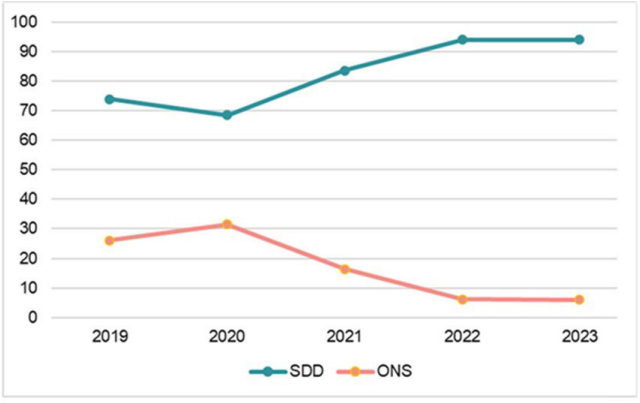


Figure 1. Same-day discharge after elective PCI over time. SDD - Same-day discharge; ONS - Overnight stay

Results: The study included 560 patients, 78% males with a mean age of 66 ± 10 years, that underwent elective PCI. Most patients were discharged in the same day (n = 546, 84%). There were three adverse events (0.6%) during the 30-day follow-up period of the patients treated in ambulatory regimen. One ACS more than 72h after the discharge - given the presence of stage 5 chronic kidney disease and a previous complex PCI of RCA, with mild elevation of troponin I and no changes in echocardiogram, a new coronarography was not performed and therefore we do not know if the

ACS was related to the targe lesion of PCI; two patients who present with major bleeding (both gastrointestinal) at 3 and 12 days after PCI.
Conclusions: The presented descriptive analysis endorses that SDD-PCI is a safe procedure. Protocol implementation is key to guide interventional cardiologists in low risk patient selection. The potential role in decreasing bed-shortage, hospital overcrowding, and healthcare costs is pivotal. Over time, the number of patients discharged on the same day has increased, without compromising the safety of the procedure.

PO 193. LONG AND MIXT/NON-CALCIFIED PLAQUES AS PREDICTORS OF FUNCTIONALLY SIGNIFICANT CORONARY ARTERY DISEASE

Rafael Viana, Diogo Brás, Rita Rocha, Gustavo Mendes, David Neves, Ângela Bento, Renato Fernandes, Lino Patrício

Hospital do Espírito Santo, EPE, Évora.

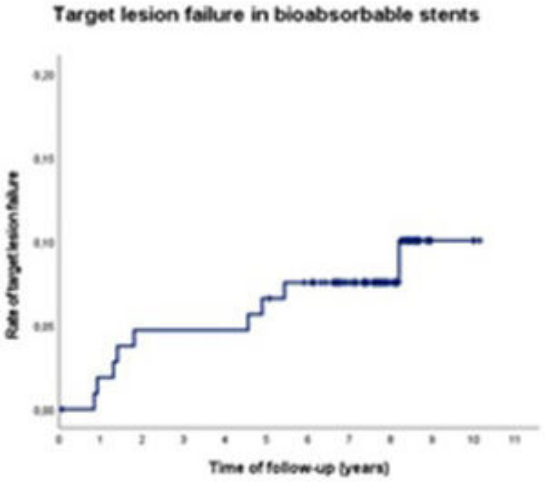
Introduction: Coronary artery disease (CAD) can manifest as a broad range of plaque phenotypes. Vessel hemodynamics, more specifically endothelial wall shear stress and tensile stress, have also been associated with specific plaque phenotypes. However, the interplay between plaque morphology and local hemodynamics remains incompletely understood. Atherosclerosis can be characterized by using invasive and noninvasive imaging methods that quantify volume, extension, and composition. Large plaque burden, lipid-rich plaques and thin-cap fibroatheromas have been identified as predictors of adverse events. Conversely, calcifications are considered markers of plaque stability. We aimed to characterize intermediate plaques observed on coronary computed tomography angiography (CCTA) and their functional significance through invasive instantaneous wave-free ratio (iwFR) and fractional flow reserve (FFR).
Methods and results: Retrospective, single-centre study. Included patients with coronary plaques with > 50% stenosis on CCTA, performed in context of chest pain investigation, that have been submitted to invasive functional evaluation (iwFR or FFR). 36 patients were included, 66% of which being males, with mean age 65 ± 11 years. A total of 45 coronary lesions were assessed by CCTA and iwFR/FFR, the majority of which in the left anterior descending artery (48%). Mean iwFR was 0,93 ± 0,05. 49% of patients had no functionally significant CAD. A total of 13 coronary angioplasties with drug-eluting stent (DES) were performed, in functionally positive lesions (iwFR ≤ 0.89 or FFR ≤ 0.8). Regarding CCTA analysis, plaque lesions with 50-75% stenosis were likely not significant (p = 0.005). Both mixt plaque and non-calcified plaque phenotypes were associated with functional significance (p < 0.005). Also long lesions (defined as > 10mm extension) were likely functionally significant (p = 0.001). In contrast, proximal segment lesions were not associated with functional significance (p = 0.604). Interestingly, the presence of long and mixt/non-calcified plaques showed to be a strong predictor to rule-in functionally significant CAD, with an area-under-curve (AUC) of 0.894.
Conclusions: CCTA is a non-invasive imaging method that allows characterization of coronary artery lesions. Our study show that plaque lesions 50-75% on CCTA were likely not significant through iwFR. Considering the extension and composition of plaques, the presence of long and mixt/non-calcified plaques can predict functionally significant CAD. More studies, with larger sample, are needed to corroborate our findings.

PO 194. BIOABSORBABLE VASCULAR SCAFFOLDS IN CLINICAL PRACTICE: NOT AS BAD AS ONE MIGHT EXPECT

Sofia Esteves[1], Ana Beatriz Garcia[2], Miguel Azaredo Raposo[3], Marta Vilela[3], Miguel Nobre Menezes[3], Cláudia Moreira Jorge[3], João Silva Marques[3], Pedro Pinto Cardoso[3], Fausto J. Pinto[2]

[1]Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria. [2] Department of Cardiology, Centro Hospitalar Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa. [3]Department of Cardiology, Centro Hospitalar Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Bioabsorbable vascular scaffolds (BVS) provide mechanical support for the first years after implantation and are completely resorbed thereafter. BVS prevent acute recoil and restenosis in the acute setting and may offer the advantage of decreasing very late stent thrombosis and restoring vascular function. However, randomized trials have challenged previous beliefs. In the ABSORB IV trial the 1-year target lesion failure (TLF) was 7,8% and thrombosis occurred in 1%.
Objectives: To evaluate the rate of thrombosis and TLF of BVS in a single center (SC) prospective observational study.
Methods: Patients (pts) submitted to percutaneous coronary intervention (PCI) with BVS between 2012-2017 were included. Clinical characteristics and procedure-related data were collected at baseline and co-primary endpoints were prospectively gathered at one and 3 years and at the longest available follow-up (FUP). First co-primary endpoint was defined as a composite of target vessel myocardial infarction or cardiac mortality and second co-primary endpoint as device thrombosis.
Results: One hundred and fourteen pts (71% male; mean age 52 ± 12 years) were submitted to PCI with BVS during the 5-year period, with a mean FUP of 94 ± 11 months. Cardiovascular (CDV) risk factors included hypercholesterolemia (79.8%), hypertension (74.6%), smoking habits (56.1%) and diabetes (34.2%). Clinical reasons to perform PCI included stable angina in 28.9%, unstable angina in 5.3%, NSTEMI in 32.5% and STEMI in 33.3% of pts. BVS was implanted in LAD in 51.8% of pts, in RCA in 23.7%, 13.2% in circumflex and 5.3% in LM artery. Almost all BVS used were ABSORB, with a medium diameter and length of 3.39 ± 2.54 mm and 19.99 ± 4.87 mm, respectively. Regarding technique of BVS implantation, predilatation was done in a majority of pts (93%), but postdilatation was only done in 47.4% of pts. Intracoronary imaging use was limited to 28.1% and identified malapposition in 2.6% of cases and edge dissection in 7%. At FUP, new CDV events that lead to coronary angiography and PCI occurred in 16.7% of pts. Most (10.5%) were related to lesions in different coronary segments (non-TLF). TLF events were due to restenosis in 5.3% and BVS thrombosis occurred in 3.5%. First co-primary endpoints occurred in 10%, 1% and 4.4% at 1 and 3-year FUP, respectively. Smaller stent diameters (p = 0.037) and diabetes (p = 0.032) were significantly associated with TLF. A total of 4 BVS thrombosis were observed (3.5%), 1% at 1-year FUP and 2.2% at 3-years. Female gender (p = 0.039) and obesity (p = 0.044) were correlated with the second co-primary endpoint.



Graphic 1: Rate of TLF in bioabsorbable stents

Conclusions: BVS use fell since a higher rate of TLF and thrombosis was described. When compared with ABSORB IV, a significant lower rate of TLS was verified in our population. As BVS could limit APT in the long term and, technically, could offer advantages in complex lesions, more studies are warranted with new BVS generations.

SÁBADO, 20 ABRIL de 2024 | 09:00-10:30

Área de Posters 3 | Sessão de Posters 30 - Terapia de Ressincronização Cardíaca

PO 195. IMPACT OF RIGHT VENTRICULAR DIMENSION AND FUNCTION ON OUTCOMES IN PATIENTS UNDERGOING CARDIAC RESYNCHRONIZATION THERAPY

Francisco Rodrigues dos Santos, Vanda Devesa Neto, António Costa, Inês Pires, Gonçalo Ferreira, Mariana Duarte Almeida

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio.

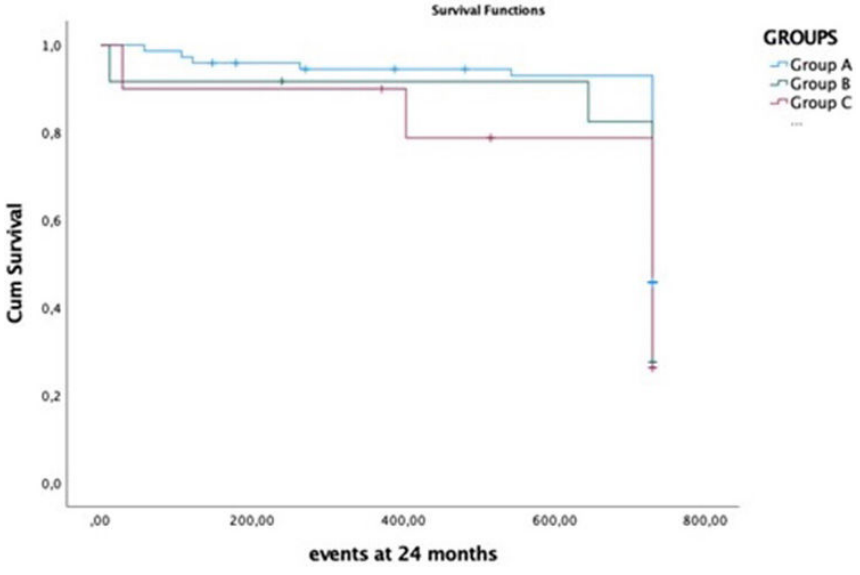
Introduction: Adverse remodeling in the right ventricle (RV) involves progressive RV dilation and systolic dysfunction, serving as crucial prognostic indicators for patients undergoing cardiac resynchronization therapy (CRT). However, the combined prognostic value of assessing these parameters in a unified model remains unexplored.
Objectives: This study aims to investigate the relationship between RV dimension and RV systolic function, assessed prior to CRT implantation, and their influence on overall outcomes.
Methods: In a single-center retrospective study, all consecutive patients who underwent CRT implantation between 2012 and 2019 were included. Echocardiography at the time of device implantation analyzed RV dimension and longitudinal function. Patients were categorized into three groups: A – RV with normal dimension and function, B – RV with normal dimension and Tricuspid Annular Plane Systolic Excursion (TAPSE) < 17 mm, and C – dilated RV and TAPSE < 17 mm. A 24-month follow-up assessed the primary endpoint, a composite of all-cause mortality, detection of ventricular arrhythmias, and cardiac hospitalization. Group comparisons used Chi-square and Mann-Whitney U tests, while survival analysis utilized Cox regression and Kaplan-Meier curves. Multivariable analysis employed logistic regression.
Results: The study included 102 patients (74.5% male, mean age 68 ± 10.46 years). NYHA class distribution was 46.1% - II, 51% - III, and 2.9% - IV. Ischemic cardiomyopathy was diagnosed in 32.4%, with 66.7% receiving CRT-D. The 24-month mortality was 8.8%, 2.94% experienced inappropriate shocks, and 27.5% were unresponsive to CRT. Group A comprised 71.6% of patients, Group B 11.8%, and Group C 9.8%. Multivariate logistic regression showed that RV dimension independently predicted the endpoint (OR 3.54; 95%CI 1.03-12.08; p = 0.04), adjusted for ischemic etiology and LVEF at CRT implantation. RV systolic function did not independently predict the endpoint (OR 2.02; 95%CI 0.68-6.04; p = 0.21). Cox regression analysis revealed that group C was an independent predictor of mortality when adjusted by LVEF and ischemic. When stratified by groups, the classification revealed a progressive decline in survival for those with normal RV dimension and function, normal RV dimension but declined function, and dilated RV with declined function (Kaplan-Meier χ^2 = 3.51; p = 0.04) (Figure).
Conclusions: Comprehensive prognostic assessments for CRT recipients should consider both right ventricular size and function. Incorporating both parameters enhances prognostic value in assessing adverse outcomes.

PO 196. LEFT BUNDLE BRANCH AREA PACING: A PARADIGM SHIFT IN CARDIAC RESYNCHRONIZATION THERAPY

Diogo de Almeida Fernandes, João André Ferreira, Patrícia Alves, Carolina Saleiro, Natália António, Luís Elvas, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Cardiac resynchronization therapy (CRT) has a pivotal role in heart failure (HF) treatment. Left bundle branch area pacing (LBBAP) has shown promising results in improving LV function and outcomes. Our aim was to compare procedural and clinical outcomes of CRT and LBBAP.
Methods: Single-centre cohort study including consecutive patients with LVEF < 45% who underwent LBBAP or CRT from Jan to Dec 2023. LBBAP was considered successful if LV activation time (LVAT) < 80 ms and/or V6-V1 inter-peak interval > 40ms. Primary outcome was a composite of HF emergency department (ER) admission, HF hospitalization and all-cause mortality.
Results: 31 patients underwent LBBAP and 62 CRT. Mean age was similar across all groups (72.2 ± 10.1 years, p 0.470). 77.4% of patients were male (p 0.599). 31.2% had ischemic cardiomyopathy (p 0.739). LBBAP patients were less likely to be on beta-blockers (61.3% vs. 85.5%, p 0.009), sacubitril-valsartan (54.8% vs. 82.3%, p 0.005) and spironolactone (48.4% vs. 72.6%, 0.022) and more likely to be on ACE inhibitor/ARBs (67.7% vs. 41.9%, p 0.019). Complete left bundle branch block was present in 55.2% of patients with LBBAP (vs 66.7%, p 0.293). There were no differences regarding baseline LVEF (31 ± 7%, p 0.425) and QRS duration (165 ± 28 ms, p 0.692). Average LVAT was 82 ± 8 ms. Paced QRS was significantly shorter in LBBAP (118 ± 18 ms vs. 152 ± 27 ms, p < 0.001). LBBAP fluoroscopy (101 ± 30 min vs. 116 ± 30 min, p 0.127) and procedure (18 ± 8 min vs. 22 ± 10 min, p 0.161) times were shorter. Pacing thresholds were lower in LBBAP (0.6 ± 0.3V vs. 1.2 ± 0.6 V, p < 0.001). After a mean follow-up time of 7.3 months, LVEF increase was greater in LBBAP (14 ± 6%) vs. CRT (9 ± 10%; p 0.147). Loss of left bundle branch capture



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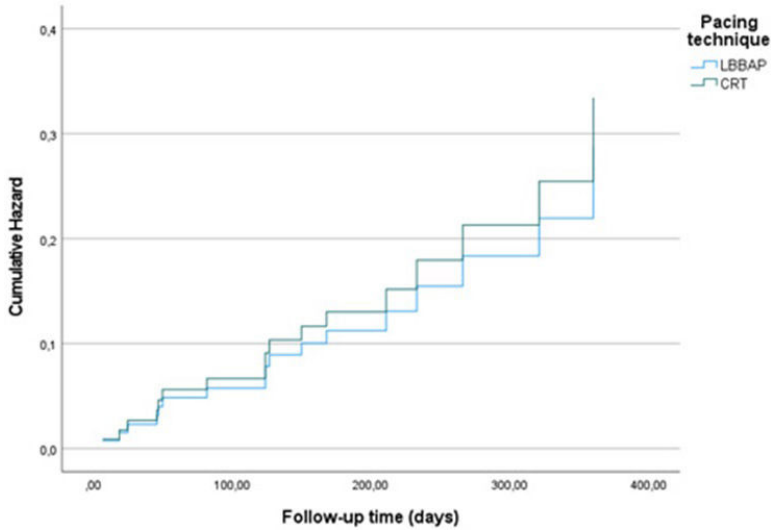


Figure PO 196

occurred in 2 patients. In the CRT group, 5 had displacement of the coronary sinus (CS) lead and 4 had diaphragmatic stimulation. The primary outcome occurred in 10.0% of patients with LBBAP (vs 22.6%, p 0.145). After adjusting for differences at baseline, both LBBAP and CRT had similar profiles (p 0.836).
Conclusions: LBBAP led to shorter paced QRS and numerically improved LV function. Primary endpoint was similar between CRT and LBBAP patients, despite LBBAP patients having less optimized HF treatment. Our data strongly suggests LBBAP is a feasible alternative to CRT with potentially shorter procedure and fluoroscopy times.

PO 197. CLINICAL EFFICIENCY AND DURABILITY OF THE EPICARDIAL LEFT VENTRICULAR LEADS IN CARDIAC RESYNCHRONIZATION THERAPY

Tatiana Pavlenko, Ana Lousinha, Ana Raquel Santos, André Ferreira, Rita Contins, Manuel Brás, Pedro Félix, Rui Rodrigues, Pedro Coelho, Hagen Kahlbau, Mário Oliveira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Cardiac resynchronization therapy (CRT) remains an important component of heart failure (HF) treatment for patients (P) with reduced left ventricular ejection fraction (EF ≤ 35%) and wide QRS. Unfavourable coronary sinus (CS) anatomy or previous cardiac implantable device (CIED) infection may lead to the necessity of implantation of an epicardial left ventricular lead (ELV). However, the data according to the endurance and efficiency of these leads is still scarce.
Objectives: To estimate the clinical efficiency and durability of the ELV in patients who required CRT.
Methods: Consecutive cases of ELV implantation in P with indication for CRT at our centre from 2013 to 2023 were reviewed. Statistical analysis was performed with the Wilcoxon signed-rank test.
Results: From a total of 16 cases (75% male, age 69.8 ± 2 years, 37.5% with atrial fibrillation, 31.3% with coronary artery disease, 12.5% diabetes and 6.3% chronic kidney disease under dialysis), 12P required ELV due to unfavourable CS anatomy, 2P had high threshold and loss of capture of the transvenous CS lead and 2P had previous CIED infection. Indications for CRT were HF with reduced EF and wide QRS (n = 14) and pacing-induced cardiomyopathy after pacemaker (PM) implantation (n = 2). The mean NYHA class before ELV implantation was 3.1 ± 0.2, QRS duration 171 ± 5.6 ms and the mean EF 28.2 ± 1.7%. Ten P implanted a CRT-D, 5P a CRT-P and 1P a PM with ELV. In one case, a high ELV threshold was registered after the procedure, which led to reimplantation in one week. No other complications were registered. All P completed 6-month follow-up (F/u). From those who were implanted before 2021 (n = 13), the survival rate was 100% and 84.6% during 1- and 2-year F/u, respectively. Non-cardiac reason of death was reported in these P. During F/u, clinical response (decrease in ≥ I NYHA class) was achieved in 81.3% of the P, the mean NYHA class was 1.9 ± 0.2 (p < 0.05, compared to baseline) and the mean QRS duration was 143.6 ± 8.0 ms (p < 0.05, compared to baseline). Echocardiographic response (increase in EF ≥ 10%) was achieved in 56.3%. The mean EF at 6- and 24-month F/u was 37 ± 3.5% (n = 12, p < 0.05) and 38.4 ± 3.4% (n = 9, p < 0.05), respectively. There was no lead failure or clinically significant rise of threshold during the whole period of observation.
Conclusions: Implantation of ELV is a safe and effective option for CRT in P with unfavourable CS anatomy or previous CIED infection, showing stable threshold profile during a 2-year follow-up.

PO 198. PREDICTORS OF NON-RESPONSE TO CARDIAC RESYNCHRONIZATION THERAPY

Luísa Pinheiro, Mariana Tinoco, Margarida Castro, Tâmara Pereira, Sílvia Ribeiro, Victor Sanfins, Olga Azevedo, António Lourenço

Hospital da Senhora da Oliveira, EPE-Guimarães.

Introduction: Cardiac resynchronization therapy (CRT) is an effective treatment for selected HF patients, but around 30% do not respond favorably.
Objectives: To determinate the predictors of non-response to CRT.
Methods: Single-center retrospective study including HF patients submitted to CRT-D according to guidelines indications between 2013 and 2022. Clinical, electrocardiographic and echocardiographic parameters were evaluated at baseline and 6-12 months after CRT implantation. CRT response was defined as an increase in left ventricular ejection fraction (LVEF) ≥ 10% or a reduction of LV end-diastolic volume (LVEDV) > 15% at 6-12 months. Right ventricular systolic dysfunction (RVSD) was defined as S' velocity < 9.5 cm/s. The CRT responders were compared to the non-responders regarding the above parameters and regression analysis was performed to identify predictors of non-response to CRT.
Results: Out of a total of 149 patients (mean age 68 ± 11 years; 69% males), 92 patients (62%) were considered responders after 6-12 months of CRT implantation. CRT non-responders were more frequently men (81% vs. 61%, p = 0.011) and had a higher frequency of CKD (54% vs. 24%, p < 0.001). In both groups, the most common HF etiology was non-ischemic and LBBB was the predominant QRS morphology (p = 0.820, p = 0.799). The incidence of AF during the first year of follow-up and % of biventricular pacing were also comparable (p = 0.799, p = 0.824). Regarding echocardiographic parameters, the non-responder group had a significantly higher Left Atrial Volume Index (51.4 ± 25.5 ml/m² vs. 43.7 ± 16.6, p = 0.047) and a higher frequency of RVSD (51% vs. 20%, p < 0.001) and severe functional mitral regurgitation (FMR) (19% vs. 5%,

p = 0.031). On multivariate analysis, male gender (OR = 2.66, 95%CI: 1.06-6.68; *p* = 0.037), CKD (OR = 3.47, 95%CI: 1.60-7.54, p = 0.002), RVSD (OR = 3.96, 95%CI: 1.78-8.83, *p* < 0.001) and severe FMR (OR = 3.63, 95%CI: 1.04-12.65, p = 0.043) were identified as independent predictors of non-response to CRT.
Conclusions: Non-response to CRT in our centre (38%) aligns with the literature. Male gender, CKD, RVSD and severe FMR were identified as independent predictors of non-response. Male gender is associated with worse CRT response, which is likely explained by the higher prevalence of ischemic heart disease, hindering effective LV stimulation due to myocardial scar tissue. RVSD and severe FMR are consistently linked to worsened LV remodeling. These findings highlight the importance of a comprehensive patient selection before CRT implantation.

PO 199. ALIGNING HUMAN AND MACHINE – PREDICTORS OF SUPER-RESPONSE TO CRT

João Santos Fonseca, Ana Beatriz Garcia, Ana Margarida Martins, Catarina Simões Oliveira, Miguel Azaredo Raposo, Catarina Gregório, Ana Abrantes, Nelson Cunha, Andreia Magalhães, João de Sousa, Fausto J. Pinto, Pedro Marques

Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Cardiac resynchronization therapy (CRT) is a key therapy in contemporary heart failure management. Among patients (pts) submitted to CRT implantation according to current ESC guidelines, there are different grades of response. It's key to leverage patient selection in order to achive the best results and health gains. The concept of super-responder is still under debate since several studies suggest different values for Left Ventricular Ejection Fraction (LVEF) and endsystolic volume to define it, but it's unquestionable that such profile is associated with a better prognosis.
Objectives: To determine predictors of CRT super-response.
Methods: Single center retrospective study of pts in whom a CRT was implanted. Patients submitted to pacemaker upgrade and CRT implantation due to nodal disease were excluded. Additionally, only pts with a mean time of follow-up of 3 years were included. Clinical, ECG, laboratorial and echocardiogram data was collected at time of implantation and during follow-up. Super-response was defined as an increase in LVEF above the 4th quartile (18%). Cox regression was used to define predictors of super-response and to evaluate impact on clinical outcomes (hospitalizations and mortality).
Results: A total of 235 pts were included (mean age 68.4 ± 9.7 years-old, 45% male). In our population, 27.7% (n = 65) of the patients were considered super-responders. The presence of super-response was a predictor of better clinical outcomes during follow-up (p = 0.009, HR 2.342 [95%CI 1.231-4.455]). Additionally, super-responders had significantly lower NT-proBNP levels at follow-up. Regarding baseline echocardiographic evaluation, super-responders presented with lower LVEF, higher TAPSE and smaller left atrium. Additionally, super-response was more prevalent in males, patients with baseline left bundle branch block (LBBB) pattern and patients with higher eGFR. Description of atrial fibrillation (Afib) and ischemic etiology had no impact on CRT response. On multivariate analysis: typical LBBB, male gender (p = 0.030, HR 2.121 [1.075-4.184]), LBBB (p = 0.031, HR 2.178 [1.075-4.412]) and LVEF (p = 0.018, HR 0.947 [0.906-0.991]) were the only independent predictors of super-response.
Conclusions: Aligned with previous studies, LBBB was an independent predictor of super-response. Somehow surprisingly, previous lower LVEF and male gender were also independent predictors of super-response; but not history of Afib neither ischemic etiology were associated with a worse response.

PO 200. IMPROVEMENT OF FUNCTIONAL MITRAL REGURGITATION FOLLOWING CARDIAC RESYNCHRONIZATION THERAPY: PREDICTORS AND CLINICAL OUTCOMES

Luísa Pinheiro, Mariana Tinoco, Margarida Castro, Tâmara Pereira, Sílvia Ribeiro, Victor Sanfins, Olga Azevedo, António Lourenço

Hospital da Senhora da Oliveira, EPE-Guimarães.

Introduction: Cardiac Resynchronization Therapy (CRT) is an established treatment for heart failure (HF). Functional Mitral Regurgitation (FMR) is common in patients with HF and CRT has been shown to lead to an improvement in FMR.
Objectives: Identify the predictors of FMR improvement with CRT and its impact on clinical outcomes.
Methods: Retrospective, single-center study of patients undergoing CRT implantation between 2013 and 2022, with moderate or severe FMR. Clinical, electrocardiographic and echocardiographic parameters were evaluated at baseline and follow-up. FMR was assessed qualitatively and graded on a scale of mild to severe. FMR improvement was defined as an improvement of ≥ 1 grade in MR class. Response to CRT was defined as an increase in left ventricular ejection fraction (LVEF) > 10%. The composite outcome of HF hospitalization and mortality from any cause was used to determine the prognosis.
Results: A total of 42 patients were included in the study (mean age 72 ± 9.5 years; 60% male). Median follow-up was 58 [IQR 31-92] months. Improvement of FMR after CRT implantation was observed in 69% of the patients. The group of FMR improvement had a lower prevalence of atrial fibrillation (AF) (31% vs. 69%, p = 0.021). The reduction of QRS duration and the percentage of responders were significantly higher (p < 0.001, 15% vs. 52%, p = 0.027, respectively). There was a trend towards a higher percentage of FMR improvement in the epicardial (EPI) than in the transvenous (TV) lead (68% vs. 85%, p = 0.144). Using multivariate analysis, the absence of AF was an independent predictor of FMR improvement (HR: 0.064, 95%CI: 0.006 – 0.693, p = 0.024), no other clinical, electrocardiographic and echocardiographic parameters were predictors improvement in regurgitation. Survival-rate free of composite outcome was significantly higher in FMR improved patients when compared to non-improvers (HR: 6.09, 95%CI: 2.14 – 17.31, p < 0.001), independent of CRT response.
Conclusions: Notably, our rate of FMR improvement slightly exceeded previous reports. AF was the only independent predictor of valvular regurgitation reduction. The role of CRT in patients with significant FMR is another crucial prognosis modifier.

PO 201. IMPACT OF ATRIAL FIBRILLATION ON MORTALITY AND RESPONSE TO CARDIAC RESYNCHRONIZATION THERAPY IN HEART FAILURE: A RETROSPECTIVE ANALYSIS

Joana Laranjeira Correia, Vanda Devesa Neto, Gonçalo R. M. Ferreira, João Gouveia Fiúza, Mariana Duarte Almeida, Oliver Correia Kungel, Francisco Rodrigues dos Santos, António Costa

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio.

Introduction: Cardiac resynchronization therapy (CRT) is an established treatment for selected patients with heart failure (HF) and a wide QRS complex. HF is frequently complicated by atrial fibrillation (AF), which is associated with worsened outcomes. The presence of AF may interfere with optimal delivery of CRT due to competition with biventricular capture by conducted beats. Nevertheless, the effectiveness of CRT in patients with AF remains controversial.
Objectives: The aim of the study was to analyze CRT results in patients with permanent AF. The endpoints analyzed were all-cause mortality in 24 months and response to CRT.
Methods: A single-center retrospective study was conducted, including all consecutive patients who underwent CRT implantation between 2012 and 2019. Follow-up started after CRT implantation and ended upon death or 24 months after study entry. The subjects were divided into two groups: Group A (with AF) and Group B (in sinus rhythm (SR)). Patients were followed for 2 years after implantation, and Kaplan-Meier survival curves were determined for each group to assess the predictive capacity for all-cause mortality in 24 months. The authors also analyzed the correlation between the presence of AF and the response to CRT (ejection fraction (EF) increase of at least 10% after CRT implantation). The statistical analysis was performed in SPSS. A p-value < 0.05 was considered statistically significant.
Results: 102 patients were included in the study (74.5% male, mean age 68 ± 10.46 years). The mortality in 24-month follow-up was 8.8%. The percentage of patients in NYHA (New York Heart Association) II, III and IV was, respectively, 46.1%, 51% and 2.9%. Inappropriate shocks occurred in 2.94% of patients, and

27.5% of patients had no response to CRT. All-cause mortality in 24 months was more likely in patients with AF compared to patients in SR (χ^2 4.985 (p = 0.026)). The presence of AF was an independent predictor of the primary outcome (p = 0.035; 95%CI 0.33-0.73) after adjusting for gender, diabetes mellitus, hypertension, dyslipidemia and smoking. However, the response to CRT was similar between both groups (χ^2 1.713; p = 0.191 – OR 0.559; 95%CI 0.232-1.343).
Conclusions: The presence of AF is associated with increased likelihood of all-cause death. However, the response to CRT was not altered by the presence of AF. Randomized controlled trial are lacking to compare the response to CRT between patients with AF and patients in SR. Further randomized, large-scale studies are required to confirm our study results.

PO 202. FROM REDUCED TO NORMAL LEFT VENTRICULAR EJECTION FRACTION: WHAT MAKES A SUPER-RESPONDER TO CRT?

Luísa Pinheiro, Mariana Tinoco, Margarida Castro, Tâmara Pereira, Sílvia Ribeiro, Victor Sanfins, Olga Azevedo, António Lourenço

Hospital da Senhora da Oliveira, EPE-Guimarães.

Introduction: Cardiac resynchronization therapy (CRT) is an effective treatment for selected heart failure (HF) patients. The response, however, may vary widely. Some patients exhibit above-expected improvement, linked to a better prognosis, known as super-responders (SRs).
Objectives: To identify predictors of CRT super-response.
Methods: Retrospective, single-center study of patients undergoing CRT implantation between 2013 and 2022. Clinical, electrocardiographic and echocardiographic parameters were evaluated at baseline and follow-up. A super-response to CRT was defined as the recovery of left ventricular (LV) ejection fraction (LVEF) to a value ≥ 50%. The composite outcome was the occurrence of major adverse cardiac events (MACE), which were defined as HF or cardiovascular mortality. SRs were compared to non-SRs regarding the above parameters and regression analysis was performed to identify predictors of super-response to CRT.
Results: A total of 149 patients were included in the study (mean age 68 ± 11 years; 69% male), patients that are not followed in our center were excluded. Median follow-up was 4.7 [IQR 2.4-6.9] years. In this study, 28 (19%) were deemed as SRs.SRs were more frequently of women (63% vs. 33%, p = 0.031), a lower frequency of chronic kidney disease (11% vs. 41%, p = 0.031) and right ventricular systolic dysfunction (RVSD) at baseline (14% vs. 33%, p = 0.05). After CRT, effective biventricular pacing (BiV ≥ 98%) and QRS duration ≤ 150 ms were achieved on a higher percentage in the SRs group (88% vs. 61%, p = 0.043; 92% vs. 81%, p = 0.031, respectively). A higher frequency of super-response was observed in the epicardial (EPI) vs. the transvenous (TV) leads (25% vs. 15%, p = 0.156) and in the non-ischemic versus ischemic heart disease (22% vs. 13%, p = 0.140), although not achieving statistical significance. On multivariate analysis, female gender (OR = 9.70, 95%CI: 1.27-74.32; p = 0.029) and BiV pacing ≥ 98% (OR = 59.10, 95%CI: 2.238-1,560.66, p = 0.015) were independent predictors of super-response to CRT. Survival-rate free of MACE was significantly higher on the SRs group than in the non-SRs group (HR: 3.60, 95%CI: 1.11- 11.63, p = 0.010).
Conclusions: The frequency of SRs to CRT in our centre (19%) is in concordance with literature. Our study confirms that female gender and effective BiV pacing are independent predictors of super-response to CRT and that a super-response to CRT is associated with a better prognosis.

PO 203. MITRAL REGURGITATION IN HEART FAILURE PATIENTS UNDERGOING CARDIAC RESYNCHRONIZATION THERAPY – DOES IT AFFECTS CLINICAL OUTCOMES?

Fabiana Silva Duarte, Inês Santos, Maria Inês Barradas, Luís Oliveira, Cátia Serena, André Monteiro, Carina Machado, Raquel Dourado, Emília Santos, Nuno Pelicano, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: Cardiac resynchronization therapy (CRT) is a well-established treatment for specific heart failure (HF) patients´ groups, enhancing outcomes in both ischemic and non-ischemic HF cases. Mitral regurgitation (MR) is a common finding with uncertain reported impact on prognosis.
Objectives: Investigate clinical outcomes in HF patient undergoing CRT based on MR severity assessed before and 1 year after device-based therapy, considering both ischemic and non-ischemic HF etiologies.
Methods: Single-center retrospective study of CRT-implanted patients, stratified MR severity at baseline and post-CRT into significant (moderate and severe MR) or non-significant MR groups. Primary endpoint comprised major adverse cardiac events (MACE), involving HF hospitalization or all-cause mortality. Secondary endpoint included sustained ventricular arrhythmic events.
Results: 117 HF patients (mean age 71.1 ± 10.6 years, males 67.5%) were enrolled, 31.6% having ischemic HF and 23.9% falling into the baseline significant MR (SMR) group. Baseline characteristics revealed 40.2% with atrial fibrillation (AF), 23.9% with obstructive pulmonary disease (COPD) and 9% with peripheral artery disease (PAD). SMR patients showed more dyslipidemia (p = 0.026) and lower left ventricular ejection fraction (median 25% vs. 32%, p = 0.001). At 1-year follow-up, 11.1% had significant MR, mostly with the same degree (61.5%), and presented higher NYHA class (p = 0.032). During follow-up, 15.4% reached the primary endpoint, while 8.5% reached the secondary endpoint. Ischemic etiology and baseline MR severity did not predict either endpoint in SMR and non-SMR groups (p = 0.204, p = 0.106 vs. p = 0.191, p = 0.213). However, male gender (p = 0.033), alcohol consumption (p = 0.003), PAD (p = 0.004) and COPD (p = 0.005) independently predicted MACE endpoint at a multivariable analysis. For the secondary endpoint, PAD (p = 0.020) and AF (p = 0.001) were significant predictors. Notably, significant MR post-CRT was a strong independent predictor only for MACE outcome (HR 4.3 95%CI 2.1–6.1, p = 0.014).
Conclusions: Baseline significant MR did not show an association with clinical outcomes following CRT implantation. However, MR at follow-up was a strong determinant of increased mortality and HF hospitalizations, especially in more symptomatic patients, irrespective of HF etiology. Patients exhibiting persistent MR after CRT should also be evaluated for potential valvular interventions.

SÁBADO, 20 ABRIL de 2024 | 11:00-12:00

Ágora | Best Posters

PO 373. PRECISION IN PROGNOSTICATION: A COMPREHENSIVE COMPARISON OF RISK SCORES IN THE SETTING OF CARDIOGENIC SHOCK

Samuel Azevedo, Rita Barbosa Sousa, João Presume, Débora da Silva Correia, Rita Almeida Carvalho, Joana Certo Pereira, Miguel Domingues, Ana Rita Bello, Catarina Brízido, Christopher Strong, Jorge Ferreira, António Tralhão

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Early and precise risk stratification of cardiogenic shock (CS) patients is essential for tailoring appropriate treatment, guiding decisions on the initiation of more aggressive therapies like mechanical circulatory support, or on discontinuing futile interventions. Additionally, current CS risk scores are often developed in specific cohorts, neglecting the diversity within CS cases.
Objectives: This study aimed to assess the applicability of existing CS-specific and general intensive care unit (ICU) risk scores, evaluating their performance in the overall CS population and across subgroups based on CS etiology.
Methods: We conducted a single-center retrospective study, enrolling consecutive CS patients admitted to the cardiac ICU (CICU) between January 2017 and October 2023. Three CS-specific scores and two general ICU scores were calculated based on admission data. ROC curve analysis was used to compare these scores to the SCAI stage at admission and against each other, regarding their discriminative power to predict 30-day all-cause mortality.
Results: The analysis included 281 patients (mean age 67 ± 16 years, 65% male, 30% with SCAI ≥ D at admission, median hospitalization duration of 11 [3; 23] days). Half of the cohort was admitted for acute myocardial infarction

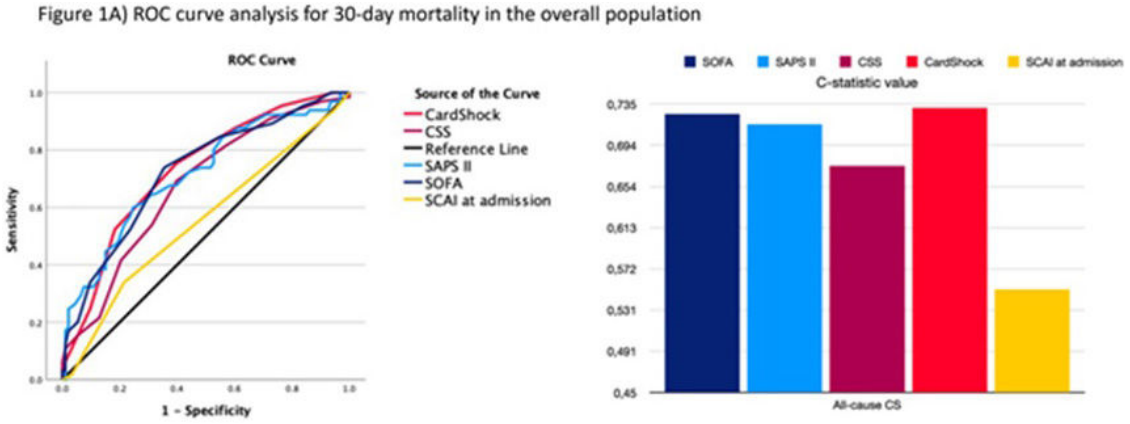


Figure PO 373

CS (AMI-CS). The 30-day mortality rate was 44%. The calculated scores at admission were as follows: CardShock 4.4 ± 1.8; IABP-SHOCK II 3.3 ± 1.9; Cardiogenic Shock Score (CSS) 5.9 ± 2.5; SOFA 7.6 ± 2.8; SAPS-II 50 ± 17. In the overall cohort, ROC curve analysis revealed that SCAI staging at admission exhibited poor performance in predicting 30-day mortality compared to the scores (Figure). Although CardShock exhibited the highest predictive value for 30-day mortality, all scores showed only moderate predictive ability (C-statistic between 0.550-0.731), and no significant differences were observed between them. After stratifying the cohort into two subgroups based on etiology (AMI-CS or non-AMI-CS), SCAI at admission consistently showed poor predictive performance in both cohorts. Furthermore, within the AMI-CS subgroup, no notable differences were identified among the remaining scores. However, in the non-AMI-CS subgroup, ICU risk scores displayed a superior predictive value for 30-day mortality compared to CS-specific scores. Specifically, the SOFA score significantly outperformed CardShock in discriminative ability (z = 2.070; p = 0.0384).

Conclusions: ICU and CS risk scores appear to provide additional value over SCAI staging at admission for predicting 30-day mortality. Overall, risk scores demonstrated moderate prognostic prediction, with no clearly superior score. In the non-AMI-CS population, CS-specific scores seem to underperform compared to general ICU scores. Further research is needed to enhance the discriminative abilities of existing models or develop new ones.

PO 374. LV REVERSE REMODELING AFTER SAVR IN PATIENTS WITH SEVERE SYMPTOMATIC AORTIC STENOSIS: IMPACT ON THE CLINICAL OUTCOME

Maria Rita Giestas Lima, João Abecasis, Rita Reis Santos, Sérgio Maltês, Sara Guerreiro, Pedro Freitas, António Ferreira, Regina Ribeiras, Maria João Andrade, Miguel Sousa-Uva, Pedro Adragão

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Surgical aortic valve replacement (SAVR) is the treatment of choice for young patients with severe aortic stenosis (AS) and low surgical risk. Left ventricular (LV) reverse remodeling (RR) after surgery is expected

Table 1 N=118

	Pre-SAVR	Post-SAVR	*p*-value	Patients with reverse remodelling (n, %)
GLS, % (mean±SD)	−14.9±3.7	−16.4±3.3	0.113	13 (7.2)
LVEF (CMR), % (mean±SD)	60.3±10.0	58.3±8.4	0.140	26 (22.0)
LVEDV (CMR), mL (median, IQR)	148.0 (71.0–323.0)	137.0 (50.0–345.0)	0.148	53 (44.9)
LV indexed mass (CMR), g/m² (mean±SD)	80.0±27.1	62.1±15.5	**<0.001**	77 (65.3)
Geometric remodelling (mean±SD)	0.94±0.19	0.83±0.17	0.381	65 (55.1)

Table 2

Univariate analysis (N=118)	OR 95% CI	*p*-value
GLS, % (mean±SD)	0.039 (0.000–21.689)	0.314
LVEF (CMR), % (mean±SD)	0.245 (0.032–1.863)	0.174
LVEDV (CMR), mL (median, IQR)	0.440 (0.140–1.382)	0.160
LV indexed mass (CMR), g/m² (mean±SD)	0.118 (0.033–0.420)	**0.001**
Geometric remodelling (mean±SD)	0.637 (0.231–1.760)	0.385

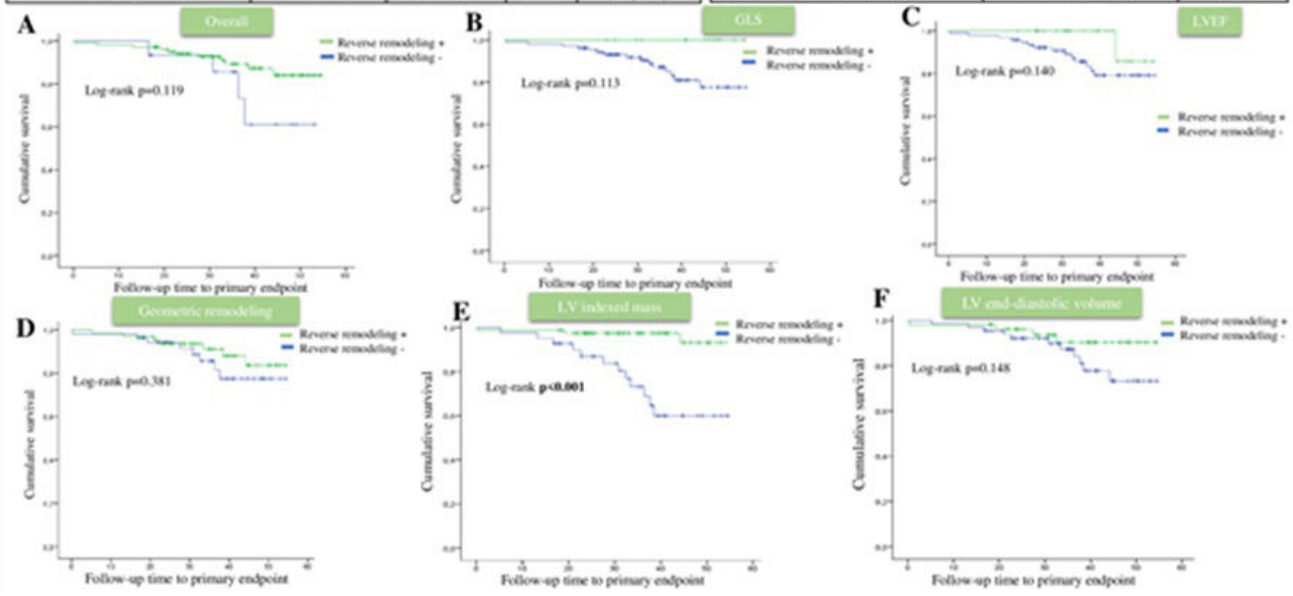


Figure PO 374

to occur. However, this is not always the case following afterload relief, and this may impact the prognosis. We aimed to assess the prognostic effect of distinct definitions of LV RR after SAVR in the long-term outcome of patients with severe AS.
Methods: Single-centre prospective study including patients referred for SAVR due to severe symptomatic AS, with no previous history of ischemic cardiomyopathy. Both pre- and post-operative transthoracic echocardiographic (TTE) and cardiac magnetic resonance (CMR) study (at the 3rd to 6th month after SAVR) were performed. LV RR was defined when in presence of at least one of the imaging criteria: > 15% decrease in end-diastolic volume (EDV) by CMR; > 15% decrease in LV indexed mass (LVM) by CMR; > 10% decrease in geometric remodeling (LV mass/EDV ratio) by CMR; > 10% increase in LV ejection fraction (LVEF) by CMR; > 50% increase on global longitudinal strain (GLS) by TTE. We assess the prognostic value of RR definitions for the outcome after SAVR using Cox regression and Kaplan-Meier analysis. The primary endpoint was defined as all-cause mortality, heart failure (HF) hospitalization or worsening HF.
Results: We enrolled 140 patients – mean age 71 ± 9 years-old, 49% male, predominantly high-gradient-normal flow AS (mean gradient 65 ± 18 mmHg, aortic valve area 0.7 ± 0.2 cm^2, index stroke volume 47 ± 11 mL/m^2) submitted to SAVR. At a mean follow-up (FUP) of 34 ± 12 months, 23 (16%) patients met the primary endpoint: 4% (5 patients) died immediately after surgery; three patients died at the FUP (overall mortality rate of 6%). 12 patients (9%) were admitted for HF and 7 (5%) had at least one episode of worsening HF. 118 patients had complete pre and post-surgery imaging study (mean FUP: 36 ± 10 months): 103 patients (87%) had at least one RR parameter (Table 1). Post-operative RR was not independently associated with the clinical outcome (Figure A). LVM was the sole independent predictor of the outcome at univariate analysis (Figure B–F).
Conclusions: LV RR after SAVR is highly prevalent in a cohort of patients with classical severe symptomatic AS. However, only LVM regression independently predicts the clinical outcome after surgery. This may stand the greater importance of structural reverse remodeling, rather than LV functional improvement, after pressure overload relief.

PO 375. MAY ORAL IRON PLAY A ROLE IN HFREF WITH IRON DEFICIENCY? A SECONDARY ANALYSIS OF IRONOUT HF RANDOMIZED CONTROLLED TRIAL

António Afonso Angélico Gonçalves[1], Ana Rita Leite[2], Adelino Leite Moreira[2], João Pedro Ferreira[1]

[1]Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE. [2]Centro Hospitalar Universitário de São João.

Introduction: Iron deficiency (ID) associates with high morbimortality in patients with Heart Failure with reduced Ejection Fraction (HFrEF). Intravenous iron improves functional capacity and decreases the risk of cardiovascular hospitalizations. Treatment with oral iron has been scarcely studied and is not recommended.
Objectives: To study patients according to changes in iron reserves, assess whether ID correction was associated with clinical outcomes and how treatment with oral iron influenced iron reserves.
Methods: We used patient-level data from the IRONOUT HF randomized placebo-controlled trial (RCT), which assessed the efficacy of treatment with oral iron for 16 weeks on functional capacity in 225 patients with HFrEF and ID. We divided the patients according to the transferrin saturation (TSat) change from baseline to end of follow-up (positive change: Improvers; neutral or negative change: Non-improvers). We conducted the following pre-specified analysis: (1) comparison of baseline variables of Improvers vs. Non-improvers; (2) multivariate linear regression models evaluating the impact of TSat improvement in clinical outcomes; and (3) stepwise multivariate linear regression to assess how baseline variables and treatment with oral iron influenced iron reserves.
Results: Of the 186 patients that completed follow-up, 100 were considered Improvers and 86 were Non-improvers. Comparing to Non-improvers, Improvers had significantly lower baseline ferritin (75.8 vs. 92.0 ng/mL, p = 0.01), TSat (18.0 vs. 24.7%, p < 0.01) and hepcidin (7.1 vs. 10.2 ng/mL, p < 0.01). Forty-two percent of Non-improvers and 59% of Improvers received oral iron; the odds ratio for TSat improvement with oral iron was 2.0. Compared to Non-improvers, Improvers had a significantly higher Peak VO_2 change from baseline (β = 0.64; CI95% 0.05–1.22 ml/kg/min). No differences were found in KCCQ-CSS score or 6-Min walk distance changes from baseline. In the multivariate linear regression model, baseline log transferrin saturations had a negative association (β = -11.3; 95%CI -14.3 – -8,2) and treatment with oral iron had a positive association with TSat change from baseline (β = 3.15; 95%CI 0.79 – 5.5).
Conclusions: Patients with increased TSat had a clinically relevant Peak VO_2 increase. Adjusting for baseline TSat, oral iron resulted in a significant 3.15% increase in TSat. RCTs with optimized oral iron treatment and including patients with more severe ID may open a new role of oral iron in HFrEF with ID.

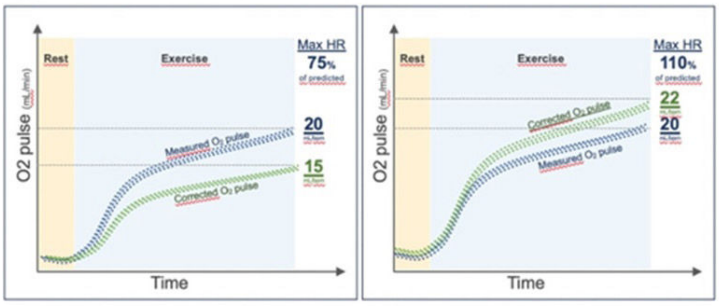
PO 376. HEART RATE CORRECTED PEAK O2 PULSE AS A SIGNIFICANT PREDICTOR OF CARDIOVASCULAR ADVERSE EVENTS IN HEART FAILURE PATIENTS

Catarina Lagoas Pohle[1], Rita Almeida Carvalho[2], Joana Silva Ferreira[1], Rui Antunes Coelho[1], Jéni Quintal[1], Patrícia Bernardes[1], Anaí Durazzo[2], Miguel Mendes[2], Catarina Sá[1], Filipe Seixo[1], Gonçalo Lopes da Cunha[2]

[1]Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo. [2]Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Peak O2 pulse (O2P) is a Cardiopulmonary Exercise Testing (CPET) parameter that reflects stroke volume. It is known that patients with chronotropic incompetence have increased time for diastole and, thus, falsely increased stroke volume, which frequently leads to normal or supranormal O2P values in this patient population. Peak O2 pulse has previously demonstrated its role as a predictor of adverse cardiovascular (CV) events. However, the inability to reach the predicted maximum heart rate (HR) may underestimate the ability of this variable to predict events.
Objectives: We aimed to observe in a population of patients with Heart Failure (HF) whether a correction for peak O2P to the predicted maximal heart rate (HR) percentage can be used as a predictor of major adverse CV events (MACE).
Methods: A retrospective observational study was conducted with a sample of HF patients with ejection fraction < 50% who underwent CPET on a treadmill. Peak O2 pulse and maximal HR were collected, predicted O2 pulse was calculated from Wasserman's equation for predicted maximal oxygen uptake and predicted HR was calculated from Astrand's formula. The corrected O2P was obtained by dividing the measured peak OP2 by the percentage of the predicted maximal HR for age attained (Figure A). Cox regression analysis was performed to assess possible associations with the intended outcomes (CV death, urgent heart transplantation, left ventricular assist device and HF hospitalization).
Results: A total of 248 patients with HF were included (17.3% were women), with a mean age of 58.3 ± 11.4 years. The etiology of HF was ischemic in 66.5% of patients, with a mean ejection fraction of 34 ± 10% and a median NT-proBNP value of 744 micrograms/dL (IQR 241 to 2255). The median peak O2P value measured was 11.5 mL/beat (IQR 9.0 to 14.2), which corresponds to 87.1% (IQR 69.4 to 105.6) of the predicted O2P. The mean corrected O2P was 8.7 ± 3.2 mL/beat, corresponding to 64.8 ± 21% of the predicted O2P. In univariate analysis for the primary endpoint, the Wald Chi square value was greater for the percentual corrected O2P (Wald 90.414, p < 0.001), followed by the corrected O2P (Wald 68.922, p < 0.001), percentual measured O2P (Wald 44.176, p < 0.001) and measured peak O2P (Wald 1.827, p = 0.176) (Figure B). Percentual corrected O2P remained significantly associated with the primary endpoint (HR 0.970 [95%CI 0.955 to 0.985; p < 0.001] even when adjusted for NT-proBNP, VE/VCO2 slope and Peak oxygen uptake (pVO2). Furthermore, percentual corrected O2P was the strongest parameter in multivariate analysis, outperforming even VE/VCO2 slope and pVO2 for the prediction of events (Figure B).
Conclusions: This study suggests that corrected O2P and percentual corrected O2P could be used as strong MACEs predictors. Additionally, percentual corrected O2P showed an even greater ability to predict adverse outcomes in HF patients than NT-proBNP, VE/VCO2 slope and pVO2.

A



B

	Univariate Analysis			Multivariate Analysis		
	Hazard ratio (95% CI)	Wald	P value	Hazard ratio (95% CI)	Wald	P value
Measured peak O2P	0.961 (0.906-1.018)	1.827	0.176			
Corrected O2P	0.564 (0.493-0.646)	68.922	<0.001			
Percentual measured O2P	0.974 (0.967-0.982)	44.176	<0.001			
Percentual corrected O2P	0.956 (0.947-0.965)	90.414	<0.001	0.970 (0.955-0.985)	14.707	<0.001
pVO2	0.766 (0.718-0.817)	66.200	<0.001	0.913 (0.843-0.988)	5.098	0.024
VE/VCO2 slope	1.077 (1.062-1.092)	103.669	<0.001	1.033 (1.012-1.055)	9.759	0.002
NT-proBNP	1,000 (1.000-1.000)	46.075	<0.001	1.000 (1.000-1.000)	10.000	0.002

Footnote: O2P - Oxygen pulse. pVO2 - peak Oxygen uptake. VE/VCO2 slope - minute ventilation/carbon dioxide production slope. CI - confidence interval.

Figure 1 - A : O2 pulse correction; B - Univariate and Multivariate Analysis of the Composite Endpoint (cardiovascular cause of death, urgent heart transplantation, left ventricular assist device and HF hospitalization) with the proposed outcomes predictors

Figure PO 376

PO 377. INCIDENCE OF ATRIAL FIBRILLATION DURING THE FIRST WEEK OF BLANKING PERIOD: PULSED-FIELD ABLATION VS HIGH-POWER SHORT-DURATION RADIOFREQUENCY ABLATION

Patricia Matias, Pedro Adragão, Pedro Carmo, Gustavo Rodrigues, João Carmo, Francisco Costa, Francisco Morgado, Diogo Cavaco, Pedro G, Santos, Daniel Matos, Daniel Gomes

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Pulsed-field (PFA) is a new source of energy for atrial fibrillation (AF) ablation. It uses ultrashort high-energy electrical pulses inducing a non-thermal necrosis (without inflammatory response). On the other hand, high-power short-duration radiofrequency (HPSD RF) ablation causes thermal (coagulation) necrosis and consequent inflammatory response. We aimed to compare the incidence of AF during the first week after ablation using these 2 different types of energy (PFA vs. HPSD RF).
Methods: Single-center registry of patients undergoing AF ablation. Patients were classified according to the type of ablation energy employed (PFA with Farapulse [Boston Scientific] or HPSD RF [QDOT, Biosense Webster]). After the procedure, all patients underwent electrocardiographic monitoring with a 7-day Holter monitor. The outcome of interest was AF recurrence during the first week after ablation.
Results: A total of 53 patients underwent AF ablation using PFA (n = 19) or HPSD RF (n = 34). The mean age was 63 ± 12 years, 61% were male and 75% had paroxysmal AF. There were no significant differences regarding baseline clinical characteristics between groups. Particularly, 68% of patients (n = 13) in the PFA group and 79% submitted to HPSD RF (n = 27) had a paroxysmal form of AF (p = 0.372). During the first week of follow-up after AF ablation, 20.6% of patients had a numerically higher recurrence rate in the HPSD RF subgroup vs. 5.3% in the PFA (p = 0.135). There was no relationship between the type of AF and the outcome of interest (1 patient in the PFA and 6 patients in the HPSD RF group had paroxysmal AF).
Conclusions: Patients who underwent PFA for the treatment of AF had four times less AF recurrence in the first week following the procedure when compared to HPSD RF, although not achieving statistical significance. We can hypothesize that the fewer arrhythmic events during the initial period after ablation in the PFA group may be associated with less inflammatory response. While the long-term implications of these findings must be enlightened, larger studies are needed to confirm these results.

PO 378. SURGICAL ABLATION OF ATRIAL FIBRILLATION CONCOMITANT WITH VALVULAR SURGERY: IS IT WORTHED?

Margarida G. Figueiredo[1], Rui Cerejo[2], Sofia B. Paula[1], Carolina Rodrigues[2], Manuela Silva[2], Guilherme Portugal[2], Pedro Cunha[2], Hélder Santos[2], Rui Rodrigues[2], Mário Oliveira[2], Pedro Coelho[2]

[1]Centro Hospitalar Barreiro/Montijo, EPE/Hospital Nossa Senhora do Rosário. [2]Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Atrial fibrillation (AF) is associated with an increased risk of stroke, heart failure and reduced survival, and is extremely prevalent in patients (P) with valvular heart disease. According to previous studies, the addition of AF ablation during surgical valvular procedures reduces the postoperative AF recurrence rate and improves survival.

	Qui-quadrado	df	Sig.
Log Rank (Mantel-Cox)	1,917	1	,166

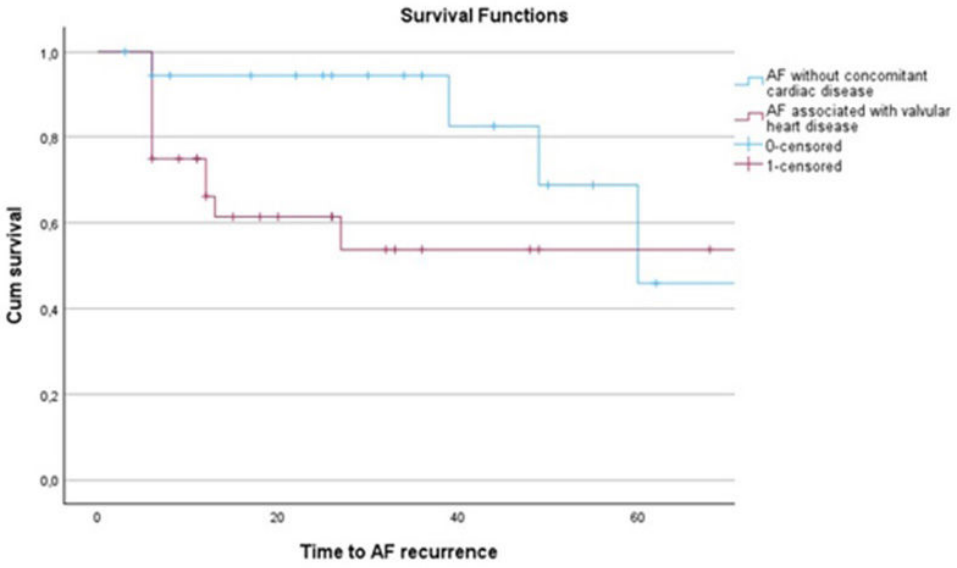


Figure 1 – Differences between the two groups in terms of AF recurrence

Figure PO 378

Objectives: We aim to compare long-term efficacy of surgical AF ablation between P with AF without structural heart disease and those with AF and concomitant valvular disease requiring surgical intervention.
Methods: Single-center retrospective study engaging P with AF undergoing surgical ablation. P were divided into two groups: Group A – AF and no concomitant heart disease; Group B – AF and heart valve disease requiring surgical intervention.
Results: A total of 47 P were analyzed, 19 in group A (40.4%) and 28 in group B (59.6%). In Group A, the median age was 57.0 (52.0 – 68.0) years, with 47.4% female, while in Group B the median age was 64.0 (20.3 – 69.8) years and 60.7% were female (p < 0,05). Regarding the type of AF, Group A had 63.2% with paroxysmal AF (PAF) and Group B 39.3% (p = 0.1). All P in group A had been submitted to prior catheter ablation, in comparison to only 7.1% of P in Group B (p < 0.001). In Group B, 46.4% were submitted to mitral replacement, 21.4% to aortic replacement, 10.7% to tricuspid intervention and 21.4% to combined valvular surgery. Mean left ventricular ejection fraction (LVEF) by echocardiogram was 54.1 ± 12.4% and 55.2 ± 7.0% in groups B and A, respectively (p = 0.761). Group B had a more dilated left atrium (64.0 (51.5 – 73.5) ml/m² versus 37.0 (25.0 – 45.0) ml/m², p < 0.001), and higher pulmonary systolic pressure (38.5 (35.0 – 47.3) mmHg vs. 31.0 (26.5 – 34.0) mmHg, p < 0.001). All P in Group A underwent surgical ablation with bipolar radiofrequency, while only 17.9% of Group B were submitted to this type of ablation (p < 0.001). During hospitalization, 84.2% of Group A and 60.7% in Group B remained in sinus rhythm (SR), p = 0.084. All Group A P were discharged in SR vs. 71.4% of the P in group B (p = 0.011). Median follow-up time was 36.0 (22.0 – 50.0) vs. 26.0 (12.3 – 48.0) months in in Group A and Group B, respectively (p = 0.374). During follow-up, there were no statistically significant difference regarding maintenance of SR: 68.4% in Group A vs. 67.9% in Group B (p = 0.972) at 1 month, 89.5% vs. 67.9% (p = 0.071) at 6 months, and 84.2% vs. 67.9% (p = 0.182) at 1 year and 78.9% vs. 78.6% (p = 0.831) in long-term follow-up. Recurrence rate of AF was 26.3% in Group A and 39.3% in Group B, p = 0.357. Kaplan Meier test showed no statistically significant differences in terms of AF recurrence between both groups (Figure).
Conclusions: Despite the presence of structural cardiac disease and worst cardiac performance at the moment of the surgery, AF surgical ablation concomitant with correction of the valvular disease contributes to increase the rate of freedom from AF in the long-term follow-up.

SÁBADO, 20 ABRIL de 2024 | 11:00-12:00

Área de Posters 1 | Sessão de Posters 31 - Fibrilhação auricular: dos mecanismos ao tratamento

PO 204. DECODING THE COMPLEXITY OF ATRIAL FIBRILLATION: UNVEILING DISTINCT PHENOTYPES OF VOLTAGE AND CONDUCTION VELOCITY

Pedro Silva Cunha

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Low atrial voltage and slow conduction velocity have been associated with atrial fibrillation (AF), but their interaction and relative importance as early disease markers remain incompletely understood. Here, we aimed to elucidate the relationship between atrial voltage and conduction velocity in high-density electroanatomic maps from patients with AF.
Methods: High-density electroanatomic maps obtained during sinus rhythm from 52 patients with AF and five healthy controls were retrospectively analysed. The data acquired during AF ablation using the CARTO3 v7 system and a high-density catheter was analysed. Atrial voltage and conduction velocity maps were generated, and their correlations were statistically assessed globally. Subgroup analyses were performed based on clinically relevant factors, such as AF type, conduction velocity, and voltage levels. A cluster analysis was conducted to identify distinct phenotypes within the population, reflecting different patterns of conduction and voltage.
Results: There was a moderate positive correlation between atrial voltage and conduction velocity (r = 0.570). Three distinct phenotypes emerged: normal voltage/normal conduction velocity, normal voltage/low conduction velocity, and low voltage/low conduction velocity, suggesting different disease progression paths. Some patients with normal atrial

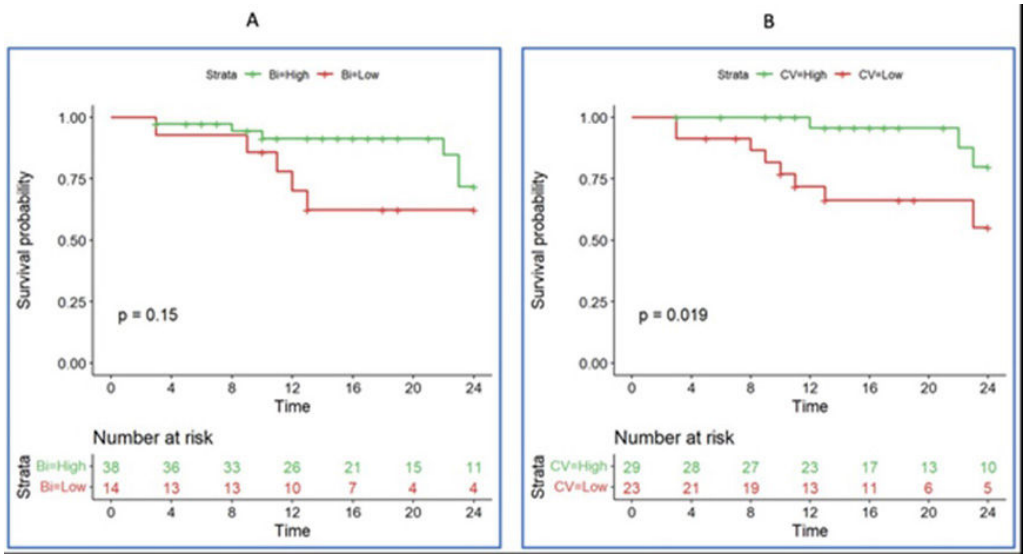


Figure PO 204

voltage exhibited low conduction velocities. Analysis between subgroups revealed significant differences in voltage (p = 0.0044) but not in conduction velocity (p = 0.42), with no significant differences between paroxysmal and persistent AF types. Lower atrial conduction velocity was identified as a significant predictor of arrhythmia recurrence at 12 and 24 months after AF ablation, surpassing the predictive potential of atrial voltage.

Conclusions: Atrial voltage and conduction velocity analysis uncovered distinct phenotypes with unique patterns of conduction and voltage. Lower atrial conduction velocity emerged as a significant predictor of AF recurrence, surpassing the predictive potential of atrial voltage. These findings emphasise the importance of considering conduction velocity and voltage in managing AF, offering potential insights for personalised strategies.

PO 205. ELECTRICAL CARDIOVERSION AND ATRIAL FIBRILLATION RECURRENCE: THE PROGNOSTIC VALUE OF P WAVE ANALYSIS

João Gouveia Fiúza, Vanda Devesa Neto, Gonçalo R. M. Ferreira, Mariana Duarte Almeida, Nuno Craveiro, Júlio Gil Pereira, António Costa

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio.

Introduction: Atrial fibrillation (AF) is the most common sustained cardiac arrythmia encountered in clinical practice. Rhythm control strategy is associated with quality-of-life improvement and symptom control. Electrical cardioversion is a widely used strategy for restoring sinus rhythm. However, recurrence post-electrical cardioversion remains a significant challenge. Understanding factors influencing AF recurrence is crucial for improving management strategies.

Objectives: To evaluate the correlation between P wave characteristics on 12-lead-electrocardiogram (ECG) following elective external electrical cardioversion (ECV) and the recurrence of AF within 6 months (6M) and 12 months (12M).

Methods: Retrospective study of 49 patients admitted for elective ECV in AF patients. Baseline characteristics, echocardiographic parameters, medication history and key ECG parameters (heart rate, PR interval, maximum and minimum P wave duration, P wave dispersion, and P wave morphology) were analyzed after successful ECV. Chi-square and Mann-Whitney U were used for comparison between groups. Discrimination for AF recurrence at 12 months was assessed with the ROC curve.

Results: Mean age was 62 ± 8 years; 67.3% were men. Mean left ventricle ejection fraction was 53 ± 13%. Seven patients had severe left atrium dilatation (14.3%). At 6 months 11 patients (22.4%) had AF recurrence and

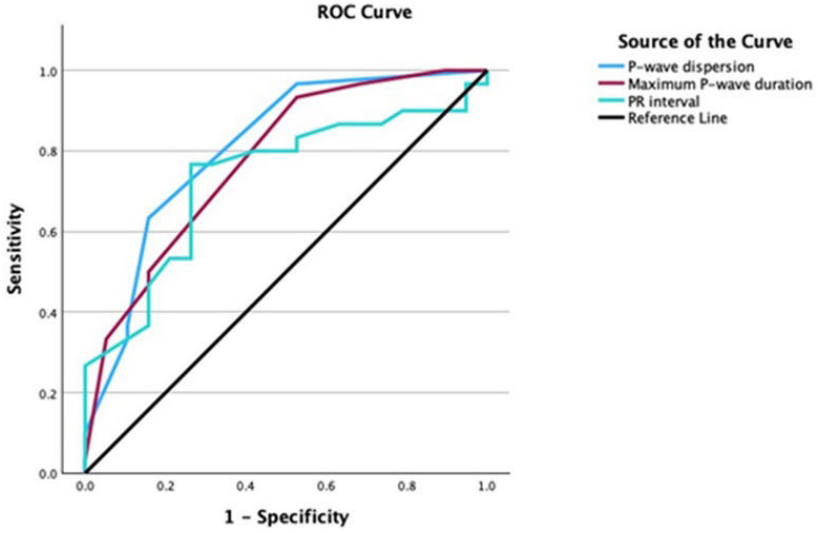


Figure PO 205

at 12 months 30 patients (61.2%) had AF recurrence. At 12M, greater P wave maximum duration (135 ± 23 ms vs. 106 ± 28 ms, p < 0.01), greater PR interval (197 ± 45 ms vs. 167 ± 22 ms, p < 0.01) and greater P wave dispersion (61 ± 21 ms vs. 36 ± 20 ms, p < 0.01) were associated with AF recurrence. At 6M PR interval duration (205 ± 38 ms vs. 180 ± 39 ms, p = 0.02) and P wave dispersion (64 ± 23 ms vs. 47 ± 23 ms, p = 0.04). When comparing P wave dispersion, P wave maximum duration and PR interval they were statistically significative and similar in predicting recurrence of AF at 12M (AUC 0.81, p < 0.01; AUC 0.778, p < 0.01; AUC 0.732, p < 0.01, respectively).

Conclusions: P wave characteristics, especially dispersion and maximum duration, are a readily available way to predict AF recurrence after successful ECV. Evaluation of these simple noninvasive ECG markers for atrial remodeling could assist in identifying vulnerable patients at a heightened risk and would enable the customization of management strategies based on individual patient profiles.

PO 206. THE NOWADAYS IMPACT OF THE PRESENCE OF ATRIAL FIBRILLATION IN THE PROGNOSIS OF PATIENTS WITH ACUTE CORONARY SYNDROME

Sofia Andraz, Joana Massa Pereira, Hugo Costa, Miguel Espírito Santo, Lucas Hamann, Pedro de Azevedo, Jorge Mimoso

Centro Hospitalar e Universitário do Algarve, EPE/Hospital de Faro.

Introduction: Atrial fibrillation (AF) shares multiple risk factors with acute coronary syndrome (ACS) and therefore it is frequently found in these patients. Studies report a worse prognosis when compared with patients in sinus rhythm, however its impact on outcome over time is not yet well established.

Objectives: Determine the effect of AF in cardiovascular (CV) outcome during the follow-up of patients who had suffered an ACS comparing with patients without the diagnosis of this arrhythmia.

Table 1: Baseline characteristics and outcomes of patients with ACS taking into account the presence or absence of AF;

	Patients with Arial Fbrillation (n=65, 13,8%)	Patients without Arial Fbrillation (n=405, 86,0%)	Total n=470	*p* Value
Gender				
Female	24 (36,9%)	103 (81,1%)	127 (27,1%)	
Male	41 (63,1%)	301 (74,5%)	342 (72,9%)	0,054
Age	74,5 ± 9,2	63,3 ±12,4	64.8±12,6	**< 0,001**
***Diabetes Mellitus* Treatment**				
NIT	22 (33,8%)	112 (27,8%)	134 (28,6%)	
IT	5 (7,7%)	22 (81,5%)	27 (5,8%)	0,375
Dyslipidemia	56 (86,2%)	316 (78,4%)	371 (79,4%)	0,151
Arterial Hipertension	58 (89,2%)	254 (63,5%)	312 (67,1%)	**< 0,001**
Smoking *Status*				
Active Smoker	9 (13,8%)	164 (40,9%)	173 (37,1%)	
Ex-smoker	10 (15,4%)	81 (20,2%)	91 (19,5%)	**< 0,001**
Family History of Coronary				
Disease	1 (1,5%)	28 (7,0%)	29 (6,3%)	0,102
Atrial Flutter	1 (1,3%)	2 (1,3%)	6 (1,3%)	1,000
Type of Event				
STEMI	14 (21,5%)	156 (38,7%)	170 (36,3%)	
NSTEMI	39 (60,0%)	195 (48,4%)	234 (50,0%)	
MINOCA	8 (12,3%)	25 (6,2%)	33 (7,1%)	
Unstable Angina	0 (0,0%)	1 (0,2%)	1 (0,2%)	
Subacute STEMI	4 (6,2%)	22 (5,5%)	26 (5,6%)	
Subacute NSTEMI	0 (0,0%)	4 (1,0%)	4 (0,9%)	0,058
Antiplatelet Therapy				
ASA + Ticagrelor	2 (3,1%)	302 (74,9%)	304 (65,0%)	
ASA + Clopidogrel	35 (53,8%)	75 (18,6%)	110 (23,5%)	
Triflusal + Clopidogrel	1 (1,5%)	1 (0,2%)	2 (0,4%)	
ASA	5 (7,7%)	11 (2,7%)	16 (3,4%)	
Triflusal	0 (0,6%)	1 (0,2%)	1 (0,2%)	
Clopidogrel	7 (1,7%)	15 (23,1%)	22 (4,7%)	**< 0.001**
Anticoagulant Therapy				
Enoxaparina	2 (3,1%)	2 (0,5%)	4 (0,9%)	
Fondaparinux	0 (0,0%)	2 (0,5%)	2 (0,4%)	
Warfarin	2 (3,1%)	8 (2,0%)	10 (2,1%)	
Acenocoumarol	0 (0,0%)	1 (0,2%)	1 (0,2%)	
Apixaban	34 (52,3%)	4 (1,0%)	37 (7,9%)	
Edoxaban	10 (15,4%)	3 (0,7%)	13 (2,8%)	
Dabigatran	12 (18,5%)	2 (0,5%)	14 (3,0%)	
Rivaroxaban	5 (7,7%)	1 (0,2%)	6 (1,3%)	**0,009**
Hemorragic Risk				
High	41 (63,1%)	91 (22,6%)	132 (28,3%)	
Low	24 (36,9%)	311 (77,4%)	335 (71,7%)	**0,011**
Hemorragic Events	9 (13,8%)	53 (13,3%)	62 (13,4%)	0,711
Unplanned Revascularization	2 (3,1%)	24 (6,0%)	26 (5,6%)	0,559
Composite Outcome				
CV Hospitalization	21 (32,3%)	55 (13,6%)	76 (16,2%)	**< 0,001**
CV Death				
Unplanned PCI				

Figure PO 206

Methods: Observational and retrospective study that included 470 patients admitted with ACS diagnosis and who underwent percutaneous coronary intervention (PCI) between January 2020 and December 2021 with a minimum follow-up of 23 months. Demographic characteristics of the sample, cardiovascular risk factors, as well as the type of ACS and therapy used were collected. The outcome studied was hospitalization due to cardiovascular (CV) causes, or unplanned PCI, or CV death. Independent predictors were obtained using multivariate logistic regression.
Results: A total of 470 patients were obtained, 65 (13.8%) of these were diagnosed with AF at admission or during the hospitalization and 63.1% were males. AF patients were older (74.5 ± 9.2 years), more often had concomitant diagnosis of arterial hypertension (HT) (89.2 vs. 63.5%, p < 0.001) and less active smokers (13.8% vs. 40.9%). In terms of anti-platelet therapy, association of aspirin and clopidogrel was the more frequent in AF group (53.8% vs. 18.6%, p < 0.001) as well as the use of apixaban (52.3 vs. 1.0%, p = 0.009) with a higher hemorrhagic risk (63.1 vs. 22.6%, p = 0.011). When the occurrence of composite outcome was evaluated, it seemed more frequent in AF group (32.3% vs. 13.6%, p = 0.001). In multivariate analyses AF was independent predictor of the occurrence of adverse outcomes (OR = 2.01, 95%CI 1.05-3.83, p = 0.034).
Conclusions: AF diagnosed at admission or during hospitalization independently predicted, in our sample, poorer outcomes in patients with ACS.

PO 207. USE OF SMARTWATCHES FOR ATRIAL FIBRILLATION DETECTION: A SYSTEMATIC REVIEW

Inês Macedo Conde, Rodrigo Silva, Mónica Dias, Sofia Fernandes, Carla Ferreira, Filipe Vilela, Vitor Hugo Pereira

Hospital de Braga, EPE.

Introduction: Atrial fibrillation (AF) significantly increases the risk of stroke and other systemic embolisms. However, it often goes undiagnosed due to its asymptomatic nature. Smartwatches may enhance AF detection by facilitating long-term, noninvasive monitoring.
Objectives: Perform a systematic review to assess the current evidence on the benefits of using smartwatches for the detection and monitoring of atrial fibrillation.
Methods: Seven electronic databases (PubMed, Science Direct, Scopus, EMBASE, Web of Science, OVID and TRIP) were searched from inception to January 2023, using the keywords: «(Atrial fibrillation OR auricular fibrillation) AND smartwatch». Human studies published until January 2023, written in English, in asymptomatic patients, and those as with diagnosis or signs and symptoms of atrial fibrillation, of both genders, any age, ethnicity or nationality and with or without cardiac comorbidities were included. The data were extracted, and a descriptive synthesis of the results was performed.
Results: A total of 8 studies on atrial fibrillation detection were analyzed, measuring the diagnostic accuracy of smartwatches in 1764 participants. The signals analyzed by the smartwatches were based on photoplethysmography (PPG). The overall sensitivity, specificity and accuracy of smartwatches for detecting atrial fibrillation were 94.8%, 94.9% and 94.3%, respectively. The positive predictive value (PPV) and negative predictive value (NPV) for the detection of atrial fibrillation were 90.2% and 96.6%, respectively.
Conclusions: The current diagnostic accuracy of smartwatches for AF detection is high. While the innovative push of digital devices in healthcare continues to gain momentum for diagnosis, more information is needed on how it will impact prognosis.

PO 208. BIOPHYSICAL PARAMETERS OF PULMONARY VEIN ISOLATION WITH VERY HIGH-POWER SHORT-DURATION COMPARED TO CONVENTIONAL RADIOFREQUENCY ABLATION GUIDED BY ABLATION INDEX

Fabiana Silva Duarte[1], Rafael Silva-Teixeira[2], João Gonçalves Almeida[2], Paulo Fonseca[2], Marco Oliveira[2], Helena Gonçalves[2], João Primo[2], Ricardo Fontes-Carvalho[2]

[1]Hospital do Divino Espírito Santo, Ponta Delgada. [2]Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE.

Introduction: Conventional strategies for pulmonary vein isolation (PVI) in atrial fibrillation (AF) involves point-by-point radiofrequency (RF) lesions with contact force-guided catheters. The very high-power short-duration (vHPSD) ablation uses a temperature-guided catheter at 90W for ≤ 4 seconds, aiming to reduce procedure time while maintaining efficacy. However, the specific procedural biophysical parameters contributing to successful atrial lesions remains unexplored.
Objectives: To compare vHPSD ablation parameters with conventional RF ablation guided by ablation index (AI).
Methods: Retrospective single-center analysis included 88 patients (pts) scheduled for radiofrequency PVI since January 2022, with full documentation of technical aspects. Patients were divided according to power output used into AI-guided 35W (low-power; 13.6%) vs. AI-guided 50W (high-power; 9.1%) vs. vHPSD mode (77.3%). Energy applications were analyzed by left atrium ablation box localization: postero-inferior wall (PIW) and anterior wall and roof (AW/R).
Results: In our cohort, median age was 61 years (IQR 51.9 – 67), with 29.5% female patients, a median body mass index of 25.59 kg/m^2 and 78.5% with paroxysmal AF. No difference in baseline characteristics were observed between groups. Procedural data indicated a total mean procedure time of 91.9 ± 10.6 min (p = 0.274), with first-pass isolation ranging from 58% to 100% (p = 0.15). Individual lesions in vHPSD group had significantly shorter duration compared to conventional groups, both in PIW (17.7 ± 6 vs. 11.1 ± 3.3 vs. 4 ± 0.2 seconds, p < 0.001) and AW/R (23.6 ± 9.6 vs. 15.4 ± 5 vs. 4 ± 0.3s, p < 0.001). Average contact force gradually increased with higher power delivery and shorter applications (12 ± 5 vs. 14 ± 5 vs. 15 ± 8 g, p < 0.001). Maximum temperature achieved during ablation also increased with higher power delivery (31 ± 10 vs. 45 ± 6 vs. 50 ± 4, p < 0.001). In PIW ablation, impedance drop as a continuous variable was significantly superior in vHPSD (10 ± 3 Ω) compared to low and moderate power applications (8 ± 4 vs. 10 ± 5 Ω, p < 0.001). Proportion of lesions with impedance drop > 10 Ω was higher in 50W and 90W groups (36% and 32%) vs. 35W group (21%, p < 0.001).
Conclusions: Higher power PVI allows for faster energy delivery with consequent reduction in ablation times. Shorter applications also minimize catheter instability, resulting in higher average contact force. The new generation temperature-guided catheter may therefore produce more effective lesions, as evaluated by higher rates of significant impedance drop, particularly in postero-inferior wall.

PO 209. POSTERIOR WALL ISOLATION IN PERSISTENT ATRIAL FIBRILLATION: PULSED-FIELD ABLATION VS. RADIOFREQUENCY

Ana Rita Bello, Gustavo Rodrigues, Daniel A. Gomes, Daniel Matos, João Carmo, Francisco Moscoso Costa, Pedro Galvão Santos, Pedro Carmo, Diogo Cavaco, Francisco Belo Morgado, Pedro Pulido Adragão

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Pulmonary vein isolation (PVI) is the mainstem of atrial fibrillation (AF) ablation. However, in persistent forms of AF the success rate is lower and additional ablation lesions have failed to improve it. Recently pulsed-field ablation (PFA) was added to the therapeutic tools for AF ablation, allowing an easier and faster posterior wall isolation (PWI). We aimed to determine the efficacy of PFA for PWI and to compare its results with radiofrequency (RF) ablation.
Methods: Single-center retrospective study including patients with persistent AF undergoing both PVI and PWI, guided by electroanatomical mapping (CARTO). PFA was performed using Farapulse (Boston Scientific) and radiofrequency using SmartTouch or QDOT catheter (Biosense Webster). The outcome of interest was AF recurrence during follow-up (FUP).
Results: A total of 37 patients were included (mean age 64 ± 11 years, 70% male). PWI was performed using PFA in 19 patients (51%) and radiofrequency in the remaining. There were no significant differences regarding baseline clinical characteristics. Acute PWI was demonstrated in all cases. During a median FUP of 10 [IQR 2-18] months, 8 patients (21.6%) had AF recurrence. There were no significant differences between groups regarding the arrhythmic outcome (AF recurrence in 26.3% PFA vs. 16.7% RF, p = 0.476).

Conclusions: Acute PVI plus PWI was achieved in all patients. During FUP, most patients were in sinus rhythm. The recurrence rate was similar, regardless of the type of energy used.

SÁBADO, 20 ABRIL de 2024 | 11:00-12:00

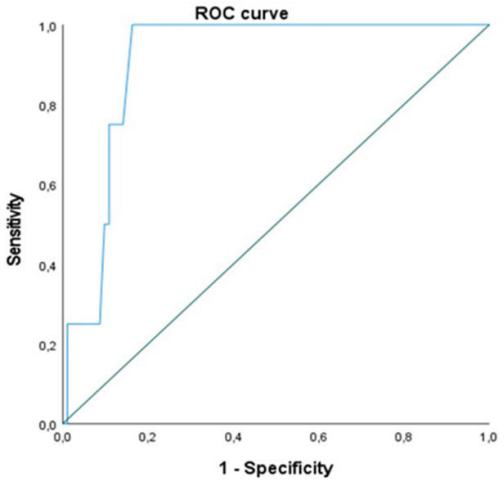
Área de Posters 2 | Sessão de Posters 32 - MINOCA

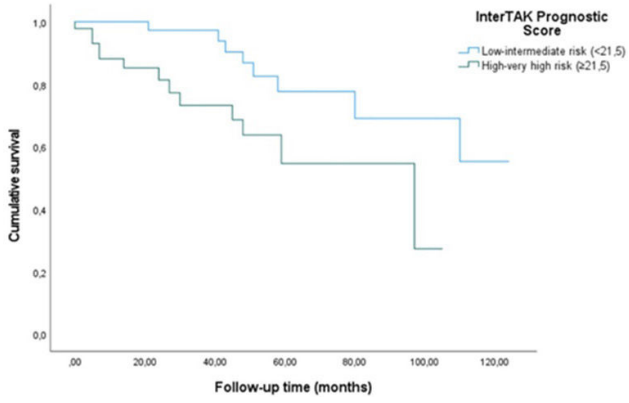
PO 210. INTERTAK PROGNOSTIC SCORE – A USEFUL TOOL TO PREDICT MORTALITY IN TAKOTSUBO SYNDROME?

Isabel Martins Moreira, Catarina Ribeiro Carvalho, Marta Catarina Bernardo, Luís Sousa Azevedo, Pedro Rocha Carvalho, Pedro Magalhães, Catarina Ferreira, Inês Silveira, Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introduction: InterTAK Prognostic Score (ITPS) is a risk stratification score designed to predict short- and long-term mortality in Takotsubo syndrome (TTS) patients. However, there are no papers regarding its external validation.
Objectives: To test the applicability of ITPS in predicting in-hospital and long-term mortality in a different cohort of TTS patients.





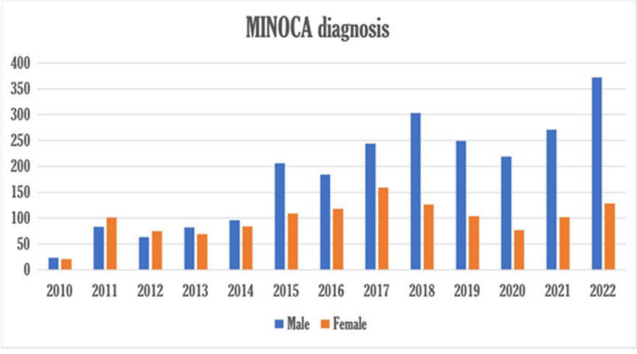
Methods: We performed a retrospective analysis of patients admitted with TTS in our centre in the last 15 years. Patients' baseline characteristics, clinical management and outcome data were collected. ITPS at hospital admission was calculated using the sum of the following parameters: age > 70 years (8 points), male sex (6 points), diabetes mellitus (6 points), systolic blood pressure (SBP) < 119 mmHg (7 points), heart rate (HR) > 94 bpm (4 points), triggering factors (secondary to neurologic disorders – 15 points, physical trigger, medical condition or procedure – 9 points; no identifiable trigger – 3 points) and left ventricular ejection fraction (LVEF) ≤ 45% (6 points). The score's capacity to predict in-hospital and long-term mortality was analysed using ROC curves and their respective area under the curve (AUC).
Results: A total of 121 patients (86% females, mean age of 71 ± 12 years) were included in our study. Overall, 84.9% of patients presented with typical TTS type and mean LVEF at admission was 41.5 ± 10.7%. Mean SBP and HR on admission were 130 ± 27 mmHg and 82 ± 18 bpm. The prevalence of diabetes mellitus and neurologic disorder was 26.4% and 12.4%, respectively. An emotional trigger was identified in 32.2% of TTS patients, while 33.9% had a preceding physical trigger and the remaining patients (33.9%) had no identifiable triggering factors. In-hospital mortality rate was 3.3% and 1-year follow-up mortality was 4.9%. In ROC curve analysis, ITPS exhibited an acceptable predictive power for in-hospital mortality (AUC: 0.773, p = 0.044 and 95% IC 0.627-0.919) and an excellent predictive power for 1-year mortality in TTS population (AUC: 0.909, p = 0.006, 95% IC 0.838-0.980). The optimal ITPS cut-off in our study was 21.5 (85.7% sensitivity and 61.8% specificity). Using a Kaplan-Meyer survival analysis, mortality was significantly higher in patients with InterTAK prognostic score ≥ 21.5 (log-rank p = 0.010).
Conclusions: In our study, ITPS displayed excellent predictive power for 1-year mortality in TTS patients and acceptable predictive power for in-hospital mortality. Further studies are needed to establish ITPS as a widespread risk stratification score.

PO 211. THE PORTUGUESE MINOCA PATIENTS: INSIGHTS FROM A MULTICENTRE NATIONAL REGISTRY ANALYSIS

Carolina Miguel Gonçalves[1], Margarida Cabral[1], Mariana Carvalho[1], Adriana Vazão[1], André Martins[1], Fátima Saraiva[1], João Morais[1], em nome dos investigadores do Registo de Síndromes Coronárias Agudas da Sociedade Portuguesa de Cardiologia[2]

[1]Centro Hospitalar de Leiria/Hospital de Santo André. [2]CNCDC.

Introduction: Myocardial infarction with nonobstructive coronary arteries (MINOCA) is defined by clinical symptoms compatible with acute myocardial infarction (AMI) but without significant stenosis in a major epicardial artery. Several gaps in evidence for MINOCA exist, particularly in diagnosis, management, and outcomes.
Objectives: To describe clinical characteristics and prognosis of Portuguese MINOCA patients.
Methods: Retrospective multicentre analysis of patients clinically suspected of MINOCA included in the Portuguese Registry on Acute Coronary Syndromes between 2010 and 2022. Baseline characteristics/findings, treatment and prognosis were analised.



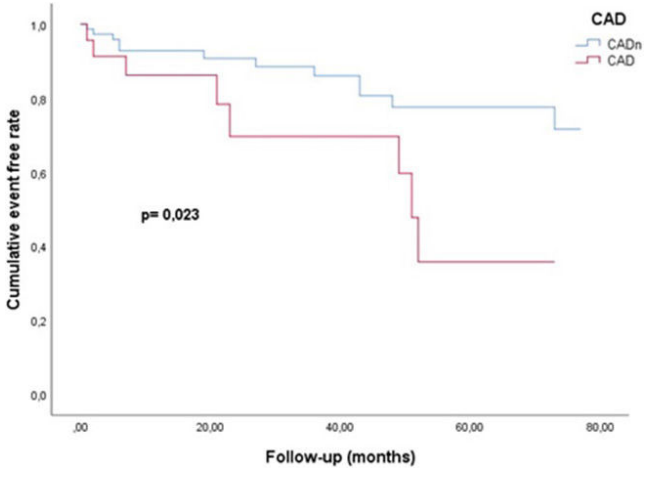
Results: The authors studied 3668 patients (9% of the total) with a mean age of 65 ± 13 years, of whom 65% were male. The diagnosis of MINOCA appeared to be increasing in Portugal, especially in men, despite a decrease in 2020. A high frequency of cardiovascular risk factors was observed, including high blood pressure (67%), dyslipidemia (55%), diabetes (27%), and smoking (25%). The most common symptom was chest pain (93%), and the admission diagnoses were non-ST-segment myocardial infarction (51%) and ST-segment myocardial infarction (48%) in Killip class 1 (88%). A composite of in-hospital complications occurred in 10%, and one-year mortality occurred in 2.9%. After multivariate analysis, age over 75 years (OR 2.889, 95%CI 1.131-7.378, p = 0.027), Killip class above 1 (OR 3.920, 95%CI 1.59-9.66, p = 0.003), and diuretics (OR 11.119, 95%CI 4.280-28.884, p < 0.001) remained as independent predictors of in-hospital major adverse cardiac events.
Conclusions: This study highlights an increasing trend in MINOCA diagnoses in Portugal, possibly with an underrepresentation of women. Although some studies indicate better outcomes compared to AMI due to coronary artery disease, our research identified in-hospital complications and 1-year outcomes. Further investigation is crucial to advance our understanding and refine treatment options for this condition.

PO 212. COEXISTENCE AND PROGNOSTIC IMPACT OF CORONARY ARTERY DISEASE IN TAKOTSUBO SYNDROME

Marta Catarina Bernardo, Catarina Ribeiro Carvalho, Isabel Moreira, Luís Sousa Azevedo, Pedro Rocha Carvalho, Pedro Magalhães, Sofia Silva Carvalho, Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introduction: Takotsubo Syndrome (TTS) is characterized by regional wall motion abnormalities in the absence of significant epicardial coronary artery disease (CAD). However, the coexistence of CAD in TTS patients is not uncommon, and its prognostic significance remains uncertain.
Objectives: Evaluate the characteristics, in-hospital evolution and long-term prognosis in patients (pts) admitted with TTS with CAD comparing to the others.
Methods: We performed a retrospective study of pts admitted in a single centre between 2008 e 2023 with the diagnosis of TTS. Pts were categorized into two groups: those with CAD (coronary artery stenosis < 50%) and those without CAD (CADn). Major adverse cardiovascular events (MACCE) included heart failure hospitalization, cardiovascular mortality, stroke, and TTS recurrence.



Results: We included 114 pts, 86% females, median age 72.50 (IQR 63.0-79.25) years. CAD group included 26 pts and CADn 88 pts. CAD group pts were significantly older (mean age of 75.81 ± 10.32 versus 68.93 ± 12.32, p = 0.011) and had a higher male prevalence (30.8% versus 9.1%, p = 0.005). As cardiovascular risk factors, CAD pts had a higher prevalence of dyslipidemia (58.0% vs. 80.8%, p = 0.034) and diabetes mellitus (46.2% vs. 21.6%, p = 0.013). Psychiatric disease was more prevalent in CADn group (28.4% versus 7.7%, p = 0.029). No significant differences were found in clinical presentation, electrocardiogram, pro-BNP, troponin levels and left ventricular ejection fraction (LVEF) at admission (mean 39.40 ± 9.70 in CAD group versus 41.68 ± 11.02 in CADn group, p = 0.33) or pre-discharge (CAD group- 51.38 ± 12.77 vs. CADn group- 51.96 ± 10.60, p = 0.84). During hospitalization, CAD group had a higher incidence of intra-hospital complications, defined as heart failure, stroke and death (35.0% vs. 16.2%, p = 0.023) and a greater use of diuretic therapy (73.1% versus 45.3% (p = 0.013)). At discharge, there was more prescription of furosemide in CAD group (52.0% vs. 28.2%, p = 0.027). No other differences in the in-hospital medication and at discharge between the two groups. During a mean follow-up of 32.04 ± 25.35 months, CAD group had a higher incidence of MACCE (34.78% vs. 16.0%, log rank p = 0.023). In a multivariate analysis, after adjusting for possible confounders, CAD was an independent predictor of MACE with a HR 3.19 (95%CI: 1.14-8.94, p = 0.028).
Conclusions: The presence of concomitant coronary artery disease is frequent, more prevalent in older pts, males and in those with cardiovascular risk factors. CAD is associated with worse in-hospital and long-term prognosis. This raises the hypothesis that coronary angiography not only has a diagnostic but a prognostic role in TTS patients.

PO 213. CARDIAC MAGNETIC RESONANCE ACCESS AND CLINICAL RELEVANCE IN MINOCA: INSIGHTS FROM A TERTIARY CENTER EXPERIENCE

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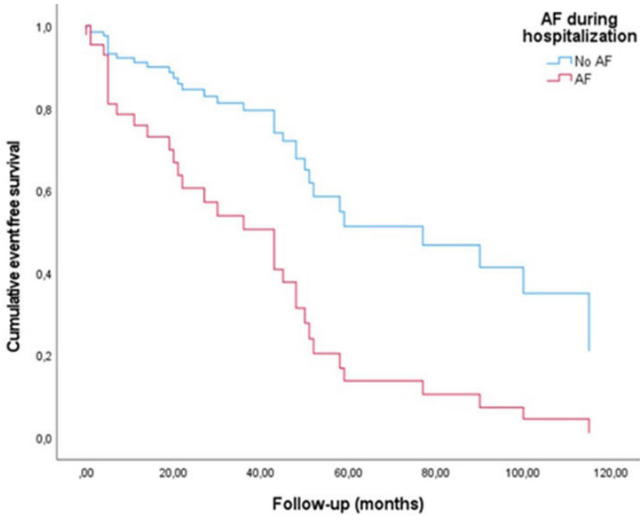
Introduction: Myocardial Infarction with Non-Obstructive Coronary Arteries (MINOCA) is characterized by clinical manifestations of myocardial infarction symptoms, substantial troponin elevation, and no significant coronary artery obstruction (greather than or equal to 50%). It is considered a working diagnosis until further assessment clarifies the troponin elevation cause. Despite not being universally accessible, Cardiac Magnetic Resonance (CMR) is strongly recommended per European and American clinical guidelines, ideally within 2 weeks of event, to refine diagnosis and improve therapeutic strategies. The aim of this study was to access CMR's clinical utility in MINOCA-diagnosed patients during their hospitalization.
Methods: Retrospective data from June 2021 to May 2023 were collected for chest pain admissions in Cardiac Intensive Care Unit with elevated troponin levels suggestive of myocardial infarction, and absence of significant coronary artery obstruction. Demographics, troponin levels, CMR details, changes in diagnosis and management, and outcomes were gathered.
Results: A cohort of 58 patients, 67.2% being females, was analyzed. The mean age was 65.8 ± 15.9 years old. The average hospital stay was 7.6 ± 4.6 days. The median maximum troponin level was 3,957.5 ng/L (interquartile range: 7,555.8 ng/dL). Of these patients, 22.4% underwent in-hospital CMR, while 34.5% underwent outpatient CMR, resulting in a cumulative utilization rate of 56.9% (n = 33). The median time to CMR was 14 days (interquartile range: 36.5 days), with in-hospital CMR having a shorter duration (median: 8.0 days, interquartile range: 4.0 days) compared to outpatient CMR (median: 38.5 days, interquartile range: 45.1 days). This difference was statistically significant (U = 20.000, p < 0.001). CMR was performed within two weeks post-event in 51.5% of cases. The results lead to diagnostic and therapeutic strategies changes for 48.5% and 57.6% of patients, respectively. Undergoing CMR scan was significantly associated with a reduced likelihood of readmission due to cardiovascular causes (χ^2 = 4.664, p = 0.031) and a lower 6-month mortality rate (χ^2 = 5.671, p = 0.017).
Conclusions: The undeniable clinical value of CMR, as evidenced by substantial alterations in patient management, highlights potential suboptimal care for those not undergoing CMR. The reliance on external resources in our hospital underscores the imperative need to establish infrastructure conducive to increased CMR utilization, encompassing requisite equipment and adequately trained personnel.

PO 214. IMPACT OF NEW-ONSET ATRIAL FIBRILLATION ON PROGNOSIS IN TAKOTSUBO SYNDROME

Isabel Martins Moreira, Catarina Ribeiro Carvalho,
Marta Catarina Bernardo, Luís Sousa Azevedo, Pedro Rocha Carvalho,
Pedro Magalhães, Catarina Ferreira, Inês Silveira, Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introduction: Although recent studies suggest that AF is a poor outcome predictor in Takotsubo Syndrome (TTS), the association between new-onset AF during hospitalization and adverse events in TTS remains unclear.
Objectives: This study aims to investigate the prevalence, clinical correlates, and prognostic impact of new-onset AF in TTS patients.
Methods: Consecutive patients admitted in our centre with TTS in the last 15 years were retrospectively evaluated. Patients with previous history of AF were excluded. Patients were categorized based on the presence or absence of new-onset AF during hospitalization. Baseline characteristics, clinical management and outcomes were compared between the two groups. Association between new-onset AF in TTS patients and major adverse cardiovascular and cerebrovascular events (MACCE), including death, cerebrovascular events, myocardial infarction, heart failure and recurrency, was analyzed using multivariate Cox regression model.
Results: Of the 109 included patients, 12 (11.1%) developed new-onset AF. Patients with AF were less frequently female (66.7% vs. 88.5%, p = 0.039). There were no significant differences in age (76 ± 10 vs. 70 ± 12, p = 0.083) and preexisting comorbidities, except for arterial hypertension (91.7% vs. 59.4%, p = 0.03) between the 2 groups. Incidence of physical triggers (p = 0,997) and typical form (p = 0.686) were also similar and LVEF at admission was not significantly lower in AF group (38.4 ± 11.3 vs. 41.2 ± 10.5%, p = 0.401). Patients with AF had longer hospital stays (5 ± 4 vs. 8 ± 5 days, p = 0.004), but there were no significant differences in in-hospital mortality (8.3% vs. 2.1%, p = 0.300) and complications between the 2 groups, including cerebrovascular events (8.3% vs. 2.1% p = 0.300). Prescribed medication during hospitalization and at discharge was similar, except for anticoagulant agents. At discharge, LVEF showed no significant difference between groups (47.7 ± 13.5% vs. 52.6 ± 10.9% p = 0.068), but non-AF patients exhibited a higher incidence of LVEF recovery (59.5% vs. 27.3%, p = 0.044). In a multivariate regression analysis, after adjusting for possible confounders, new-onset AF was an independent predictor of MACCE (HR 2.97, 95%CI 1.124-7.861, p = 0.028).



Conclusions: In our study, new-onset AF during TTS hospitalization was associated with higher incidence of MACCE, underscoring the prognostic significance of AF in TTS. The potential benefits of antiarrhythmics, cardioversion and catheter ablation in TTS patients with AF warrant investigation in future studies.

PO 215. CAN WE PREDICT IN-HOSPITAL COMPLICATIONS IN TAKOTSUBO SYNDROME?

Marta Catarina Bernardo, Catarina Ribeiro Carvalho, Isabel Moreira,
Luís Sousa Azevedo, Pedro Rocha Carvalho, Pedro Magalhães,
Sofia Silva Carvalho, Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introduction: Takotsubo syndrome (TTS) is characterized by transient left ventricular systolic dysfunction in the absence of obstructive coronary disease. Several studies have demonstrated a substantial incidence of life-threatening complications in the acute phase of TTS, with mortality ranging from 1% to 8%.
Objectives: To evaluate short term outcome and predictors of in-hospital complications in a population of patients (pts) admitted with TTS.
Methods: We performed a retrospective study of pts admitted to a single centre with diagnosis of TTS between 2008-2023. In-hospital complications included heart failure during hospitalization, stroke and death. We divided the pts into two groups: Group A- Pts who experienced complications during hospitalization, Group B- Pts without complications during hospitalization.
Results: We included 121 pts, mean age 71.0 ± 12.3 years, 86.0% females. The median duration of hospital stay was 5.0 (IQR 3.5-7.0) days. 37.2% of the pts had in-hospital complications. Regarding cardiovascular risk factors, the two groups had similar rates of dyslipidemia (p = 0.33), hypertension (0 = 0.29) and obesity (p = 0.28) with a higher prevalence of diabetes in group A (37.8% vs. 19.7%, p = 0.03). No differences in the prevalence of chronic kidney disease (p = 0.92), previous heart failure (p = 0.89) or atrial fibrillation (p = 0.94). We observed more prevalence of psychiatric disease in group B (32.9% vs. 8.9%, p = 0.003). Concerning clinical presentation and electrocardiogram at admission we observed no differences between the groups, except for heart rate (88.0 (IQR 72-100) bpm in group A vs. 78.0 (IQR 70.0-89.0) bpm in group B, p = 0.041). Group A had a significantly lower left ventricular ejection fraction (35.4% ± 8.1 vs. 44.3% ± 11.2 p < 0.005), presented more with right heart dysfunction (9.1% v 1.3%, p = 0.04) and with an echocardiographic pattern of "typical" TTS (97.7% vs. 76.3%, p = 0.002). Analytically, group A had higher pro-BNP at admission (2204.5 (IQR 721.0-5,085.8) pg/mL vs. 5868.0 (IQR 2,462.5-13,613.3) pg/mL, p < 0.005) and higher peak troponin (0.59 (IQR 0.32-0.99) ng/mL vs. 0.35 (IQR 0.2-0.7) ng/mL, p = 0.015). The presence of concomitant coronary artery disease was higher in group A (34.2% vs. 16.4%, p = 0.033). In a multivariate analysis, the typical type of TTS (HR 20.43, 95%CI 1.99-209.66, p = 0.011), heart rate (HR 1.02, 95%CI 1.002-1.005, p = 0.034) and troponin peak (HR 2.65, 95%CI 1.09- 6.44, p = 0.032) showed to be independent predictors of in-hospital complications.
Conclusions: The rates of in-hospital adverse cardiovascular events are not trivial in pts admitted with TTK, so it's important to identify pts with high-risk characteristics at admission to allow intensive monitoring and careful follow-up of these pts.

SÁBADO, 20 ABRIL de 2024 | 11:00-12:00

Área de Posters 3 | Sessão de Posters 33 - Insuficiência cardíaca - Avaliação de exercício

PO 216. CORRELATING CARDIOPULMONARY EXERCISE TESTING AND RIGHT HEART CATHETERIZATION PARAMETERS IN ADVANCED HEART FAILURE: INSIGHTS FOR PATIENT EVALUATION

Ana Rita Teixeira, Bárbara Lacerda Teixeira, João Ferreira Reis,
Pedro Garcia Brás, António Valentim Gonçalves, Rita Ilhão Moreira,
Tiago Pereira-da-Silva, Ana Teresa Timóteo, Sofia Silva, Rui Cruz Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

CPET parameters	**Mean ± SD**
Peak VO_2 (ml/kg/min)	16.9±6.3
Peak VO_2 (%)	53.2±18.6
VE/VCO_2 slope	37.4±12.1
Peak RER	1.07±0.11
HRR1	18.8±13.8
AT time (min)	5.8±3.7
VO_2 AT (ml/kg/min)	12.0±4.4
$PetCO_2$ AT (mmHg)	35.5±6.6
Peak $PetCO_2$ (mmHg)	32.8±6.7
OUES	1.9±1.3
Maximal O_2 pulse	9.3±3.7
Optimal point	32.3±8.6
Duration (min)	9.1±4.4
CPET parameters with prognostic value	**N (%)**
Peak $VO_2 \leq 12$ ml/kg/min	22 (20)
Peak $VO_2 \leq 10$ ml/kg/min	10 (9.1)
Peak $VO_2 < 50$ %	55 (50)
VE/VCO_2 slope > 35	55 (50)
RHC parameters	**Mean ± SD**
sPAP (mmHg)	42.7±17.0
mPAP (mmHg)	27.1±12.5
dPAP (mmHg)	17.8±8.1
RA pressure (mmHg)	8.6±6.2
CO (L/min)	5.1±2.3
CI ($L/min/m^2$)	2.7±1.4
PVR (WU)	2.5±2.3
PAPi	4.8±4.1
PCWP (mmHg)	21.8±6.0

Table 1 - The characteristics of non-invasive and invasive parameters in HFrEF patients.

AT: anaerobic threshold; CI: cardiac index; CO: cardiac output; CPET: cardiopulmonary exercise test; dPAP: diastolic pulmonary artery pressure; HRR: heart rate recovery; mPAP: mean pulmonary artery pressure; OUES: oxygen uptake efficiency slope; PAPi: pulmonary artery pulsatility index; peak VO2: peak O2 consumption; PCWP: pulmonary capillary wedge pressure; RA: right atrium; RER: respiratory exchange ratio; RHC: right heart catheterization; SD: standard deviation; sPAP: systolic pulmonary artery pressure.

Figure PO 216

Introduction: Patients (pts) with severe heart failure (HF) undergoing assessment for heart transplant (HT) and/or mechanical circulatory support (MCS) require right heart catheterization (RHC). Nevertheless, non-invasive methods like cardiopulmonary exercise testing (CPET) play a crucial complementary role in risk stratification for HF pts.

Objectives: To assess potential correlations between CPET and RHC parameters in HF with reduced ejection fraction (HFrEF) pts.

Methods: This retrospective single-center analysis includes consecutive HFrEF pts who underwent both CPET and RHC. All were referred for assessment by the HF team with possible indication for HT or MCS. Linear correlations were determined by measuring the Pearson's correlation coefficient.

Results: A total of 110 pts were enrolled, with a mean age of 51 ± 12 years and 81.8% males. The majority was symptomatic, with 47.3% in NYHA class ≥ 3 and high NT-proBNP values (2,494 ± 2,370 pg/mL). Ischemic etiology was present in 41 pts, the mean LVEF was 27.7 ± 7.9% and 34.5% exhibiting with RV dysfunction. In our cohort, 33 pts were in atrial fibrillation, 70.9% had an ICD, of which 20.9% had a CRT-D system. The characteristics of CPET and RHC parameters are present in table 1. Prognostic CPET measures of CPET indicated low aerobic capacity, ventilatory inefficiency and abnormalities in peak (p) VO2, percent predicted pVO_2 and VE/VCO_2 slope with prognostic value (Table). RHC parameters revealed elevated mean right atrial pressure, mean pulmonary artery pressure (PAP) values and pulmonary vascular resistance. Pulmonary hypertension (PH) was present in 78 pts and a PAPi < 1.85 in 20% of pts. Peak VO_2 correlated negatively with diastolic, systolic, and mean PAP ($r = -0.311$, $p = 0.001$; $r = -0.286$, $p = 0.002$ and $r = -0.279$, $p = 0.003$ respectively), PVR ($r = -0.202$, $p = 0.036$) and RAP ($r = -0.297$, $p = 0.006$) and positively with PAPi ($r = 0.211$, $p = 0.027$). VE/VCO_2 slope correlated positively with dPAP ($r = 0.198$, $p = 0.043$) and sPAP ($r = 0.217$, $p = 0.026$).

Conclusions: In our population, the correlations between prognostic CPET and RHC measures were practically negligible. Although CPET maintains a critical role in selecting pts for advanced HF interventions, its parameters do not substitute the RHC, which should be kept as part of the evaluation of HF pts evaluated for HT/MCS.

PO 217. O2 CONSUMPTION OVERSHOOT IN PATIENTS WITH HEART FAILURE: CROSSING THE LINE

Rita Almeida Carvalho, Daniel Gomes, Catarina Pohle, Maria Rita Lima, Rita Amador, Bruno Rocha, Catarina Brízido, Luís Moreno, Anaí Durazzo, Miguel Mendes, Pedro Adragão, Gonçalo Cunha

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Cardiopulmonary exercise testing (CPET) is among the most valuable clinical tools for evaluating disease severity and physical activity limitations in heart failure (HF) patients. Peak oxygen uptake (pVO2) reflects maximal cardiac output during exercise, and it is considered a major parameter in selecting candidates for cardiac transplantation. VO2 overshoot, a transient increase in VO2 during recovery from maximal exercise, has been frequently observed in HF patients and is attributed to the transient increase in cardiac output caused by the mismatch between cardiac contractility and afterload reduction. However, the prognostic significance of this phenomenon remains to be fully established.

Objectives: This study aimed to characterize the prognostic significance of VO2 overshoot following peak exercise in individuals with HF.

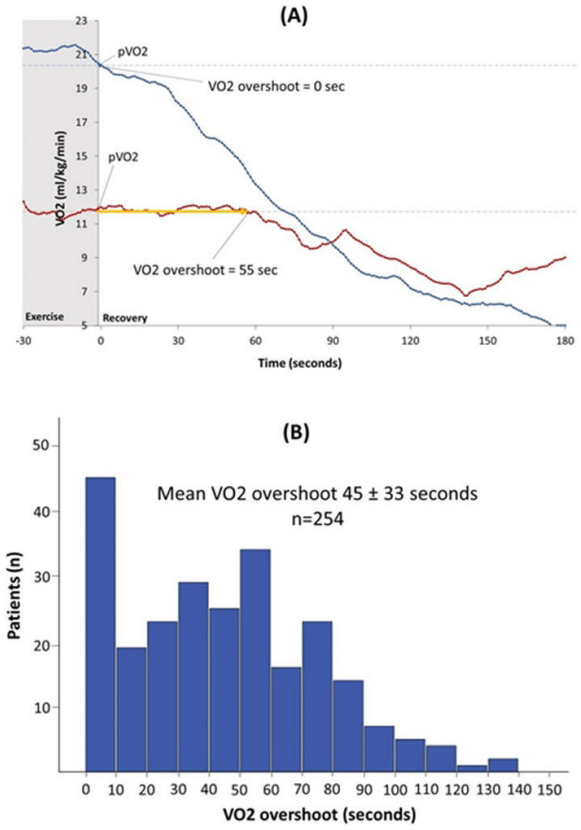


Figure 1. VO2 overshoot: (A) Data from two patients with HF who demonstrate distinct patters of VO2 overshoot. The blue line represents a patient who has an immediate decrement in VO2 following completion of the exercise period (shaded in gray) with a resultant VO2 overshoot 0 seconds. In contrast, the second patient's VO2 (red line) remained at values at or above those achieved at peak exercise for 55 seconds after exercise before beginning to decline. (B) Distribution of VO2 overshoot in patients with HF.

Figure PO 217

Methods: This retrospective single-center study included consecutive adult patients with chronic (> 3 months) and stable HF, with left ventricular ejection fraction (LVEF) < 50%, who underwent CPET between 2015 and 2020. Following maximal exercise, patients recovered over a 3-minute period (walking 2 km/h for 1 minute and sitting passively for 2 minutes). VO2 overshoot kinetics during recovery were measured and described as the time until post-exercise VO2 fell below pVO2 for at least 15 seconds. Please refer to Figure A for an example of normal and prolonged VO2 overshoot. The study endpoint was time to cardiovascular (CV) death, urgent cardiac transplant, or left ventricular assist device (LVAD) over 1-year follow-up.
Results: A total of 254 patients were included (mean age 59 ± 12 years, 83% males; mean LVEF 34 ± 9%; 70% with ischemic HF; 77% in NYHA class II-III; mean pVO2 18 ± 6 mL/kg/min; mean predicted pVO2% 52 ± 16%; mean VE/VCO2 slope 41 ± 13). The VO2 overshoot had a normal distribution (Figure B) and lasted on average for 45 ± 33 seconds. There were no differences between patients that had an overshoot higher and below average. Overall, during follow-up, 25 patients met the composite endpoint (12 CV deaths, 9 urgent heart transplants, and 4 LVAD). Univariate analysis showed a significant relationship between VO2 overshoot and the outcome of interest (HR 1.01, 95%CI 1.00 – 1.02, p = 0.027). In multivariate analysis, this association remained significant, even after adjusting for pVO2 and VE/VCO2 slope (HR 1.01, CI 95% 1.00 – 1.02, p = 0.026).
Conclusions: This study delves into the intriguing phenomenon of VO2 overshoot in patients with heart failure, shedding light on its potential prognostic significance. The independent association between VO2 overshoot and the composite endpoint suggests that this transient increase in oxygen consumption may carry prognostic value. Further studies should confirm these findings.

PO 218. LEFT VENTRICULAR GLOBAL LONGITUDINAL STRAIN IS ASSOCIATED WITH INVASIVE FILLING PRESSURES AND CARDIAC OUTPUT IN THE AMBULATORY SETTING: INSIGHTS FROM THE CARDIOMEMS™

Francisco Barbas de Albuquerque, Ana Rita Teixeira, Tiago Pereira-da-Silva, Vera Ferreira, António Gonçalves, Rita Ilhão Moreira, Ana Teresa Timóteo, Ana Galrinho, Pedro Rio, Luísa Moura Branco, Duarte Cacela, Rui Ferreira

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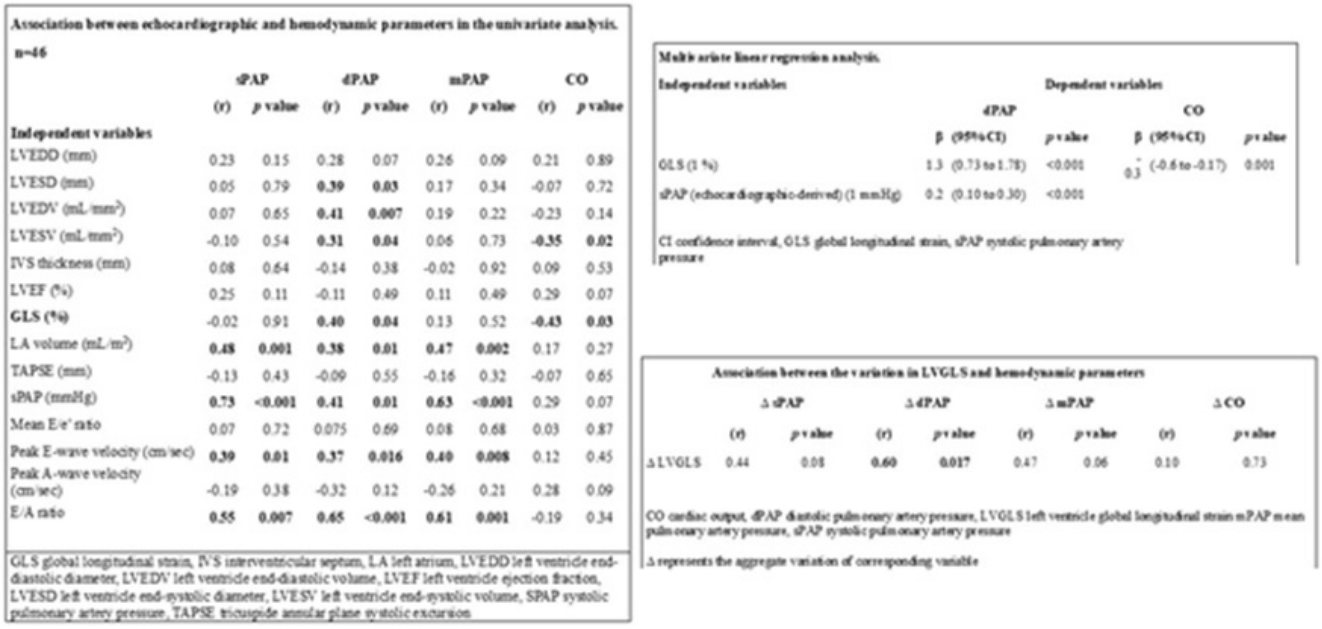
Introduction: Left ventricular global longitudinal strain (LVGLS) is a powerful indicator of myocardial function in patients with heart failure with reduced ejection fraction (HFrEF). Nevertheless, it is not clear whether LVGLS correlates with filling pressures and cardiac output (CO) in the ambulatory setting.
Objectives: We aimed to assess whether LVGLS is associated with invasive pulmonary artery pressures (PAP) and CO in outpatients using the remote monitoring CardioMEMS™ system.
Methods: This single-center, prospective observational study included patients with HFrEF undergoing remote monitoring using the CardioMEMS™ system, between January 2020 and December 2022. Repeated transthoracic echocardiography (TTE) studies were performed in each patient and invasive hemodynamic data were obtained at the moment of TTE studies using the CardioMEMS™ system. Univariate and multivariate models were used to assess the potential association between LVGLS and invasive measurements of PAP and CO.



Association between echocardiographic and hemodynamic parameters in the univariate analysis.

n=46

	sPAP		dPAP		mPAP		CO	
	(r)	*p* value	(r)	*p* value	(r)	*p* value	(r)	*p* value
Independent variables								
LVEDD (mm)	0.23	0.15	0.28	0.07	0.26	0.09	0.21	0.89
LVESD (mm)	0.05	0.79	**0.39**	**0.03**	0.17	0.34	-0.07	0.72
LVEDV (mL/mm²)	0.07	0.65	**0.41**	**0.007**	0.19	0.22	-0.23	0.14
LVESV (mL/mm²)	-0.10	0.54	**0.31**	**0.04**	0.06	0.73	**-0.35**	**0.02**
IVS thickness (mm)	0.08	0.64	-0.14	0.38	-0.02	0.92	0.09	0.53
LVEF (%)	0.25	0.11	-0.11	0.49	0.11	0.49	0.29	0.07
GLS (%)	-0.02	0.91	**0.40**	**0.04**	0.13	0.52	**-0.43**	**0.03**
LA volume (mL/m²)	**0.48**	**0.001**	**0.38**	**0.01**	**0.47**	**0.002**	0.17	0.27
TAPSE (mm)	-0.13	0.43	-0.09	0.55	-0.16	0.32	-0.07	0.65
sPAP (mmHg)	**0.73**	**<0.001**	**0.41**	**0.01**	**0.63**	**<0.001**	0.29	0.07
Mean E/e' ratio	0.07	0.72	0.075	0.69	0.08	0.68	0.03	0.87
Peak E-wave velocity (cm/sec)	**0.30**	**0.01**	**0.37**	**0.016**	**0.40**	**0.008**	0.12	0.45
Peak A-wave velocity (cm/sec)	-0.19	0.38	-0.32	0.12	-0.26	0.21	0.28	0.09
E/A ratio	**0.55**	**0.007**	**0.65**	**<0.001**	**0.61**	**0.001**	-0.19	0.34

GLS global longitudinal strain, IVS interventricular septum, LA left atrium, LVEDD left ventricle end-diastolic diameter, LVEDV left ventricle end-diastolic volume, LVEF left ventricle ejection fraction, LVESD left ventricle end-systolic diameter, LVESV left ventricle end-systolic volume, SPAP systolic pulmonary artery pressure, TAPSE tricuspide annular plane systolic excursion

Multivariate linear regression analysis.

Independent variables	Dependent variables: dPAP			Dependent variables: CO		
	β (95%CI)	*p* value		β (95%CI)	*p* value	
GLS (1 %)	1.3 (0.73 to 1.78)	<0.001	0.3	-0.2 (-0.6 to -0.17)	0.001	
sPAP (echocardiographic-derived) (1 mmHg)	0.2 (0.10 to 0.30)	<0.001				

CI confidence interval, GLS global longitudinal strain, sPAP systolic pulmonary artery pressure

Association between the variation in LVGLS and hemodynamic parameters

	Δ sPAP		Δ dPAP		Δ mPAP		Δ CO	
	(r)	*p* value	(r)	*p* value	(r)	*p* value	(r)	*p* value
Δ LVGLS	0.44	0.08	**0.60**	**0.017**	0.47	0.06	0.10	0.73

CO cardiac output, dPAP diastolic pulmonary artery pressure, LVGLS left ventricle global longitudinal strain mPAP mean pulmonary artery pressure, sPAP systolic pulmonary artery pressure

Δ represents the aggregate variation of corresponding variable

Figure PO 218

Results: Twelve patients were included and 46 TTE studies were analyzed. In overall population, the median age was 67 (11), 92% were male, 8 (67%) had ischemic dilated cardiomyopathy. Median LVEF was 28.5 (8)%, median LVGLS was -7.3 (3) and mean NT-proBNP was 5,032 ± 4,518.1 pq/mL. All patients were on optimized guideline-directed medical therapy (GDMT). Nine (75%) patients had an implantable cardiac device (ICD) and 2 (16.7%) had cardiac resynchronization therapy (CRT). Five patients had more than one HFH and 4 (33%) received levosimendan in the previous year. LVGLS was correlated with diastolic PAP (r = 0.403, p = 0.041) and CO (r = - 0.426, p = 0.039) in the univariate analysis (Figure), but not with systolic PAP and mean PAP. In multivariate models, LVGLS was an independent predictor of dPAP (Figure). This model explains 60% of dPAP value (R^2 = 0.60, adjusted R^2 = 0.56, p < 0.001). A 1% rise in the absolute LVGLS value is associated with an increase of 1.3 mmHg in dPAP (p < 0.001), when adjusted for sPAP estimation by echocardiography. In addition, LV GLS was the only independent predictor of CO value. This model explains 36% of CO value R^2 = 0.362, p = 0.001). Incrementing 1% in LVGLS is associated with a decrease of 0.38 L/min of CO. Furthermore, the variation of LVGLS was correlated with the variation of dPAP during follow-up (r = 0.60, p = 0.017) (Figure).

Conclusions: In a cohort of HFrEF patients with invasive hemodynamic remote monitoring, LVGLS was independently associated with invasive filling pressures and CO in the ambulatory setting. These findings reinforce the value of LVGLS for the management of HFrEF in this clinical context.

PO 219. UNVEILING THE INTERPLAY OF PULMONARY HYPERTENSION PARAMETERS FROM RIGHT HEART CATHETERIZATION WITH CARDIOPULMONARY EXERCISE TESTING IN HEART FAILURE PATIENTS

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Introduction: Pulmonary hypertension (PH) frequently complicates heart failure (HF), influencing prognosis and treatment decisions. This study explores the relationship between PH indicators from right heart catheterization (RHC) and Cardiopulmonary Exercise Testing (CPET) variables, providing insights into PH's functional implications in HF.

Methods: In this retrospective single-center analysis, we included HF with reduced ejection fraction patients (pts) who underwent both CPET and RHC. All were referred for potential indication for heart transplant or mechanical circulatory support. Correlation analyses was employed to examine the association between RHC-derived PH parameters and CPET variables.

Results: A total of 110 patients were enrolled (mean age of 51 ± 12 years, 81.8% males and 47.3% in NYHA class ≥ 3. Ischemic etiology was present in 41 pts and the mean LVEF was 27.7 ± 7.9%. Thirty-five pts were in AF rhythm and PH was present in 70.9% of pts. Elevated mean pulmonary artery pressure (PAP) correlated with reduced peak VO_2 (r = -0.209, p = 0.028), peak respiratory exchange ratio (RER) (r = -0.234, p = 0.014) and peak O_2 pulse (r = -0.202, p = 0.035). However, it was not associated with altered ventilatory efficiency represented by elevated VE/VCO2 slope (r = 0.157, p = 0.186). Still, this correlated positively with systolic and diastolic PAP (r = 0.27, p = 0.021; r = 0.24, p = 0.038) as well as with markers of impaired RV performance like diastolic RV pressure and TAPSE/SPAP ratio < 0.036 (r = 0.25, p = 0.036; r = 0.48, p = 0.002, respectively). The PH cohort had a significant difference in aerobic capacity as indicated by lower pVO2 (p = 0.028) and percent predicted pVO_2 (p = 0.043), lower peak RER (p = 0.014) and lower cardiac function during exercise as determined by peak O_2 pulse, (p = 0.035) compared with non-PH pts. When compared to isolated post-capillary PH, combined pre- and post-capillary PH was associated with lower O_2 consumption at peak or anaerobic threshold (p = 0.038; p = 0.030) while differences in other CPET parameters remained non-significant.

Conclusions: In HFrEF patients with PH, exercise capacity and cardiac function, as assessed by CPET, appear lower than in non-PH patients. Those with combined pre- and post-capillary PH revealed significantly reduced functional aerobic capacity. Initial results suggest, however, practically negligible correlations between RHC and CPET parameters in these pts.

PO 220. EXERCISE STRESS TESTING RECOVERY KINETICS: THE FORGOTTEN PHASE

Rita Almeida Carvalho, Rita Amador, Ana Rita Bello, Daniel Gomes, Rita Santos, Bruno Rocha, Catarina Brízido, Luís Moreno, Anaí Durazzo, Miguel Mendes, Pedro Adragão, Gonçalo Cunha

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Introduction: Impaired exercise capacity is a cardinal feature of heart failure (HF). Peak oxygen uptake (pVO2) and ventilatory efficiency

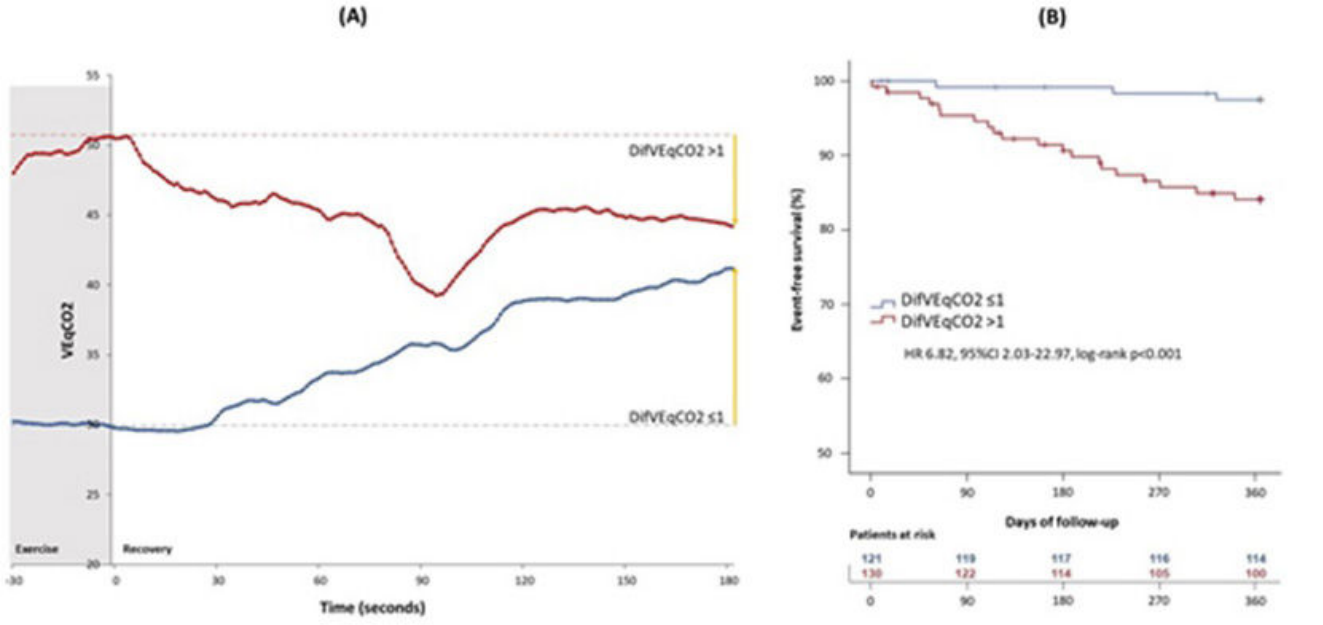

Figure 1. VEqCO2 kinetics during recovery overshoot: (A) Data from two patients with HF who demonstrate distinct patters of VEqCO2 during recovery. The blue line represents a patient who has an increase in VEqCO2 following completion of the exercise period (shaded in gray) with a resultant DifVEqCO2 ≤1. In contrast, the second patient's VEqCO2 (red line) remained at values below those achieved at peak exercise for with a resultant DifVEqCO2 >1. (B) Kaplan-Meier event-free survival curves (CV death, urgent cardiac transplant or LVAD) for HF patients stratified by DifVEqCO2.

Figure PO 220

(VE/VCO2 slope) during exercise are well-consolidated prognostic markers in patients with HF. A previous study suggested that abnormally prolonged VO2 recovery, specifically the failure to decrease VO2 from peak exercise by 10.5 mL/kg/min at 180 seconds of the recovery phase, predicts adverse outcomes in HF. However, it is unknown to what extent the recovery of VEqCO2, a marker of ventilation/perfusion mismatch, adds prognostic value to the already existing parameters.

Objectives: The aim of this study was to characterize the functional and prognostic significance of VEqCO2 kinetics following peak exercise in individuals with HF.

Methods: This retrospective single-center study included consecutive adult patients with chronic (> 3 months) and stable HF with left ventricular ejection fraction (LVEF) < 50% who underwent cardiopulmonary exercise testing (CPET) between 2015 and 2020. Following maximal exercise, patients recovered over a 3-minute period (walking 2km/h for 1 minute and sitting passively for 2 minutes). VO2 and VEqCO2 kinetics during recovery, described as the absolute difference to peak VO2 (difVO2) and VEqCO2 (difVEqCO2), were measured at 30, 60, 120, and 180 seconds. Outcomes were assessed as a composite of cardiovascular (CV) death, urgent cardiac transplant, or left ventricular assist device (LVAD) implantation at 1 year.

Results: A total of 238 patients were included (mean age 58 ± 12 years; 82% males; mean LVEF 34 ± 10%; 68% with ischemic HF; 75% in NYHA class II-III; mean pVO2 18 ± 6 mL/kg/min; mean VE/VCO2 slope 41 ± 12). During the 1-year follow-up, 19 patients met the endpoint (8 CV deaths, 8 urgent heart transplants, and 3 LVAD). ROC curve analysis showed that the best correlation between difVEqCO2 and outcomes was apparent at difVEqCO2 of 180 seconds (AUC 0.83) with a cut-off value of 1 (sensitivity 93%, specificity 58%). These patients, who had an increase in VEqCO2 (difVEqCO2 > 1) at 180 seconds, were significantly older (p = 0.02), had a lower LVEF (p < 0.001), and higher NYHA (p < 0.001). They were at an increased risk of cardiovascular events compared to those with a decrease in VEqCO2 (difVEqCO2 < 1) at 180 seconds (event-free survival at 1 year 86% vs. 98%, log-rank p < 0.001). In multivariate analysis, the statistical association between difVEqCO2 and outcomes remained significant, even after adjusting for difVO2 at 180 seconds (HR 4.315, CI95% (1.349-13.804), p = 0.014).

Conclusions: Abnormal VEqCO2 kinetics in the recovery period of CPET is an easily recognizable non-invasively derived measurement that predicts outcomes in HF. VEqCO2 may complement the evaluation of VO2 and other parameters during recovery to further improve prognostic risk stratification in HF.

PO 221. BEYOND BEATS: AN ANALYSIS OF HEMODYNAMICS AND EXERCISE CAPACITY IN HEART FAILURE PATIENTS WITH ATRIAL FIBRILLATION

Ana Rita Teixeira, Sofia Jacinto, João Ferreira Reis, Pedro Brás, António Valentim Gonçalves, Rita Ilhão Moreira, Tiago Pereira-da-Silva, Ana Teresa Timóteo, Rui Cruz Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: The coexistence of atrial fibrillation (AF) with Heart Failure (HF) complicates clinical management and is associated with increased mortality. This study aims to compare cardiopulmonary exercise testing (CPET) and right heart catheterization (RHC) parameters in HF patients with AF versus sinus rhythm (SR) and its prognostic importance.

Methods: A prospective single-center study included HF patients (pts) with left ventricular ejection fraction (LVEF) ≤ 40%, grouped by AF presence. All pts underwent both CPET and RHC to assess physiological and hemodynamic parameters. Data analysis used chi-square and independent t-tests. Univariate and multivariate Cox analyses identified predictors for the primary endpoint (cardiac death or urgent heart transplant), with significance at p < 0.05.

Results: A total of 110 pts were enrolled, 33 in the AF group. Table 1 presents baseline characteristics of both groups. Regarding clinical data, AF pts were older and more symptomatic. There were also differences in HF survival score and cardiac resynchronization therapy prevalence. Right ventricular dysfunction (27.3% vs. 51.5%, p = 0.014) and LVEF ≤ 20% (14.3%, 36.4% p = 0.009) were more frequent in the AF group, revealing worse biventricular function. CPET data showed no differences regarding heart rate parameters, but it revealed worse status in AF pts, including lower CPET duration, pVO_2, time to anaerobic threshold (AT), and

	SR (n=77)	AF (n=33)	*p*-value
BASELINE CHARACTERISTICS			
Age	49.3 ± 12.3	56.6 ± 11.1	**0.004**
Male	60 (77.9)	30 (90.9)	0.106
Ischemic etiology	30 (39.0)	11 (33.3)	0.576
HFSS	8.6 ± 1.0	8.0 ± 1.2	**0.005**
Baseline ICD (%)	52 (67.5)	26 (78.8)	0.234
Baseline CRT (%)	10 (13)	13 (39.4)	**0.002**
NYHA functional class >=3 (%)	30 (40.0)	22 (68.8)	**0.006**
Comorbidities (%)			
Diabetes mellitus	16 (21.6)	6 (18.8)	0.738
Smoker	40 (54.1)	17 (53.1)	0.930
Glomerular filtration rate (ml/min/1.73m^2)	75.4 ± 27.9	72.1 ± 31.1	0.610
Sodium (mEq/L)	137.8 ± 2.8	136.4 ± 4.5	0.073
NT-proBNP (pg/mL)	2201.8 ± 2000	3223.8 ± 2302	0.147
ECHOCARDIOGRAPHIC DATA			
LV ejection fraction (%)	28.4 ± 6.8	26.1 ± 9.9	0.175
LV ejection fraction ≤ 20 (%)	11 (14.3)	12 (36.4)	**0.009**
MR III-IV (%)	18 (23.4)	6 (18.2)	0.358
RV-RA gradient	27.6± 13.4	35.0± 19.1	**0.049**
TAPSE/sPAP ratio	0.82± 0.29	0.59± 0.31	**0.006**
RV dysfunction (%)	21 (27.3)	17 (51.5)	**0.014**
CPET DATA			
Initial HR	77 (49 - 117)	78 (29-113)	0.968
Maximal HR	125 (71 - 187)	122 (61-188)	0.680
HRR1	18.29 ± 13.0	19.97 ± 15.5	0.559
Duration (min)	9.78 ± 4.23	7.43 ± 4.25	**0.009**
Peak RER	1.07 ± 0.10	1.06 ± 0.12	0.659
pVO_2 (ml/kg/min)	18.1 ± 6.2	14.3 ± 5.9	**0.003**
pVO_2 < 14 (ml/kg/min)	22 (28.6)	19 (57.6)	**0.004**
pVO_2 < 12 ml/kg/min (%)	9 (11.7)	13 (39.4)	**< 0.001**
pVO_2 predicted (%)	56.1 ± 18.5	46.6 ± 17.3	**0.014**
VE/VCO_2 slope	34.7 ± 10.0	43.9 ± 14.3	**< 0.001**
VE/VCO_2 slope > 36 (%)	30 (39.0)	25 (75.8)	**< 0.001**
OUES	2.05 ± 1.39	1.46 ± 0.57	0.146
AT time (min)	6.62 ± 3.54	3.82 ± 3.27	**< 0.001**
pVO_2 at AT	12.2 ± 4.2	11.6 ± 5.0	0.697
Rest PET CO_2	33.2 ± 5.0	31.7 ± 4.8	0.200
PET CO_2 at AT	36.9 ± 6.4	31.6 ± 5.8	**< 0.001**
Maximal PET CO_2	33.9 ± 6.6	30.1 ± 6.2	**0.011**
Pulse peak O2	0.14 ± 0.04	0.12 ± 0.04	**< 0.001**
RHC DATA			
Right atrial pressure	7.8 ± 5.9	10.3 ± 6.8	**0.050**
sPAP	40.5 ± 16.2	47.7 ± 18.1	**0.042**
dPAP	16.3 ± 7.8	21.4 ± 7.7	**0.002**
mPAP	26.6 ± 12.9	31.2 ± 10.9	0.077
mPAP > 20mmHg (%)	49 (63.6)	29 (87.9)	**0.010**
PCWP	21.6 ± 6.4	22.2 ± 5.4	0.701
Cardiac Output	4.9 ± 1.6	5.4 ± 3.4	0.373
Cardiac Index	2.6 ± 0.8	2.9 ± 2.1	0.289
Pulmonary Vascular Resistance	2.5 ± 2.5	2.4 ± 1.7	0.963
Pulmonary Artery Pulsatility Index (PAPi)	5.3 ± 4.4	3.5 ± 2.7	**0.012**
PAPi < 1.85 (%)	12 (15.6)	10 (30.3)	0.077

Table 1 – Clinical characteristics and echocardiographic, CPET and RHC data of HFrRF with SR and AF.

AT: anaerobic threshold; AF: atrial fibrillation; CRT: cardiac resynchronization therapy; CPET: cardiopulmonary exercise test; dPAP: diastolic pulmonary artery pressure; HFSS: heart failure survival score; HHR: heart rate recovery; HR: heart rate; ICD: implantable cardioverter defibrillator; LV: left ventricle; mPAP: mean pulmonary artery pressure; MR: mitral regurgitation; NYHA: New York Heart Association; NT-proBNP: N-terminal pro B-type natriuretic peptide; OUES: oxygen uptake efficiency slope; PCWP: pulmonary capillary wedge pressure; pVO2: peak O2 consumption; RER: respiratory exchange ratio; RHC: right heart catheterization; RV: right ventricle; RV/RA: right ventricle/right atrium; sPAP: systolic pulmonary artery pressure; SR: sinus rhythm; TAPSE/sPAP: tricuspid annular plane systolic excursion/systolic pulmonar artery pressure

Figure PO 221

higher VE/VCO2 slope (Table 2). RHC parameters demonstrated a mean pulmonary artery pressure (PAP) suggestive of pulmonary hypertension, higher systolic and diastolic PAP, and right atrial pressure and lower PAPi values in the presence of AF. Yet, no significant differences in PAPi values predicting RV failure. At 2 years, the primary endpoint significantly differed between groups (p = 0.031), indicating that AF pts experienced a more unfavorable prognosis. Peak pVO_2, and VE/VCO_2 slope were primary endpoint predictors; in the multivariate analysis pVO2 was the only independent one (p = 0.009).

Conclusions: The observed differences in CPET and RHC parameters suggest that AF distinctly impacts exercise capacity and hemodynamic profiles in HF pts. Prognostic CPET measures, such as pVO_2 and VE/VCO_2 slope, showed worse status in AF pts, being pVO_2 an independent predictor of cardiac death/heart transplant.

SÁBADO, 20 ABRIL de 2024 | 12:30-13:30

Área de Posters 1 | Sessão de Posters 34 - Medicina Cardiovascular: Para além dos cardiologistas

PO 222. RIGHT CARDIOVASCULAR REMODELLING AND REVERSE REMODELLING DURING PREGNANCY AND POSTPARTUM

Ana Filipa Ferreira[1], Joana Araújo[1], Maria João Azevedo[2], Francisca Almeida Saraiva[1], Sílvia Oliveira Diaz[1], Carla Sousa[3], Ana Paula Machado[3], Carla Ramalho[3], Adelino Leite-Moreira[1], António Sousa Barros[1], Mário Santos[1], Inês Falcão-Pires[1]

[1]Faculdade de Medicina da Universidade do Porto. [2]Academic Center for Dentistry Amsterdam, University of Amsterdam and Vrije Universiteit Amsterdam. [3]Centro Hospitalar Universitário de S. João, EPE.

Introduction: Many studies have focused on pregnancy-induced left ventricular remodelling, overlooking the changes in right cardiac chambers.
Objectives: To characterize the right cardiovascular (CV) remodelling and reverse remodelling (RR) induced by pregnancy and postpartum, respectively, and the impact of CV risk (CVR) factors on these processes.
Methods: This prospective cohort was recruited at two tertiary centers from 2019 to 2022, including 51 healthy and 79 obese and/or hypertensive and/or with gestational diabetes and/or smoking habits pregnant women (cardiovascular risk [CVR] group). Women were evaluated by transthoracic echocardiography at the 1st trimester (1T) and 3rd trimester (3T) of pregnancy, as well as one-month (PP1), six-months (PP2), and one-year postpartum (PP3). Generalized linear mixed-effects models were used for the analysis of right CV remodelling and RR and to evaluate the impact of CVR factors on these processes.
Results: This study included 130 pregnant women, 60.8% primiparous, with a median age of 33 years. Despite all echocardiographic results being within the normality range, we describe the progression of right heart adaptations throughout pregnancy and postpartum (Table), namely: 1) Similar enlargement of the right atrium (RA) and right ventricle (RV) dimensions throughout pregnancy, recovering at PP2 except for RA in the CVR group; 2) Preserved RV systolic function throughout pregnancy in both groups, while the postpartum hemodynamic normalization triggers a reduction of (TAPSE) and tricuspid S' wave velocity; 3) Reduced RA strain in both groups during pregnancy, more evident in CVR group, which had a slower postpartum recovery; 4) Preserved RV global longitudinal strain (GLS) throughout follow-up time, being significantly reduced in 3T of CVR group and recovering at PP2; 5) Reduction of tricuspid E/A ratio from 1T to 3T in both groups with an early recovery at PP1, being these values significantly higher in the healthy group, and 6) Steady pulmonary artery systolic pressure (PASP) values throughout follow-up time, showing consistently higher values in the CVR group.
Conclusions: This study describes the subclinical right cardiac functional and structural changes within the physiological range, which recover 6 months after delivery. CVR factors impact the magnitude of the subclinical RV diastolic function changes, PASP and myocardial deformation (strain) without any impact on classic RV systolic function.

PO 223. ECG IMAGING FOR REAL-TIME ASSESSMENT OF VENTRICULAR SYNCHRONY IN PHYSIOLOGICAL PACING

Sofia Monteiro[1], Sérgio Laranjo[1], Andreu Climent[2], Pedro Cunha[1], Hélder Santos[1], Cátia Guerra[1], Margarida Paulo[1], Mário Oliveira[1]

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Introduction: Left bundle branch pacing (LBBP) and His Bundle pacing (HBP) deliver physiological ventricular pacing, which aims to preserve or restore the electrical and mechanical synchrony of the ventricles. Electrocardiographic imaging (ECGi) allows the evaluation of the cardiac substrate non-invasively and can be used to guide lead placement during implantation.
Methods: Four patients referred for physiological pacing were included. Three were male, with ages of 64 ± 27 years and LVEF of 52 ± 17%. Two had an indication for cardiac resynchronization and two for pacemaker implantation due to symptomatic bradycardia. Sequential ECGi acquisitions were obtained in real-time during the lead implantation procedure without the need for CT or MRI imaging. The cardiac geometry and localization were estimated based

	Healthy Group			CVR Group			Healthy vs CVR
Variables	N	Median (IQR)	p-value	N	Median (IQR)	p-value	p-value
Right atrium volume, mL/m²							
1T	39	19.21 [17.19; 22.95]	Ref.	39	18.62 [15.02; 21.70]	Ref.	
PP1	43	18.71 [15.50; 23.27]	0.462	59	19.20 [16.19; 23.30]	0.116	
PP2	48	17.65 [14.80; 20.88]	0.002	75	18.52 [16.15; 21.56]	0.763	
PP3	31	19.18 [17.15; 21.19]	0.160	44	18.21 [14.96; 20.53]	0.588	
Right ventricle volume, mL/m²							
1T	28	17.96 [16.08; 20.01]	0.070	26	17.55 [14.81; 19.43]	0.015	
3T	27	19.77 [17.07; 23.89]	Ref.	55	20.48 [17.22; 24.30]	Ref.	
PP1	35	20.02 [16.99; 23.25]	0.622	42	19.63 [17.26; 22.49]	0.353	0.900
PP2	38	16.74 [13.42; 22.16]	0.061	57	17.24 [14.13; 21.94]	<0.001	
PP3	21	17.78 [13.97; 22.16]	0.130	33	16.45 [12.60; 20.48]	<0.001	
PP3	28	-24.50 [-28.98; -20.98]	0.604	41	-24.80 [-28.75; -20.70]	0.030	
E/A ratio							
1T	20	1.67 [1.35; 1.82]	0.086	19	1.62 [1.41; 1.78]	0.003	
3T	32	1.47 [1.28; 1.67]	Ref.	58	1.30 [1.15; 1.44]	Ref.	
PP1	41	1.75 [1.45; 1.96]	<0.001	54	1.63 [1.37; 1.81]	<0.001	0.002
PP2	47	1.69 [1.56; 2.00]	<0.001	73	1.70 [1.46; 2.00]	<0.001	
PP3	28	1.91 [1.64; 2.30]	<0.001	46	1.71 [1.45; 1.96]	<0.001	
E/e' ratio							
1T	26	3.45 [3.01; 3.96]	0.127	29	3.59 [3.05; 4.16]	0.298	
3T	35	3.91 [3.08; 4.28]	Ref.	57	3.53 [3.00; 4.62]	Ref.	
PP1	41	3.48 [3.04; 4.46]	0.359	56	3.76 [3.32; 4.10]	0.611	0.570
PP2	47	3.67 [3.18; 4.53]	0.343	74	3.66 [3.08; 4.32]	0.286	
PP3	28	3.53 [2.88; 4.45]	0.268	45	3.83 [2.97; 4.52]	0.219	
TAPSE, mm							
1T	37	25 [21; 27]	0.475	39	25 [22; 27]	0.669	
3T	45	26 [22; 29]	Ref.	77	24 [22; 27]	Ref.	
PP1	44	24 [21; 26]	<0.001	62	22 [20; 25]	<0.001	0.700
PP2	50	24 [21; 26]	<0.001	77	23 [22; 26]	0.021	
PP3	31	23 [19; 25]	<0.001	48	23 [20; 25]	0.003	
Tricuspid S' wave, cm/s							
1T	36	14.3 [12.9; 15.3]	0.860	39	14.2 [12.8; 15.3]	0.735	
3T	45	14.5 [12.9; 15.9]	Ref.	76	14.1 [13.0; 15.3]	Ref.	
PP1	44	12.7 [11.7; 13.7]	<0.001	62	12.1 [11.2; 13.0]	<0.001	0.561
PP2	51	12.7 [11.8; 14.4]	<0.001	79	12.6 [11.7; 14.0]	<0.001	
PP3	31	13.0 [12.1; 14.4]	0.002	48	12.9 [12.0; 14.3]	<0.001	

Figure PO 222

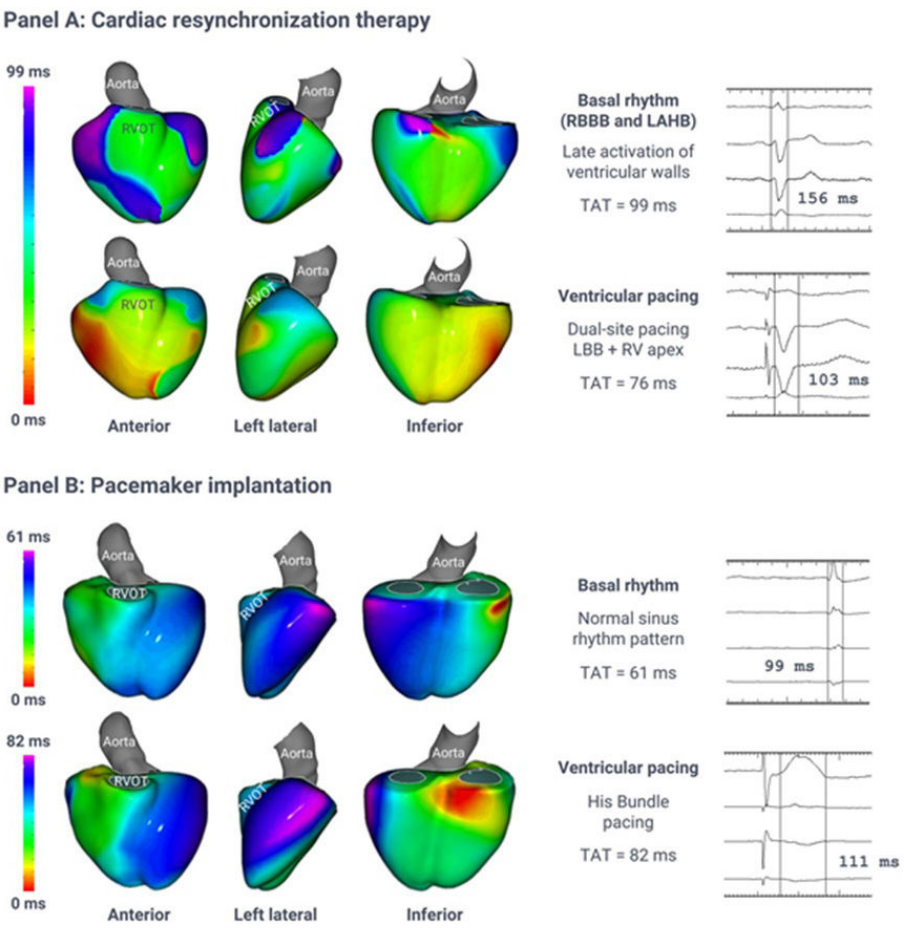

Figure PO 223

on an artificial intelligence algorithm. Epicardial electrograms were computed to obtain ventricular local activation time maps. Intra- and interventricular synchrony were assessed by evaluating activation patterns and by calculating the total ventricular activation time (TAT).
Results: ECGi was able to localize ventricular pacing sites during lead implantation. In patients with bundle branch block, the basal maps showed heterogeneous interventricular conduction, with marked delayed activation at the block site. Electrical synchrony was restored after LBBP lead implantation (Panel A). In the patients that had normal basal conduction (without cardiac resynchronization indication), physiological ventricular pacing preserved the intra- and interventricular activation (Panel B).
Conclusions: ECGi enables real-time, non-invasive monitoring of ventricular activation, and may be used to assess ventricular synchrony in different physiological pacing applications.

PO 224. PHYSICAL ACTIVITY LEVELS AND SEDENTARY BEHAVIOUR PATTERNS IN PATIENTS ATTENDING A PHASE III CARDIAC REHABILITATION PROGRAM: ARE THERE DIFFERENCES BETWEEN MEN AND WOMEN?

Gonçalo de Sá[1], Mariana Borges[1], Madalena Lemos Pires[1], Ana Abrantes[2], Pedro Alves da Silva[2], Daniel Cazeiro[2], Nelson Cunha[2], Inês Ricardo[2], Fausto Pinto[2], Ana Abreu[3], Rita Pinto[1]

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Introduction: Higher levels of moderate to vigorous physical activity (MVPA) are associated with lower cardiovascular risk and mortality levels, especially in people with cardiovascular disease (CVD). Contrarily, sedentary behaviour (SB) is an important cardiovascular risk factor with a negative health impact. According to the World Health Organization recommendations, at least 150 minutes of MVPA should be performed per week (21.4 min/day) and SB should be reduced.
Objectives: To analyse SB, light physical activity (PA) and MVPA levels and patterns in CVD patients attending a phase III CR program on non-exercise session days, exercise session days, and to compare those levels between women and men.
Methods: CVD patients were assessed when entering the CR phase III program. CR exercise sessions were conducted 2 or 3 times per week, 60 minutes/session. PA and SB were assessed through accelerometery during seven consecutive days. Comparisons were made between men and women on CR and non-CR days. Demographic and clinical outcomes were retrieved. Independent-samples T-test and Mann-Whitney U test were used.
Results: Two hundred and thirteen CVD patients completed all the assessments, where 44 were women [62 ± 9 years-old, 87% coronary artery disease (CAD), 12.4% heart failure (HF)] and 169 were men (61 ± 10 years-old, 72.7% CAD, 13.6% HF). Regarding MVPA levels both women and men had more minutes spent in MVPA on CR session days when compared to non-exercise CR session days (31 ± 22 min/day vs. 52 ± 31 min/day, $p < 0.001$; 41 ± 29 min/day vs. 62 ± 30 min/day, $p < 0.001$). However, regarding light PA and SB, only men spent more minutes in light PA (161 ± 46 min/day vs. 172 ± 49 min/day, $p = 0.022$) on CR session days and had significantly higher SB on non-exercise CR session days (77 ± 7%/day vs. 74 ± 7%/day, $p < 0.001$). When comparing weekly PA levels between sex, MVPA was superior in men (276 ± 163 min/week vs. 345 ± 188 min/week, $p < 0.045$) but SB was the same.
Conclusions: These findings demonstrate that despite men spending more minutes in MVPA, both men and women achieve weekly MVPA

recommendations. However, SB remains high. Patients should be strongly encouraged to maintain their PA levels and reduce SB on non-session days. An individualized PA counselling consult in CR programs, by specialized exercise professionals, might be a good strategy to improve PA and sedentary behavior in CVD patients.

PO 225. CARDIOMYOPATHIES: THE IMPORTANCE OF GENETIC TESTING IN THE ELDERLY

Micaela Oliveira[1], Rafael Graça[1], Diana Antunes[2], Catarina Silveira[1], Yuri Chiodo[1], Maria Carmo-Fonseca[3]

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Cardiomyopathies are a heterogeneous group of pathologies characterised by structural and functional alterations of the heart. The determination of their aetiology is crucial for the management of index patients and their relatives. The prevalence of hypertrophic cardiomyopathy (HCM, 1:500) and dilated cardiomyopathy (DCM, 1:250) may be underestimated in the general population, in part due to their common late-onset. Therefore, it is important to consider a genetic aetiology of cardiomyopathies in the elderly: genetic testing can play a critical role in family screening and in the prevention of multiple disease-related complications. In this work, we present a retrospective observational analysis of genetic testing, between January 2020 and December 2023, in patients over 65 years old, with suspected cardiomyopathies. The mean age of the studied cohort (n = 255) was 72 years old and the focus of the study was to identify the genetic diagnostic success rate of these patients. It was observed that, of the 255 index cases under study, 17.65% (n = 45) obtained a positive result, with a pathogenic or likely pathogenic genetic variant that could explain their phenotype. Among these positive cases, 57.78% (n = 26) had a HCM phenotype, whereas 26.67% (n = 12) showed a DCM phenotype. Accordingly, around 58.70% of the variants were found in sarcomeric genes, namely in the *MYBPC3*, *MYH7*, *MYL2*, *TNNT2* and *TPM1* genes, being known that pathogenic and likely pathogenic variants in these genes are frequently associated with HCM. The remaining variants, mainly detected in patients with DCM, were located in other genes, such as the *FLNC*, *LMNA*, *PKP2*, *RYR2*, *TTN* and *TTR* genes. The other 210 patients presented a high percentage of variants of uncertain significance. However, additional studies are still required to investigate their pathogenicity and the consequent possible justification of the phenotype of their carriers. Taken together, these results reinforce the importance of the genetic testing of cardiomyopathies in the elderly, not only to effectively treat the affected patients, but also to provide the appropriate genetic counselling for their family members.

PO 226. CUSTOS DA IMPLANTAÇÃO PERCUTÂNEA DE VÁLVULA AÓRTICA E DO SEU COMPARADOR

Catarina Caçador[1], Julian Perelman[2]

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Introduction: Aortic valve stenosis (EVAo) is the most common primary valvular disease in industrialized countries, associated with high rates of morbidity and mortality. Transcatheter aortic valve replacement (TAVI) appears to be non-inferior on patients with severe symptomatic EVAo and moderate surgical risk, in comparison with surgical aortic valve replacement (SAVR). However, according to the international literature, this intervention seems to be associated with higher costs. The investigation aims at measuring and valuing the resources associated with TAVI and its comparator in patients with severe symptomatic EVAo and moderate surgical risk, in light of current practice in Portugal.
Methods: A questionnaire was applied to three groups of experts involved in both interventions during the periods included in the follow-up of each of the interventions under study. Data on clinical events occurring in the first and second years of follow-up were extracted from the clinical trial PARTNER IIA Trial. For the valuation of costs, official documents issued by the Portuguese Government were consulted, as well as literature with national data.
Results: The TAVI intervention was associated with higher costs, compared to SAVR (34,479.15€ versus 19,769.82€), with the cost of the percutaneous prosthesis being the main cost driver. Regarding other dimensions, the highest costs were associated with SAVR, mainly due to clinical events that occurred in the post-intervention periods.
Conclusions: The price of the percutaneous prosthesis was the factor that most influenced the costs of TAVI, which were much higher than the costs of SAVR. In order to justify its dissemination to a greater number of individuals, data will be needed to attest the clear clinical benefit of this technique.

PO 227. HANDGRIP STRENGTH AND MUSCLE MASS GAINS IN PHASE III CARDIAC REHABILITATION PATIENTS – IMPACT OF WEEKLY EXERCISE TRAINING FREQUENCY

Mariana Borges[1], Madalena Lemos Pires[1], Rita Pinto[1], Gonçalo Sá[1], Daniel Cazeiro[1], Ana Abrantes[1], Pedro Alves da Silva[1], Nelson Cunha[1], Inês Ricardo[1], João Magalhães[2], Fausto Pinto[3], Ana Abreu[4]

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Introduction: Sarcopenia is associated with a faster progression of cardiovascular disease (CVD). Handgrip strength and skeletal muscle mass index (SMI) are crucial when assessing sarcopenia. Phase III cardiac rehabilitation (CR) programs usually offer a variety of exercise modalities and schedules. Having an insight on how this variety can affect gains in strength and muscle mass can help tailoring guidance to patients, optimizing long-term CR effectiveness.
Objectives: To compare gains in handgrip strength and SMI in patients attending phase III exercise CR sessions either 3 or 2 times/week over 12 months.
Methods: CVD patients attending for 12 months a phase III CR program were included. Handgrip strength and appendicular skeletal muscle mass (ASM) were assessed at baseline (M0) and after 12 months (M1) with a dynamometer and dual X ray absorptiometry (DEXA), respectively. SMI was calculated dividing ASM (kg) by height (m^2). After initial screening, patients chose to attend 60 minutes exercise CR sessions either 3 or 2 times/week. Attendance rates were calculated dividing number of sessions attended by number of sessions planned. Paired/independent sample t-tests were used (or non parametric alternatives when applicable).
Results: One hundred and six patients completed 12 months of exercise CR sessions. Eighty-nine chose 3 times/week (61 ± 11 years old, 81.61% male, 87.36% had coronary artery disease (CAD)) and nineteen chose 2 times/week (67 ± 8 years old, 78.85% male, 84.21% CAD). Handgrip strength (both arms) was compared between M0 and M1. Only patients attending 3 times/week improved handgrip strength (M0: 39.93 ± 9.78 kg vs. M1: 41.04 ± 9.92 kg, $p < 0.001$ right arm; M0: 36.93 ± 9.90 kg vs. M1: 38.32 ± 9.97 kg, $p = 0.002$ left arm). A sub analysis made with ninety patients also only showed improvements in SMI in patients attending 3 times/week (M0: 7.66 ± 0.97 kg/m^2 M1: 7.77 ± 0.97 kg/m^2; $p < 0.001$). Attendance rates to CR exercise sessions were the same between groups (69.78 ± 14.40% vs. 73.09 ± 13.68%; $p = 0.181$) but age was higher in the 2 times/week group ($p = 0.007$).
Conclusions: Attending a higher number of CR exercise sessions per week (3 times/week) might lead to greater improvements on handgrip strength. Higher attendance rates in patients attending exercise CR sessions 2 times/week might be crucial to achieve comparable results. Further analysis are needed to comprehensively understand the impact of different exercise modalities and attendance rates on other health outcomes in long-term CR programs.

SÁBADO, 20 ABRIL de 2024 | 12:30-13:30

Área de Posters 2 | Sessão de Posters 35 - Enfarte agudo do miocárdio com supra ST

PO 228. MANUAL THROMBUS ASPIRATION - 12-YEAR SINGLE CENTRE EXPERIENCE

António Maria Rocha de Almeida, Miguel Carias de Sousa, David Neves, Marta Paralta Figueiredo, Rafael Viana, Kisa Congo, Diogo Brás, Renato Fernandes, Ângela Bento, Manuel Trinca, Lino Patrício.

Hospital do Espírito Santo, EPE, Évora.

Introduction: Manual thrombus aspiration (TA) is not routinely recommended, due to the risk of stroke, as supported by some dedicated clinical trials. It is, however, a simple and delicate technique that gives the opportunity to improve angioplasty results by decreasing thrombus burden and potentially improving stent apposition and decreasing no-reflow phenomenon.
Objectives: To describe a single-centre experience on TA regarding clinical context, anatomic and technical features, procedure success and in-hospital occurrence of stroke.
Methods: Retrospective study of procedures in which TA was performed from 2009 to 2021. Procedure and patient characteristics were analyzed and related with hospital records of new stroke diagnosis.
Results: TA was performed on 1,136 procedures, in 1,111 patients (77% male). As expected, most cases were acute coronary syndromes: STEMI (1,031 cases; 90.8%) and NSTEMI (78; 6.9%). The device used was predominantly 6F (81.7%). Most frequent reference diameters were 3.0 mm (529, 46.6%) and 3.5 mm (244; 21.5%). The vessel was initially completely occluded in about two thirds of the cases (747; 65.8%) and the left anterior descending artery was the most frequent culprit (541; 47.7%), followed by the right coronary (386; 33.9%). Revascularization was considered completely successful in 1,017 (89.5%) of cases. There were no cases of new stroke diagnosis during admission in these patients.
Conclusions: TA should not be routinely performed, as recommended by international guidelines. However, fear of stroke should not hamper its use whenever the benefits seem clear, such as the presence of a flow-limiting thrombus in a culprit artery, with a retrievable size and good catheter engagement of the coronary artery. In this relatively large sample, we report a good single centre experience with this technique, with no clinical stroke occurrence during admission.

PO 229. PRIMARY PCI IN A REGIONAL CENTRE - 7 YEARS OF CHANGE AND IMPROVEMENT

Rafael Viana, Marta Figueiredo, Francisco Cláudio, Miguel Carias, António Almeida, Rita Rocha, Gustavo Mendes, Diogo Brás, David Neves, Ângela Bento, Renato Fernandes, Lino Patrício

Hospital do Espírito Santo, EPE, Évora.

Introduction: Ischemic heart disease stands as the predominant cause of mortality. The mortality rate among individuals experiencing an acute coronary syndrome with ST-elevation (STEMI) is influenced by various factors, including the time lapse before treatment, encompassing primary percutaneous coronary angioplasty (PPCI) or fibrinolysis. To enhance the quality of care, it is essential to systematically document and assess treatment delays. We aim to analyse and characterized the times and delays in the emergent coronary referral pathway in our region.
Methods and results: Consecutive STEMI patients admitted for PCI in our centre, from 2015 to 2021, were included. We gathered data on following time variables: patient delay, electrocardiogram (ECG) delay, logistic delay, transport delay, home delay, procedure time. These variables enabled calculation of the following time frames: first medical contact (FMC) to diagnosis time, door-in-door out time (DIDO), door to wire, diagnosis to wire, FMC to wire and total ischemia time. Over 7 years, we included a total of 1,452 cases, with a median age of 64 ± 14 years and 75.3%male. The analysis revealed a median patient delay of 90 min (interquartile range (IQR) 145), while the ECG delay median was 20 min (IQR 47). Median DIDO time was 112 min (IQR 151), diagnostic delay was 40 min (IQR 40) and FMC to diagnostic time was 80 min (IQR 139). The median time of logistic delay was 28 min (IQR 54), transport time was 58 min (IQR 25) and home delay was 16 min (IQR 57). In our population, median procedure time was 28 min (IQR 14), door to wire time was 52 min (IQR 57), diagnosis to wire time was 87 min (IQR 73), FMC to wire time was 194 min (IQR 147) and the total ischemia time was 311 min (IQR 303).
Conclusions: Our work shows several points in which there should be a direct intervention in order to improve quality of care. Firstly, the global median time from FMC to diagnosis is still far from the expected target (80 minutes vs. 10 minutes in European Society of Cardiology). The median time to perform an ECG is higher than the target. Improving this aspect could involve establishing a dedicated team to promptly conduct ECG assessments in alignment with the patient's symptoms. The diagnosis to wire is more forthcoming with a median of 87 min. In order to reduce logistic and transport delays, establishing a regional transport network for critical patients is crucial. This becomes particularly significant in our geographical area, where considerable distances separate centres lacking hemodynamic facilities and accessibility is suboptimal.

PO 230. LONG TERM BETA-BLOCKERS AFTER ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION IN PATIENTS WITH PRESERVED LEFT VENTRICULAR EJECTION FRACTION

Catarina Ribeiro Carvalho, Marta Catarina Bernardo, Isabel Martins Moreira, Luís Sousa Azevedo, Ana Baptista, Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introduction: Beta-blockers are recommended after acute myocardial infarction (AMI) in patients with left ventricular ejection fraction (LVEF) ≤ 40% and should be considered in all ACS patients regardless of LVEF. Recent studies showed controversial results regarding the long-term benefits of beta-blocker therapy, namely in the setting of ST-segment elevation myocardial infarction (STEMI) and primary percutaneous coronary intervention.
Objectives: To evaluate the prognostic impact of long-term beta-blocker therapy after STEMI in patients with LVEF > 40%.
Methods: This was a single center retrospective study that included patients with STEMI and LVEF > 40%, between 2010 and 2016. Patients previously taking beta-blocker or with previous heart failure were excluded. The impact of oral beta-blocker prescription at discharge on the composite endpoint of all-cause mortality, AMI, unplanned revascularization and heart failure (HF) was evaluated.
Results: A total of 272 patients were included, 83.1% with beta-blocker prescription. Mean follow-up duration was 6.8 ± 2.9 years. Apart from being slightly younger than patients without beta-blocker prescription (62.0 ± 13.2 vs. 69.0 ± 13 years, p = 0.001), there were no other significant differences in the baseline characteristics of the two groups, namely regarding LVEF (51.8% vs. 53.7%, p = 0.06).The primary endpoint occurred in 82 patients in the beta-blocker group (36.3%) and in 19 patients without beta-blocker prescription (41.3%). Despite the slightly better outcome, beta-blockers didn't seem to significantly reduce the incidence of the composite endpoint (p = 0.43). In a multivariate analysis, accounting for possible confounders, only arterial hypertension (HR = 0.57, 95%CI 0.38-0.86) and LVEF (HR = 0.96, 95%CI 0.93-0.99) were independent predictors.When analyzing the individual components of the primary endpoint, a subtle trend towards a more favorable outcome in the beta-blocker group was once again observed. However, this was not sufficient to achieve statistical significance in all-cause mortality (13.3% in the beat-blocker group vs. 19.6% in patients without beta-blocker, p = 0.25), recurrent AMI (8.4% vs. 10.9%, p = 0.51), unplanned revascularization (11.9% vs. 15.2%, p = 0.44) or HF (17.7% vs. 21.7%, p = 0.47). The subgroup analysis of patients with mildly reduced LVEF highlighted a further accentuation of the aforementioned differences between groups, yet failed to attain statistical significance. Conversely, these differences were nearly negligible when exclusively assessing the patients with preserved LVEF.

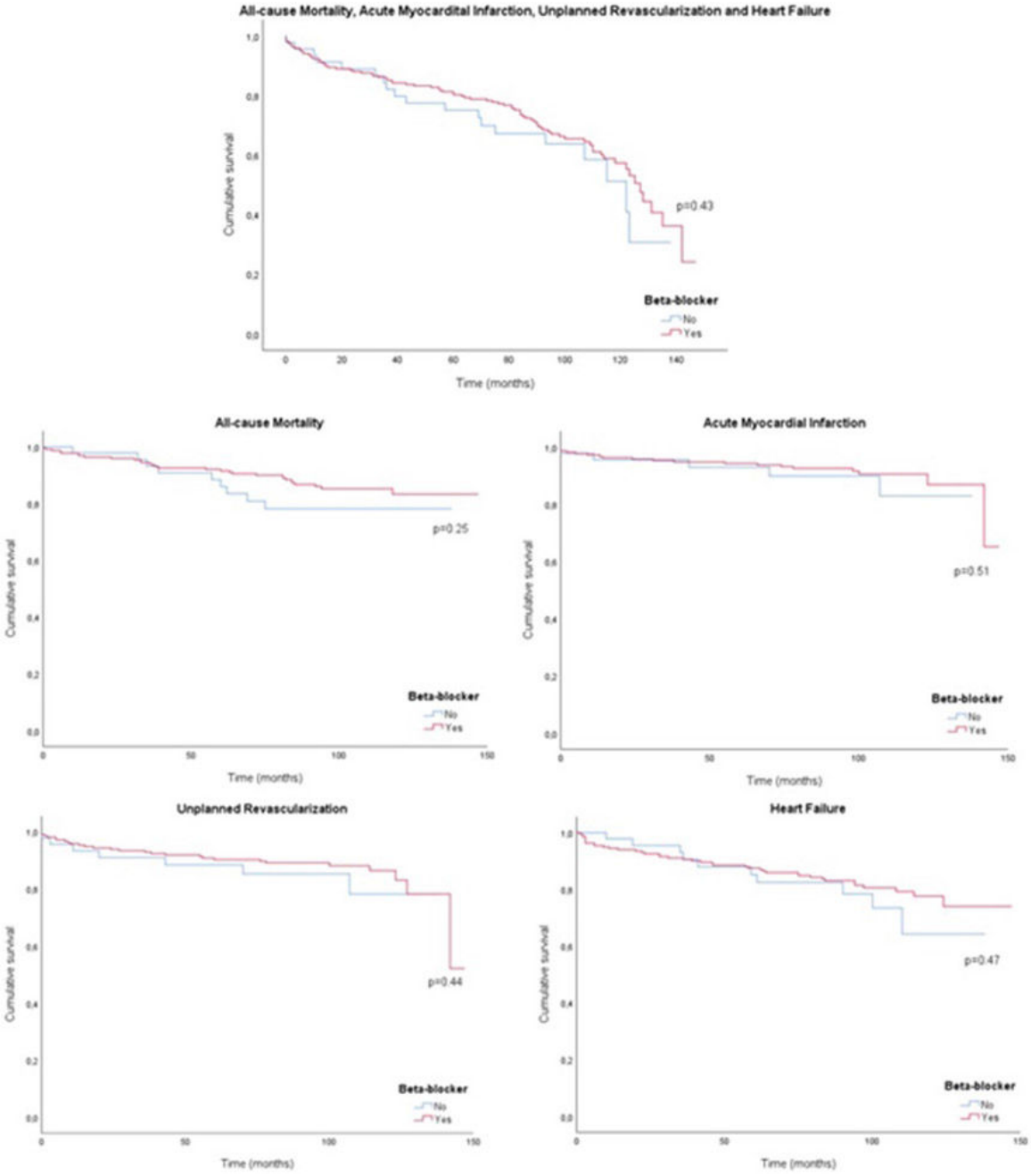

Figure PO 230

Conclusions: long term use of beta-blocker following STEMI didn't reduce the incidence of the composite endpoint of all-cause mortality, AMI, unplanned revascularization or HF. Nevertheless, in the subgroup of patients with mildly reduced LVEF, a trend toward improved outcomes was identified.

PO 231. PRIMARY PCI IN A REGIONAL CENTRE – PANDEMIC IMPACT

Rafael Viana, Marta Figueiredo, Miguel Carias, António Almeida, Francisco Claúdio, Rita Rocha, Gustavo Mendes, Diogo Brás, David Neves, Ângela Bento, Renato Fernandes, Lino Patrício

Hospital do Espírito Santo, EPE, Évora.

Introduction: Ischemic heart disease stands as the predominant cause of mortality. The mortality rate among individuals experiencing an acute coronary syndrome with ST-elevation (STEMI) is influenced by various factors, including the time lapse before treatment, encompassing percutaneous primary angioplasty (PPCI) or fibrinolysis. To enhance the quality of care, it is essential to systematically document and assess treatment delays. The COVID-19 pandemic had a profound impact on healthcare systems worldwide. We aim to analyse the impact of SARS-CoV-2 pandemic in times and delays in the emergent coronary referral pathway in our region.

Methods and results: We studied consecutive STEMI patients from 2013 to 2022, admitted in our centre for primary percutaneous coronary angioplasty (PPCI). We defined pandemic period as the interval between 2020 and 2022. Time variables included were: patient delay, electrocardiogram (ECG) delay, diagnostic delay, logistic delay, transport delay, home delay, procedure time. With these variables we also registered: first medical contact (FMC) to diagnosis time, door-in-door out time, door to wire, diagnosis to wire, FMC to wire and total ischemia time. We included a total of 1,962 PCI cases, with a median patient age of 64 ± 14 years and with 74% being males. We

found that median patient delay was higher during the SARS-CoV-2 pandemic (90 min vs. 105 min, p = 0.002) and that the median transport time during the same period was also higher (55 min vs. 62 min, p < 0.001). Home delay was lower during the pandemic interval (18 min vs. 12 min, p < 0.001). In contrast, procedure time was higher in SARS-CoV-2 period (27 min vs. 32 min, p < 0.001) and we verified the same considering total ischemia time (304 min vs. 326 min, p < 0.001).
Conclusions: The COVID-19 pandemic had a profound impact on healthcare systems worldwide and our centre was not an exception. As expected, patient delay was higher during the pandemic period reflecting the fear of looking for health care during this time. Importantly, our analysis show that the home delay was lower during pandemic, so we must maintain and improve the strategies adopted as a new foundation, so we can provide the best quality of care possible to our population.

PO 232. MID-RANGE EJECTION FRACTION AFTER STEMI: DIFFERENT APPLES IN THE SAME BASKET

Sofia Esteves[1], João Agostinho[2], Fátima Salazar[1], Ana Francês[1], Catarina Simões de Oliveira[3], Ana Abrantes[3], Daniel Inácio Cazeiro[3], Nuno Lousada[3], Joana Rigueira[3], Rafael Santos[3], Doroteia Silva[3], Fausto J. Pinto[2]

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Introduction: ST segment elevation infarction with mid-range ejection fraction (EF) constitutes a subgroup of population with less evidence in respect to therapeutic indications, prognosis and risk estimation. Several studies showed that troponin levels after STEMI could act as a marker of prognosis, but such conclusions are yet to be drawn in this subgroup.
Objectives: To define whether troponin levels after STEMI in this subgroup of patients (pts) could help establishing long term prognosis.
Methods: Single center retrospective observational study including patients with STEMI and a resulting mildly reduced ejection fraction (40-49%) between January 2015 and December 2019. Clinical, laboratory, echocardiographic and cath data were obtained through electronic patient records at the time of STEMI and during follow-up. Frequency tables were created and data analysis was performed with Chi-square test; ROC curve analysis and Kaplan-Meyer curves were obtained to analyze survival.
Results: During the study period we enrolled a total of 219 patients who presented with STEMI and mildly reduced ejection fraction. Mean age was 62.67 ± 12.9 years and 72.1% were male. Most frequent risk factors were hypertension and dyslipidemia. In most patients anterior descending artery was the culprit vessel (62.8%), followed by right coronary artery (23.3%). Mean left ventricle ejection fraction (LVEF) after the event was 44.9 ± 2.37% and subsequent echocardiographic evaluation showed that 11.4% of patients had a worsening of LVEF. ROC curve analysis was performed, and a cut-off of 4300 ng/L was established as having the best sensitivity and specificity (AUC 0.809, 95%CI 0.722-0.895). The Kaplan Meyer curve showed that patients with troponin level > 4300 ng/L presented a higher rate of cardio-vascular events (composite endpoint of death, cardiovascular hospital admissions and stroke) – figure 1. Peak troponin levels also showed an inverse correlation with left ventricular ejection fraction at follow-up (p = 0.031).
Conclusions: Post STEMI mid-ranged ejection fraction pts are not an homogeneous population, as higher troponin levels identified a subset of patients in whom worsening of LVEF was detected and at higher risk of events during follow-up. Since specific therapeutic recommendations are lacking in this group, close clinical monitoring is warranted in those at higher risk, as starting neurohormonal modifying therapy and referral to an HF center must be considered.

PO 233. GENDER DIFFERENCE IN REFERRAL PATHWAY IN PRIMARY PCI

Rafael Viana, Francisco Cláudio, Marta Figueiredo, Miguel Carias, António Almeida, Rita Rocha, Gustavo Mendes, Diogo Brás, David Neves, Ângela Bento, Renato Fernandes, Lino Patrício

Hospital do Espírito Santo, EPE, Évora.

Introduction: Ischaemic heart disease is the single most common cause of death and its frequency is increasing. The mortality in patients presenting with an acute coronary syndrome with ST-elevation (STEMI) is associated with many factors such as the time delay to treatment. Research has suggested that there may be variations in ischemia time between men and women experiencing STEMI. Understanding these gender differences is crucial for improving quality of care and outcomes. Hence, we aim to analyse the response time and delays in the emergent coronary referral pathway for our centre taking gender in consideration.
Methods and results: We studied consecutive STEMI patients from 2013 to 2022, admitted in our centre for primary percutaneous coronary angioplasty (PPCI). Time variables included were: patient delay, electrocardiogram (ECG), delay, diagnostic delay, logistic delay, transport delay, home delay, procedure time. Other variables registered were: first medical contact (FMC) to diagnosis time, door-in-door out time, door to wire, diagnosis to wire, FMC to wire and total ischemia time. A total of 1959 patients were included over 9 years, with a median age of 64 ± 14 years and with 74% being males. There were no differences regarding median patient (104 min vs. 90 min, p = 0.077) or ECG delay (19.5 min vs. 19 min, p = 0.998). The median diagnostic delay was higher in female (62 min vs. 51 min, p < 0.001), conditioning also a higher median delay between FMC to diagnosis (100 min vs. 90 min, p = 0.022). We also registered a lower median home delay in

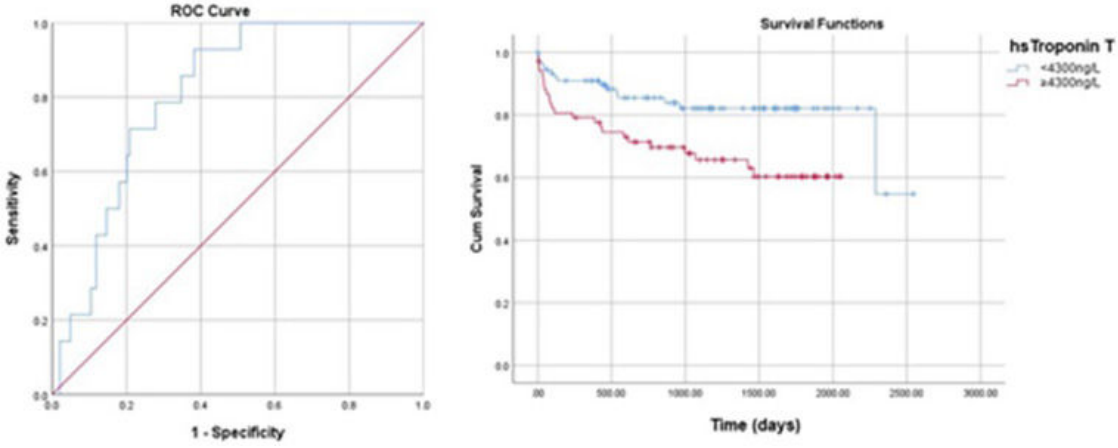


Figure PO 232

men (20 min vs. 15 min, p = 0.025), lower FMC to wire (213 min vs. 184 min, p < 0.001) and a total ischemia times (381.5 min vs. 295.5 min; p < 0.001).
Conclusions: First, we found that both genders did not achieve the time frames recommended in the guidelines, suggesting that there is a lot to improve taking STEMI pathway in consideration. We also concluded that besides literature suggesting that women present more often with atypical clinical symptoms, that did not influence either patient or ECG delay. Our findings show a significant delay in STEMI diagnosis in women, which leaded to treatment delays. This finding may be explained by healthcare professional's underestimation of the risk of heart disease in women, or less pronounced changes in ECG. Hence, when in doubt, a team shared decision is fundamental to improve quality of care and minimize this gender differences.

SÁBADO, 20 ABRIL de 2024 | 12:30-13:30

Área de Posters 3 | Sessão de Posters 36 - Antiagregação plaquetar

PO 234. PROGNOSTIC IMPLICATIONS OF P2Y12 INHIBITOR PRETREATMENT IN NON-ST SEGMENT ELEVATION ACUTE CORONARY SYNDROMES UNDERGOING LATE INVASIVE STRATEGY - A NATIONAL REGISTRY ANALYSIS

Adriana Vazão[1], Carolina Gonçalves[1], André Martins[1], Mariana Carvalho[1], Margarida Cabral[1], João Carvalho[1], Sidarth Pernencar[1], João Morais[1], em nome de todos os investigadores do Registo Nacional de Síndromes Coronárias Agudas[2]

[1]Centro Hospitalar de Leiria/Hospital de Santo André. [2]CNCDC.

Introduction: Current guidelines recommend considering P2Y12 pre-treatment (PreT) in patients (pts) with non-ST segment elevation acute coronary syndrome (NSTE-ACS) expected to undergo a late invasive strategy, based on individual bleeding risk.
Objectives: Describe in-hospital morbi-mortality in NSTE-ACS pts undergoing a late invasive strategy (coronary angiography (CAG) performed > 24h post-admission) comparing those receiving P2Y12 inhibitors (P2Y12i) PreT with those who did not.
Methods: Retrospective multicenter analysis of NSTE-ACS pts from the Portuguese Registry on Acute Coronary Syndromes (ProACS) undergoing a late invasive strategy (2010-2023). Exclusion criteria: prior treatment with P2Y12i or anticoagulants; atrial fibrillation. Two cohorts were defined PreT with P2Y12i before undergoing CAG (group 1) and without PreT (group 2) with comparative analyses of baseline characteristics, clinical and CAG findings, and treatment. Primary outcome was in-hospital major adverse cardiac events (MACE), a composite of all-cause mortality, re-infarction, stroke and congestive heart failure. Secondary outcomes were individual events and major bleeding.
Results: 3,776 pts were included (mean age: 66 ± 12 yrs, 29% female) of whom 1,530 (41%) received PreT (group 1). Group 1 had lower prevalence of dyslipidemia (60 vs. 66%), prior myocardial infarction (16 vs. 21%) and percutaneous coronary intervention (12 vs. 15%) (all p ≤ 0.001). On admission, there were no differences in Killip class (class I - 90%) but group 1 less frequently had left ventricular disfunction (ejection fraction < 50% - 20 vs. 24%, p = 0.032). Group 1 had higher incidence of obstructive coronary disease (84 vs. 77%, p < 0.001), more frequently needed more than 1 CAG (8 vs. 4%, p < 0.001), but multivessel disease did not differ significantly (52 vs. 52%, p = 0.667). Coronary angioplasty was more frequent in group 1 (63 vs. 60%, p = 0.019) as was coronary artery bypass graft (13 vs. 10%, p = 0.002). Regarding anti-thrombotics, group 1 had higher prescription of clopidogrel (68 vs. 56%), aspirin (99 vs. 81%), unfractionated heparin (21 vs. 8%) and enoxaparin (80 vs. 56%) (all p < 0.001). There were no differences in primary outcome (9 vs. 9%) and secondary outcomes (Table B). Group 1 had higher rates of major bleeding (0.8 vs. 0.2%, OR 3.48,CI 95% 1.22-9.89, p = 0.013).
Conclusions: In patients with NSTE-ACS undergoing a late invasive strategy, PreT with P2Y12i showed no significant differences in in-hospital MACE despite association with higher rates of major bleeding.

PO 235. EFFICACY AND SAFETY OF USING 3 VS 12-MONTH ANTIPLATELET THERAPY AFTER PERCUTANEOUS CORONARY INTERVENTION: META-ANALYSIS OF RANDOMIZED CONTROLLED CLINICAL TRIALS

Ana Filipa Mesquita Gerardo, Mariana Passos, Inês Fialho, Carolina Mateus, Inês Miranda, Joana Lima Lopes, Mara Sarmento, Pedro Custódio, Daniel Faria

Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra.

Introduction: The optimal duration of dual antiplatelet therapy (DAPT) in the era of second generation drug-eluting stents is a matter of debate as increasing evidence suggests that shorter periods of DAPT are feasible and reduce bleeding events. However, the non-inferiority design of the published trials regarding ischemic events still raises doubt on its effectiveness.
Methods: We performed a meta-analysis to evaluate short-term (≤ 3 months) vs. long-term (≥ 12 months) DAPT after percutaneous coronary intervention (PCI). PubMed, Embase and Cochrane Central were searched from inception to February 2023 to identify randomized controlled trials that compared outcomes of patients between these two regimens. Primary outcome of

(A)

	Total (n=3776)	P2Y12i PreT (N=1530)	No P2Y12i PreT (N=2246)	p-value
Male (%)	2691 (71)	1100 (72)	1591 (71)	0.494
Age (years) - mean±SD	66±12	65±12	66±12	0.065
Obesity (%)	885 (28)	382 (28)	503 (27)	0.790
Dyslipidaemia (%)	2326 (63)	894 (60)	1432 (66)	<0.001
Hypertension (%)	2774 (74)	1108 (73)	1666 (75)	0.168
Diabetes mellitus (%)	1286 (34)	514 (34)	772 (35)	0.638
History of smoking (%)	952 (25)	411 (27)	541 (24)	0.056
Prior angina (%)	1146 (31)	301 (20)	845 (38)	<0.001
Prior MI (%)	686 (19)	248 (16)	438 (21)	0.001
Prior PCI (%)	514 (14)	177 (12)	337 (15)	0.001
Prior Ischemic stroke/TIA (%)	217 (6)	102 (7)	115 (5)	0.003
COPD (%)	186 (5)	93 (6)	93 (4)	0.009
Family history of CAD (%)	220 (6)	69 (5)	151 (7)	0.011
Heart failure (%)	172 (5)	77 (5)	95 (4)	0.290
Chronic Kidney Disease (%)	193 (6)	79 (5)	114 (6)	0.523

(B)

	Total (n=3776)	P2Y12i PreT (N=1530)	No P2Y12i PreT (N=2246)	p-value
MACE (%)	330 (9)	134 (8.9)	196 (9)	0.906
All-cause Mortality (%)	25 (0.7)	9 (0.6)	16 (0.7)	0.647
Re-infarction (%)	36 (1)	20 (1.3)	16 (0.7)	0.072
Stroke (%)	19 (0.5)	11 (0.7)	8 (0.4)	0.130
Heart failure (%)	280 (7.6)	107 (7.1)	173 (7.9)	0.353
Major bleeding (%)	17 (0.5)	12 (0.8)	5 (0.2)	0.013

Table 1. Baseline characteristics (A) and outcomes (B) [CAD – Coronary artery disease; COPD – Chronic obstructive pulmonary disease; MI – myocardial infarction; PCI – Percutaneous coronary intervention; SD – Standard deviation; TIA – transient ischemic attack]

Figure PO 234

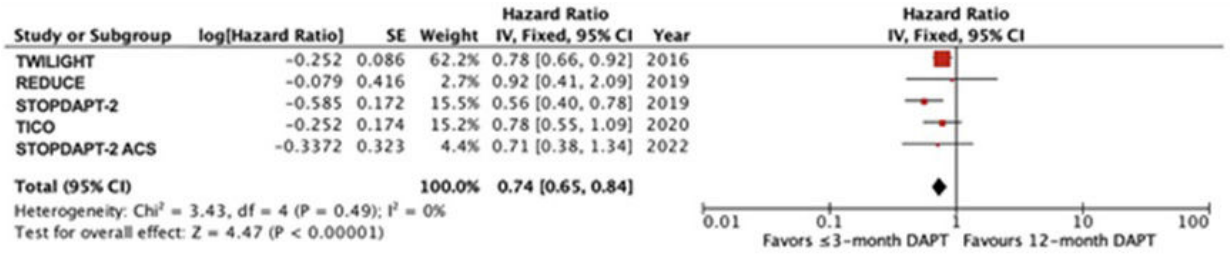


Figure 1A: The pooled hazard ratio for the outcome of hemorrhagic events of ≤ 3-month vs 12-month dual platelet therapy after percutaneous coronary intervention.

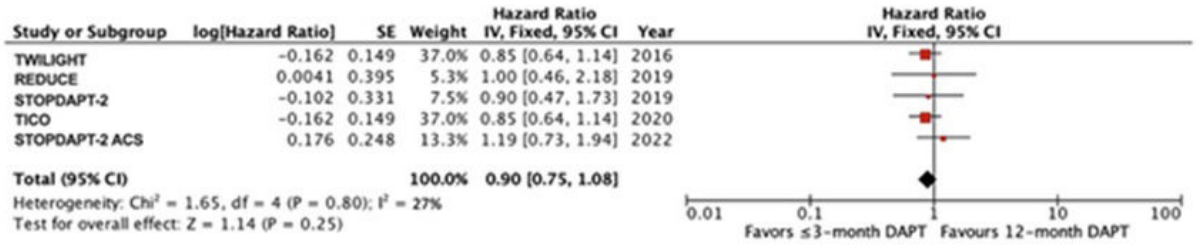


Figure 2A: The pooled hazard ratio for the outcome of ischemic events of ≤ 3-month vs 12-month dual platelet therapy after percutaneous coronary intervention.

Figure PO 235

interest included a composite of ischemic events (cardiovascular [CV] death, myocardial infarction, re-revascularization and stroke) and secondary outcome was major bleeding as assessed by Bleeding Academic Research Consortium (BARC) classification ≥ 3 after 1 year of follow up. Event rates were extracted and Mantel-Haenszel fixed-effects model was used to perform the meta-analysis.

Results: We identified a total of 5 trials with 18,682 randomized patients. The included studies were: 1) The effect of 1-month DAPT followed by clopidogrel vs. 12-Month DAPT on cardiovascular and bleeding events in patients receiving PCI (STOPDAPT-2) trial; 2) The comparison of clopidogrel monotherapy after 1 to 2 Months of DAPT with 12 months of DAPT in patients with acute coronary syndrome (ACS) (STOPDAPT-2 ACS) trial; 3) The effect of ticagrelor monotherapy vs. ticagrelor with aspirin on major bleeding and CV events in patients with ACS (TICO) trial; 4) The randomized evaluation of short-term DAPT in patients with ACS treated with a new-generation stent (REDUCE) trial and 5) The ticagrelor with or without aspirin in high-risk patients after PCI (TWILIGTH) trial. All 5 studies contributed to the outcome of BARC-defined major bleeding. In the pooled analysis, the use of ≤ 3-month DAPT was associated with a 26% reduction in major bleeding (HR 0.74, 95%CI 0.65 to 0.84, $p < 0.01$, $I^2 = 0\%$). Ischemic outcomes were similar for ≤ 3-month-DAPT and ≥ 12-month-DAPT (HR 0.90, 95%CI 0.75-1.08, $p = 0.25$, $I^2 = 27\%$) (Figure 1).

Conclusions: The present meta-analysis provides an updated data on the use of DAPT duration. Short-term DAPT appears to be equivalent to long-term DAPT regarding ischemic risk and a superior strategy in optimizing bleeding risk reduction.

236. PRECISE DAPT SCORE FOR PREDICTION OF OUTCOMES IN PATIENTS TREATED WITH PERCUTANEOUS CORONARY INTERVENTION FOR PROXIMAL LEFT ANTERIOR DESCENDING ARTERY

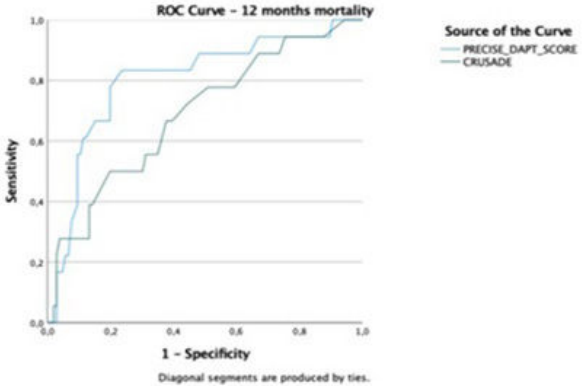
Oliver Correia Kungel, Vanda Devesa Neto, António Costa, Inês Pires, Joana Correia, Gonçalo Ferreira, João Gouveia Fiúza, Mariana Duarte Almeida, Francisco Rodrigues dos Santos

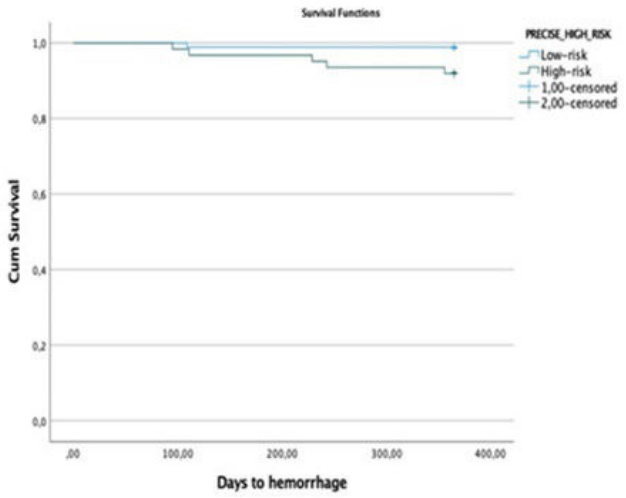
Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio.

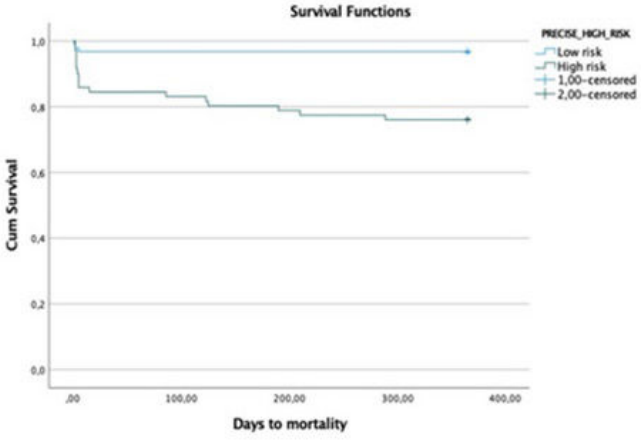
Introduction: PRECISE-DAPT (PD) is a recently validated score for long-term bleeding prediction after percutaneous coronary intervention (PCI) with stenting in patients undergoing double antiplatelet therapy (DAPT). Our purpose was to evaluate if PD could predict bleeding events and 12 months-mortality in patients hospitalized due to acute coronary syndrome (ACS) undergoing PCI proximal left anterior descending artery (pLAD) and compared to other validated bleeding score (CRUSADE score).

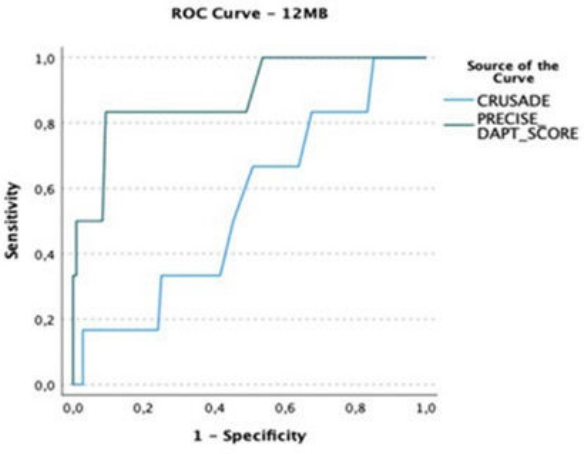
Methods: Retrospective analysis of 804 patients admitted to a Cardiology ward due to ACS, planned to undergo PCI and treated with DAPT (aspirin + P2Y12 inhibitor) for a minimum of 12 months. Bleeding event was defined as any Thrombolysis in Myocardial Infarction criteria (TIMI) minor or major bleeding. Kaplan-Meier survival plots were used to evaluate the predictive power of PD score on 12-month bleeding events (12MB) and 12-month mortality (12MM). Receiver Operating Characteristic (ROC) curve analysis was conducted to compare the performance of both the PD score and the CRUSADE score in predicting outcomes.

Results: 233 patients were included; mean patient age was 68 (± 13), 75% were men. 53.4% had ST-elevation myocardial infarction. 78%, 16% and 6% of patients, respectively, were submitted to PCI of 1, 2 and 3 or more vessels. 12MB event rate was 5.9%. 12MM was 14.8%. Kaplan-Meier analysis stratified by high vs. non-high bleeding risk using PD score (PD < or ≥ 25) revealed significantly lower median time to 12MB in high-risk subgroup (362.2 ± 2.8 vs. 352.2 ± 6.4 days, bleeding rate: 8.1% vs. 1.1%, χ^2: 4.702, $p = 0.03$). 12MM analysis revealed that high bleeding risk patients had significantly lower median time to death (days to event 353.4 ± 6.6 vs. 292.2 ± 16.1, mortality rate: 23.9% vs. 3.2%, χ^2: 16.09, $p < 0.01$). ROC curve analysis demonstrated that PD score had better predictive analysis to 12MM (AUC PD 0.804 vs. AUC CRUSADE 0.689) and 12MB (AUC PD 0.883 vs. AUC CRUSADE 0.552) when compared with CRUSADE score.









Conclusions: Patients treated with PCI to pLAD disease after ACS with a high bleeding risk, as assessed by PD score, have significantly higher risk of 12MB and 12MM events. PD might be a useful tool for long-term bleeding prediction and may support the decision of DAPT duration after ACS in these patients.

PO 237. TRIPLE ANTITHROMBOTIC THERAPY IN ACUTE CORONARY SYNDROME IN PATIENTS WITH MODERATE-HIGH ISCHEMIC RISK: HOW TO DEFINE THE DURATION OF TREATMENT TAKING INTO ACCOUNT THE OUTCOME?

Joana Massa Pereira, Sofia Andraz, Lucas Hamann, Hugo Alex Costa, Miguel Espírito Santo, Daniela Carvalho, Pedro Azevedo, Raquel Fernandes, Dina Bento, João Sousa Bispo, Hugo Vinhas, Jorge Mimoso

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Introduction: Atrial fibrillation (AF) and flutter (AFL) increase the risk of thromboembolic events and may be indicated to initiate anticoagulation. In these patients, in case of an acute coronary syndrome (ACS), anticoagulation must be maintained during percutaneous coronary intervention (PCI) and continued thereafter. Differing in terms of duration, we can use a default triple antithrombotic therapy (TAT) or an extended therapy strategy.

Table 1- Characteristics of patients with acute coronary syndrome submitted to triple antithrombotic therapy.

	Triple Antithrombotic Therapy			
	Default Strategy 1 week (n=17, 26,2%)	Extended Strategy 1-3 months (n 32, 49,2%)	Total n=49	*p* Value
Gender				
Female	7 (41,2%)	12 (37,5%)	19 (38,8%)	
Male	10 (58,8%)	20 (62,5%)	30 (61,2%)	1,000
Age	75,7 ± 9,2	73,9 ± 9,9	74.5±9.6	0.544
Diabetes Mellitus				
NIT	7 (41,2%)	13 (13,1%)	20 (40,8%)	
IT	2 (11,8%)	2 (6,3%)	4 (8,2%)	0,741
Dyslipidemia	16 (94,1%)	27 (84,4%)	43 (87,8%)	0,650
Arterial Hipertension	15 (88,2%)	31 (96,9%)	46 (93,9%)	0,273
Smoking *Status*				
Active Smoker	3 (17,6%)	4 (12,5%)	7 (14,3%)	
Ex-smoker	2 (11,8%)	7 (21,9%)	9 (18,4%)	0,737
Family History of Coronary Disease	0 (0.0%)	1 (3,1%)	1 (2,0%)	1,000
Atrial Flutter	2 (11,8%)	2 (6,3%)	4 (8,2%)	0,602
Atrial fibrillation	16 (94,1%)	31 (96,9%)	47 (95,9%)	0,578
Type of Event				
STEMI	4 (23,5%)	10 (31,3%)	14 (28,6%)	
NSTEMI	10 (58,8%)	20 (62,5%)	30 (61,2%)	
MINOCA	1 (5,9%)	0 (0,0%)	1 (2,0%)	
Subacute STEMI	2 (11,8%)	2 (6,3%)	4 (8,2%)	0,548
Antiplatelet Therapy				
ASA + Ticagrelor	1 (5,9%)	0 (0,0%)	1 (2,0%)	
ASA + Clopidogrel	5 (29,4%)	30 (93,8%)	35 (71,4%)	
ASA + Triflusal	0 (0,0%)	1 (3,1%)	1 (2,0%)	
Clopidogrel	10 (58,8%)	1 (3,1%)	11 (22,4%)	**< 0,01**
Anticoagulant Therapy				
Enoxaparin	2 (11,8%)	0 (0,0%)	2 (4,1%)	
Warfarin	0 (0,0%)	1 (3,1%)	1 (2,0%)	
Apixaban	12 (70,6%)	19 (59,4%)	31 (63,3%)	
Edoxaban	2 (11,8%)	4 (12,5%)	6 (12,2%)	
Dabigatran	1 (5,9%)	7 (21,9%)	8 (16,3%)	
Rivaroxaban	0 (0,0%)	1 (3,1%)	1 (2,0%)	0,261
Hemorragic Risk				
High	15 (82,4%)	18 (53,1%)	32 (63,3%)	
Low	3 (17,6%)	15 (46.9%)	18 (36,7%)	**0,043**
Hemorragic Events	3 (17,6%)	5 (15,6%)	8 (16,3%)	1,000
Ischemic Risk	16 (94,1%)	27 (84,4%)	43 (87,8%)	0,650

NIT – non-insulin-therapy; IT – insulin-therapy; STEMI - ST-elevation myocardial infarction; NSTEMI - non-ST-elevation myocardial infarction; MINOCA - Myocardial infarction with non-obstructive coronary arteries; ASA - acetylsalicylic acid;

Objectives: Understand if patients with AF and/or AFL admitted due to an ACS and who underwent PCI had differences in terms of outcome, taking into account the duration of TAT (1 week - Default Strategy or 1-3 months - Extended Strategy). Additionally, the aim was to characterize the sample in terms of demographic characteristics, cardiovascular risk factors (CVRF), ischemic and hemorrhagic risk, as well as the type of therapy used.
Methods: Retrospective study included 65 patients with AF and/or AFL admitted due to an ACS and who underwent PCI between January 2020 and December 2021. The outcome studied was hospitalization due to cardiovascular (CV) cause, or unplanned PCI, or occurrence of a hemorrhagic

event or CV death. Categorical variables are expressed as absolute value and frequency, while continuous variables as mean and standard deviation. Statistical evaluation was carried out using the Chi-Square Test or Fisher's Exact Test. p value < 0.05 indicates statistical significance.
Results: From 65 patients with AF and/or AFL, 49 received TAT (26.2% until 1 week and 49.2% between 1 to 3 months). They had an average age of 74.5 ± 9.6 years, with 61.2% being male. In terms of CVRF 49.0% had Diabetes Mellitus, 87.8% dyslipidemia, 93.9% high blood pressure and 14.3% were smokers. The most common coronary event was acute myocardial infarction without ST segment elevation (61.2%). The majority had a moderate-high ischemic risk, with no differences between the TAT group treated until 1 week *versus* TAT group treated during 1-3 months (p = 0.650). Differences were observed between groups when assessed bleeding risk using ARC-HBR evaluator with a greater number of individuals under TAT for 1-3 months than expected, when the hemorrhagic risk was low (p = 0.043). There was no association between the composite outcome and the duration of TAT (p = 0.231).
Conclusions: In patients with ACS and AF and/or AFL, the choice of TAT strategy should be guided by hemorrhagic risk, since it does not seem to lead to an increase in CV, ischemic or hemorrhagic events, when ischemic risk is moderate-high.

PO 238. DEVELOPMENT OF A CLINICAL RISK SCORE FOR EARLY LEFT VENTRICULAR THROMBUS PREDICTION FOLLOWING ANTERIOR ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION

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Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio.

Introduction: Despite improvements in the management of ST-segment elevation myocardial infarction (STEMI), the risk of left ventricular thrombus (LVT) remains a significant concern due to its potential for embolic complications. Early identification of patients at high risk for LVT is crucial for guiding therapeutic interventions and improving clinical outcomes. This study aimed to develop a practical and clinically applicable risk score that integrates readily available demographic, clinical, and echocardiographic parameters to predict the likelihood of early LVT formation post anterior STEMI.
Methods: A single-center study was performed including all patients admitted due to anterior STEMI and performed echocardiography in the days following the event. The newly designed score was calculated for each patient (0-15 points), after identification of the variables significantly associated with LVT formation (points attributed for each variable according to odds ratio). The score incorporates age, clinical presentation (Killip-Kimball classification), history of previous myocardial infarction and atrial fibrillation, and echocardiographic findings (left ventricular ejection fraction and apical aneurysm). ROC curve analysis was performed to evaluate the predictive value of the score.
Results: 68 patients; mean age was 66.1 ± 13.5; 81% male. History of previous myocardial infarction in 16% and 6% had atrial fibrillation. Killip-Kimball (KK) classification at admission was 57% in class I, 32% in class II, 2% in class III, and 9% in class IV. Fibrinolysis was performed in 27% of patients. Mean door-to-balloon time was 138.9 ± 123.4 minutes. 13% presented > 12h after symptom onset. Successful reperfusion (Grade 3 in TIMI classification) in 84% of patients. Median LVEF was 41.2 ± 8.6%; apical aneurism in 34%. Contrast echocardiography was performed in 56% of patients. Apical thrombus was identified in 19%. The developed risk score demonstrated a clear association with thrombus formation (13% high-risk, 4% intermediate-risk and 1.5% low-risk group; p < 0.01, χ^2 = 17.02). ROC curve analysis revealed that the score had a robust predictive performance for early thrombus detection (AUC 0.82; p < 0.01, 95%CI 0.68-0.95). High-risk classification had a significant

SCORE

Age:
40-50 years: 0 points
51-60 years: 1 point
61-70 years: 2 points
70 years: 3 points

Killip Class at Presentation:
Class I: 0 points
Class II: 1 point
Class III: 2 points
Class IV: 3 points

Time to Reperfusion:
<2 hours: 0 points
2-4 hours: 1 point
4-6 hours: 2 points
6 hours: 3 points

History of Prior Myocardial Infarction:
No: 0 points
Yes: 2 points

History of Atrial Fibrillation:
No: 0 points
Yes: 2 points

Left Ventricular Ejection Fraction (LVEF):
50%: 0 points
40-50%: 1 point
30-40%: 2 points
<30%: 3 points

Presence of Left Ventricular Aneurysm:
No: 0 points
Yes: 2 points

Interpretation:
Low Risk: 0-3 points
Intermediate Risk: 4-7 points
High Risk: 8-15 points

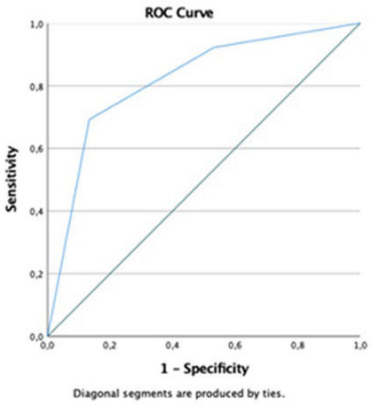


Figure PO 238

association with apical aneurism ($p < 0.01$; $\chi^2 = 11.88$), previous acute myocardial infarction ($p = 0.02$; χ^2 7.87), history of chronic pulmonary disease ($p = 0.01$; $\chi^2 = 9.07$) and higher KK score ($p < 0.01$; $\chi^2 = 17.24$). No differences between groups regarding 6 months ($p = 0.24$) and 12 ($p = 0.30$) months mortality and 12 months hospital re-admission ($p = 0.68$).
Conclusions: These findings suggest that the proposed risk score effectively stratifies patients based on their risk of developing LVT following anterior STEMI and could be used in daily practice to determine which patients should be aggressively investigated.

PO 239. STEMI DUAL ANTIPLATELET PRETREATMENT - PORTUGUESE MULTICENTER EXPERIENCE

António Maria Rocha de Almeida, Miguel Carias de Sousa, Marta Paralta Figueiredo, Rafael Viana, Kisa Congo, Rita Rocha, David Neves, Manuel Trinca, Lino Patrício

Hospital do Espírito Santo, EPE, Évora.

Introduction: Antiplatelet therapy is the cornerstone treatment for ST-segment elevation myocardial infarction (STEMI). Dual antiplatelet therapy (DAPT) including aspirin and a potent P2Y12 inhibitor (P2Y12i) is recommended as default strategy, however, the timing remains controversial: European Cardiology Society ceased to recommend pretreatment with DAPT in STEMI. This study aims to evaluate the effect of DAPT pretreatment with potent P2Y12i in STEMI, in comparison to DAPT with clopidogrel and single antiplatelet treatment (SAPT) with aspirin.
Methods: Multicenter national cohort of 2,139 STEMI cases was divided in 3 groups, considering its antiplatelet therapy pretreatment: DAPT with potent P2Y12i, DAPT with clopidogrel and SAPT. Primary endpoints were death, major adverse cardiovascular events (MACE), and successful PCI. Safety endpoint was major hemorrhagic events.
Results: From the total 2.139 STEMI patients, 80% (n = 1.719) were pretreated with DAPT with clopidogrel, with mean age of 65 ± 14 years and 27% were women. 13% (n = 268) patients undergone with DAPT with potent P2Y12i, whom the mean age was 63 ± 12 years and 21% were female. 7% (n = 152) patients were pretreated with aspirin, which the mean age was 72 ± 13 years and 38% were women. The DAPT pretreatment groups were statistically significantly younger ($p < 0.001$) and had fewer female patients ($p < 0.001$). In the SAPT group, there was a statistically significant higher rate of history of stroke and chronic kidney disease (15.1% vs. 6.8%, $p < 0.01$ and 8.6% vs. 4.4%, $p = 0.03$) and of Killip 3 or 4 presentation rate in the aspirin group, against the DAPT group (16.8% vs. 7.3%, $p < 0.01$). There was a statistically significant decrease in hospital mortality in the DAPT group, comparing with SAPT (11% vs. 28%, n = 43, $p < 0.001$ OR 0.3 [0.2-0.5] NNT 6), and statistically similar between potent P2Y12i and Clopidogrel (9% vs. 11% n = 194, $p = 0.3$). The number of MACE was statistically similar between DAPT and SAPT (27% and 33%, $p = 0.4$), however, there was a statistically significant reduction in potent P2Y12i group, comparing with Clopidogrel (15% and 29% $p < 0.001$ OR 0.4 [0.3-0.5] NNT 7). Successful PCI was higher in DAPT group cases, in comparison to SAPT group (73% vs. 6%, $p < 0.01$ OR 9 [7-15] NNT 1). Regarding safety outcomes, major hemorrhage occurred in 1.5% (n = 5) patients with DAPT with potent P2Y12i, in 3% (n = 53) of patients with DAPT with clopidogrel and in 3% (n = 4) of aspirin only group of patients. There was no statistically significant difference in terms of hemorrhagic events ($p = 0.7$).
Conclusions: According to our retrospective multicenter results, pretreatment with potent P2Y12i is associated with better results, namely higher rate of successful PCI, less MACE and in hospital death, contrary to recent trials. Our study has some bias, as DAPT pretreatment was standard of care during the registry, and the choice for a SAPT might have been related to higher risk patients.

SÁBADO, 20 ABRIL de 2024 | 14:30-15:30

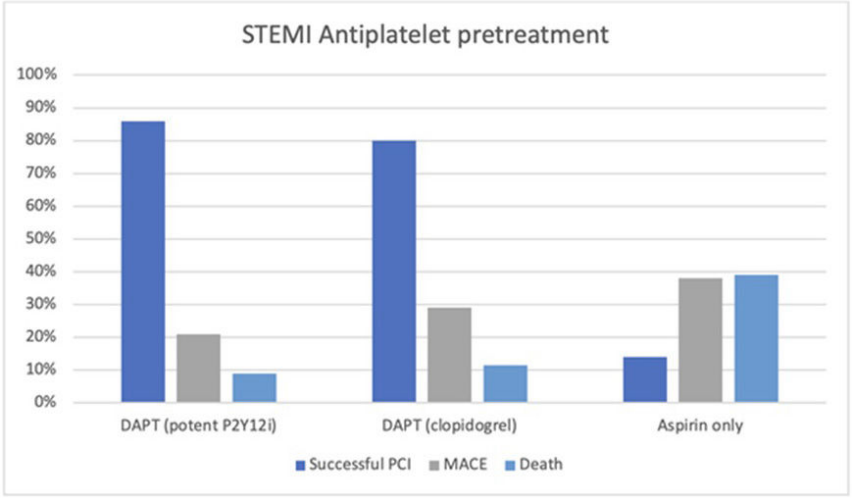
Área de Posters 2 | Sessão de Posters 37 - Insuficiência cardíaca - Terapêutica farmacológica

PO 240. REAL-WORLD IMPACT OF EARLY QUADRUPLE THERAPY IN HFREF: A COMPARATIVE ANALYSIS OF SEQUENTIAL VS. SIMULTANEOUS APPROACHES

Diogo Rosa Ferreira[1], Catarina Gregório[1], Ana Beatriz Garcia[1], Ana Francês[1], Fátima Salazar[1], Rafael Santos[2], Joana Rigueira[2], Doroteia Silva[2], Nuno Lousada[2], Fausto Pinto[2], Dulce Brito[2], João Agostinho[2]

[1]Department of Cardiology, Centro Hospitalar Lisboa Norte, CAML, Faculdade de Medicina, Lisboa. [2]Department of Cardiology, Centro Hospitalar Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Lisboa.

Introduction: The treatment approach for heart failure with reduced ejection fraction (HFrEF) underwent a paradigm shift after the 2021



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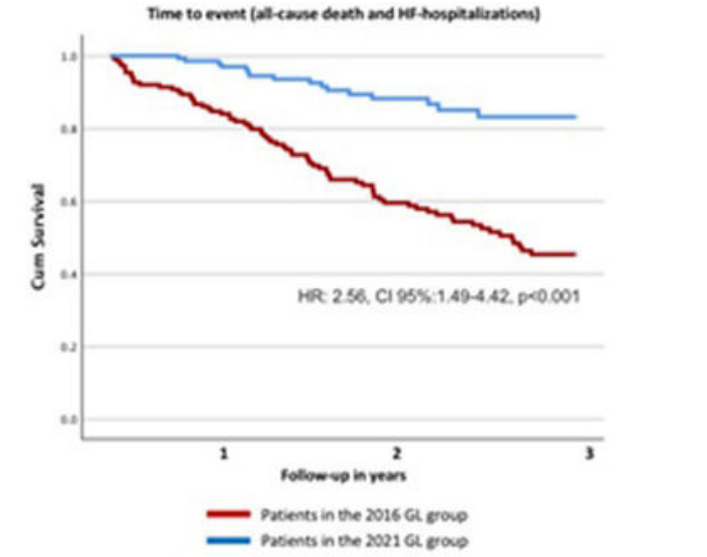

	Bisoprolol dose-equivalent	Spironolactone dose-equivalent	Sacubitril-Valsartan dose	SGLT2i
2016 group	5.5 mg	20 mg	45mg	30%
2019 group	5.1 mg	24 mg	113 mg	91%
p-value	p=NS	p=NS	p=0,01	p<0,001

Table 1: Mean dose of each drug of the four pharmacological pillars at FUP

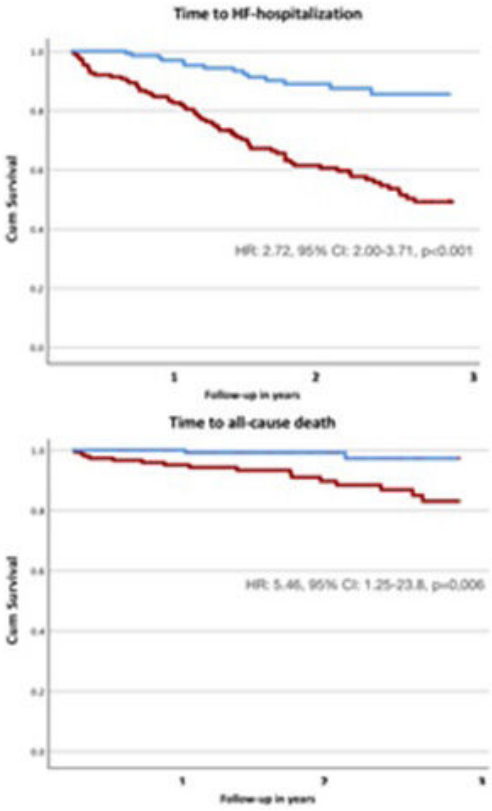

Figure PO 240

European Society of Cardiology Heart Failure Guidelines (GL). Contrary to the previous sequential strategy, which was a cornerstone in HFrEF management, the updated guidelines advocate for the early initiation of quadruple therapy based on recent clinical trials. However, this approach lacks validation in clinical trials or real-world registries.

Objectives: To assess in real-world data the impact on 3-year all-cause mortality and HF-hospitalization rate of early initiation of quadruple therapy against sequential therapy initiation in HFrEF patients.

Methods: A population of consecutive patients (pts) included in a HF outpatient clinic in a tertiary center was analyzed. A prospective group of 150 consecutive pts who initiated follow-up (FUP) from 2019-2022, embracing a baseline treatment approach involving early initiation of quadruple therapy was defined as the intervention group - "2021 GL group". The control group was composed by 150 retrospective pts who commenced FUP from 2016-2020, adhering to the sequential approach - "2016 GL group". The study groups were compared with Chi-square and Mann-Whitney tests. Impact on outcomes was established with Kaplan-Meier survival analysis and multivariate Cox regression.

Results: The 300 pts included were 65 ± 9 years and were followed for 25 ± 10 months. The most common HF etiologies were dilated cardiomyopathy (44.2%) and ischemic heart disease (42%), median LVEF was 29%. Age, creatinine clearance, initial left ventricle ejection fraction and NYHA class distribution were similar in both groups. Mean doses of each foundational therapy at FUP are displayed in the Table. All-cause mortality rate during the 3-year follow-up was significantly different between the two groups: 10% in the 2016 GL group and 1.3% in the 2021 GL group (p = 0.006). The number of HF admissions was also significantly lower in the 2021 GL group (9.3% vs. 41.2%, p < 0.001). Patients in the 2016 GL group had 2.6 times the risk of composite outcome of all-cause death and HF-hospitalization (HR: 2.56, CI 95%:1.49-4.42, ≤ 0.001).

Conclusions: In this real-world analysis comparing the sequential therapy approach to the early initiation of quadruple therapy in HFrEF patients, significant differences in outcomes were observed in all-cause mortality and HF-hospitalizations over a 3-year follow-up period. These findings underscore the safety and benefits of adopting the recommended early initiation of quadruple therapy in the management of HFrEF.

PO 241. HEART FAILURE ETIOLOGY AND ARNI+SGLT2I INITIATION MAY INFLUENCE ICD IMPLANTATION TIMING

Jéni Quintal, Sara Gonçalves, Tatiana Duarte, Pedro Carreira, Hugo Viegas, Margarida Madeira, Leonor Parreira, Dinis Valbom Mesquita, Rita Marinheiro, Rui Antunes Coelho, Ermelinda Pedroso, Filipe Seixo

Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo.

Introduction: Implantable cardioverter-defibrillator (ICD) is recommended in patients (pts) with symptomatic Heart Failure (HF) and a left ventricle ejection fraction (LVEF) ≤ 35% despite ≥ 3 months of optimal medical therapy (OMT) to reduce the risk of sudden death and all-cause mortality. However, the optimal timing of ICD implantation remains unclear and LVEF often recovers beyond 3 months of OMT. The impact of new neurohormonal therapies (NNHT) - ARNI/SGLT2i - is also unclear.

Objectives: To evaluate long term LVEF recovery in pts with implanted ICD after 3 months of OMT, LVEF predictors of recovery and the impact of NNHT.

Methods: We performed a retrospective single-center cohort study. Patients with symptomatic HF with LVEF ≤ 35% despite 3 months of OMT who underwent ICD implantation for primary prevention between 1 January 2013 and 30 June 2023 were included. Basal characteristics were determined. The population was divided in 2 groups: pts with recovered LVEF (gA) and pts without LVEF recovery (gB). The groups were compared regarding etiology, therapy and adverse events (arrhythmias, HF hospital readmission and all-cause mortality).

Results: This cohort included 114 pts with a mean age of 62 (± 9) years and an 83% male predominance. There was a high prevalence of cardiovascular

Table 1. Baseline characteristics and clinical data of individuals after implantable cardioverter-defibrillator implantation according to LVEF recovery

Variables	Overall sample	LVEF recovery		p value
	Pre-ICD n= 114	A – Recovered LVEF n= 16 (14.4)	B – Non-recovered LVEF n = 95 (85.6)	
Age, mean (± SD), years	62 (±9)	65 (±9)	62 (±9)	0.237
Male gender, n (%)	94 (82.5)	11 (68.8)	80 (84.2)	0.161
Cardiovascular risk factors				
Hypertension, n (%)	78 (68.4)	11 (68.8)	65 (68.4)	0.979
Diabetes mellitus, n (%)	43 (37.7)	6 (37.5)	35 (36.8)	0.960
Dyslipidemia, n (%)	64 (56.1)	6 (37.5)	56 (58.9)	0.110
Smoking history, n (%)	63 (55.3)	7 (43.8)	53 (55.8)	0.371
Obesity, n (%)	35 (31.5)	7 (43.8)	27 (28.4)	0.252
HF etiology, n (%)				
Ischemic	84 (73.3)	7 (43.8)	74 (77.9)	**0.038**
Dilated non-ischemic	24 (21.1)	9 (56.3)	15 (15.8)	**0.014**
Multifactorial	4 (3.5)		4 (4.2)	1.000
Alcoholic cardiomyopathy	1 (0.9)		1 (1.1)	1.000
LV noncompaction	1 (0.9)		1 (1.1)	1.000
LVEF, median (Q1-Q3), %	29 (14-35)	52 (50-69)	32 (17-47)	**0.001**
ARNI + SGLT2i, n (%)	26 (23.6)	26 (23.6)	49 (53.3)	**0.037**
Arrhytmias, n (%)	83 (73.5)	10 (62.5)	71 (74.7)	0.364
NSVT, n (%)	75 (66.4)	8 (50.0)	65 (68.4)	0.151
VT, n (%)	23 (20.4)	1 (6.3)	22 (23.2)	0.185
VF, n (%)	6 (5.3)	1 (6.3)	5 (5.3)	1.000
VT or VF with ICD therapies, n (%)	18 (69.2)	1 (6.3)	17 (17.9)	**0.001**
SVT, n (%)	13 (11.5)	2 (12.5)	11 (11.6)	1.000
AFib, n (%)	29 (25.7)	4 (25.0)	25 (26.3)	1.000
Upgrade to CRT, n (%)	4 (3.5)		4 (4.2)	1.000
NT-proBNP, median (Q1-Q3), pg/mL	938 (36-9720)	329 (76-2955)	907 (60-3467)	0.130
NYHA functional class, n (%)				
NYHA I		12 (75.0)	51 (53.7)	0.155
NYHA II	100 (91.7)	4 (25.0)	30 (31.6)	0.528
NYHA III	9 (8.2)		5 (5.5)	1.000
NYHA IV			5 (5.5)	1.000
HF readmission, n (%)	22 (19.3)	1 (6.3)	21 (22.1)	0.188
Death, n (%)	24 (21.1)	0 (0.0)	24 (25.3)	**0.021**
HF readmission or death, n (%)	33 (28.9)	1 (6.3)	32 (33.7)	**0.036**

AFib – Atrial fibrillation; ARNI - angiotensin receptor-neprilysin inhibitor; CMP – cardiomyopathy; HF – heart failure; LV – left ventricle; ICD – Implantable cardioverter-defibrillator; LVEF – left ventricle ejection fraction; NSVT – nonsustained ventricular tachycardia; NYHA – New York Heart Association Functional Classification; SGLT2i – Sodium-glucose co-transporter 2 inhibitors; SVT – supraventricular tachycardia; VT- ventricular fibrillation; VT - ventricular tachycardia.

Figure PO 241

risk factors as depicted in the Table. After a median follow-up (FUP) time of 44 (1-127) months, 16 (14.4%) pts recovered, 52.6% improved and 9.6% deteriorated LVEF. When comparing the groups, a significant difference in HF etiology was verified, with DNICMP being more common (56.3% vs. 15.8%, p = 0.014) and ischemic ICMP less common (43.8 vs. 77.9%, p = 0.038) in gA. Median time until LVEF recovery was 27 (2-135) months. Notably, 56.3% of pts only recovered LVEF after ARNI and SGLT2i initiation (56.3%, p = 0.001) within a median time of 19 (4-35) months. DNICMP [Exp (beta) 95%CI: 2.05 [2.36 – 25.53, p = 0.001], ICMP [Exp (beta) 95%CI: -1.69 [0.06 – 0.59, p = 0.004] and concomitant therapy with ARNI and SGLT2i [Exp (beta) 95%CI: 1.52 [1.11 – 18.88, p = 0.035] were independent predictors of LVEF recovery in multivariate analysis. Only 1 pt in gA required ICD therapy, 63 months after ICD implantation, making ventricular tachycardia or ventricular fibrillation with ATP or ICD shock significantly more common in gB (6.3 vs. 17.9%, p = 0.001). Overall median time until ICD therapy was 43 months. Hospital readmission due to HF and all-cause mortality were more common in gB (6.3% vs. 22.1%, p = 0.021; 0 vs. 25.3%, p = 0.036).

Conclusions: Our study suggests ICD implantation delay beyond the standard 3 months of OMT may be reasonable, particularly in pts with DNIMCD. ARNI/SGLT2-i initiation significantly contributed to LVEF recovery, hinting at a role in avoiding unnecessary ICD implantation in selected pts. This underscores the need for personalized timing based on HF etiology and NNHT impact for more effective therapeutic strategies.

PO 242. QUADRUPLE THERAPY AT DISCHARGE: ENHANCING CLINICAL TRAJECTORIES IN DECOMPENSATED HEART FAILURE WITH REDUCED EJECTION FRACTION

João Mendes Cravo[1], Ana Beatriz Garcia[1], Ana Margarida Martins[1], Ana Francês[2], Fátima Salazar[2], Nuno Lousada[3], Joana Rigueira[3], Rafael Santos[3], Doroteia Silva[3], F. J. Pinto[3], Dulce Brito[3], João Agostinho[4]

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Introduction: Guidelines recommend the use of multiple drugs in patients with heart failure and reduced ejection fraction (HFrEF). However, there is limited real-world data on the impact of simultaneously initiating the four pharmacological pillars (FPP) at discharge following a decompensation event.
Methods: A retrospective single-center study was conducted on patients with HFrEF discharged after a decompensation event and followed in an HF-specialized outpatient clinic from a tertiary hospital. Outcomes were compared between patients discharged with FPP and those missing at least one of the FPP. Kaplan-Meier survival analysis was performed.

	Bisoprolol equivalent mean dose	Spironolactone equivalent mean dose	Sacubitril-Valsartan total mean dose	SGLT-2i (yes/no)
NO-FPP ar discharge	5mg	25mg	95mg	75%/25%
FPP at discharge	6,5mg	32mg	133mg	100%/0%
p-value	**p=0,03**	**p= 0,022**	**p=0,01**	p=0,06

Table 1: Mean dose-equivalent of each drug of the four pharmacological pillars after optimized medical therapy

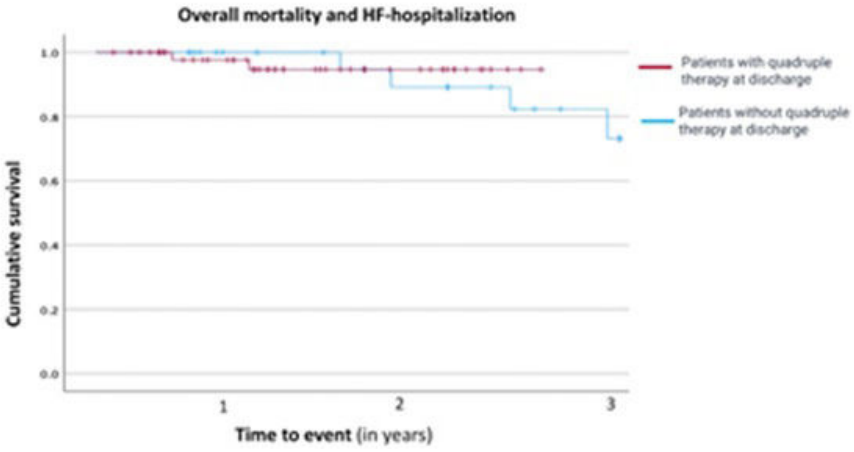

Figure PO 242

Results: A total of 84 patients were included. Twenty-two patients were female (26%), with a mean age of 62 years-old and the majority were ischemic (58.3%). At discharge 63% of the patients had started the FPP. Patients discharged with FPP had a worse mean left ventricle ejection fraction (LVEF) than those missing at least one FPP (25.7% vs. 32.6%). The two groups showed similarity in baseline NYHA class, NT-proBNP and eGFR, sex and age. Despite not statistically significant, patients in FPP group reached maximum tolerated doses of guideline-based therapies earlier (median up-titration visits of 2.1 vs. 3.8 in FPP lacking group), reached higher doses of FPP (Table) and had a significantly greater improvement in LVEF of +14% vs. +6% (mean difference of +6.86%, 95%CI: 3.26-10.46; p = 0.007). In a time to event analysis considering a composite of all-cause mortality and HF-related hospitalizations with a 3-year follow-up, there was a tendency towards reduction in events in the FPP group. Despite being globally low, the 3-year event rate was 3.8 times higher in the group missing FPP (3.92 vs. 14.8%).
Conclusions: Quadruple therapy at discharge in patients with HFrEF following a decompensation event resulted in earlier and more effective guideline-based optimal medical therapy uptitration, a greater improvement of LVEF after three months and a tendency towards reduction in all-cause mortality and HF-related hospitalizations.

PO 243. REAL-WORLD DAPAGLIFLOZIN AND CONCOMITANT MEDICATION TREATMENT PATTERNS IN PORTUGUESE PATIENTS WITH HEART FAILURE WITH REDUCED EJECTION FRACTION

Aurora Andrade[1], Sara Gonçalves[2], Ana Batista[3], Ana Teresa Timóteo[4], Ana Oliveira Soares[5], Fátima Franco[6], Otília Simões[7], Marisa Pardal[8], Mário Almeida[8], Margarida Lopes[8], Filipa Bernardo[8], José Silva Cardoso[9]

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Introduction: Dapagliflozin is a sodium–glucose cotransporter 2 inhibitor approved in 2020 for treatment of heart failure with reduced ejection fraction (HFrEF) regardless of a diagnosis of diabetes and added in 2021 to the European Society of Cardiology guidelines as a Class I therapeutic for HFrEF.
Objectives: This study aimed to understand dapagliflozin and concomitant medication treatment patterns in Portuguese real-world setting.
Methods: EVOLUTION-HF is an observational, retrospective cohort study in 8 Portuguese sites with patients initiated on dapagliflozin for HFrEF (with or without a diagnosis of diabetes). Medical records were analysed, collecting information at the index date (date of dapagliflozin initiation), and at 6 and 12-month follow-ups.
Results: 228 patients were included, mostly male (73%), mean 65 years old, 85% in NYHA II, with mean left ventricular ejection fraction (LVEF) of 29%, and mean eGFR of 77 mL/min/1.73 m^2. At the index date, the most common cardiovascular scope medications included beta-blockers, aldosterone antagonists (MRA), and diuretics (92%/71%/71%, respectively). After dapagliflozin initiation, there was a higher level of prescription and/or up-titration of beta-blockers, MRAs, and angiotensin receptor-neprylisin inhibitors (ARNI), as well as down-titration/withdrawal of diuretics and angiotensin-converting enzyme (ACE) inhibitors. The EVOLUTION-HF study showed a tendency for higher use of ARNI and lower use of diuretics and ACE inhibitors at the index date compared with DAPA-HF. Regarding glucose-lowering drugs, there were 40 participants with this medication at the index date - changes in these medications, however, were not significant. At the end of follow-up, 5% of participants had discontinued dapagliflozin.
Conclusions: Treatment with dapagliflozin was maintained in 95% of the participants. The therapy at index date, changes in cardiovascular medication, and comparison with DAPA-HF therapy highlight both the focus of the participating sites and the potential role of dapagliflozin in optimizing Guideline-Directed Medical Therapy (GDMT).

PO 244. BEYOND ASSUMPTIONS: NT-PROBNP RISE AND DIURETIC STRATEGIES IN HFREF THERAPY UP-TITRATION

Diogo Ferreira[1], Catarina Gregório[1], Ana Beatriz Garcia[1], Ana Francês[1], Fátima Salazar[1], Rafael Santos[2], Joana Rigueira[2], Doroteia Silva[2], Nuno Lousada[2], Fausto Pinto[2], Dulce Brito[2], João Agostinho[2]

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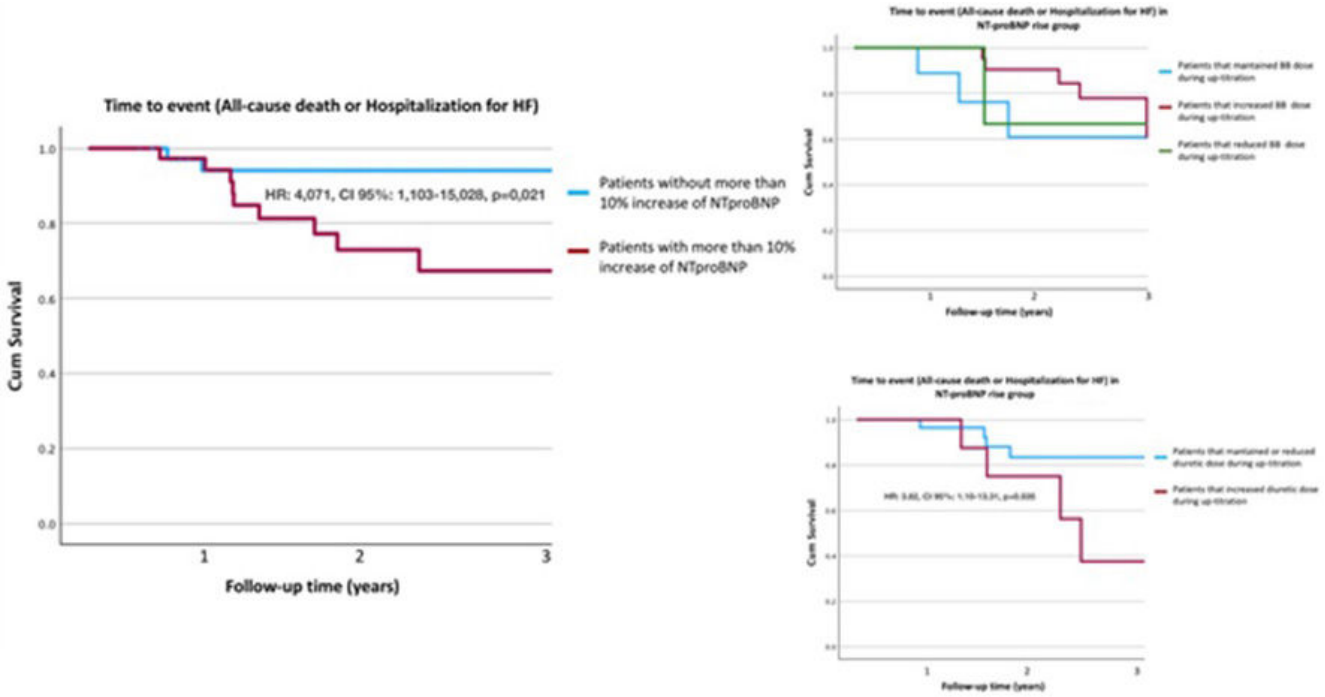

Figure PO 244

Introduction: In patients with Heart failure and Reduced Ejection Fraction (HFrEF), NT-proBNP may rise during guideline-directed therapy up-titration. The STRONG-HF trial authors assumed that NT-proBNP increase between visits predicted worse prognosis, suggesting caution in up-titrating beta-blocker (BB) and considering diuretic escalation. Yet, this assumption lacks testing, and evidence linking NT-proBNP elevation during up-titration to a worse prognosis is absent.
Methods: Retrospective, single-center study on HFrEF patients followed at an HF-specialized outpatient clinic since 2019. Two groups were formed: patients that had more than 10% increase in NT-proBNP at least once between up-titration visits and patients that had stable (< 10% increase) or decreasing NT-proBNP between visits. A composite outcome of all-cause death and HF-hospitalizations (HFH) was compared at 3 years follow-up. Diuretic and beta-blocker (BB) titration was evaluated in patients that had an increase in NT-proBNP.
Results: Of the 154 patients studied, 24.4% were female, 46.7% were ischemic, and 41.7% had dilated cardiomyopathy, mean age was 64.3 ± 14,2 years. Patients had an average of 3.4 up-titration visits, and it took around 6,8 weeks to reach guideline-recommended doses. Seventy-seven patients (49.4%) experienced an NT-proBNP increase at least once, while 79 patients (50.6%) did not. The two groups showed similarities in sex, age, eGFR, baseline NYHA class and NT-proBNP. Composite outcome at 3 years was 4,1 times more likely to happen in the NT-proBNP rise group (HR: 4.06, 95%CI 1.10-15.02, p = 0.02). The difference was mainly driven by HFH. Within the NT-proBNP rise group, 24.5% of patients had their diuretic dose increased during up-titration, with a mean furosemide end-dose of 66mg. In contrast, 75.5% of patients either maintained or reduced their diuretic dose, resulting in a mean furosemide end-dose of 17 mg. Those requiring an increase in diuretics during up-titration faced a 3.8 times greater risk of the composite outcome (HR: 3.82, 95%CI 1.10-13.31, p = 0.035). In contrast, changing or maintaining BB dose in patients in the NTproBNP increase group did not impacted prognosis.
Conclusions: An increase exceeding 10% in NT-proBNP during up-titration visits in patients with HFrEF signals a higher risk of death or HFH. Importantly, contrary to what was suggested, increasing diuretic dosage not only failed to improve outcomes in these patients but it correlated with a worse prognosis. It seems that the clinical need to up-titrate furosemide – clinical congestion - indicates a more severe prognosis, overshadowing the importance of the NT-proBNP increase in predicting adverse outcomes.

PO 245. VERICIGUAT ELIGIBILITY IN HEART FAILURE: EARLY POST-DISCHARGE ASSESSMENT

Mariana Passos, Filipa Gerardo, Carolina Mateus, Joana Lima Lopes, Inês Miranda, Mara Sarmento, Inês Fialho, Ana Oliveira Soares, David Roque

Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra.

Introduction: The VerICiguaT Global Study in Subjects with Heart Failure with Reduced Ejection Fraction (VICTORIA) trial demonstrated that vericiguat reduces the composite endpoint risk of mortality and heart failure (HF) hospitalizations in patients with a recent worsening event on top of guideline-directed medical therapy (GDMT). In October 2023, vericiguat obtained reimbursement approval from the Portuguese medicine authority.
Objectives: To estimate the suitability for vericiguat based on VICTORIA trial eligibility in patients evaluated during an early post discharge appointment (EPDA) for HF.
Methods: We applied the enrollment criteria of the VICTORIA trial to patients assessed in an HF EPDA at a single center between March 2021 and September 2023.
Results: A total of 200 HF patients with EF < 45% attended an EPDA a median of 12 [IQR 10-14] days post-discharge. The inclusion criteria of VICTORIA trial were fulfilled only by 21,5% (n = 43) of patients (mean age 66.1 ± 15.1 years, 41.9% female). The main reason for exclusion was *de novo* HF (n = 98; 49%), followed by systolic blood pressure (SBP) < 100 mmHg (n = 19; 17.2%) (Figure). Randomization based on SBP at discharge would lead to exclusion of additional 17 patients (37 vs. 19 patients, p = 0.005). All included patients were on maximal tolerated GMDT, with 58% (n = 25) on triple therapy, similar to the VICTORIA trial (60%), including angiotensin-converting enzyme inhibitor/angiotensin receptor blocker/angiotensin receptor neprilysin inhibitor, beta-blocker, and mineralocorticoid receptor antagonist. However, in our sample, 90% (n = 39) were also on sodium-glucose cotransporter type 2. Our population had a higher proportion of women (41.9 vs. 23.9) and black (41.9 vs. 4.9) patients, a lower mean EF (24 vs. 30%), with 90% having an EF < 40% (vs 85.7%) and a higher NTproBNP value at randomization (4,421 vs. 3,377 pg/ml). Within 90 days post-discharge, our population experienced a 37.2% HF hospitalization rate and 2.3% cardiovascular mortality.
Conclusions: Only 4 in 20 patients meet the criteria of VICTORIA trial, a number that would be lower using discharge data. One However, 39.5%

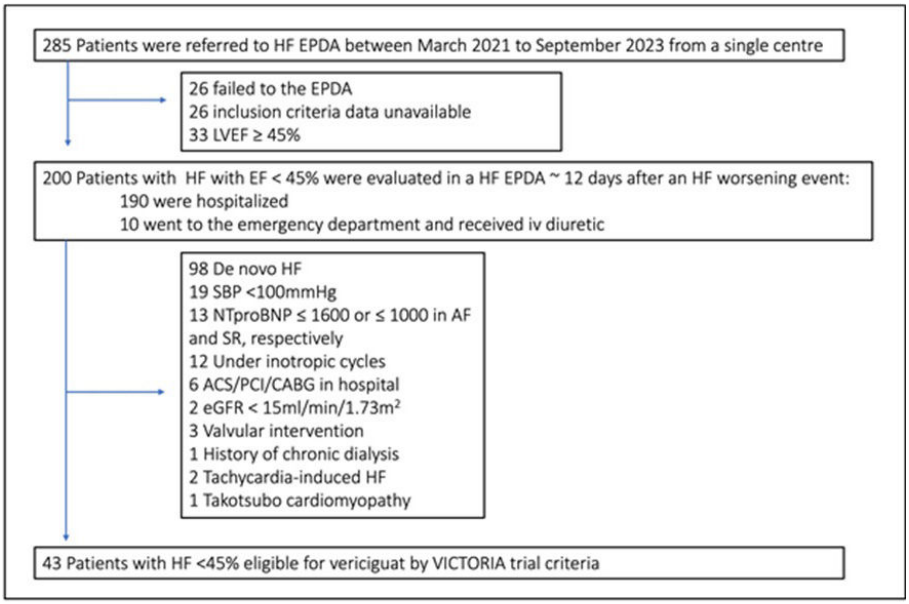

Fig. 1) Proportion of patients referred to HF EPDA who are candidates for Vericiguat.

Figure PO 245

of patients eligible for vericiguat experienced an HF-related event, a rate that could be modified, given vericiguat potential to modify prognosis. A follow-up visit within 2 weeks after discharge allows for medication adherence assessment and GMDT titration, including novel drugs as vericiguat.

SÁBADO, 20 ABRIL de 2024 | 14:30-15:30

Área de Posters 3 | Sessão de Posters 38 - Insuficiência cardíaca avançada

PO 246. ASSESSMENT OF SUBCLINICAL HYPERVOLEMIA BY BIOIMPEDANCE SPECTROSCOPY IN HEART FAILURE

Bruno Bragança, Mauro Moreira, Rafaela G. Lopes, Inês G. Campos, Ricardo Barbosa, Sónia Apolinário, Patrícia Silva, Licínia Aguiar, Magda Silva, Aurora Andrade

Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa.

Introduction: Expansion and redistribution of extracellular fluid (ECF) precedes heart failure (HF) decompensation. Subclinical hypervolemia has a dismal impact on the prognosis of HF patients. Bioimpedance spectroscopy (BIS) technology is able to estimate ECF expansion in hypervolemia states non-invasively. However, it remains to be explored whether BIS improves the detection of subclinical hypervolemia in HF.
Methods: Fifty-six adult outpatients under guideline-directed medical therapy for HF with reduced ejection fraction (HFrEF) were recruited for a single-center prospective study. BIS (InBody BWA 2.0) was calibrated to detect hypervolemia using healthy control subjects and clinical congestive HF patients. Subclinical hypervolemia was defined as a raised ECF adjusted to total body water (ECF/TBW above 1st quartile) despite the absence of clinical signs of hypervolemia according to the EVEREST score. Clinical evaluation was blinded for BIS data. Data is presented as mean ± SD.
Results: In this cohort, 68% were male, mean age 65 ± 11 years, body mass index (26.9 ± 14 Kg/m²), left ventricular ejection fraction (LVEF) 34 ± 13%, NT-proBNP 3,290 ± 5,706 pg/mL. Body fluid distribution of HF patients was as follows: total body water (TBW; 38.4 ± 8L); ECF (15.0 ± 3L), ECF/TBW (39 ± 2%). 37 HF patients (66%) showed raised ECF/TBW > 38.6% (1st quartile) and, among them, 29 (52%) had no clinical signs of hypervolemia identified at physical examination. ECF/TBW positively correlated with NT-proBNP levels ($r = 0.37$; $p = 0.01$), but not with serum albumin, sodium, gamma-glutamyl transferase or alkaline phosphatase ($p > 0.05$). In the subclinical hypervolemia group, NT-proBNP levels were significantly raised but did not differ significantly from the clinical hypervolemia group (4,490 ± 6,908 pg/mL vs. 4,316 ± 5,029 pg/mL, $p > 0.05$).
Conclusions: Subclinical hypervolemia is prevalent in outpatients with HFrEF. ECF/TBW correlates with routine markers of hypervolemia. BIS has sensitivity to detect subclinical hypervolemia in HF patients.

PO 247. INTERMITTENT LEVOSIMENDAN CYCLES: A SINGLECENTRE CLINICAL EXPERIENCE

Mariana Passos, Filipa Gerardo, Joana Lima Lopes, Carolina Mateus, Inês Miranda, Mara Sarmento, Inês Fialho, Ana Oliveira Soares, David Roque

Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra.

Introduction: Advanced heart failure (AdHF) is characterized by a decline in life expectancy, a poor quality of life marked by frequent hospitalizations, and a significant impairment in functional capacity. In these patients, intermittent levosimendan cycles (ILC) have been shown to have clinical and hemodynamic benefits being used as a bridge therapy, to heart transplantation (HT) and left ventricular assist device (LVAD), or as a symptomatic approach.
Objectives: To describe the role of ILC in the management of AdHF patients.
Methods: We performed a retrospective observational analysis of AdHF patients included in an ILC program between March 2019 and January 2023. The demographic, clinical, and laboratory data were collected. Levosimendan was infused at 0.05-0.2 mg/Kg/min doses without bolus for 6h (every two weeks) or 24 h (monthly) infusion duration.
Results: A total of 32 patients were included in the ILC program (58.5% male; mean age 65.7 ± 12.8 years). All patients had a reduced ejection fraction (median 22 [IQR 19-25]%) and 53.1% had biventricular dysfunction. The main HF etiology was ischemic heart disease (56.3%) followed by idiopathic cardiomyopathy (31.3%). At inclusion, 96.9% of patients were in NYHA class III. Relevant demographic and clinical data are summarized

Baseline characteristics	N=32 (%)
Age, years	65,7 (± 12.8)
Male sex	24 (58.5)
Hypertension	21 (65.6)
Dyslipidemia	15 (46.9)
Diabetes mellitus	10 (31.3)
Exsmoker	16 (50)
COPD	5 (15.6)
Atrial fibrillation	19 (59.4)
Etiology	
Ischemic heart disease	18 (56.3)
Idiopathic cardiomyopathy	10 (31.3)
Hereditary cardiomyopathy	3 (9.4)
Cardiotoxicity	1 (3.1)
NYHA Class	
3	31 (96.9)
4	1 (3.1)
Left ventricle ejection fraction (%)	22 [19-25]
Cardiac implantable devices	
ICD	13 (40.6)
CRT- D	6 (18.8)
CRT- P	2 (6.3)
Systolic blood pressure, mmHg	108.5 [96.3-129]
Heart rate, bpm	77.5 (± 16.9)
Weight, Kg	70 (± 12.2)
BMI, Kg/m^2	24 [22-26.75]
Creatinine, mg/dL	1.3 [1.1-1.9]
Glomerular filtration rate, mL/min/1.73 m^2	
>90	5 (15.6)
60-90	8 (25)
30-60	14 (43.8)
<30	5 (15.6)
NT-proBNP, pg/mL	7003.5 [3079.3-13253.8]
Treatment	
ACEI	6 (18.8)
ARB	0 (0)
Beta-blockers	15 (46.9)
Aldosterone antagonists	26 (81.3)
Ivabradine	6 (18.8)
Sacubitril-valsartan	8 (25)
Furosemide	29 (90.6)
Metolazone	4 (12.5)

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in the Table. The median duration of the program was 3.75 [IQR 1.9-7.5] months, and the majority (78.1%) of the patients were in monthly cycles. It was necessary to increase the frequency of administration in 3 patients due to clinical deterioration between the programmed cycles. Only one patient had a ventricular arrhythmia during drug infusion. During the 6 months before ILC initiation 22 (68.8%) patients had at least one hospital admission for worsening HF (WHF), and of those 13 (59.1%) had more than one hospitalization, with a median of 2 [IQR 1-3] admissions/patient. For the same length of time after ILC initiation only 10 (40%) patients were hospitalized at least once, 3 (30%), more than one time, with a median of 0 [IQR 0-1] admissions/patient. Only twenty-five patients had at least 6 months of follow-up. In these patients after 6 months on ILC there was a significant improvement in NYHA class ($p < 0.05$), reduction in NTproBNP levels ($p = 0.009$), and reduction in HFW admissions ($p = 0.006$). Until January 2023, 5 patients died and 2 had lost follow-up. 9 are still on the program, 6 for symptom palliation and 3 as a bridge to transplant/LVAD. The treatment was suspended in 15 patients because of clinical improvement, including in 1 that underwent LVAD and in 1 that is on the waiting list for HT. **Conclusions:** ILC is an effective and safe option in AdHF, as a palliative approach with an improvement of quality of life, by improving NYHA class and reducing HFW admissions. As well as maintaining the patient's stability until transplantation or LVAD.

PO 248. SLIDING DOWN A SLOPE - THE PROGNOSTIC VALUE OF DIFFERENT METHODS OF MEASURING VE/VCO2 IN HEART FAILURE

Rita Amador, Joana Certo Pereira, Sérgio Maltês, Bruno Rocha, Mariana Paiva, Rita Carvalho, Miguel Mendes, Anaí Durazzo, Pedro Adragão, Gonçalo Lopes da Cunha

Hospital de Santa Cruz.

Introduction and objectives: The Cardiopulmonary exercise testing (CPET) is the gold standard for evaluation of cardiorespiratory and metabolic function during exercise and provides strong prognostic indicators in patients with heart failure (HF), particularly the VE/VCO2 slope. However, VE/VCO2 slope measurement methods differ, producing dissimilar results and hindering comparability. There are only small studies that approached this problem and were performed in populations with low prevalence of guideline directed

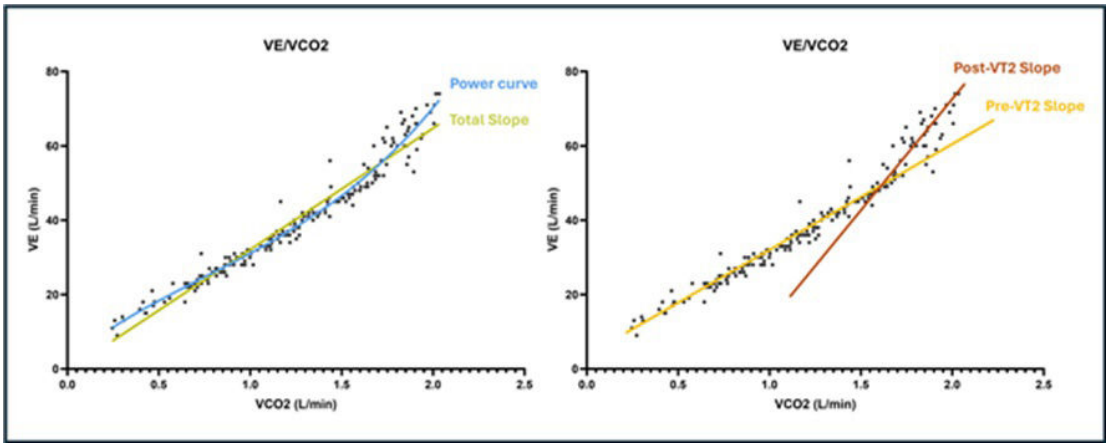


Figure PO 248

medical therapy (GDMT) and excluded patients who had not reached VT2. Thus, we aim to evaluate the prognostic power of VE/VO2 measurement methods in a broader contemporary cohort of patients with HF.

Methods: Single centre retrospective study of patients with HF with LVEF < 50% who underwent CPET between 2015-2021. VE/VCO2 was measured using 1) VE/VCO2 up to VT2 (Pre-VT2 Slope) and after VT2 (Post-VT2 Slope); 2) VE/VCO2 from rest to peak exercise (Total Slope) and 3) as fitted to a power curve ($f(x) = a.x^b$) (Figure A). All tests were evaluated and ventilatory thresholds determined by 3 independent, experienced operators. Our primary endpoint was a composite of CV death, urgent transplant or left ventricular assist device (LVAD) implantation and HF hospitalization.

Results: We included 247 patients (mean age 58 ± 12 years, 83% males). The HF aetiology was mostly ischemic in nature (67%), with LVEF of 34 ± 9% and median NTproBNP of 744 (244 – 2,250) pg/mL. Most patients (64%) were in class NYHA I-II and with high prevalence of GDMT (94% ACEi/ARB; 97% beta-blockers and 64% on MRA). Peak VO2 was 18.4 ± 6.1 mL/Kg/min and 42% had exercise oscillatory ventilation. Mean RER in this group was 1.15 ± 0.08 and most patients (92%) attained VT2. The different methods of measuring resulted in a high variability between measurements. Median pre-VT2 Slope, post-VT2 Slope and Total Slope were 34.2 ± 8.6, 43.6 ± 8.6 and 41.3, respectively ($p < 0.001$). Median (a) Slope value for the power equation was 41.4 ± 10, which was similar to Total Slope but different from other measurements. Multivariate analysis showed that all measurement methods where independent predictors of prognosis after adjusting for LVEF, NTproBNP and pVO2. ROC curve analysis for 1-year mortality showed AUC of 0.832 (0.759 – 0.905), 0.857 (0.790 – 0.924), 0.845 (0.781 – 0.909) and 0.785 (0.699 – 0.872) for Total Slope, (a) Slope value for power equation, pre and post-VT2 Slope, respectively.

Conclusions: Although all methods showed to be independent predictors of prognosis, the fitted power equation slope (a) showed a slight numerical advantage over the remaining methods in a contemporary population of HF patients.

PO 249. "I NEED HELP": UNLEASHING THE FULL POTENTIAL OF THE ACRONYM FOR THE MANAGEMENT OF PATIENTS WITH HEART FAILURE AND REDUCED EJECTION FRACTION

Mariana Sousa Paiva, Maria Rita Lima, Ana Rita Bello, Débora Silva Correia, Daniel A. Gomes, Sérgio Maltês, Bruno M. Rocha, Catarina Brízido, Christopher Strong, António Tralhão, Carlos Aguiar, Pedro Adragão

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: The acronym "I NEED HELP", comprising nine readily obtainable clinical, laboratory, and imaging characteristics, serves as a valuable tool to guide physician referrals to heart failure (HF) specialists. Despite its practicality, the specific impact of each criterion on adverse outcomes remains underexplored. Our aim with this study was to assess the individual weight of each criterion in predicting morbidity and mortality among ambulatory patients with chronic HF and reduced ejection fraction (HFrEF).

Figure 1B Kaplan-Meier curve: time to heart failure hospitalization according to the presence of "I NEED HELP" risk features

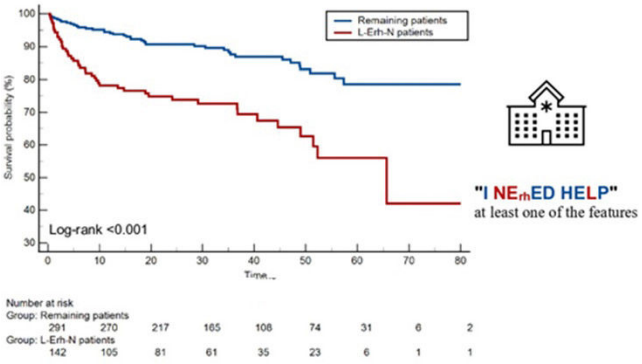
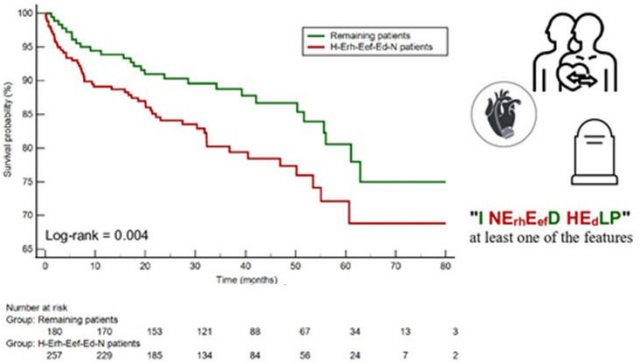


Figure 1B Kaplan-Meier curve: time to all-cause mortality according to the presence of "I NEED HELP" risk features



(I) need for intravenous inotropes; (N) NYHA functional class III-IV or NT-proBNP ≥1000 pg/mL; (Erh) renal dysfunction (GFR ≤ 30 mL/min/1.73m² by MDRD formula) or hepatic dysfunction (serum total bilirubin ≥ 1.8 mg/dL; (Ef) EF ≤25%; (D) appropriate defibrillator shocks; (H) at least one HF hospitalization in the previous year; (Ed) daily furosemide dose ≥100 mg or combination of diuretics; (L) systolic blood pressure (SBP) ≤90 mmHg; (P) intolerance to beta-blockers or renin-angiotensin-aldosterone inhibitors.

Methods: Single-center retrospective cohort study of consecutively enrolled patients with HFrEF (< 50%) who underwent both transthoracic echocardiography (TTE) and cardiac MRI from 2018 to 2023. The "I NEED HELP" acronym was translated into the following variables: (I) need for intravenous inotropes; (N) NYHA functional class III-IV or NT-proBNP ≥ 1,000 pg/mL; (Erh) renal dysfunction (GFR ≤ 30 mL/min/1.73 m^2 by MDRD formula) or hepatic dysfunction (serum total bilirubin ≥ 1.8 mg/dL); (Ef) EF ≤ 25%; (D) appropriate defibrillator shocks; (H) at least one HF hospitalization in the previous year; (Ed) daily furosemide dose ≥ 100 mg or combination of diuretics; (L) systolic blood pressure (SBP) ≤ 90 mmHg; (P) intolerance to beta-blockers or renin-angiotensin-aldosterone inhibitors. Cox regression analysis was conducted to evaluate the relationship between these variables and outcomes, specifically HF hospitalizations, and a composite of all-cause mortality, orthotopic heart transplant (OHT), or left ventricular assist device placement (LVAD).
Results: A total of 439 patients were included (median age 65 years (IQR: 55-75), 75% male, 21% in NYHA II-III, mean EF 34 ± 9% by TTE), of whom 55% had HF for more than 18 months. Over a median follow-up of 33 months (IQR 21-51), notable outcomes were observed: 85 (19.4%) patients experienced at least one hospitalization for decompensated HF, 5 (1.1%) received an OHT, 5 (1.1%) underwent LVAD implantation, and 78 (17.8%) patients deceased. In our multivariate Cox analysis for the event of HF hospitalization, criteria (N), (Erh), and (L) held significantly elevated risks (all p < 0.001). Subsequently, patient stratification based on the presence or absence of these risk features demonstrated significance in our Kaplan-Meier (KM) curve analysis (log-rank < 0.001) (Figure 1A). Analyzing the relationship of criteria with our composite outcome, (N), (Erh), (Eef), (Ed), and (H) emerged as independent predictors (all p < 0.05). This was further affirmed by our KM curve analysis (log-rank = 0.004) (Figure 1B).
Conclusions: In this real-world study, the deconstruction of the acronym "I NEED HELP" held significant prognostic value in identifying patients with high-risk features for HF hospitalization ("L-Erh-N" subgroup) and a composite of death/OHT/LVAD ("H-Erh-Eef-Ed-N" subgroup). Further studies will be crucial to validate our findings.

PO 250. HOME ADMINISTRATION OF LEVOSIMENDAN IN PATIENTS WITH ADVANCED HEART FAILURE - THE LEVO-HOME PILOT PROJECT

Inês Fialho, Mariana Passos, Filipa Gerardo, Carolina Mateus, Ana Oliveira Soares, David Roque

Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra.

Introduction: Levosimendan has been used in advanced heart failure (HF) patients in the hospital setting to reduce hospitalizations and improve quality-of-life. However, there is a lack of evidence regarding the safety of its administration at home.
Methods: We conducted an investigator-initiated, single-center and non-randomized study involving HF patients with reduced ejection fraction (EF) and NYHA class IV or III with frequent HF decompensations. After an uneventful first hospital administration, Levosimendan was given as a 6-hour infusion, every 2 weeks for 3 months. The primary safety outcome was protocol completion without symptomatic hypotension or dysrhythmias.
Results: Eight patients were included, with a median age of 65 (IQR 51-75) years; 87.5%, males. The 3-month program was completed by 87.5% (n = 7). The median left ventricle EF was 21 [15- 34]%, and the median NT-proBNP level was 6,291 (1,673- 11,277) pg/mL. Forty-four administrations were performed, with no symptomatic hypotension or arrythmias. After 3 months, there was a reduction in NYHA class (62.5% improved ≥ 1 class, p = 0.046), HF-related hospitalizations (100% before levosimendan vs. 25% after, p = 0.016) and NT-proBNP levels (6291 [1,673 - 11,277] vs. 4,776 [1,229 - 10,496 pg/mL], p = 0.038). No differences in the treadmill 6-minute walking test (100 [58 - 163] vs. 100 [26 - 177], p = 0.686) or in the Kansas City Cardiomyopathy Questionnaire (73 [62 - 83] vs. 50 [43 - 75], p = 0.173) were observed.
Conclusions: Levosimendan proved to be a safe inotrope for at-home use, validating it as a feasible alternative for those who are already receiving intermittent Levosimendan infusions at the hospital.

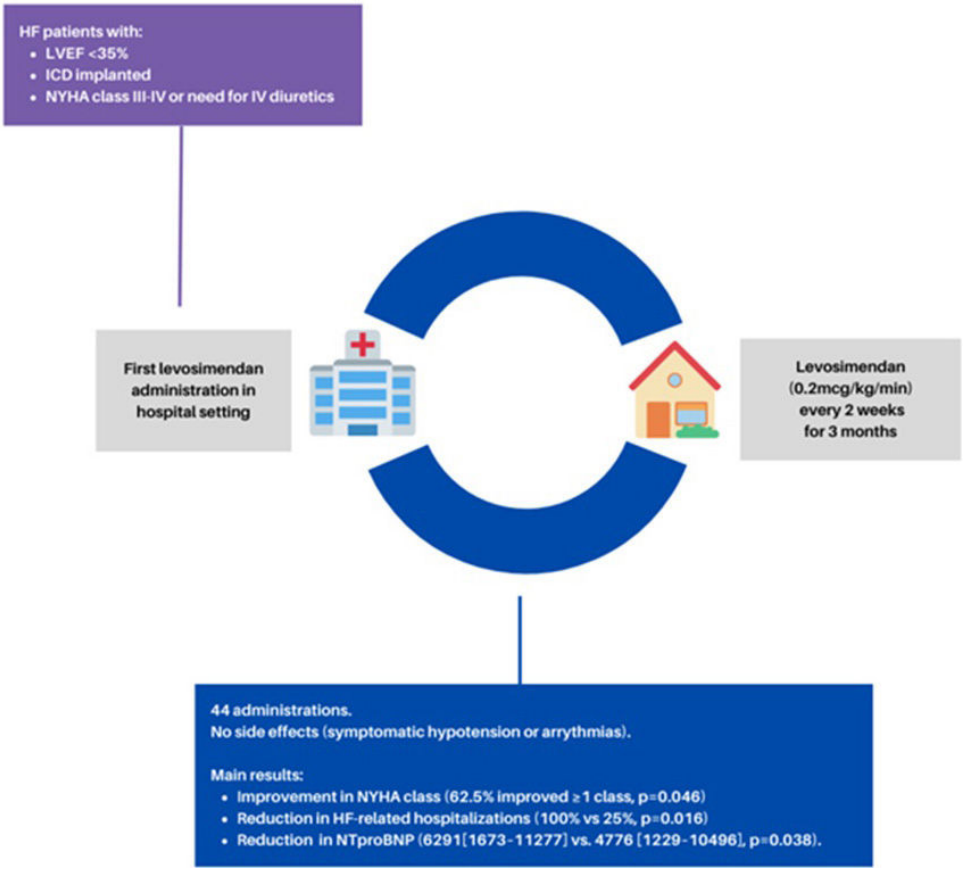


Figure PO 250

PO 251. INTERMITTENT OUTPATIENT ADMINISTRATION OF LEVOSIMENDAN IN PATIENTS WITH ADVANCED HEART FAILURE: IS IT ENOUGH?

Inês Gomes Campos, Rafaela G. Lopes, Mauro Moreira, Bruno Bragança, Isabel Cruz, Patrícia Silva, Ana Neto, Inês Gonçalves, Aurora Andrade

Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa.

Introduction: The number of patients with advanced heart failure (HF) is increasing and the access to long-term therapies such as heart transplantation and mechanical circulatory support is limited. Levosimendan, a calcium sensitizer agent with inodilator effects, has been shown to reduce NT-proBNP levels and acute HF hospitalizations in these patients. In this study, we aim to assess the role of levosimendan in this population, providing data from almost 400 infusions.
Methods: Retrospective observational study of consecutive advanced HF patients referred for intermittent outpatient levosimendan infusions between 2015 and 2023. It was administered by a 6-hour intravenous infusion in the maximal tolerated dose, every 2 weeks for at least 6 cycles, along with non-invasive electrocardiographic and haemodynamic monitoring. Clinical, laboratorial and echocardiographic data were collected from baseline and after the last infusion.
Results: A total of 26 patients were included (mean age 65 ± 7.9 years, 76.9% male), with a baseline mean LVEF 19.0 ± 5.6% and a median of 1 HF hospitalization in the previous 6 months. 24 patients (92.3%) were in NYHA functional class III at baseline, with a median NT-proBNP level of 4,391 pg/mL (IQR 7,006). A total of 387 infusions were administered (median 9; IQR 16), mainly as a bridge for stabilization (80.8%) or for transplantation (19.2%). 13 patients (50.0%) had premature discontinuation, the majority due to HF hospitalization. At the end of follow-up, there was a significant reduction (> 25%) in NT-proBNP levels in 13 patients (50.0%), in NYHA functional class in 10 patients (38.5%) and in diuretic dose in 6 patients (23.1%). Main adverse events reported were hypokalemia requiring supplementation in 19 patients (73.1%) and arterial hypotension in 15 patients (57.7%). It was reported an arrhythmic event (ventricular tachycardia) in 1 patient (3.8%). During follow-up, 1 patient underwent heart transplantation, 42.3% patients died from cardiovascular (CV) causes and 19.2% patients died from non-CV causes.
Conclusions: Intermittent outpatient administration of levosimendan is a strategy used in an attempt to stabilize a very sick population with poor prognosis. In these patients, levosimendan leads to transitory clinical relief with reductions in NYHA functional class and NT-proBNP levels. However, as demonstrated in this real-life registry, it cannot be seen as a destination therapy nor lead to the postponement of essential therapies such as mechanical circulatory support and heart transplantation, unfortunately with very limited availability in our country. There's a need for political and institutional measures that improve the availability and access of patients to those therapies.

SÁBADO, 20 ABRIL de 2024 | 14:30-15:30

Área de Posters 1 | Sessão de Posters 39 - Insuficiência cardíaca: abordagem a longo prazo

PO 252. AGE-RELATED IMPLICATIONS IN GUIDELINE-DIRECTED MEDICAL THERAPY UP-TITRATION FOR HEART FAILURE WITH REDUCED EJECTION FRACTION: A RETROSPECTIVE SINGLE-CENTER STUDY

Inês Caldeira Araújo[1], Catarina Gregório[2], Diogo Ferreira[1], Ana Francês[3], Fátima Salazar[3], Nuno Lousada[1], Joana Rigueira[1], Rafael Santos[1], Doroteia Silva[1], Fausto J. Pinto[2], Dulce Brito[2], João Agostinho[2]

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Introduction: According to the STRONG-HF study, the initiation and rapid up-titration of oral heart failure therapy is recommended to reduce heart failure (HF) hospital admissions and all-cause mortality. Up-titration can be challenging due to the complexity of HF patients (pts), however age is not highlighted enough as a contributing factor for this difficulty.
Objectives: To evaluate the impact of age on guideline-directed medical therapy (GDMT) up-titration in pts with HF with reduced or mildly reduced ejection fraction (HFrEF).
Methods: Single-center retrospective study of pts with HFrEF followed in a HF unit. Pts were divided into 3 groups based on age terciles (T): 1st T included pts below 60 years (52 pts), 2nd T, between 60 and 70 years (51 pts) and 3rd T, pts above 70 years (51 pts). Demographic, clinical, therapeutic, and echocardiographic data were recorded. For statistical analysis Chi-square test and Kaplan-Meier survival analysis were used.
Results: We included 154 patients, 76% males, median age of 64.3 ± 14.2 years, with 62.5% of pts in NYHA class II. HF etiology was ischemic heart disease in 46.7% of pts and dilated cardiomyopathy in 41.7%. At baseline,

Table 1: Baseline and final characteristics of all patients (n=26).

Variables	Baseline	Final
Age, years - mean ± SD	65 ± 7.9	
Male gender - n (%)	20 (76.9)	
Comorbidities - n (%)		
Hypertension	11 (42.3)	
Diabetes mellitus	13 (50.0)	
Dyslipidemia	20 (76.9)	
Smoker	11 (42.3)	
Obesity	4 (15.4)	
Atrial Fibrillation	17 (65.4)	
Chronic pulmonary disease	2 (7.7)	
Chronic kidney disease	15 (57.7)	
Peripheric arterial disease	4 (15.4)	
Cerebrovascular disease	2 (7.7)	
Ischemic cause of HF - n (%)	18 (69.2)	
NYHA functional class - n (%)		
II	0 0	10 (38.5)
III	24 (92.3)	11 (42.3)
IV	2 (7.7)	5 (19.2)

Variables	Baseline	Final
NT-proBNP (pg/mL) - median (IQR)	4391 (7006	4325 (4433
Echocardiogram		
LVEF, %	19.0 ± 5.6	19.9 (6
RV dysfunction - n (%)	19 (73.1)	
LVEDV, mL/m2	110 (52	121 (48
LVESV, mL/m2	85.4 (32	99.7 ± 41.9
E/E' - mean±SD	24.8 ± 6.8	14.7 ± 6.1
Treatment - n (%)		
ACEIs or ARBs	12 (46.2)	4 (15.4)
ARNI	12 (46.2)	16 (61.5)
Beta-blockers	24 (92.3)	23 (88.5)
MRAs	20 (76.9)	21 (80.8)
SGLT2i	12 (46.2)	15 (57.7)
Furosemide, mg	120 (80	140 ± 49.0
ICD	14 (53.8)	
CRT	7 (26.9)	
HF hospitalization - median (IQR)	1 (1	1 (1

Legend: CRT - Cardiac resynchronization therapy; HF - Heart failure; ICD - Implanted cardiac defibrillator; LVEDV - Left ventricle end-diastolic volume; LVESV - Left ventricle end-systolic volume; LVEF - Left ventricle ejection fraction; RV - Right ventricle.

Figure PO 251

	ClCr (ml/min)	NTproBNP (pg/mL)	LVEF initial (%)	LVEF_FUP (%)
T1: < 60 years	66.1±24.5	2833.5±2737	26.8±7.9	42.5±13.7
T2: 60-70 years	69.8±23.7	4641±7699	27.1±8.8	39.9±12.3
T3: > 70 years	75.8±23.3	3046±2837	32.1±8.1	41.5±11.5

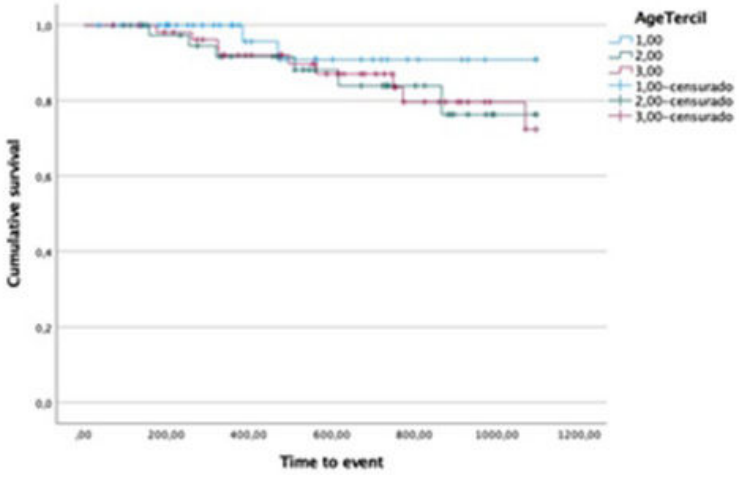

Figure PO 252

groups were comparable regarding age, HF etiology, NYHA class, NT-proBNP and creatinine. The group of pts older than 70 years had a significantly higher left ventricular EF (p = 0.001, Table). Significant differences were found in the maximum achieved doses of GDMT between groups. Pts above 70 years tended to achieve lower therapeutic doses of ARNI (1st T: 126.5 ± 81.7 mg; 2nd T: 132.6 ± 75.5 mg; 3rd T: 76.8 ± 69.4 mg, p < 0.001), B-blocker (1st T: 5.5 ± 2.7; 2nd T: 5.95 ± 2.6; 3rd T: 4 ± 2.5 mg, p < 0.001), and MRA (1st T: 29.8 ± 13.5, 2nd T: 27.3 ± 16.2, 3rd T: 22.1 ± 11.4, p = 0.009), with no differences regarding iSGLT2 (p = 0.17). Regarding renin angiotensin aldosterone system inhibitors, ACEi was preferred to ARNI as the starting drug in patients above 70 years-old; this was not so evident in younger age groups (pts that were started on ACEi instead of ARNI: 1stT - 26 pts (50%), 2nd T - 21 pts (41%), 3rd T - 42 pts (82%), p = 0.03. Hypotension or eGFR did not appear to have influenced this decision as they were not statistically different between groups (p = 0.049, p = 0.09, respectively). Consequently, one may speculate that non-quantified characteristics like clinical frailty may have impact when deciding which drug to start. During a follow-up of 3 years, EF significantly improved in with no significant differences between groups (1st T: 42.5 ± 14%, 2nd T: 39.9 ± 12%, 3rd T: 41.5 ± 12%, p = 0.66). Despite differences in GDMT, the rate of HF hospitalizations or death was similar between groups (log rank 1.48, p = 0.48).

Conclusions: In the studied population, pts with HFrEF or HFmrEF and age above 70 years achieved lower doses of GMDT, specially regarding ARNI. The older population also seems to present non-quantified and characteristics that impact GDMT initiation and up-titration.

PO 253. BEYOND 3 MONTHS: UNRAVELING THE PROLONGED IMPACT OF OPTIMIZED MEDICAL THERAPY ON LVEF AND ICD IMPLANTATION IN HFREF PATIENTS

Daniel Inácio Cazeiro[1], Catarina Gregório[2], Diogo Ferreira[1], Catarina Simões de Oliveira[1], Ana Beatriz Garcia[1], Fátima Salazar[1], Nuno Lousada[2], Rafael Santos[2], Doroteia Silva[2], Fausto J. Pinto[2], Dulce Brito[2], João Agostinho[2]

[1]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Guidelines advise implanting a cardiac defibrillator (ICD) in symptomatic heart failure patients with reduced ejection fraction (HFrEF) and left ventricle ejection fraction (LVEF) ≤ 35% after 3 months of optimized medical therapy (OMT). However, this recommendation predates the standard use of sacubitril-valsartan and SGLT-2 inhibitors. Concomitantly, some literature suggests that the HFrEF therapy impact in cardiac remodeling goes beyond 3 months. This study aims to assess LVEF improvement in HFrEF patients from 3 months to 1 year after achieving OMT and how it could potentially impact ICD implantation.

Methods: Single-center, observational retrospective study of HFrEF patients without cardiac resynchronization device (CRT), followed at an outpatient clinic of a tertiary hospital. The population was stratified in two groups based on LVEF after 3 months of OMT: ≤ 35% vs. > 35%. T-test compared mean LVEF at baseline, 3 months, and one-year and Kaplan-Meier survival analysis was used to identify prognostic impact.

Results: From a total of 154 patients included, 24.4% were female, 46.7% were ischemic and 41.7% had dilated cardiomyopathy, with a mean age of 64.3 ± 14.2 years. Thirty-four patients had a CRT implanted. In the remaining 120 patients, 67.5% experienced LVEF improvement to > 35% at 3-month after OMT, demonstrating a significant enhancement from a baseline mean LVEF of 31.1% to 44.7% (p < 0.001). However, this improvement suffers a plateau, with no further significant change observed at 1 year after OMT (p = NS). Conversely, the remaining 32.5% of patients maintained a LVEF ≤ 35% at 3 months after OMT (mean baseline LVEF of 27.3%). There was no statistically significant improvement in this subgroup at the 3-month mark (mean LVEF of 29.4%). Importantly, this lack of improvement persisted at 1 year, with the mean LVEF reaching 32.2% (p = NS). Only four patients from this subgroup achieved a LVEF greater than 35% at 1 year after OMT, 3 of whom had dilated cardiomyopathy, showcasing a mean LVEF at 3 months close to the 35% threshold (34.1%). Patients with LVEF ≤ 35% at 3 months had a statistically significant greater risk of the composite outcome of all-cause death and HF-hospitalization at two-year follow-up (HR: 3.6, 95%CI: 1.2-12.1, p = 0.025).

Conclusions: In challenging the conventional 3-month timeframe for assessing LVEF in HFrEF patients and deciding whether ICD implantation may be indicated, it was found that LVEF showed significant improvement up to 3 months after OMT, but this improvement plateaus afterwards up until 1 year. Consequently, decisions concerning device implantation should align with the current guideline recommendation of the 3-month after OMT reassessment.

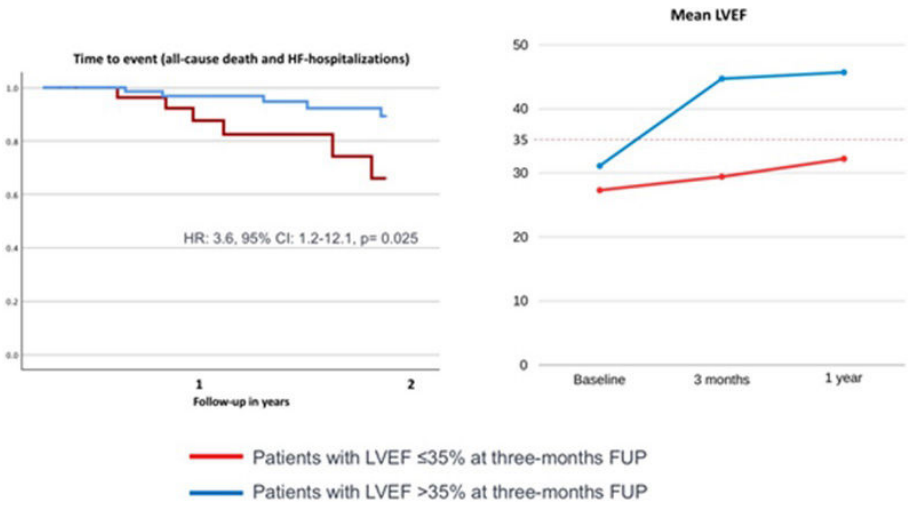

Figure PO 253

PO 254. ASSOCIATION BETWEEN PHYSICIAN-PERCEIVED FUNCTIONAL CLASS AND FUNCTIONAL CAPACITY MEASURED BY EXERCISE STRESS TEST IN PATIENTS WITH HEART FAILURE AND REDUCED EJECTION FRACTION

Carla Oliveira Ferreira, Eduarda Silva, Fernando Mané, Rodrigo Silva, Inês Macedo Conde, Ana Sofia Fernandes, Mónica Dias, Filipe Silva Vilela, Carlos Galvão Braga, Cátia Costa Oliveira

Hospital de Braga, EPE.

Introduction: The New York Heart Association (NYHA) functional classification is widely used in clinical practice, not only for the clinical and prognostic evaluation of heart failure (HF) patients but also for determining candidates for specific treatments. However, it is a subjective classification, in contrast to the exercise stress test, which is an accessible complementary examination that allows for the objective assessment of functional capacity.
Objectives: To evaluate the correlation and agreement between the NYHA functional classification as perceived by the physician and the exercise capacity assessed in the exercise test in patients with HFrEF and HFmrEF.
Methods: An observational, analytical and retrospective study was conducted in the Cardiology Department. It included 300 patients with HF and left ventricular ejection fraction (LVEF) < 50%, who underwent an exercise stress test between January 2018 and December 2022.
Results: Most patients were in NYHA functional class I (59.3%), with 36.7% in NYHA class II, and 4% in NYHA class III. The median LVEF was 39%, significantly lower in NYHA classes II and III (p < 0.001). The median of N-terminal pro B-type natriuretic peptide (NT-proBNP) was 780.50 pg/mL, with no significant differences among patients in NYHA classes I, II, or III (p = 0.192). The correlation between NYHA classes and functional capacity was 0.280 (p < 0.001), with an agreement of 0.150 (p = 0.000). The correlation between NYHA classes and heart rate recovery was 0.095 (p = 0.260).
Conclusions: A moderate correlation was found between the NYHA class perceived by the physician and the objectively measured functional capacity during the exercise stress test, despite a reduced agreement. On the other hand, the correlation between the NYHA class and heart rate recovery was considered insignificant.

PO 255. REMOTE MONITORING OF CARDIAC IMPLANTABLE ELECTRONIC DEVICES FOR PREDICTING ACUTE CLINICAL DECOMPENSATION EVENTS IN HEART FAILURE PATIENTS

Mariana Tinoco[1], Margarida Castro[1], Marta Mota[2], Luísa Pinheiro[1], Filipa Almeida[1], Sílvia Ribeiro[1], Lucy Calvo[1], Bebiana Faria[1], Bernardete Rodrigues[1], Cláudia Mendes[1], Victor Sanfins[1], António Lourenço[1]

[1]Hospital da Senhora da Oliveira, EPE - Guimarães. [2]Universidade do Minho.

Introduction: Heart Failure (HF) patients are at constant risk of decompensation, and urgent hospital admissions can be life-threatening

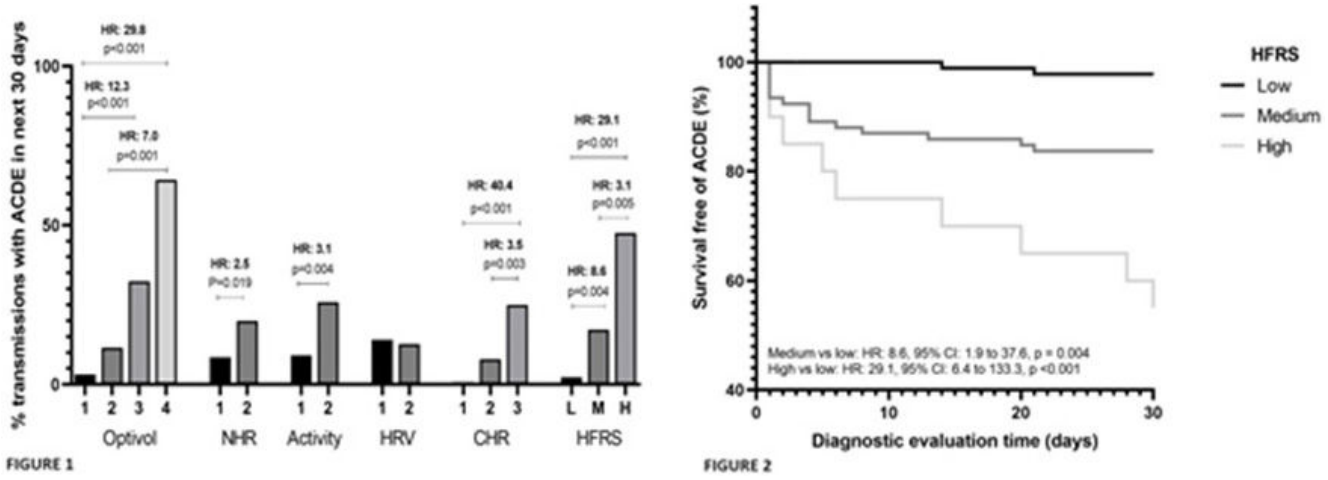

Figure PO 255

events. Monitoring biological variables can be an important mechanism to anticipate decompensations. TriageHF is a validated diagnostic algorithm tool available on Medtronic® Cardiac Implantable Electronic Devices that combines physiological data to stratify a patient's risk of HF hospitalization in the following 30 days in low, medium or high risk.
Objectives: We aimed to evaluate the utility of TriageHF algorithm to predict the occurrence of Acute Clinical Decompensation Events (ACDE), including HF-related and non-HF cardiovascular related events, within a 30-day period in a population of HF patients with reduced ejection fraction.
Methods: We reviewed the transmissions received by the Medtronic® Carelink™ Network between August 2022 and July 2023. The Heart Failure Risk Status (HFRS) and the device parameters contributing to that risk, from the previous 30 days, were collected, along with the occurrence of ACDEs within 30 days.
Results: We retrospectively assessed 207 transmissions from the 64 patients included in the study. Among the 93 medium HFRS transmissions, 16 (17.2%) resulted in ACDEs. For the 21 high HFRS transmissions, 10 (47.6%) resulted in ACDEs. Considering the ACDEs, 60.7% were preceded by an alarm-initiated transmission. Except for Heart Rate Variability, each diagnostic parameter demonstrated effectiveness in stratifying risk for ACDEs. (Figure 1) Optivol® and the Combined Heart Rhythm showed independent association with ACDEs ($p < 0.001$). Patients with medium and high HFRS were, respectively, 8.6 and 29.1 times more likely to experience an ACDE in the next 30 days than low risk patients. (Figure 2). A medium-high HFRS conferred a sensitivity of 92.9% and a NPV of 97.8% for an ACDE.
Conclusions: Our study expands the use of the TriageHF algorithm to predict ACDEs, including HF-related and non-HF cardiovascular events. Automatic alerts and high-risk status transmissions have been shown to be crucial in predicting ACDEs, so remote monitoring teams should prioritize these transmissions. However, medium-risk transmissions should not be underestimated, as they present an opportunity for medical interventions to prevent disease progression and hospitalizations. The high sensitivity and high NPV of a medium-high HFRS for ACDEs suggest that the TriageHF algorithm could be used as an initial screening method.

PO 256. THE EFFECT OF INTRAVENOUS IRON-CARBOHYDRATE COMPLEXES ON QUALITY OF LIFE IN PATIENTS WITH ACUTE VS CHRONIC HEART FAILURE - A SYSTEMATIC REVIEW AND META-ANALYSIS

Mauro Moreira, Rafaela G. Lopes, Inês Gomes Campos, Aurora Andrade, Bruno Bragança

Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa.

Introduction: Intravenous iron supplementation in iron deficient patients with symptomatic heart failure (HF) with reduced or mildly reduced left ventricular ejection fraction demonstrated to improve quality of life (QoL). However, a comparison of this supplementation between acute and chronic HF is lacking.
Objectives: To review and summarize the effect of intravenous iron-carbohydrate complexes on QoL in patients with acute vs. chronic HF.
Methods: We performed a systematic review on MEDLINE and SCOPUS for articles that assessed the effect of intravenous iron-carbohydrate complexes on QoL in patients with HF published until October of 2023. Two investigators screened the literature, extracted data, and assessed the risk of bias. Treatment effects were measured by Cohen's d effect-size (EZ) with 95% confidence interval (CI), using fixed-effects inverse variance model. Improvement of QoL was the prespecified endpoint.
Results: From 1369 publications screened, 9 randomized controlled trials (RCT) that fulfilled our criteria were included, comprising a total of 3193 patients. Ferric carboxymaltose (FCM) was studied in 5 RCT, while other 4 RCT analysed iron sucrose, iron isomaltoside or ferric derisomaltose. Meta-analysis demonstrated that intravenous iron-carbohydrate complexes improve QoL in patients with HF (EZ = 0.12, CI 0.04-0.19, I^2 = 58.51%). Subgroup analysis showed benefit on QoL in chronic HF patients (EZ 0.11, CI 0.03-0.18, I^2 = 54.03%), whereas the effect in acute HF was neutral (EZ = 0.21, 95%CI -0.04-0.46; I^2 = 82.36%). There was no evidence of publication bias on Funnel plot analysis.
Conclusions: Despite heterogeneity among these studies, this meta-analysis demonstrates that intravenous iron-carbohydrate complexes improve QoL in patients with HF. Subgroups analysis showed that this benefit on QoL might be limited to chronic HF patients.

PO 257. THE CLINICAL VALUE OF BIOELECTRICAL PHASE ANGLE IN HEART FAILURE

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Introduction: Phase angle (PhA) is an emerging biomarker derived from bioimpedance vector analysis (BIVA) between cells' resistance (R) and reactance (Xc) to the passage of electric current through the body. PhA levels correlate with cellular integrity, with low levels being found in several diseases as well as in subjects with low cardiorespiratory fitness. Notwithstanding, few data regarding PhA on heart failure (HF) are available.
Methods: Patients with chronic HF (mean left ventricular ejection fraction (LVEF) of 34 ± 13) and 13 healthy subjects were recruited for BIVA. Whole-body PhA at 50Hz was measured through an octa-polar electrode (InBody BWA 2.0). BIVA was correlated with other clinical and biochemical parameters in HF patients. HF patients were prospectively followed up to 6 ± 1 months for the occurrence of the composite adverse event: all-cause death, hospitalization/unplanned visit, or up-titration of diuretics due to HF.
Results: PhA was lower in HF patients than in controls (5.87 ± 1.48 vs. 7.04 ± 0.98°, $p = 0.009$); resistance (R, 229 ± 56.9 vs. 233 ± 44.3 Ω, $p = 0.836$) and reactance (Xc, 23.1 ± 5.5 vs. 28.4 ± 4.9 Ω; $p = 0.002$). In comparison with age-matched subjects from vendor database, HF patients had less -1.1 ± 1.8° PhA. PhA was inversely associated with NT-proBNP levels ($r = -0.423$; $p = 0.003$), but not with LVEF ($r = 0.1$, $p = 0.943$). Stratifying according to PhA quartiles, patients in the lowest quartile (PhA < 4.95°; 4.13 ± 0.7°, n = 14) were older (74 ± 9 vs. 62 ± 10 years; $p < 0.001$), had lower levels of hemoglobin (12.9 ± 2 vs. 14.3 ± 2 years; $p < 0.02$) and higher levels of urea-to-creatinine ratio (54.9 ± 10 vs. 43.5 ± 9; $p < 0.001$). In the event-free survival analysis, the group with the lowest PhA was significantly associated with the composite outcome (HR 4.36 ± 2.7; $p < 0.03$).
Conclusions: PhA is associated with surrogate markers of HF severity. Patients with low PhA will possibly benefit from the intensification of specific HF therapies, but this needs to be confirmed in further studies.

SÁBADO, 20 ABRIL de 2024 | 15:30-16:30

Área de Posters 3 | Sessão de Posters 40 - Insuficiência cardíaca - da Preservada ao Transplante

PO 258. PREVALENCE OF ECHOCARDIOGRAPHIC FINDINGS COMPATIBLE WITH PRESERVED EJECTION FRACTION HEART FAILURE IN A REAL-WORLD PRACTICE

António Baptista Carvalho[1], José Ferreira Santos[2], Duarte Espregueira Mendes[2], Rita Gomes[2], Rita Rodrigues[2], Rita Santos[2], Isabel Melo[2], João Santos[2], Telma Martins[2], Joana Patinha[2], João Colaço[3], Lígia Mendes[2]

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Introduction: Diagnosing heart failure with preserved ejection fraction (HFpEF) poses challenges. The current criteria, outlined in the 'HFA-PEFF

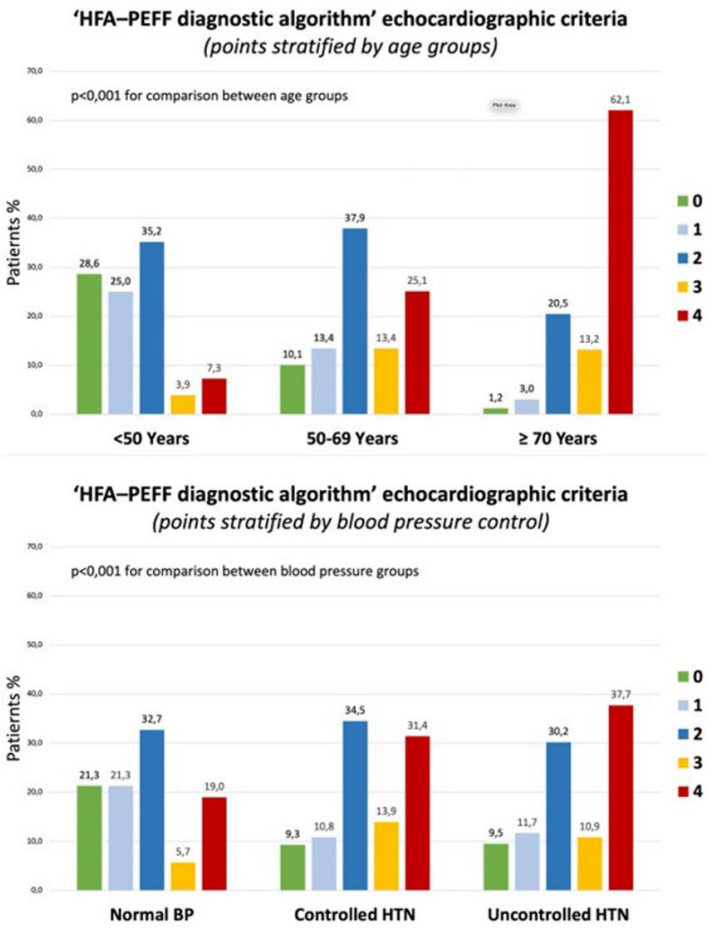

Figure PO 258

diagnostic algorithm', rely on parameters obtained through transthoracic echocardiography. However, some of these criteria are commonly encountered in clinical practice.

Objectives: To determine the prevalence of echocardiographic findings aligning with Heart Failure with Preserved Ejection Fraction, as per the 'HFA-PEFF diagnostic algorithm', among patients with suspected hypertension.

Methods: We retrospectively evaluated consecutive patients referred for ambulatory blood pressure monitoring (ABPM) and transthoracic echocardiography over a one-year period at a single center. Patients with LVEF < 50% + and severe valvular disease were excluded. Echocardiographic assessments and ABPM followed best practices. We assessed the prevalence of functional and morphological criteria defined in the 'HFA-PEFF diagnostic algorithm'. The identified findings compatible with HFpEF were compared among different age groups (< 50 years, 50-69 years, and ≥ 70 years) and hypertension status.

Results: Our analysis involved 1,888 patients (average age 60 ± 13 years, 49% female). Of these, 20.4% exhibited normal blood pressure on ABPM, 47.9% had controlled hypertension, and 31.7% had uncontrolled hypertension. Only 1.6% had a previous HFpEF diagnosis. On average, patients showed 2.19 ± 1,67 echocardiographic findings aligning with the 'HFA-PEFF diagnostic algorithm' criteria (corresponding to an average 2.36 points). Overall, 43.7% of patients had at least one major functional criterion (most commonly, e' lateral < 10 cm/s, observed in 38.4%), while 61.2% had at least one major morphological criterion (most frequently, LAVI > 34 ml/m^2, seen in 61.1%). Additionally, 30.9% exhibited both major functional and morphological criteria (4 points). Only 11.8% of patients showed no minor or major criteria for HFpEF (0 points). Stratifying by age and blood pressure control revealed a significant increase in prevalence of findings compatible with the 'HFA-PEFF diagnostic algorithm' criteria (Figure).

Conclusions: Echocardiographic findings consistent with HFpEF are highly prevalent and widespread in real-world clinical practice, increasing with advancing age and in patients with hypertension. Integrating these echocardiographic criteria with natriuretic peptides in appropriate clinical setting, could yield a high prevalence of HFpEF.

PO 259. PREDICTION OF WAIT TIMES IN HEART TRANSPLANTATION IN PORTUGAL

Carlos Aguiar[1], Fátima Franco[2], Sandra Amorim[3], António Valentim Gonçalves[4], Rita Ilhão Moreira[4], Marta Marques[1], David Prieto[2], Paulo Pinho[3], Pedro Coelho[4], António Martinho[5], Margarida Ivo[6]

[1]Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz. [2]Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra. Centro Hospitalar Universitário de S. João, EPE. [4]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [5]Centro de Sangue e de Transplantação de Coimbra. [6]Instituto Português do Sangue e da Transplantação.

Introduction: Wait times for heart transplantation vary significantly among patients. Prolonged wait times are well established as a risk factor for poor post-transplant outcomes. Durable left ventricular assist devices substantially improve waitlist survival and may be used as a bridge-to-transplant in eligible candidates. We aimed to identify predictors of wait time for heart transplantation in Portugal.

Methods: We reviewed data for 229 patients who underwent heart transplantation between January 1, 2018, and December 15, 2023, in any of the 4 heart transplantation centers in Portugal. We performed univariate and multivariate analyses of the waiting times. Variables considered included age at listing, sex, blood type, weight and body mass index at listing, urgency status at listing, and pulmonary hypertension. We used a Cox

proportional hazards model to evaluate the simultaneous effect of multiple variables on the waiting time of heart transplant candidates.
Results: Most heart transplant recipients were male (71%), over 50 years old (median age 54 years) at the time of listing for transplantation, and blood type A (56%). The medical urgency status on the day the patient was listed for transplantation was grade 1 to 4 (emergent) in 31% patients, grade 5 or 6 (urgent) in 61%, and grade 7 (elective) in 8% (data available for 152 patients). Only 30% were transplanted within 3 months of being listed, whereas 10% were transplanted after 1 year on the waiting list. The median wait time for the overall cohort was 93 days (interquartile range: 26 days, 190 days). In univariate analyses, wait time was significantly associated with blood type (median wait time was 167 days for blood type B, 121 days for type O, 84 days for type A, and 33 days for type AB) and with urgency status on initial listing (median wait time was 21 days for emergent listings, days for 128 urgent listings, and 225 days for elective listings). In multivariate analyses, both variables were significantly and independently associated with wait time ($p < 0.001$): wait time was 2-fold higher among patients with a non-A blood type compared with blood type A patients (odds ratio 2.16; 95%CI, 1.53-3.06); wait time was 7-fold higher among patients with an urgent status on initial listing compared with patients with and emergent status (odds ratio 7.40; 95%CI, 3.68-14.86).
Conclusions: This study is the first nationwide analysis of wait times in heart transplantation in Portugal. The results have the potential to describe the wait-time duration more accurately for an individual patient, which may influence care decisions.

PO 260. CLINICAL OUTCOMES OF IMPLANTABLE CARDIOVERTER DEFIBRILLATORS IN HEART FAILURE: A COMPARATIVE ANALYSIS BETWEEN ISCHEMIC AND NON-ISCHEMIC CARDIOMYOPATHY PATIENTS

Inês Ferreira Neves, Julien Lopes, Guilherme Portugal, Rita Teixeira, Pedro Silva Cunha, Bruno Valente, Ana Lousinha, Paulo Osório, Hélder Santos, André Monteiro, Rui Cruz Ferreira, Mário Martins Oliveira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: In individuals with Heart Failure with Reduced Ejection Fraction (HFrEF), a considerable number of fatalities result from electrical disturbances, such as ventricular arrhythmias. Implantable cardioverter defibrillators (ICDs) are recommended for primary prevention in patients with symptomatic Heart Failure (HF), with a left ventricular ejection fraction (LVEF) ≤ 35%, following a minimum of three months of optimal medical therapy (OMT). The implantation of an ICD in these patients is a class I recommendation in the most recent European Society of Cardiology (ESC) Guidelines (level of evidence A) for patients with ischemic etiology, but the evidence is less strong for patients of a non-ischemic cardiomyopathy (NICM). We aimed to compare the outcomes of ICD implantation in patients with ischemic heart disease (IHD) and NICM.
Methods: All patients with HFrEF, symptomatic (New York Heart Association [NYHA] class II-III) and with LVEF ≤ 35% after 3 months of OMT who were implanted with ICD for primary prevention at our center between 2015 and 2022 were included. ICD therapies, including Anti Tachycardia Pacing (ATP) and shock were recorded during follow-up. We retrospectively analyzed the time to event (ICD therapy) in patients with IHD and NICM. A cox regression model was used with time to event and Kaplan-Meier survival curve was calculated.
Results: 289 patients (82.4% males, age 62 ± 11.3 [between 50 and 73 years]) were included. 195 (67.5%) had IHD and 94 (32.5%) had NICM. There were no statistically significant differences between the groups. After one year, there were no significant differences in the number of therapies delivered by the ICD between the groups, with a p value of 0.318. In cox regression, the non-ischemic etiology of the cardiomyopathy was not associated with a reduced risk of ICD therapy (hazard ratio [HR] 1.05, 95% confidence interval [CI] 0.58-1.89). There were no significant differences in the "free from ICD therapy" survival curves.
Conclusions: The outcomes of ICD implantation in patients with IHD and NICM, regarding ICD therapy, did not differ in or population of patients with HFrEF.

PO 261. ASSOCIATION BETWEEN IMPAIRED KIDNEY FUNCTION AND WORSE RESPONSE TO LEVOSIMENDAN TREATMENT

Filipa Gerardo, Mariana Passos, Inês Fialho, Ana Oliveira Soares, Carolina Mateus, Inês Miranda, Mara Sarmento, Joana Lima Lopes, David Roque

Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra.

	All (n=289)	IHD (n=195)	NICM (n=94)	p value
Age - mean±SD	61.96±11.34	63.48±10.03	58.83±13.17	0.003
Male sex - n (%)	238 (82.4)	168 (86.2)	70 (74.5)	0.015
LVEF* - mean±SD	28.09±5.2	28.29±5.22	27.69±5.16	0.363
QRS duration* - median (IQR)	110 (30.0)	114 (30.0)	110 (26.0)	0.723
NYHA class* - n (%)				0.094
I	24 (8.3)	19 (9.7)	5 (5.3)	
II	198 (68.5)	137 (70.3)	61 (64.9)	
III	58 (20.1)	33 (16.9)	25 (26.6)	
Comorbidities - n (%)*				
Hypertension	202 (69.9)	150 (76.9)	52 (55.3)	<0.001
Type 2 DM	97 (33.6)	76 (39.0)	21 (22.3)	0.004
Dyslipidemia	204 (70.6)	157 (80.5)	47 (50.0)	<0.001
Current alcohol abuse	23 (8.0)	10 (5.1)	13 (13.8)	0.011
Previous alcohol abuse	16 (6.2)	7 (3.6)	11 (11.7)	0.008
Smoker	87 (3.1)	64 (32.8)	23 (24.5)	0.133
Previous smoking	69 (23.9)	49 (25.1)	20 (21.3)	0.444
Current drug abuse	5 (1.0)	2 (1.0)	3 (3.2)	0.208
Previous drug abuse	4 (0.8)	3 (1.5)	1 (1.1)	0.733
Chronic Kidney Disease	61 (21.2)	44 (22.6)	17 (18.1)	0.371
COPD	34 (11.8)	20 (10.3)	14 (14.9)	0.265
Medication* - n (%)				
ACE-I/ARB	189 (65.4)	130 (66.7)	59 (62.8)	0.374
ARNI	85 (29.4)	54 (27.7)	31 (33.0)	0.399
Beta-blocker	278 (96.2)	187 (95.9)	91 (96.8)	0.780
Espironolactone	222 (76.8)	148 (73.9)	74 (78.7)	0.755
Dapagliflozin/Empagliflozin	45 (15.6)	32 (16.4)	13 (13.8)	0.536
Ivabradine	42 (14.5)	25 (12.8)	17 (18.1)	0.256
Loop diuretic	198 (68.5)	129 (66.2)	69 (73.4)	0.285
ICD therapies after one year	24 (8.3)	14 (7.2)	10 (10.6)	0.318

Footnote: IQR - Interquartile Range. SD - Standard deviation. IHD - Ischaemic heart disease. NICM - Non-ischaemic cardiomyopathy. LVEF - Left Ventricular Ejection Fraction. NYHA - New York Heart Association. DM - Diabetes Mellitus. BMI - Body Mass Index. COPD - Chronic Obstructive Pulmonary Disease. ACE-I - angiotensin-converting enzyme inhibitor. ARB - angiotensin II receptor blocker. ARNI - angiotensin receptor-neprilysin inhibitor.. *4 missing values for LVEF; 120 missing values for QRS duration; 2 missing values for cormobidities; 9 missing values for NYHA class; 3 missing values for medication.

Table 1: Population characteristics and group comparisons

Figure 1: Survival curves of patients IHD and NICM implanted with ICD as primary prevention

Figure PO 260

Introduction: Kidney dysfunction is a hallmark of advanced heart failure that correlates with morbidity and mortality. Levosimendan is a positive inotropic agent with calcium sensitizing properties that has been reported to reduce the risk of deterioration of heart failure. Positive effects of levosimendan on renal function have been described. However, data regarding response to intermittent pulses of levosimendan in patients with kidney dysfunction is lacking.
Objectives: To correlate levosimendan response with kidney dysfunction in patients with advanced heart failure.
Methods: In a single center study we retrospectively analyzed data from January 2020 to November 2022 of patients with advanced heart failure. Patients were included if they were on intermittent pulses of levosimendan (0.05–0.1 μg/kg/min over 24) in 4 weeks intervals. Exclusion criteria was not meeting the 6-month follow-up time-frame. Clinical and laboratorial data were collected. Kidney dysfunction was assessed with creatinine levels prior to starting levosimendan pulses. Primary outcome was heart failure decompensation 6 months after starting the program, measured by in-hospital patient admission.
Results: A total of 35 electronic medical charts were reviewed. Of these, 29 met the inclusion criteria. The participants consisted of 22% women and 78% men. All patients had a reduced ejection fraction (median 22 [IQR 19-25]%) and 53.1% had biventricular dysfunction. The median duration of the program was 3.75 (IQR 1.9-7.5) months. Before levosimendan pulses the participants had a mean of 1.59 (95%CI 0.98-2.21, SD 1.55) in-hospital admissions for acute heart failure. After starting levosimendan pulses the mean of in-hospital admissions was 0.63 (95%CI 0.23-1.03, SD 1.01, p = 0.003). Mean creatinine level was 1.44 (95%CI 1.22-1.65, SD 0.54). Multiple regression analysis, adjusted for heart failure decompensations prior to starting levosimendan pulses, showed that patients with higher levels of creatinine had a worse response to levosimedan, with a higher number meeting the primary endpoint (p = 0.006). For every unit increase in creatinine levels, there was a corresponding 0.945 (95%CI 0.303-1.586) times increase in the likelihood of a worse response to levosimendan treatment, taking into account previous heart failure decompensations.
Conclusions: Kidney dysfunction appears to correlate with worse response to levosimendan treatment.

PO 262. TWO YEARS OF ACTIVITY AT A HEART FAILURE DAY HOSPITAL IN A PRIVATE HOSPITAL: A REAL-WORLD PORTRAIT

Pedro Moraes Sarmento, Tiago Gonçalves, Margarida Nascimento, Nuno Neves, Margarida Proença, Luís Landeiro, Rui Costa, Inês Araújo, Cândida Fonseca

Hospital da Luz Lisboa.

Introduction: A Heart Failure Day Hospital (HFDH) constitutes a pivotal element in the organization of healthcare for patients with Heart Failure (HF). The HFDH inherently serves as a transitional care component between hospitalization and outpatient care. It enables early assessment of a patient's progression post-HF hospitalization as well as monitoring of ambulatory patients exhibiting signs of syndrome decompensation, ensuring optimization of prognostic and diuretic therapeutic interventions. In both scenarios, HFDH evaluation and guidance play a pivotal role in preventing patient rehospitalization, while also serving as a significant diagnostic optimization tool for individuals suspected of HF.
Objectives: The Heart Failure Day Hospital in one Portuguese private hospital started its activity in December 2021. We aimed to characterize the patient population attended to and the activities conducted since its inception.
Methods: Anonymous clinical records were analyzed for demographic data, types of HF, comorbidities, number and types of sessions (titration of disease modifying drugs, intravenous diuretic treatment, correction of iron deficiency, or others), and the sources of referral (hospitalization, outpatient consultation, emergency department, or others).
Results: Between December 2021 and December 2023, 452 patients were admitted to the HFDH, comprising 52.9% males with an average age of 79 ± 13 years. One hundred twenty-four patients (27.4%) had HF with reduced ejection fraction, 70 (15.5%) had moderately reduced ejection fraction, and 257 (56.9%) had preserved ejection fraction. A total of 1724 sessions were conducted (3.8 per patient), including 149 sessions of intravenous diuretic treatment (80 patients; 1.9 sessions per patient), 136 sessions of intravenous iron deficiency correction (1.1 sessions per patient), and 1,439 sessions of therapeutic titration/optimization. Referrals were sourced from outpatient consultations (45.1%; internal medicine: 24.6%; cardiology: 19%), emergency department (10%), and hospitalization (44.9%).
Conclusions: Patients attended to at the HFDH were equally referred from hospitalization and outpatient settings, particularly from Internal Medicine and Cardiology departments. They were predominantly elderly individuals with preserved ejection fraction, regardless of gender. Over 80% of the activity focused on therapeutic optimization for patients, which is in line with the latest update of the HF recommendations.

PO 263. IMPACT OF ACTIVE INTERVENTION IN HIGH-RISK HEART FAILURE PATIENTS UNDER A TEAM-BASED REMOTE MONITORING UNIT

Sofia Jacinto, Bárbara Lacerda Teixeira, Madalena Coutinho Cruz, Guilherme Portugal, Bruno Valente, Ana Lousinha, Pedro Silva Cunha, Cátia Guerra, Sofia Barquinha, Ana Teresa Timóteo, Rui Cruz Ferreira, Mário Martins Oliveira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Heart failure (HF) risk algorithms included in cardiac electronic implantable devices (CEID) can identify HF patients (P) at higher risk of 30-day hospitalization following a data transmission. These predictive models include physiological parameters, such as thoracic impedance, arrhythmia burden, percentage of pacing, night heart rate, heart rate variability or P activity levels. Multidisciplinary team-based care in remote monitoring (RM) programs may be a way to further positively impact outcomes in this population.
Objectives: We aim to assess the predictive value of machine learning HF algorithms in P classified as "high-risk", and the impact of an active intervention flow-chart by a team-based in a RM unit in order to reduce HF hospitalizations.
Methods: A single-centre prospective analysis of P with "high-risk" HF alerts generated by CEID with two different HF algorithms from two different brands. Exclusion criteria included P under 18 years old and P without HF. We compared outcomes in two different groups: P in which an action was taken (INTERV; lifestyle changes, diuretics optimization and/or call for observation in the HF clinic/Day Hospital), and P in which, after a standard questionnaire by phone, no changes were prompted (NO INTERV). HF hospitalization at 30 days was compared between the two groups.
Results: Out of 46 HF P under RM, there were 40 "high-risk" HF alerts (mean of 1.7 alerts per P) in 23P (71 ± 10 years, 83% males) from June to November 2023. Underlying diseases were ischemic cardiomyopathy (n = 13; 57%), non-ischemic cardiomyopathy (n = 6; 26%) or valvular heart disease (n = 4; 17%). Mean left ventricular (LV) ejection fraction at baseline was 27 ± 8% and New York Heart Association (NYHA) classification was II (71%), III (14%) and IV (14%). P had a CRT-D in 18 cases (78%) and an ICD in 5 (22%). Most of the alerts were due to a decreased thoracic impedance, higher burden of atrial arrhythmias and low P activity. An immediate intervention was prompted in 16 cases (40%). In 24P (60%), daily monitoring was maintained and no changes were made. HF hospitalization at 30 days occurred in 19% of the intervention group and in 8% of the non-intervention group (p = 0.373).
Conclusions: In a RM-based follow-up program of P with severe LV dysfunction, "high-risk" alerts for HF decompensation are a common finding. In this preliminary study, we found no significant differences between INTERV and NO INTERV groups regarding hospitalization. More data are need to evaluate the role of a prompt intervention after a "high-risk" score transmission.

SÁBADO, 20 ABRIL de 2024 | 15:30-16:30

Área de Posters 1 | Sessão de Posters 41 - Taquiarritmias supraventriculares

PO 264. ATYPICAL RIGHT ATRIUM FLUTTERS.

Joao Santos Fonseca, Ana Beatriz Garcia, Ana Margarida Martins, Catarina Simões Oliveira, Joana Brito, Nelson Cunha, Afonso Nunes Ferreira, Gustavo Lima da Silva, Luís Carpinteiro, Nuno Cortez-Dias, Fausto J. Pinto, João de Sousa

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Introduction: Atypical right Atrial Flutter (AFl) are uncommon tachycardias, mostly documented in patients with previous structural cardiopathy or previous ablation lesions.
Objectives: We aim to describe the mechanism of right atypical AFl submitted to ablation.
Methods: Single center cohort of patients (pts) submitted to atypical right AFl from 2015 to 2022. Patients were consecutively selected from a pool of pts referred to atypical AFl mapping and ablation.
Results: From a total of 185 pts referred for atypical flutter ablation a right atypical AFl was documented in 10 pts. Only 3 patients had no documentation of structural cardiopathy or previous ablation, 3 pts had a severe congenital anomaly, 1 a surgical corrected ASD, 1 had dilated cardiomyopathy and was submitted to surgical CRT leads extraction, the remaining 2 had been submitted to previous cavotricuspid isthmus (CTI) ablation. Regarding the patients without a previous medical history, one had a localized reentry in the superior vena cava, another a localized reentry in the anterior border of a spontaneous lateral scar, and the other a macro reentrant dual loop, constituted with a lower-loop and clockwise CTI. All the other AFl were macro-reentrant tachycardia - 3 single-loops, 2 dual-loops and 1 four-loop. Low voltage was most frequently localized in the lateral wall (7/10 pts), which was spontaneous in 3 pts and incisional in the others. All these pts presented at least one loop scar related. A loop dependent on the inferior vena cava was found in 2 pt and a gap from a previous ablation in 1 pt. In one pt, after termination of the 1st flutter, a 2nd new flutter was remapped, with the documentation of single loop dependent on a gap from a previous inter-cava line. Acute successful conversion was achieved in all patients, although one patient had an early recurrence and was submitted to AV node ablation. Table summarizes the characteristics of the 10 cases described.
Conclusions: Right atypical AFl are infrequent tachycardias, more commonly associated with previous structural cardiopathy or previous ablation lesions. Through this descriptive work we aimed to leverage community expertise on this rare pathology.

PO 265. EVALUATION OF THE USE OF OPEN WINDOW MAPPING WITH HIGH DENSITY CATHETER IN PATIENTS WITH WOLFF-PARKINSON-WHITE IN A TERTIARY CARE UNIT

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Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: The evolution of electroanatomical mapping has allowed the treatment of tachyarrhythmias more effectively, reducing the recurrence rate, allowing less exposure of the patient and team to fluoroscopy and with less chance of complications. In accessory pathways, the use of the open window mapping (OWM) technique uses the automatic inclusion of points corresponding to atrial and ventricular signals with greater fusion, creating maps with better visualization of the activation exit location for the chamber of interest. The aim of this stud was to identify the characteristics of electrophysiological studies carried out with the OWM technique in a population with ventricular pre-excitation syndrome in a tertiary unit in Lisbon.
Methods: A retrospective analysis was carried out on patients with Wolff-Parkinson-White syndrome who underwent an electrophysiological study using the open window technique for mapping the accessory pathway and treatment from March 2020 to November 2023. Unlike conventional mapping techniques that use point-by-point annotations and depend on an interpretation of the electrograms by the operator, the OWM technique automatically annotates local activation, using the clearest unipolar signal (maximum dV/dt) synchronized with the bipolar signal on the mapping catheter, collecting points on both sides of the atrioventricular ring more accurately, regardless of the chamber in which it is positioned.
Results: 69 data from electrophysiological studies of patients diagnosed with WPW were included. Of these, 40 were male and 29 were female. 32 right pathways, 30 left pathways and 7 perihisian tracts were identified. Among the diagnoses, 62 had a correlation between the ECG and the

		Circuit	Mechanism	Ablation line
1	No structural cardiopathy or previous ablation	Localized reentry		Focal applications
2	No structural cardiopathy or previous ablation	Dual loop	1) Lower loop 2) Counterclockwise CTI	CTI
3	No structural cardiopathy or previous ablation	Localized reentry	Scar RA lateral wall	Focal applications
4	Einsenmenger syndrome	Single loop	Scar RA lateral wall	Line between scar and posterior wall
5	Ebstein + Surgical tricupid plasty CTI ablation and intercava line	Single loop	Scar RA lateral wall	Inferior region of the lateral scar
6	ASD surgical closure	Single loop	Scar RA lateral wall	Focal applications inside the scar
7	CTI + RA line	Dual loop	1) Scar related lateral wall; 2) CTI	Lateral wall line
8	CTI ablation	Dual loop	1) IVC 2) Scar related in the RA lateral wall	Lateral wall line
9	Arryhthmogenic cardiopathy with surgical CRT lead extraction	Single loop	Gap from previous CTI	CTI
10	Tetralogy of Fallot repaired	4-Loop single loop	1) Intra scar 2) Around the lateral scar 3) CTI counterclockwise 4) IVC clockwise	Focal applications intra scar

Figure PO 264

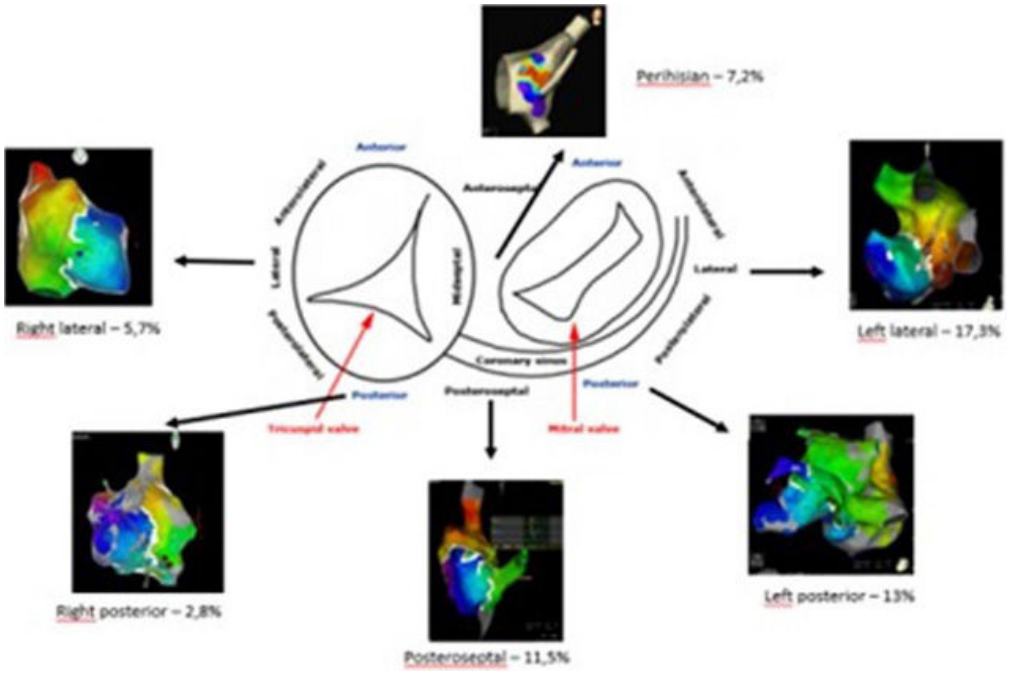

Figure PO 265

electrophysiological finding. Treatment was carried out with radiofrequency in 61 patients; 7 were treated with cryoablation and 1 patient was not treated due to high risk of atrioventricular block (AVB). The fluoroscopy time was zero in 30 studies and the exams with the longest exposure time were routes located on the left that require transseptal puncture. The treatment was carried out successfully in 62 patients. Those that were unsuccessful were due to pain intolerance, high risk of AVB and a route with probable epicardial extension that awaits a new approach.

Conclusions: Data analysis demonstrated that the use of open window mapping increases the accuracy in identifying the location of the accessory pathway than conventional techniques, which allows the electrophysiologist to choose the best therapeutic approach and thus obtain greater effectiveness, a lower recurrence rate and less possibility of complications.

PO 266. RADIOFREQUENCY CATHETER ABLATION OF ANTEROSEPTAL AND MIDSEPTAL ACCESSORY PATHWAYS IN THE ERA OF ELECTROANATOMIC MAPPING SYSTEMS AND IRRIGATED CATHETERS

Catarina Amaral Marques, Helena Santos Moreira, André Cabrita, Ana Isabel Pinho, Cátia Oliveira, Luís Santos, Inês Correia, Patrícia Araújo, Ana João Tavares, Cíntia Soares, Luís Adão, Ana Lebreiro

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Introduction: Ablation of anteroseptal (AS) and midseptal (MS) accessory pathways (APs) remains challenging due to proximity to the atrioventricular node and a non-negligible risk of AV block (AVB) during ablation. Reviewing the literature, data regarding the approach and results in these cases are limited and from before the advent of mapping systems.

Objectives: Describe a 7-year experience of a tertiary care hospital in the management of septal APs.

Methods: Retrospective study of pts with APs, referred to electrophysiology study (EPS), between 2016 and 2022. Data was collected by reviewing medical records.

Results: A total of 356 pts were enrolled. Median age was 22 years-old (58% were male). AP location distribution is described in table 1. Only radiofrequency (RFA) was used when ablation was performed. RFA success (absence of recurrence within 30 minutes after successful ablation lesion) was 97.2%. Electroanatomic mapping systems were used in 87% of cases. Median fluoroscopy (fluoro) time was 1.6 minutes with a median dose of 101 mGy. Median fluoro dose was significantly reduced through study years (before 2021: median dose of 376 mGy versus during/after 2021: median dose of 58 mGy; $p < 0.001$). The subgroup of pts with AS and MS APs (n = 50), was then analysed. Risk stratification during EPS was performed and in 54% of cases RFA was performed, with an acute success rate of 96.3%. Decision not to proceed to RFA in the remaining 46% was due to prohibitive high-risk of AVB and/or presence of low-risk APs. Median ablation-time to success (disappearance of conduction through AP) was 3 seconds, applying up

AP location		Frequency of cases (%)
Left	Lateral	35%
	Posterior	14%
	Anterior	1%
	Total	**50%**
Right	Posterior	24%
	Lateral	7%
	Total	**31%**
Septal	Anterior and midseptal	14%
	Posterior	4%
	Total	**18%**
Epicardial		1%

Figure PO 266

to 30W, using irrigated catheters. After the first RF application, 44% pts had recurrence of AP conduction during the waiting period, requiring 2 to 3 touch-up lesions in most cases, to achieve acute success. The majority of this lesions were applied with an atrial signal higher than the ventricular signal, reflecting the need to ablate more proximally. There were no procedural complications.
Conclusions: We report a large series of pts with AS and MS APs referred for a first attempt ablation/EPS, reporting not only our success rate, but also the percentage of pts who did not proceed to ablation due to low risk features of AP and/or prohibitive high-risk of AVB. Bearing in mind that AP ablation is indicated when the pathway presents high risk features or symptoms, our judicious selection of pts may justify the absence of procedural complications, with a success rate of RFA comparable to the previously published results, while using a low fluoroscopy strategy and irrigated catheters. In our cohort, using a low fluoroscopy protocol and irrigated catheters, RFA of AS and MS APs proved to be safe and effective.

PO 267. BIATRIAL FLUTTERS UNCOMMON CIRCUITS REQUIRING TAILORED ABLATION APPROACH

João Mendes Cravo[1], Ana Beatriz Garcia[1], Ana Margarida Martins[1], Catarina Simões de Oliveira[1], Ana Abrantes[1], Joana Brito[2], Nelson Cunha[2], Afonso Nunes-Ferreira[2], Gustavo Silva[3], Nuno Cortez Dias[3], F. J. Pinto[3], João de Sousa[3]

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Introduction: Atrial flutters are macroreentrant tachycardias that typically involve several walls of a certain atrium, being the other atrium passively activated. Biatrial flutters (BAF) are peculiar macro-reentries associated with anterior/septal scars, involving both atrial and using the interatrial connections.
Objectives: To characterize the mechanism of BAF in a cohort of patients (pts) submitted to mapping and ablation.
Methods: Retrospective single-center study of pts with atypical atrial flutter submitted to ablation from 2015 to 2022. High resolution electro anatomical voltage and activation mapping were collected using Carto, Ensite or Rhythmia. Whenever the arrhythmia circuit was not fully displayed in a certain atrium, the other atrium was mapped to fully characterize the reentrant circuit and establish the critical isthmus. Biatrial circuits were classified into 4 types: type 1, involving the mitral annulus and the tricuspid annulus, escaping the septal wall in both atria; type 2 using most of the mitral annulus and the right atrium (RA) septum; type 3, using both the left atrium (LA) and RA septum; and type 4, using most of the tricuspid annulus and the LA septum. Acute and long-term success was evaluated.
Results: From a total of 107 pts submitted to atypical flutter ablation, 5 pts presented BAF (3 male, median age: 55-yo), 4 of them previously submitted to cardiac surgery (CABG in 1, mitral valvuloplasty in 1, mitral + tricuspid valvuloplasty in 1 and surgical correction of aortic coarctation and ostium primum atrium septal defect in 1) and 1 had been previously submitted to pulmonary vein isolation (PVI), empirical roof line and cavo tricuspid isthmus (CTI) ablation. A proximal-to-distal coronary sinus activation and extensive low-voltage areas at the septum were recognized in all these pts. The BAF mechanism was single loop in all of them, with a type 2 circuit in 2 pts, and types 1, 3 and 4 in one patient each. BAF types 1 and 4 were terminated with CTI ablaon. BAF types 2 and 3 were terminated with linear ablations from the mitral annulus to the right superior PV, complemented with focal applications at Bachmann bundle insertion sites in the pts with type 2 BAF. Acute success was achieved in all pts. During a mean time of follow-up of 344 ± 91 days, 1 pt had AFl recurrence.
Conclusions: BAF is a rare and complex arrhythmia, which is possible to ablate successfully by applying high-density mapping tools, a comprehensive analysis of the substrate/activation maps and a mechanism-tailored ablation strategy.

PO 268. INITIAL EXPERIENCE WITH A NOVEL TEMPERATURE-CONTROLLED RADIOFREQUENCY CATHETER ABLATION FOR THE TREATMENT OF ATRIAL FLUTTER

Sofia B. Paula[1], Margarida Figueiredo[1], Ana Raquel Santos[2], Sofia Jacinto[2], Hélder Santos[2], André Viveiros Monteiro[3], Ana Lousinha[2], Guilherme Portugal[2], Bruno Valente[2], Paulo Osório[2], Pedro Silva Cunha[2], Mário Oliveira[2]

[1]Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo. [2]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [3]Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: Irrigated radiofrequency (RF) ablation catheters lose tissue temperature acuity, which is vital in assessing lesion formation. DIAMOND-AF (DiamondTemp™ Ablation System for the Treatment of Paroxysmal Atrial Fibrillation) was a prospective, multicenter, noninferiority, randomized trial that demonstrated non-inferiority of the new Diamond Temp Ablation (DTA) catheter (designed to re-establish accurate tissue temperature measurements during ablation) on efficacy and safety compared to contact-force RF catheters.
Methods: Single-center prospective pilot study, evaluating patients who underwent typical atrial flutter (AFL) ablation between January and August of 2023. We considered two groups: Group 1 used a DTA system and Group 2 used a contact-force (non-DTA) catheter. Since group 1 had fewer patients, we used a propensity match score and successfully matched 30 patients in a 1:2 match.
Results: We screened a total of 47 patients who underwent solely AFL ablation. Mean age was 65.5 (± 7.8) years, 80.9% were male. After calculating and applying the propensity match score we had 10 patients in Group 1 and 20 patients in Group 2. Comparing baseline characteristics between Group 1 and Group 2: mean age was 66.9 vs. 70 years, 90% vs. 80% of patients were males; 70% vs. 80% had arterial systemic hypertension; 30% vs. 40% had diabetes and 20% vs. 35% had smoking habits. All patients were submitted to cavotricuspide isthmus ablation. One patient from each group was submitted to additional right atrial ablation spots. All the procedures were successful and no complications were registered. Regarding total procedure duration, Group 1 mean time was 61.9 (± 24.3) min whilst Group 2 was 87.8 (± 28.5) min (p = 0,021). Mean fluoroscopy time in Group 1 vs. Group 2 was 3.76 (± 4.23) and 1.94 (± 3.15) min, respectively (p = 0,3). Mean RF time in Group 1 vs. Group 2 was 7.1 (± 3.51) and 9.81 (± 7.72) min (p = 0,5).
Conclusions: The DTA system showed a similar safety profile and efficacy compared to contact force catheters in patients undergoing AFL ablation, with a shorter total procedure duration.

PO 269. ACCESSORY PATHWAY ABLATION IN WOLFF-PARKINSON-WHITE SYNDROME: A DECADE OF EXPERIENCE

João Santos Fonseca, Ana Margarida Martins, Ana Beatriz Garcia, Catarina Simões Oliveira, Joana Brito, Nelson Cunha, Afonso Nunes Ferreira, Gustavo Lima da Silva, Luís Carpinteiro, Nuno Cortez-Dias, Fausto J. Pinto, João de Sousa

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Introduction: Wolff-Parkinson-White (WPW) syndrome is characterized by an electrical accessory pathway (AP) resulting in pre-excitation and increased risk of tachyarrhythmias. Electrophysiology study (EPS) is crucial in diagnosing and managing this condition. Recent developments such

as irrigated and contact-force catheters, steerable sheath and electro-anatomic mapping systems were developed to improve ablation efficacy and safety.
Objectives: To evaluate efficacy and safety of AP ablation in patients (pts) with WPW and assess recurrency during follow-up.
Methods: Single center retrospective study of pts referred to EPS for supraventricular tachycardia (SVT) with a documented AP, from January 2013 to April 2023. Ablation efficacy was evaluated through absence of AP and non-inducibility of atrioventricular reentry tachycardia (AVRT) at the end of the procedure. Safety was defined as major outcomes that halted discharge. Recurrence was accessed based on ECG pre-excitation pattern, symptoms, and performance of additional EPS during follow-up (FU). Student t and chi-square were used for comparison and K statistics was used to assess agreement.
Results: We included 249 pts, 46% female, mean age 36 ± 21 years; only 7 pts had history of structural cardiomyopathy (5 dilated, 1 ischemic, 1 Ebstein anomaly). Palpitations were reported in 75% of pts, syncope in 3% and 19% were asymptomatic. Previous SVT was present in 45% of pts, of which 12% had pre-excited atrial fibrillation (AF) and 10% orthodromic AVRT. Prior to EPS, beta-blocker was prescribed to 35% of pts and 12% were under other antiarrhythmics. After invasive assessment AP locations were mostly LL, LPL, LPS and RPS, in 23%, 21%, 13% and 18% of pts respectively. Concealed pattern was associated with a 5.3 fold increase odd of left lateral or left posterolateral locations (OR 5.3, IC 2.8-10). Orthodromic AVRT was induced in 52% of pts, and pre-excited AF in 2.4% of pts. AP ablation was effective in 96% of pts. In 3 pts, ablation was not performed due to futility and safety reasons (low risk para-hisian AP). EPS was safe, with complications reported only in 2 pts (cardiac tamponade and 2nd degree AV block requiring pacemaker). During a mean FU of 5 ± 3 years, 13% of pts had symptom recurrence and 14% pre-excitation pattern, of which 60% underwent a second EPS. There was a moderate agreement between baseline and FU EPS AP's location (K = 0.58; p < 0.001). Age below 50 years was associated with a 2.9 fold increase odd of repeating an EPS during FU (OR 2.9, CI 1.1-7.8).
Conclusions: In our population, with the use of modern ablation tools, AP ablation in WPW syndrome was safe and successful, with a low rate of recurrency.

SÁBADO, 20 ABRIL de 2024 | 15:30-16:30

Área de Posters 2 | Sessão de Posters 42 - Revascularização de tronco comum

PO 270. LEFT MAIN PERCUTANEOUS INTERVENTION FOR MYOCARDIAL INFARCTION: A TERTIARY CENTRE RETROSPECTIVE STUDY

Tomás M. Carlos, Gonçalo Terleira Batista, Luísa Gomes Rocha, Luís Leite, Bernardo Lisboa Resende, Mafalda Griné, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Acute myocardial infarction due to left main coronary artery (LMCA) is an uncommon but severe condition, associated with high in-hospital morbidity and mortality. This study aimed to assess baseline and demographic characteristics of patients undergoing LMCA percutaneous coronary intervention (PCI) for myocardial infarction and compare them based on their global 1-year outcome. Moreover, we sought to identify potential predictors of survival.
Methods: A single-centre retrospective observational study assessed consecutive patients who underwent LMCA-PCI for both ST-elevation and non-ST-elevation myocardial infarction, from January 2020 to December 2022. Data was collected from hospital records. Elective interventions and patients with insufficient data or lost follow-up were excluded. We assessed their baseline characteristics and their global mortality rates at 30, 90 and 180 days, and 1 year. Survivors and non-survivors within 1 year were compared using parametric/non-parametric, according to the normality of the distribution, and chi-square/Fisher tests. Lastly, we performed Cox regression to identify possible predictors of survival.
Results: A total of 59 patients, with a mean age of 69.6 ± 11.8 years and a male predominance (76%) were included. The most frequent comorbidity was hypertension (68%), followed by dyslipidaemia (64%). ST-elevation myocardial infarction (STEMI) was the most common clinical presentation (59%). All-cause mortality at 30-days was 24%, increasing to 34% at 1-year (20 patients). When comparing survivors and non-survivors at 1-year of follow-up, older age (p = 0.019) and higher values of high-sensitivity troponin I (hsTNI) at admission (p = 0.011) were significantly associated with mortality. No statistically significant differences were found regarding hypertension, gender, smoking, diabetes or clinical presentation. Cox regression analysis suggested hsTNI peak value in the first 72 hours as a potential predictor of survival, notwithstanding its modest hazard ratio (p < 0.001, HR 1.000003).
Conclusions: Acute LMCA-PCI in our centre primarily addresses STEMI, reflecting its severity on initial presentation and mainly justifying higher short-term mortality. Older age and elevated admission hsTNI levels were associated with 1-year mortality, with peak hsTNI in the first 72 hours potentially predicting survival, despite its low hazard ratio.

PO 271. PERCUTANEOUS REVASCULARIZATION OF LEFT MAIN CORONARY ARTERY IN DIABETIC PATIENTS

Lucas Hamann, Joana Massa Pereira, Sofia Andraz, Hugo Costa, Miguel Espírito Santo, Jorge Mimoso

Centro Hospitalar e Universitário do Algarve, EPE/Hospital de Faro.

Introduction: The treatment of choice of left main coronary artery (LMCA) disease has been subject to intense debate and investigation in the last decade, mainly in diabetic patients, where surgical revascularization is the standard of care. Angioplasty of LMCA in diabetics has been increasing mainly in non-complex coronary artery disease patients.
Objectives: Characterize the population submitted to LMCA angioplasty. Compare cardiovascular (CV) mortality, acute coronary syndromes (ACS) and the need of re-vascularization (composite primary outcome) regarding the presence of type 2 diabetes (T2DM), in 2 years follow-up. Try to identify prognostic factors for the primary outcome.
Methods: Retrospective study between 2019/2020, composed of n = 120 patients who submitted to LMCA angioplasty. Two groups were created regarding the presence of T2DM. Categorical variables are presented as frequencies and percentages, and continuous variables as means and standard deviations, or medians and interquartile ranges for variables with skewed distribution or a significant Shapiro-Wilk test. Multivariate analysis was performed using logistic regression. p value < 0.05 indicates statistical significance.
Results: A total of 120 patients were identified, with a mean age of 70.5 ± 10.8 years, 76.7% were male. T2DM group was composed by 41 (34.2%) patients. 75% had hypertension, 60.8% dyslipidemia, 20.2% obesity, 21.7% were smoker and 8.3% chronic renal disease (CRD). Age, obesity, smoking status and CRD were more frequent in T2DM population. 72.5% presented with ACS and 55% had left main plus one atherosclerotic coronary artery disease. Overall, improvement of LVEF after procedure was 6% (p < 0.001). Euroscore and syntax score > 22 were higher in T2DM patients (p < 0.001, p < 0.001). Primary outcome (composite) occurred in 21 (18.6%) patients, without differences between groups (T2DM n = 10, 25.6% vs. n = 11, 14.9%, p = 0.161). Individual components of primary outcome also without statistical significance in 2 years follow-up. T2DM was not an independent predictor of the primary outcome (p = 0.813, OR 0.86, 95%CI 0.26 to 2.89).
Conclusions: In the sample analyzed, T2DM patients submitted to LMCA angioplasty had low rates of hard CV outcomes and improvement of LVEF without differences when compared with non-T2DM group, showing the benefit of this revascularization strategy in these patients.

Table 1 – Clinical characteristics of patients submitted to left main angioplasty

			Non-T2DM (n=79, 65,8%)	T2DM (n=41, 34,2%)	Total (n=120)	p value
Age	*Mean±SD - years*		68,5±10,4	74,1±8,50	70,5±10,8	0,003
Gender	*Male*	n (%)	66,0 (83,5)	26,0 (63,4)	92,0 (76,7)	
	Female	n (%)	13,0 (15,6)	15,0 (36,6)	28,0 (23,3)	0,013
Hypertension		n (%)	55,0 (69,6)	35,0 (85,4)	90,0 (75,0)	0,059
Dyslipidemia		n (%)	44,0 (55,7)	29,0 (70,7)	73,0 (60,8)	0,175
Smoker		n (%)	23,0 (29,1)	3,00 (7,30)	26,0 (21,7)	0,040
Obesity		n (%)	10,0 (12,7)	14,0 (35,0)	24,0 (20,2)	0,004
Stroke		n (%)	2,00 (2,50)	3,00 (7,30)	5,00 (4,20)	0,213
Ischemic heart disease		n (%)	38,0 (48,1)	23,0 (56,1)	61,0 (50,8)	0,363
Heart failure		n (%)	2,00 (2,60)	2,00 (4,90)	4,00 (3,40)	0,506
Chronic renal disease		n (%)	3,00 (3,80)	7,00 (17,1)	10,0 (8,30)	0,013
Clinical presentation						
Acute coronary syndrome		n (%)	58,0 (73,4)	29,0 (70,7)	87,0 (72,5)	
Chronic coronary syndrome		n (%)	10,0 (12,7)	9,00 (22,0)	19,0 (15,8)	
Ischemia stress test		n (%)	7,00 (8,90)	3,00 (7,30)	10,0 (8,30)	
Heart failure		n (%)	4,00 (5,10)	0,00 (0,00)	4,00 (3,30)	0,343
Coronary artery disease						
Left main		n (%)	10,0 (12,7)	11,0 (26,8)	21,0 (17,5)	
Left main plus 1		n (%)	44,0 (55,7)	22,0 (53,7)	66,0 (55,0)	
Left main plus 2		n (%)	25,0 (31,6)	7,00 (17,1)	32,0 (26,7)	
Left main plus 3		n (%)	0,00 (0,00)	1,00 (2,40)	1,00 (0,80)	0,066
IVUS		n (%)	15,0 (19,0)	7,00 (17,1)	22,0 (18,3)	0,797
Radial access		n (%)	74,0 (93,7)	35,0 (85,4)	109 (90,8)	0,308
Left ventricular ejection fraction - pre	*Mean±SD - %*		48,4±11,3	50,1±12,3	49,4±11,1	0,400
Left ventricular ejection fraction - pos	Mean±SD - %		55,1±9,90	55,6±11,5	55,3±10,4	0,600
			p<0,001	p=0,010	p<0,001	
Stents	*Mean±SD - n*		1,46±0,62	1,26±0,57	1,40±0,59	0,294
Euroscore	*Mean±SD*		2,79±4,39	12,2±13,1	6,45±9,83	<0,001
Syntax score	*Mean±SD*		27,2±11,9	27,6±11,9	27,3±12,4	
Syntax score > 22		n (%)	5,00 (6,30)	15,0 (36,6)	20,0 (16,7)	<0,001

Figure PO 271

PO 272. COMPREHENSIVE ASSESSMENT OF LEFT MAIN CORONARY ARTERY STENOSIS UTILIZING PRESSURE WIRE: A RETROSPECTIVE ANALYSIS

Tatiana Pereira dos Santos, Mariana Rodrigues Simões, Gonçalo Terleira Batista, Ana L. Silva, Rafaela Fernandes, Vanessa Lopes, Diogo Fernandes, Gonçalo Costa, Joana Guimarães, Elisabete Jorge, Luís Leite, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Pressure wire evaluation (PWE) serves as a pivotal tool in guiding revascularization decisions for coronary lesions, providing a coronary index flow that prevents overtreatment and facilitates clinical decision-making. Left main (LM) coronary stenosis is associated with increased mortality and a poorer prognosis. The aim of this study was to assess the long-term clinical outcomes of patients with stenosis in whom treatment strategy was based on PWE.

Methods: A retrospective analysis was conducted on patients who underwent PWE between January 2018 and December 2022 at a Portuguese tertiary center. PWE methods used included fractional flow reserve and instantaneous wave-free ratio, employing cut-off points of ≤ 0.80 and ≤ 0.89, respectively.

Results: Among the 71 patients with LM disease assessed using PWE, 87.3% were male, with a mean age of 68.2 ± 9.6 years. The median follow-up time was 1185 (IQR 880) days. Predominantly, 85.7% had hypertension, 37.1% diabetes, and 18.1% heart failure (HF) with reduced or mildly reduced ejection fraction. Notably, 43.7% had a history of acute coronary syndrome (ACS) and PWE was performed in this context (ACS) in 29.6% of cases. Angiography exhibited 52.1% patients with multivessel disease (MVD). PWE identified 24 patients with significant LM disease who underwent revascularization (R), while 41 without significant disease were managed medically (MT). Some patients with significant disease were not revascularized by decision of heart team. No significant differences emerged between groups concerning risk factors, lesion type, MVD, chronic or ostial occlusions. Overall mortality was numerically higher in revascularized patients (R: 12.5% versus MT: 9.8%, p = 0.7), whereas cardiovascular death was lower (R: 4.2% versus MT: 7.3%, p = 1.0). HF rehospitalization appeared similar (R: 4.2% versus MT: 4.9%, p = 1.0). Elevated mortality was associated with the presence of chronic kidney disease (CKD) (OR 26.7, 95%CI 4.0-177.1, p = 0.001) and left ventricular ejection fraction < 50% (OR 8.2, 95%CI 1.6-42.6, p = 0.018). Logistic regression, with potential confounders, showed significance only for CKD (p = 0.003). No complications were observed during PWE.

Conclusions: Deferral of revascularization for LM stenosis based on PWE appears to be safe, with similar long-term outcomes to those in whom LM revascularization was performed according to PWE values. CKD emerges as a mortality factor, while other factors lack significant associations.

PO 273. A DECADE OF URGENT AND EMERGENT UNPROTECTED LEFT MAIN STEM PERCUTANEOUS CORONARY INTERVENTION: OUTCOMES FROM A PORTUGUESE CARDIAC CENTER

Rafael Silva Teixeira, Inês Neves, Fábio Nunes, Marta Leite, André Lobo, Marta Catarina Almeida, Alberto Rodrigues, Bruno Melica, Cláudio Guerreiro, Gustavo Pires Morais, Pedro Braga, Ricardo Fontes-Carvalho

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Introduction: Percutaneous coronary intervention (PCI) on unprotected left main stem (LMS) is increasingly considered a viable alternative to coronary artery bypass grafting (CABG), offering comparable outcomes and safety profiles in select patient groups.
Objectives: To assess the outcomes of unprotected LMS PCI in patients presenting with acute coronary syndrome at a tertiary Portuguese center over the previous decade.
Methods: We retrospectively collected data on all LMS PCI procedures performed from September 2013 to September 2023 from the local PCI database and electronic patient records. We compared all-cause mortality across varying severities of presentation using Cox proportional hazards models.
Results: Out of 428 patients undergoing LMS PCI, 115 (23%) received urgent/emergency intervention. Among these, 98 had unprotected LMS PCI. Males represented 70% of the cohort (n = 69), with an average age of 67 ± 13 years. Anatomical distribution was as follows: 20% ostial left main (n = 20), 9% shaft (n = 9), 80% bifurcation (n = 78), and 9% diffuse (n = 8). Cardiogenic shock was present in 48% of patients (n = 47) at presentation, and 42% (n = 41) required mechanical circulatory support, including Impella (n = 3), venoarterial ECMO (n = 9), and IABP (n = 29). The procedure was successful in 95% of cases, with no patients requiring emergency CABG transfer. Mortality was higher in patients presenting with cardiogenic shock (HR: 1.92, 95%CI: 1.02 to 3.62, p = 0.04) and highest in those needing mechanical support (HR: 2.61; 95%CI: 1.73 to 4.96; p < 0.01). The 12-month all-cause mortality rate stood at 65%. Intravascular imaging use rose from 14% in 2015 to 40% in 2023 (p for non-stationarity = 0.09) and was associated with radial access (OR: 2.59; 95%CI: 1.01 to 6.68; p < 0.05). Mortality was lower with imaging (HR: 0.38; 95%CI: 0.17 to 0.86; p = 0.02).
Conclusions: Urgent/emergent PCI for unprotected LMS has shown acceptable success rates, including for bifurcation lesions, without the need for emergency CABG. However, outcomes are less favorable for patients presenting with cardiogenic shock or requiring mechanical support. The increasing use of advanced imaging is correlated with improved survival, emphasizing its growing significance in the success of PCI procedures.

PO 274. LEFT MAIN CORONARY ARTERY ANGIOPLASTY IN PATIENTS WITH NON-COMPLEX CORONARY ARTERY DISEASE

Joana Massa Pereira, Sofia Andraz, Lucas Hamann, Hugo Alex Costa, Miguel Espírito Santo, Daniela Carvalho, Pedro Azevedo, Raquel Fernandes, Dina Bento, João Sousa Bispo, Hugo Vinhas, Jorge Mimoso

Centro Hospitalar e Universitário do Algarve, EPE/Hospital de Faro.

Introduction: The treatment of choice of left main coronary artery (LMCA) disease has been subject to intense debate and investigation in the last

Table 1 – Clinical characteristics of patients submitted to left main coronary artery angioplasty;

			CAD			
			Non-complex CAD (n=100, 83,3%)	Complex CAD (n=20, 16,7%)	Total (n=120)	p value
Age	*Mean±SD - years*		68,9±10,8	78,1±10,7	70,5±10,8	**<0,001**
Gender	*Male*	n (%)	78,0 (78,0)	14,0 (70,0)	92,0 (76,7)	
	Female	n (%)	22,0 (22,0)	6,00 (30,0)	28,0 (23,3)	0,440
Hypertension		n (%)	72,0 (72,0)	18,0 (90,0)	90,0 (75,0)	0,090
Dyslipidemia		n (%)	57,0 (57,0)	16,0 (80,0)	73,0 (60,8)	0,145
Smoker		n (%)	24,0 (24,0)	2,00 (10,0)	26,0 (21,7)	0,35
Obesity		n (%)	16,0 (16,2)	8,00 (40,0)	24,0 (20,2)	**0,015**
Type 2 diabetes		n (%)	26,0 (26,0)	15,0 (75,0)	41,0 (34,2)	**<0,001**
Ischemic heart disease		n (%)	47,0 (47,0)	14,0 (70,0)	61,0 (50,8)	0,178
Heart failure		n (%)	2,00 (2,00)	2,00 (10,5)	4,00 (3,40)	0,059
Chronic renal disease		n (%)	5,00 (5,00)	5,00 (25,0)	10,0 (8,30)	**0,003**
Clinical presentation						
Acute coronary syndrome		n (%)	71,0 (71,0)	16,0 (80,0)	87,0 (72,5)	
Chronic coronary syndrome		n (%)	16,0 (16,0)	3,00 (15,0)	19,0 (15,8)	
Ischemia stress test		n (%)	10,0 (10,0)	0,00 (0,00)	10,0 (8,30)	
Heart failure		n (%)	3,00 (3,00)	1,00 (5,00)	4,00 (3,30)	0,640
Coronary artery disease						
Left main		n (%)	15,0 (15,0)	6,00 (30,0)	21,0 (17,5)	
Left main plus 1		n (%)	55,0 (55,0)	11,0 (55,0)	66,0 (55,0)	
Left main plus 2		n (%)	29,0 (29,0)	3,00 (15,0)	32,0 (26,7)	
Left main plus 3		n (%)	1,00 (1,00)	0,00 (0,00)	1,00 (0,80)	0,312
IVUS		n (%)	20,0 (20,0)	2,00 (10,0)	22,0 (18,3)	0,291
Radial access		n (%)	93,0 (93,0)	16,0 (0,80)	109 (90,8)	**0,017**
Left ventricular ejection fraction - pre	*Mean±SD - %*		50,2±10,5	45,1±13,4	49,4±11,1	0,072
Left ventricular ejection fraction - pos	Mean±SD - %		55,7±10,2	52,7±12,1	55,3±10,4	0,430
			p<0,001	p=0,011	p<0,001	
Stents	*Mean±SD - n*		1,43±0,60	1,20±0,52	1,40±0,59	0,066
Euroscore	*Mean±SD*		2,20±1,21	27,7±5,01	6,45±9,83	**<0,001**

Figure PO 274

decade. Although it is not the standard of care, angioplasty of LMCA has been increasing mainly in non-complex coronary artery disease (CAD) patients.
Objectives: Characterize the population submitted to LMCA angioplasty. Compare cardiovascular (CV) mortality, acute coronary syndromes (ACS) and the need of repeated revascularization (composite primary outcome) regarding the presence of complex CAD, in 2 years follow-up. Try to identify prognostic factors for the primary outcome.
Methods: Retrospective study between 2019/2020, composed of n = 120 patients who were submitted to LMCA angioplasty. Complex CAD was defined as Syntax score > 22. Categorical variables are presented as frequencies and percentages, and continuous variables as means and standard deviations, or medians and interquartile ranges for variables with skewed distribution or a significant Shapiro-Wilk test. Multivariate analysis was performed using logistic regression. $p < 0.05$ indicates statistical significance.
Results: A total of 120 patients were identified, with a mean age of 70.5 ± 10.8 years, 76.7% were male. 75,0% had hypertension, 60.8% dyslipidemia, 34.2% diabetes, 20.2% obesity, 8.3% chronic renal disease and 21.7% were smokers. 72.5% presented with ACS and 55% had left main plus one atherosclerotic coronary artery disease. Overall, after the procedure, the mean absolute increase in LVEF was 6% ($p < 0.001$). Primary outcome (composite) occurred in 21 (18.6%) patients, mainly in complex CAD group (n = 9, 45% vs. n = 12, 12.9%, $p < 0.001$) and driven by CV mortality (n = 8, 40% vs. n = 4, 4.3%, $p < 0.001$) in 2 years follow-up. Syntax score > 22 was an independent predictor of the primary outcome ($p = 0.015$, OR 4.25, 95%CI 1.32 to 13.6), predicting 4 times more events.
Conclusions: In the sample analyzed, the benefit of LMCA angioplasty in patients with non-complex CAD seems to remain, with low rates of hard CV outcomes and improvement of LVEF in 2 years follow-up. Nevertheless, in complex CAD patients, this revascularization strategy showed worst outcomes with higher CV mortality. In the last group, a surgical approach should be considered, in line with the guidelines.

PO 275. THE INFLUENCE OF CARDIOVASCULAR RISK FACTORS ON RESTENOSIS AND MORTALITY FOLLOWING PERCUTANEOUS CORONARY INTERVENTION FOR LEFT MAIN DISEASE

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Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: The decision to perform percutaneous coronary intervention (PCI) for chronic left main disease (LMD) has been subject of much debate. Nonetheless, the follow-up of these patients holds equal importance due to their high risk of death and need for reintervention. Understanding the clinical characteristics associated with these critical events is crucial as they could influence our approach, namely, by warranting angiographic review.
Objectives: This study aimed to evaluate the impact of various cardiovascular risk factors on restenosis and mortality in patients who underwent PCI for LMD.
Methods: We conducted a retrospective single-center observational study, analyzing patients who underwent LMD PCI between January 2020 and December 2022. Data was gathered from hospital registries, documenting the presence of hypertension, dyslipidemia, obesity, diabetes and smoking habits. Evidence of restenosis and one-year mortality were recorded. Fisher exact tests were performed to assess correlation between these clinical variables and the incidence of restenosis and death. Due to considerable differences in sample sizes, separate analyses between elective and acutely treated patients were not feasible. Statistical significance was set at $p < 0.05$.
Results: The study included a total of 72 patients (mean age 70.53 ± 11.64, 54 (75%) males). Among the participants, 50 (69.4%) had hypertension, 14 (19.4%) were smokers, 48 (66.7%) had dyslipidemia, 12 (16.7%) were obese, and 30 (41.7%) had diabetes. Elective PCI was performed in 11 patients (15.3%), while 60 (83.3%) needed acute intervention. Restenosis occurred in 6 patients (8.3%), and within the one-year follow-up period, 21 patients (29.2%) had died. Fisher exact tests revealed no significant association between cardiovascular risk factors and one-year mortality. However, diabetes significantly impacted restenosis (two tailed $p = 0.033$). No other variable showed significant association.
Conclusions: Diabetes was the only cardiovascular factor that significantly impacted restenosis. This finding could potentially influence our future follow-up strategy for these patients. While no factor significantly impacted mortality, larger cohorts are essential for more conclusive and robust results.

SÁBADO, 20 ABRIL de 2024 | 16:30-18:00

Área de Posters 1 | Sessão de Posters 43 - Inovações em Síncope e *Pacing* Cardíaco

PO 276. LEFT BUNDLE BRANCH AREA PACING USING STYLET-DRIVEN PACING LEADS- EXPERIENCE OF ONE CENTER

Marta Catarina Bernardo, Catarina Ribeiro Carvalho, José P. Guimarães, Sofia Silva Carvalho, Isabel Moreira, Luís Sousa Azevedo, Sílvia Leão, Renato Margato, José Paulo Fontes, Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introduction: Left bundle branch area pacing (LBBP) recently emerged as an alternative modality for conduction system pacing. Most cases have been performed using a lumen-less pacing lead with a fixed helix design. However, LBBP using stylet-driven pacing leads (SDL) with an extendable helix design emerged as a feasible alternative with comparable implant success.
Objectives: To characterize the population of patients (pts) admitted for LBBP using SDL regarding implant success, complications, procedural and pacing characteristics at implant and during follow-up.
Methods: We performed a prospective observational study of consecutive pts submitted to LBBP using SDL in a single center between August 2022 and November 2023. We used the Solia S60 lead from Biotronik delivered through a preshaped sheath (Selectra 3D). The vascular access was the axillary/subclavian vein in all pts.
Results: LBBP was attempted in 53 pts and successful in 49 (92.5%). The mean age was 74 ± 10 years and 62.3% were male. Baseline characteristics are shown in Table 1. The mean left ventricular ejection fraction (LVEF) was 54.83 ± 10.0%, with 10 pts (20.8%) presenting with reduced LVEF (LVEF < 40% in 5 pts). The indication for pacing was atrioventricular (AV) block in 34 pts (64.2%), sinus node dysfunction in 14 (26.4%), pacing and AV node ablation in 3 and heart failure in 2 (after failed cardiac resynchronization therapy). 15 pts had left bundle branch block in the basal electrocardiogram. Dual chamber pacemakers were implanted in 42 pts (79.2%). Pacing parameters at implantation were: R wave 8.97 ± 5.33 mV, capture threshold 0.83 ± 0.30V@ 0.5 ms and impedance 568.5 ± 118.10 Ω. The mean fluoroscopy time was 10.92 ± 6.29 min. Mean LV activation time was 75.72 ± 10.08 and median paced QRS was 120 (IQR 120-130) ms. Failed implants resulted of failure to advance the SDL into the septum (2 pts) and lead dislodgment after sheath slitting (2 pts) after which it was decided to implant a conventional pacemaker. Procedural complications included one local anaesthetic systemic toxicity, two damaged helix requiring new lead and one septal perforation (pt remained asymptomatic and the lead was repositioned). 1-month post-implantation the R wave increased to 12.82 ± 6.75 mV ($p < 0.01$) and the capture threshold remained stable - 0.89 ± 0.84V@ 0.5 ms ($p = 0.45$). The mean ventricular pacing percentage was 79.18 ± 27.69%. During a median follow-up of 5.0 (IQR 2.0-7.5) months, we reported 1 case of a significant rise in threshold requiring lead revision. No other complications were observed.

COMORBIDITIES	NUMBER (%)
Hypertension	40 (75,5%)
Type 2 Diabetes Mellitus	15 (28,3%)
Dyslipidaemia	27 (50,9%)
Atrial Fibrillation	14 (26,4%)
Atrial Flutter	8 (15,1%)
Heart Failure	18 (34%)
Reduced Ejection fraction (≤40%)	5 (27,7%)
Mildly reduced ejection fraction (41-49%)	5 (27,7%)
Preserved ejection fraction (≥50%)	8 (44,4%)
Previous Myocardial infarction	5 (9,4%)
Chronic Kidney disease	8 (15,1%)
Obstructive sleep apnoea	7 (13,2%)

Table 1- Comorbidities of patients admitted to LBBP

Figure PO 276

Conclusions: LBBP using SDL is a technique with high success rates, rare complications that provide low and stable pacing thresholds with reduced left ventricular activation time. This suggests physiological pacing that guarantees electrical synchrony of the left ventricle. We are awaiting the results of undergoing randomized clinical studies.

PO 277. SYMPTOM-RHYTHM CORRELATION OF IMPLANTABLE LOOP RECORDERS IN PATIENTS WITH SYNCOPE/PRESYNCOPE

Margarida de Castro, Mariana Tinoco, Luísa Pinheiro, Cláudia Mendes, Assunção Alves, Bernardete Rodrigues, Ana Rita Andrade, Lucy Calvo, Sílvia Ribeiro, João Português, Victor Sanfins, António Lourenço

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Introduction: Implantable loop recorders (ILRs) are a powerful diagnostic tool for heart rhythm disorders, particularly when symptoms are infrequent and long-term monitoring is needed to establish a diagnosis. They are primarily indicated for studying syncope and presyncope cases suspected to have a cardiac etiology.
Objectives: To evaluate the correlation between symptoms and heart rhythm disorders during follow-up (FU).
Methods: Retrospective study conducted at a single center including patients (P) who underwent ILR implantation for evaluation of unexplained syncope or presyncope between 2000 and 2023.
Results: We included 540P (91%) with syncope and 55P (9%) with presyncope. The mean age was 68 ± 14 years and 50% were female. Median follow-up was 21 (IQR 7-38) months. ILR results led to device implantation in 33% of the P (88% pacemaker, 9% ICD, 3% CRT), with a median time to implantation of 6 (IQR 2-14) months after ILR. From these, the majority of ILR implantation was motivated by syncope (88%). The most common arrhythmic findings were sick sinus syndrome in 101P (52%), followed by advanced AV block (AVB) in 66P (34%), ventricular tachycardia in 14P (7%), and atrial fibrillation with slow ventricular rate in 13P (7%). During FU, 205P (35%) experienced symptoms (92% with syncope/presyncope and 8% with palpitations), with 180P (88%) achieving symptom-rhythm correlation. Comparing the 25P (8%) who presented symptoms without ECG correlation to P who underwent device implantation, the 1st group was younger (mean age 65 ± 12 vs. 74 ± 11 years, p = 0.001), had a higher prevalence of smoking (28% vs. 11%, p = 0.031), and a lower incidence of heart conduction disorders (12% vs. 46%, p = 0.002). They also had a lower incidence of 1st AVB (0% vs. 20%) and left bundle branch block (0% vs. 14%).
Conclusions: Implantable loop recorders have proven to be valuable in evaluating cases of syncope/presyncope and establishing a correlation between symptoms and heart rhythm patterns. This correlation has led to the recommendation of appropriate device implantation. It was observed that patients who presented symptoms without ECG correlation were younger and had a lower incidence of heart conduction disorders. These findings highlight potential differences in patient characteristics and underlying pathophysiology. Further research is needed to optimize the use of ILRs and improve diagnostic outcomes in this population.

PO 278. LONG-TERM RESULTS OF CARDIONEUROABLATION EVALUATED BY IMPLANTABLE LOOP RECORDER

Jéni Quintal, Leonor Parreira, Dinis Valbom Mesquita, Rita Marinheiro, Duarte Chambel, Cláudia Encarnação, Cláudia Lopes, Joana Silva Ferreira, Rui Antunes Coelho, Catarina Lagoas Pohle, Patrícia Bernardes, Filipe Seixo

Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo.

Introduction: Cardioneuroablation (CNA) is a catheter ablation (abl) technique based on radiofrequency application in the atrial endocardium to decrease vagal response. Since the first series publication, its use has greatly increased, with CNA being now used in vasovagal syncope (VVS), functional atrioventricular block (AVB), symptomatic sinus bradycardia (SB) and Atrial Fibrillation (AFib). There is still limited data regarding long-term follow-up (FUP) of patients (pts) who have undergone this procedure.
Objectives: The aim of this study was to evaluate long-term results of CNA in a single center with the use of an implantable loop recorder (ILR).
Methods: We performed a prospective single-center cohort study. Patients with significant documented functional bradyarrhythmias between September 2019 and October 2023 were enrolled. All pts underwent ILR implantation before abl. CNA was performed using catheter abl aiming at right epicardial GPs with 3-dimensional electroanatomical mapping support. A 2 mg atropine test (bolus) was carried out before and after CNA and the subsequent heart rate (HR) increase registered. Successful CNA was defined as absence of HR increase with atropine after the abl. HR pre and post abl was compared. Immediate and late procedure complications were assessed. Recurrence of symptoms, the presence significant vagal-induced bradyarrhythmias on ILR and the need for pacemaker (PM) implantation were also assessed.
Results: Fifteen pts were included, with a mean age of 64 (± 12) years and a 53.3% male prevalence. None of the pts had structural heart disease. The main indication for CNA was AFib with brady-tachy syndrome (8 pts, 53.3%), followed by VVS (4 pts, 26.7%), SB (2 pts, 13.3%) and AVB (2:1 AVB, 1 pt). The most common symptom was syncope (46.7%), followed by pre-syncope (40%) and fatigue (20%). There was a significant improvement in HR after CNA (55 ± 13 vs. 67 ± 14 bpm pos-CNA, p = 0.002). The achievement of success was verified in all pts (mean HR variation with atropine before CNA 35 ± 10% vs. 2 ± 2% after CNA, p = 0.001). Procedure mean time was 28 ± 12 min. During a maximum FUP of 48 months (minimum 1, median 5 months), 1 patient had recurrence of VVS with a 10s pause documentation on ILR requiring PM implantation and 1 patient had a 4s pause without translation into symptoms and a duration decreasing tendency during FUP. Freedom from recurrence of symptoms was 93.3%, freedom from pacemaker implantation was 93.3% and freedom from significant bradyarrhythmias was 86.7% (Figure). No immediate or long-term complications were seen.
Conclusions: CNA aiming at the right GPs is a safe and quick procedure for pts with functional bradyarrhythmias. This abl technique in most pts not only reduces symptoms, but also avoids early PM implantation, therefore

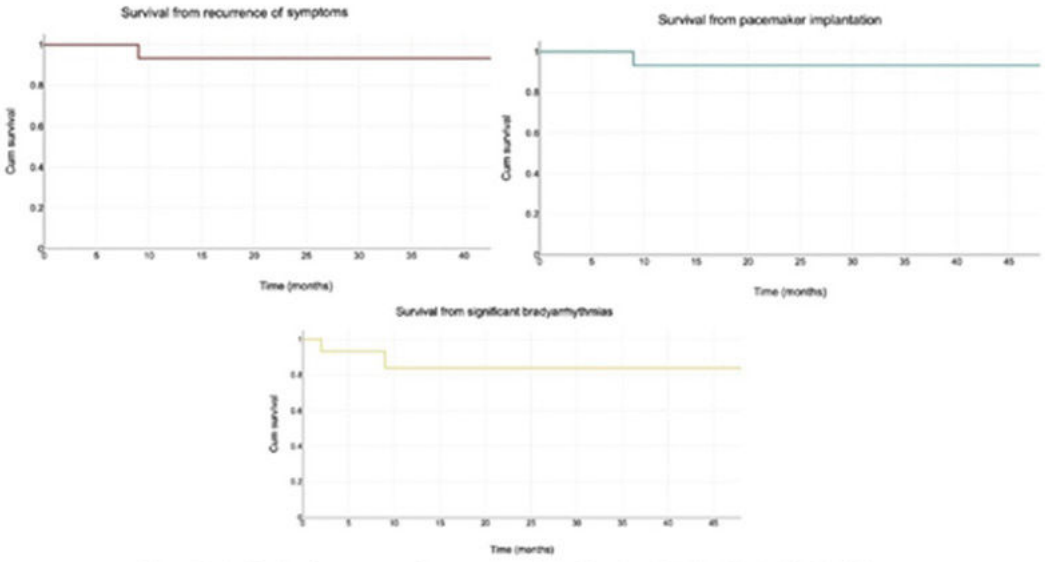

Figure 1. Survival freedom from recurrence of symptoms, pacemaker implantation and significant functional bradyarrhythmias

Table 1. Patients clinical and electrocardiographic characteristics before and after CNA

Patient	Gender	Age (years)	Symptoms	CNA Indication	Basal HR* (bpm)	HR* after CNA (bpm)	Longest pause before CNA (s)	Longest pause after CNA (s)	Symptoms recurrence	PM implantation
1	63	F	Pre-syncope	SB	82	94	13	2	No	No
2	69	F	Syncope	VVS	69	72	14	10	Yes	Yes
3	70	M	Fatigue	AFib	63	71	-	3	No	No
4	68	M	Pre-syncope	AVB	48	59	-	-	No	No
5	69	F	Syncope	AFib	45	59	-	-	No	No
6	44	M	Syncope	VVS	65	86	22	-	No	No
7	44	F	Syncope	VVS	66	95	6	-	No	No
8	47	M	Fatigue	AFib	43	57	33	-	No	No
9	57	F	Syncope	SB	47	58	-	-	No	No
10	57	F	Pre- and Syncope	VVS	42	68	39	3	No	No
11	58	M	Fatigue	AFib	45	71	-	-	No	No
12	77	M	Syncope	AFib	53	50	56	-	No	No
13	85	M	Pre-syncope	AFib	48	67	9	-	No	No
14	74	F	Pre-syncope	AFib	67	60	14	4	No	No
15	75	M	Pre-syncope	AFib	40	45	60	-	No	No

CNA = Cardioneuroablation; HR* = Heart rate on ECG; bpm, beats per minute; s = seconds; PM = Pacemaker.

Figure PO 278

improving quality of life. Further randomized clinical trials are needed to support these data and refine patient selection criteria.

PO 279. LONG-TERM IMPACT OF PACEMAKER IMPLANTATION AFTER TAVI: A SUBGROUP ANALYSIS ACCORDING TO PREVIOUS INTRAVENTRICULAR CONDUCTION DISTURBANCES

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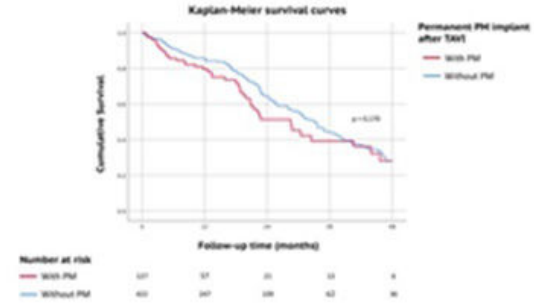
Introduction: Conduction system disturbances, frequently requiring permanent pacemaker (PM) implantation, remain one of the most common procedural complication after transcatheter aortic valve implantation (TAVI). Whether the permanent ventricular pacing has a deleterious impact on the prognosis of this population remains unclear.

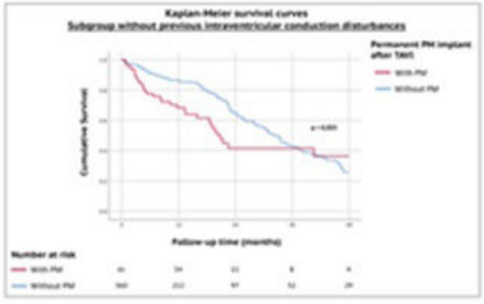
Objectives: To assess the long-term impact of permanent PM implantation in clinical outcomes after TAVI.

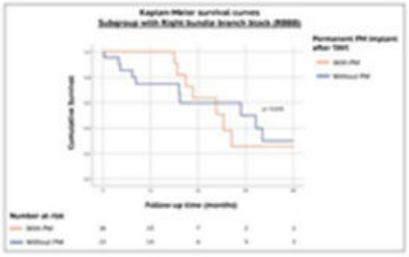
Methods: Retrospective analysis of consecutive patients (P) who underwent TAVI between 2009 and 2021 in a single tertiary center. P with a PM implanted before TAVI or with in-hospital mortality were excluded. PM implantation post-TAVI was defined as an implant during hospital stay after TAVI or in one month after discharge. Kaplan Meier survival curves were used to estimate the impact of permanent PM after TAVI, regarding the composite endpoint of all-cause mortality and heart failure (HF) hospitalization during a 4 years follow-up period, followed by subgroup analysis according to intraventricular conduction disturbances at baseline.

Results: 549P (82 ± 6.6 years, 56.8% female, left ventricular ejection fraction 53 ± 10%, aortic valve area 0.7 ± 0.2 cm^2) were included. At baseline, 108P (20%) had intraventricular conduction disturbances (50P

CLINICAL BASELINE CHARACTERISTICS	All (n= 549)	NO PMI (n=422)	PMI (n=127)	p value
Age in years - mean*SD	82 ± 6,6	81 ± 6,9	83 ± 5,2	**0,025**
Female - n (%)	312 (56,8)	254 (60,2)	58 (45,7)	**0,004**
BMI - median (IQR)	26 (5,6)	26 (6,0)	27 (4,7)	0,302
Smoking - n (%)	65 (11,8)	50 (11,8)	15 (11,8)	0,991
Hypertension - n (%)	458 (83,4)	349 (82,7)	109 (85,8)	0,406
Diabetes mellitus - n (%)	195 (35,5)	148 (35,1)	47 (37,0)	0,689
Dyslipidemia - n (%)	364 (66,3)	278 (65,9)	86 (67,7)	0,808
Coronary artery disease - n (%)	225 (41)	164 (38,9)	61 (48)	0,065
Previous MI - n (%)	85 (15,5)	64 (15,2)	21 (16,5)	0,866
Previous CABG - n (%)	79 (14,4)	58 (13,7)	21 (16,5)	0,432
Previous valvular surgery - n (%)	34 (6,2)	33 (7,8)	1 (0,8)	**0,004**
CKD (KDIGO stage >= 3)	253 (46,1)	188 (44,7)	65 (51,2)	0,196
Peripheral artery disease - n (%)	81 (14,8)	61 (14,5)	20 (15,7)	0,719
Cerebrovascular artery disease - n (%)	59 (10,7)	40 (9,5)	19 (15,0)	0,080
Chronic pulmonary disease - n (%)	123 (22,4)	96 (22,7)	27 (21,3)	0,724
Atrial fibrillation - n (%)	170 (31)	128 (30,3)	42 (33,1)	0,558
Intraventricular conduction disturbances - n (%)	108 (19,7)	62 (14,7)	46 (36,2)	**< 0,001**
Right bundle branch block - n (%)	50 (9,1)	22 (5,2)	28 (22,0)	**< 0,001**
Left bundle branch block - n (%)	58 (10,6)	40 (9,5)	18 (14,2)	0,131







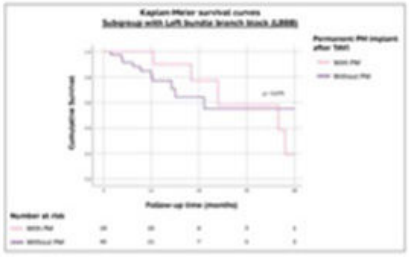


Figure PO 279

with right bundle branch block [RBBB] and 58P with left bundle branch block [LBBB]). 127P (23%) required PM implantation after TAVI. Baseline characteristics were similar between groups, except for age, gender, previous valvular surgery and RBBB. At 48 months follow-up, 35% (n = 193) met the composite endpoint, that was similar between both groups (35.8% vs. 34.1%, p = 0.731). Kaplan-Meier survival curves revealed no difference in the composite endpoint between the two groups (log-rank p = 0.170). Further analysis of subgroups, according to the presence or absence of baseline intraventricular conduction disturbances, revealed a significant difference among the subgroup of P without previous intraventricular conduction disturbances that underwent PM implantation after TAVI (log rank p = 0.02). This difference in the composite endpoint was not found in the subgroups of P with RBBB (log rank p = 0.656) or LBBB (log rank p = 0.975) at baseline.
Conclusions: Permanent PM implant after TAVI does not have an impact on long-term HF hospitalization and mortality. However, in the specific subgroup of P without previous intraventricular conduction disturbances, PM implantation seems to be associated with worse prognosis.

PO 280. UNRAVELING THE STORY OF HUNDREDS OF SYNCOPES AND PRE-SYNCOPES

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Introduction: Implantable loop recorders (ILR) improve diagnostic yield in unexplained syncope patients (P), as syncope's sporadic nature and unpredictable recurrence make it challenging to determine its etiology.
Objectives: To assess the diagnostic yield of ILR and subsequent therapeutic interventions.
Methods: Single-center retrospective study of P who implanted an ILR for the study of unexplained syncope or pre-syncope between 2000 and 2023. The primary endpoint was a documented arrhythmia requiring device implantation during the follow-up.
Results: 595P were included (mean age 68 ± 14 years, 50% female). The majority of P (543, 91%) had a normal ejection fraction. 134P (23%) had atrial fibrillation (AF). In terms of basal ECG characteristics, 86P (15%) had 1st degree atrioventricular block (AVB), 60 (10%) had left bundle branch block (L-BBB), 68 (11%) had R-BBB, and 40 (7%) had bifascicular block. Prior to ILR implantation, all P underwent ECG and echocardiogram, with 87% also undergoing 24H-Holter, 14% tilt test, and 8% electrophysiological study. During a median follow-up of 21 (IQR 7-38) months, 194P (33%) required device implantation due to significant arrhythmias (88% pacemaker, 9% ICD, 3% CRT). Median duration from ILR until device implantation was 6 (IQR 2-14) months. The indications were sick sinus syndrome in 101P (52%), advanced AVB in 66P (34%), ventricular tachycardia in 14P (7%), and symptomatic slow AF in 13P (7%). Additionally, 8% (50P) experienced AF/AFL episodes (2min to 70h), with 24% (12P) reporting symptoms and 84% (42P) starting anticoagulation. Symptoms without correlation with diagnostic findings were reported in 25P (8%). P who required device implantation were older (72 ± 13 vs. 66 ± 15 years, p < 0.001) and had a higher prevalence of hypertension (73% vs. 56%, p < 0.001), AF (31% vs. 18%, p < 0.001), obstructive sleep apnea syndrome (OSAS) (11% vs. 5%, p = 0.007), and LVH (32% vs. 19%, p < 0.001). In a multivariate analysis, age > 75 years (HR: 1.6; 95%CI 1.1-2.4), AF (HR: 1.6; 95%CI 1.1-2.4), hypertension (HR: 1.6; 95%CI 1.1-2.3), and OSAS (HR: 2.5; 95%CI 1.3-4.8) were identified as independent predictors for device implantation.
Conclusions: ILR was a useful diagnostic tool, providing additional value to other methods. After the disorder was unveiled by the ILR, 41% of P required intervention. Advanced age, AF, hypertension, and OSAS were independent predictors for device implantation, which may help identify a higher-risk group and should be considered during the initial workup.

PO 281. MID-TERM VENTRICULAR PACING PERCENTAGE IN PATIENTS REQUIRING PACEMAKER IMPLANTATION FOLLOWING TAVR: INSIGHTS FROM A LARGE SINGLE-CENTER EXPERIENCE

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Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

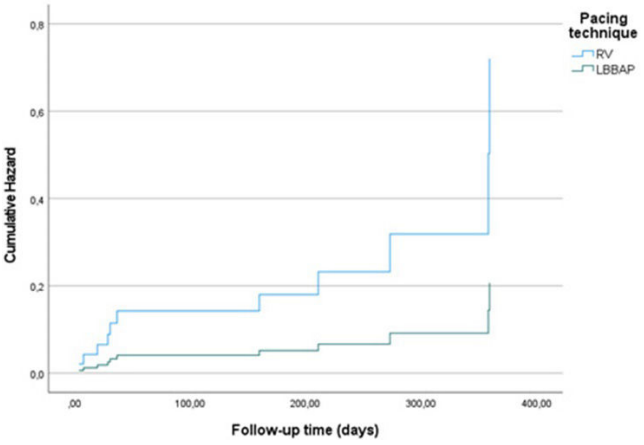
Introduction: Recent research indicates the potential recovery of atrioventricular (AV) conduction after pacemaker (PM) implantation subsequent to transcatheter aortic valve replacement (TAVR). However, there is limited knowledge regarding the long-term follow-up of these patients in such cases. Our objective is to assess the percentage of pacing in patients who underwent a TAVR procedure and experienced a conduction disturbance necessitating the implantation of a transvenous pacemaker.
Methods: We included all patients who underwent a TAVR procedure at our center from March 2020 to December 2022. Those who received a PM or an implantable cardioverter-defibrillator (ICD) before the TAVR procedure or within 30 days after were excluded from our analysis, as these cases were likely unrelated to TAVR. Patients meeting the eligibility criteria were categorized into two groups: one with complete atrioventricular block (AVB) after TAVR (with complete AVB group) and another without complete AVB (non-complete AVB group). The evaluation of effective right ventricular pacing percentage was conducted during a one-year follow-up period.
Results: 443 patients underwent TAVR in the study period (52.4% males, 81.4 ± 6.2 years). 60 patients already had a PM and were excluded. Out of the remaining 383 patients, 97 (25,3%) received a PM following TAVR, with 88 of them undergoing implantation within 30 days (mean time from TAVR to PM implantation: 3.3 ± 3.2 days). The main reason for PM implantation was complete atrioventricular block in 68 (77,3%) patients followed by alternating bundle branch block in 8 (9,1%) patients, LBBB plus 1st degree AVB in 5 (5,7%) patients and atrial fibrillation with slow A-V conduction in 3 (3,4%) patients. The initial follow-up, usually performed between 1-2 days after PM implantation, was conducted for 85 (96,6%) patients, while the follow-up at 1 year after PM implantation was available for 69 (78,4%) patients. At the first follow-up the percentage of pacing was significantly higher in the group with complete AVB vs. the group without complete AVB group (93.4% vs. 55.4%, p = 0.007). This difference was even more significant at 1-year follow-up (88.3% vs. 14%; p = 0.004)
Conclusions: Patients who needed a PM due to persistent complete AVB after TAVR were less likely to exhibit recovery in AV conduction, whereas patients receiving PMs for other indications demonstrated a low pacing percentage during follow-up. The outcomes of our study might influence the decision regarding the optimal timing for PM implantation post-TAVR and the potential consideration for using a leadless PM.

PO 282. LEFT BUNDLE BRANCH AREA PACING IN TAVI PATIENTS: A FEASIBLE ALTERNATIVE?

Diogo de Almeida Fernandes, João André Ferreira, Patrícia Alves, Carolina Saleiro, Natália António, Luís Elvas, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: Conduction system damage with need of pacemaker implantation is one of the most common transcatheter aortic valve implantation (TAVI) complications. Left bundle branch area pacing (LBBAP) has shown promising results in improving cardiovascular outcomes, however, data on LBBAP in TAVI patients is scarce. Our aim was to compare procedural and clinical outcomes of LBBAP and right ventricular pacing (RVp) in TAVI patients.
Methods: Single-center cohort study including consecutive patients who underwent pacemaker implantation (LBBAP or Rvp) following TAVI from Jan to Dec 2023. LBBAP was considered successful with an LV activation time (LVAT) < 80 ms and/or V6-V1 inter-peak interval > 40 ms. Primary outcome was defined as a composite of HF emergency department (ER) admission, HF hospitalization and all-cause mortality.
Results: 19 patients underwent LBBAP and 45 RVp. LBBAP patients were younger [77 interquartile amplitude (AIQ) 11 vs. 83 years AIQ 7, p < 0.001] and more likely male (84.2% vs. 57.8%, p 0.042). There were no further differences on baseline characteristics. Most common indication was complete atrioventricular (AV) block (73.7% LBBAP vs. 79.5% RVp). Median left ventricle ejection fraction (LVEF) was lower in LBBAP (55% AIQ 10 vs. 57% AIQ 5, p 0.033). Average LVAT was 77 ± 7 ms. Paced QRS was significantly shorter in LBBAP (116 ms AIQ 10 vs. 152 ms AIQ 28, p < 0.001). Fluoroscopy time was similar (7 min AIQ 6 vs. 8 min AIQ11, p 0.223) as well as pacing thresholds (0.6 ± 0.3V vs. 0.5 ± 0.3V, p 0.081). Sensing thresholds were higher in LBBAP (15.1 mV AIQ 6.8 vs. 10.7 AIQ 6.3, p 0.006). After a mean follow-up time of 7.9 months, LBBAP patients had a significant increase in LVEF (7% AIQ 13 vs. -5% AIQ 7, 0.002). The primary outcome occurred in 15.8% of patients with LBBAP (vs 24.4%, p 0.526). After adjusting for differences at baseline and for patients with pacing percentage greater than 20%, there were no differences between groups. Of note, the hazard curves separate early on, even though no significance was obtained.



Conclusions: LBBAP led to shorter paced QRS, improved LV function and better acute R-wave amplitudes. Primary endpoint occurred in a similar proportion of the groups, even though the curves separate early on. Early data appears to show LBBAP is a feasible and potentially advantageous technique in TAVI patients.

PO 283. THE LEARNING CURVE OF LEFT BUNDLE BRANCH AREA PACING: FEASIBILITY, SAFETY AND ACUTE SUCCESS RATES - A SINGLE-CENTER EXPERIENCE

Margarida de Castro, Mariana Tinoco, Luísa Pinheiro, Cláudia Mendes, Assunção Alves, Bernardete Rodrigues, Olga Azevedo, Lucy Calvo, Sílvia Ribeiro, João Português, Victor Sanfins, António Lourenço

Hospital da Senhora da Oliveira, EPE - Guimarães.

Introduction: Left bundle branch area (LBBA) pacing (LBBAP) is a physiological pacing modality that aims to avoid harmful effects of right ventricular pacing.
Objectives: We aimed to assess feasibility, safety, acute success and short-term stability of LBBAP in patients (pts) with conduction tissue and/or sinus node (SN) disease.
Methods: Retrospective study including pts that underwent LBBAP attempt from May 2022 to Nov 2023. ECG features, pacing and echocardiographic (echo) parameters and adverse events were evaluated during a mean follow-up (FU) of 9 ± 5 months. Successful LBBAP was defined as two of: paced QRS morphology of incomplete right bundle branch block (RBBB) pattern in V1, QRS duration (QRSd) less than 130ms and/or left ventricle (LV) activation time (LVAT) less than 90 ms. In pts with echo evaluation after implantation, the inter-ventricular mechanical delay and the LV basal septal-to-lateral wall delay via tissue doppler imaging were analysed in order to assess mechanical desynchrony.
Results: We included 42 pts (69.0 ± 10.8 years; 57.1% males). Bundle branch block (BBB) was present in 55% (n = 23), specifically left BBB (LBBB) in 28%

(n = 12). Mean QRSd was 118 ± 30 ms. LV ejection fraction was preserved in 88.1% of pts. Pacing indications are described in the Table. LBBAP performed successfully in 88.1% (n = 37) of pts with a median LVAT of 72.5 ± 14.7 ms. Lumenless pacing leads were used in 81% (n = 34) and stylet-driven in the remaining ones. for failure were high pacing thresholds or inability to burrow lead into the septum for acceptable V1 morphology and LVAT. Mean procedure and fluoroscopy time were 86.5 ± 24.3 and 9.0 ± 5.9 min. Mean paced QRSd was 113.7 ± 20.1 ms during the procedure and 117.3 ± 26.1 ms at FU. In pts with baseline QRSd > 110 ms, the mean reduction of QRSd after LBBAP was 22.9 ± 26.5ms. One septal lead displacement occurred soon after the procedure. Immediate and FU lead parameters were stable regarding ventricular threshold (0.54 ± 0.11 vs. 1.03 ± 2.4, p = 0.247) and sensing (11.34 ± 6.9 vs. 13.57 ± 5.8, p = 0.191). There was a decrease in ventricular lead impedance (566.83 ± 128.02 vs. 409.08 ± 86.4, p = 0.000). No complications were reported during FU.In pts who performed echo evaluation after LBBAP (n = 17), 85% maintained interventricular and 100% intraventricular synchrony.

Pacing indications	% (n)
AV node disease	64,3 (27)
3rd degree AVB	31,0 (13)
2nd degree AVB	33,3 (14)
Symptomatic intraventricular conduction disturbances	9,5 (4)
Alternating BBB	4,7 (2)
Bifascicular with first degree AVB	2,3 (1)
LBBB with syncope	2,3 (1)
SN dysfunction	21,5 (9)
AF requiring AV node ablation	4,7 (2)

Table 1.

AF – atrial fibrillation; AV – atrioventricular; AVB – Atrioventricular block; BBB – bundle branch block; LBBB – left bundle branch block; SN – sinus node

Conclusions: Our results showed that LBBAP yielded stable threshold, narrow QRSd and preserved LV synchrony with few minor complications. LBBAP holds promise as an attractive physiological pacing mode.

PO 284. LEADLESS PACEMAKER - LEAD PARAMETERS STABILITY AND BATTERY LONGEVITY IN THE MID-TERM FOLLOW-UP

Joana Certo Pereira, Rita Amador, Francisco Moscoso Costa, Daniel A. Gomes, Rita Reis Santos, Sandra Feliciano, Gustavo Rodrigues, Pedro Galvão Santos, Pedro Carmo, Diogo Cavaco, Francisco Belo Morgado, Pedro Adragão

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Leadless pacemaker (L-PM) systems claim lower complications rate by avoiding the need for generator pocket and transvenous lead. Nevertheless, long-term safety will largely depend on the need for replacements, mainly due to battery depletion (end-of-life). While the mean L-PM battery longevity predicted by the manufacturer is 12 years, real-world longevity data are still scarce. We aimed to describe L-PM parameters' stability and battery longevity during the mid-term follow-up.
Methods: Single-center registry of consecutive patients undergoing L-PM implantation from May 2015 to November 2023. Procedural characteristics, lead parameters and battery longevity were collected immediately after implantation and during the most recent follow-up visit.
Results: Overall, 261 consecutive patients had a transcatheter L-PM implanted through a femoral vein (mean age 78 ± 10 years; 66% male). Mean procedural duration was 44 ± 28min and fluoroscopy time was 4,4 ± 3,9min. The device was successfully implanted in all but one patient. The main indications for permanent pacing were high-degree atrioventricular block [N = 130 (50%)], atrial fibrillation with pauses [N = 78 (30%)], and sinus node disease [N = 28 (11%)]. Immediately after implantation, three cases (1,2%) of pericardial effusion (one with tamponade) were reported. In one case (0,4%), a conventional pacemaker was implanted due to L-PM acute dysfunction. No other procedure-related complications, including dislodgment, were reported at discharge. After a mean follow-up of 2,8 ± 1,7 years, the pacing threshold and R-wave amplitude remained stable [0,67 mV vs. 0,62 mV (p = 0,9); and 10,3 mV vs. 16,1 mV (p < 0,001), respectively] and mean ventricular pacing was 54 ± 38%. Expected battery longevity was > 8 years (maximum value) in 84% of the patients. In the subgroup of patients with > 5 years of follow-up (N = 20; mean follow up of 6,3 ± 1,8 years), the expected battery longevity was > 8 years in 85% (N = 17). In three cases, the L-PM was upgraded to cardiac resynchronization therapy or left bundle branch area pacing due to pacing-induced left ventricular dysfunction. There was one case of L-PM end-of-life 6 years after implant (pacing threshold 0,5 mV, with 100% ventricular pacing), in which a second L-PM was successfully implanted. Overall, 78 (31%) patients died, a mean of 2,2 ± 1,9 years after L-PM implantation, none related to the device.

Leadless pacemaker implanted from May 2015 to November 2023 (N = 261)	
Baseline characteristics of the patients	
Age (years)	78±10
Male sex	172 (66)
Indications for permanent pacing	
High-degree atrioventricular block	130 (50)
Atrial fibrillation with pauses	78 (30)
Sinus node disease	28 (11)
Other	25 (9)
Procedural characteristics	
Duration (min)	44±28
Fluoroscopy time (min)	4,4±3,9
Acute major complications	
Pericardial effusion	3 (1,2)
L-PM acute dysfunction	1 (0,4)
Follow-up characteristics (mean follow-up of 2,8±1,7 years)	
Pacing threshold (mV)	0,62 (versus 0,67 at baseline)
R-wave amplitude (mV)	16,1 (versus 10,3 at baseline)
Ventricular pacing (percentage)	54±38
L-PM end-of-life	1 (0,4)
Upgrade to CRT/LBBAP	3 (1,2)
Death from any cause	78 (31)*

mV – miliVolts; L-PM Leadless pacemaker; CRT - cardiac resynchronization therapy; LBBAP - left bundle branch area pacing
*a mean of 2,2±1,9years after L-PM implantation

Conclusions: In this real-world cohort, L-PM maintained stable pacing parameters and, in the mid-term follow-up, only one battery depletion was observed while expected longevity remained above 8 years in the large majority of patients. Longer follow up will allow better understanding of both technical and clinical aspects relevant to manage end-of-life devices.

SÁBADO, 20 ABRIL de 2024 | 16:30-18:00

Área de Posters 2 | Sessão de Posters 44 - Endocardite Infeciosa

PO 285. COMORBIDITY AND PROGNOSIS IN OCTOGENARIANS WITH INFECTIVE ENDOCARDITIS

Liliana Brochado, Bárbara Ferreira, Paula Fazendas, João Grade, Mariana Martinho, Diogo Cunha, Oliveira Baltazar, João Luz, Nazar Ilchyshyn, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Infective endocarditis (IE) is a rare but seemingly increasing disease, particularly among older adults. Management of IE often varies by age group, with a notably low rate of cardiac surgery in octogenarians, attributed partially to heightened surgical risk in advanced age. However, the underutilization of cardiac surgery is linked to unfavorable outcomes in older IE patients.

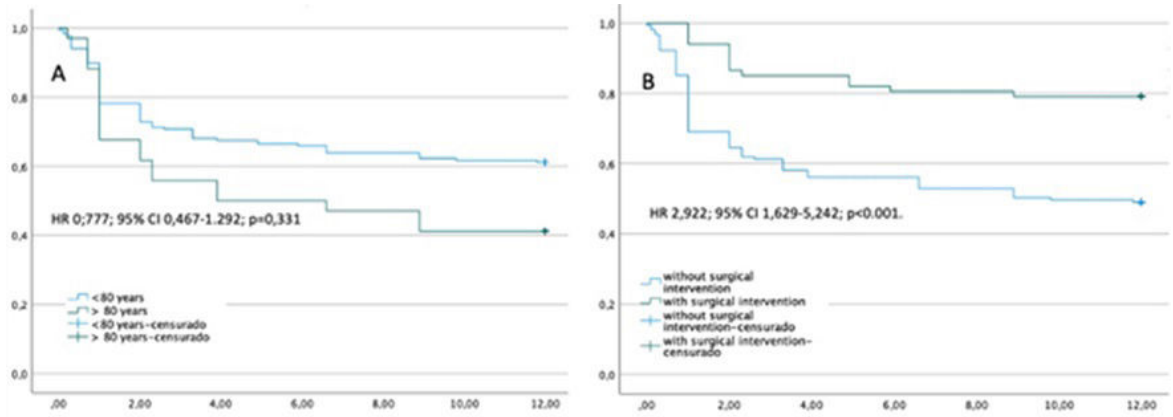


Fig 1. Survival curves throughout the 12-month follow-up in function of age (A) and surgical indication (B) and respective mortality predictor results in multivariate analysis.

Figure PO 285

Objectives: To describe the characteristics of IE in octogenarians and assess their prognosis.
Methods: We conducted a retrospective, single-center analysis of patients hospitalized with definite IE from January 2006 to December 2021. The cohort comprised 222 patients divided into two groups: 188 patients aged under 80 years and 34 patients aged over 80 years. We assessed all-cause mortality over a 1-year follow-up period.
Results: In comparison to patients aged < 80 years, those aged ≥ 80 years exhibited significantly lower rates of valvular surgery indication (38.6% vs. 5.9%, p < 0.001), performed surgery (35.1% vs. 5.9%, p < 0.001), and higher 1-year mortality (38.8% vs. 58.8%, p = 0.038). Multivariable analysis demonstrated that age alone did not predict mortality, while the absence of a surgical procedure was predictive of worse outcome (51.0% vs. 20.9%, p < 0.001; HR 2,922; 95%CI 1,629-5,242). Baseline characteristics, besides gender (higher prevalence of males in < 80 years group, 75.0% vs. 55.9%, p = 0.036), the remaining characteristics were similar in both groups. The incidence of hypertension between groups was 55,3% vs. 64,7%; diabetes mellitus 19,7% vs. 17,6%; coronary disease 10,6% vs. 14,7%; heart failure 21,8% vs. 32,4%; valvular disease 42% vs. 52,9%; kidney disease 17,0% vs. 8,8% and anemia 49,5% vs. 67,6%. Additionally, no statistically significant differences were observed in the incidence of vegetation location: aortic valve (54.3% vs. 55.9%), mitral valve (49.5% vs. 41.2%), and right-sided valves (13.3% vs. 5.9%). The groups also did not differ in the main complications of EI.
Conclusions: Our study demonstrated high mortality and restricted valvular surgery performance in octogenarians with IE, despite the pivotal role of surgery in achieving successful outcomes. Still, age alone should not be determinant for denying surgery; instead, the assessment of the patient's frailty emerges as a crucial factor. We consider that a more comprehensive patient assessment, involving the collaboration of geriatricians, and emphasizing shared decision-making may help improve patients' outcomes. Therefore, experienced multidisciplinary teams are essential for managing these complex cases. Yet, further research is needed to assess the benefits of IE surgery in the elderly population.

PO 286. INFECTIVE ENDOCARDITIS – SEX DIFFERENCES

Fernando Nascimento Ferreira, Francisco Albuquerque, Rita Ilhão Moreira, Miguel Figueiredo, Julien Lopes, Bárbara Teixeira, Madalena Coutinho Cruz, Ana Galrinho, Ana Teresa Timóteo, Pedro Rio, Luísa Moura Branco, Rui Cruz Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Infective Endocarditis (IE) is a pathology with significant incidence and contribution to global mortality. The impact of gender on the clinical presentation and prognosis of IE remains to be clarified.
Objectives: To assess differences between sex concerning demographic, clinical, and prognostic characteristics of IE.
Methods: A retrospective study included patients with a definitive diagnosis of IE, according to the 2023 guidelines of the European Society of Cardiology (ESC), who underwent transesophageal echocardiography at a Cardiology Center of a tertiary hospital between 2015 and 2020. Two groups were defined based on sex among the IE cases, and differences in demographic, clinical, echocardiographic, therapeutic, and prognostic aspects were evaluated.
Results: A total of 142 patients were included, 41 females (F) and 101 males (M). The average age was 66 years (± 15.6), with no differences between groups. Significant differences were observed in the prevalence of smoking and Chronic liver disease (CLD), with higher rates in M (2.4% vs. 27.5%, p = 0.001; 0% vs. 12%, p = 0.019 respectively). While atrial fibrillation (AF), prior mechanical valve, and endocarditis were more common in F (31.7% vs. 16.8%, p = 0.049; 19.5% vs. 6.9%, p = 0.049; 24.4% vs. 4%, p = 0.001, respectively). Fever was the most common symptom (85.4% F vs. 95% M, p = 0.078), with a higher prevalence of cardiac murmur in F (34.1% vs. 18.8%, p = 0.05). The mitral valve was more affected in F (56.1% vs. 32.7%, p = 0.01), with a significant difference in tricuspid valve involvement, more affected in M (0% vs. 9.9%, p = 0.034). The most common echocardiographic finding in both groups was vegetation (92.7% F vs. 94.1% M, p = 0.034), with a mean vegetation size of 10.35 mm (± 7.7) in F and 11.17 mm (± 5.6) in M (p = 0.113). No difference was found between groups regarding the microorganism groups (p = 0.298). *Staphylococcus* spp. was the most frequent in both groups (31.7% vs. 23.8%, p = 0.038), followed by *Streptococcus gallolyticus* and *pyogenes* in F (17.1% vs. 9.9%, p = 0.259) and *Enterococcus* in M (14.9% vs. 17.3%, p = 0.221). Perivalvular extension was more common in F (22% vs. 24.8%, p = 0.723), while heart failure was more prevalent in M (14.6% vs. 32.7%, OR 2.831 [1.083-7.298], p = 0.029). 51.2% of F and 55.4% of M had surgical indications (p = 0.647), mainly for infection control in F (85.7% vs. 66.1%, p = 0.42). Surgical intervention was performed in 24.6% of F and 26.7% of M (p = 0,773). In-hospital mortality was higher in M (12.2% vs. 27.7%, p = 0.47), although there was no difference in one-year mortality.
Conclusions: The analysis reveals a higher prevalence of AF, mechanical valve, and prior endocarditis in F, with lower rates of smoking, and CLD. F predominantly experience mitral valve involvement and exhibit a less complicated clinical course with lower in-hospital mortality.

PO 287. LANDSCAPE OF INFECTIVE ENDOCARDITIS IN A PORTUGUESE TERTIARY CENTER: DEMOGRAPHIC TRENDS, RISK PROFILES AND CLINICAL VARIABILITY

João Fernandes Pedro[1], Ana Margarida Martins[1], Catarina Oliveira[1], Ana Beatriz Garcia[1], Catarina Gregório[1], Miguel Azaredo Raposo[1], João Fonseca[1], Ana Abrantes[1], João Cravo[1], Pedro Carrilho Ferreira[2], Catarina de Sousa[2], Fausto J. Pinto[2]

[1]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Despite its lower incidence, infective endocarditis (IE) requires careful consideration due to a complex clinical presentation, frequent need for surgical intervention and extended hospital stay as well as significant in-hospital mortality rate. Identifying predictors of a poorer prognosis is crucial for directing appropriate medical care and anticipating adverse clinical outcomes. Additionally, the dynamic epidemiology of IE, along with an observed increase in incidence in recent years, underscores the need for a contemporary review.
Objectives: The scope of this paper was to characterize a population admitted with IE in a tertiary center during a 13-year period, to evaluate clinical outcomes and to identify predictors of in-hospital mortality.
Methods: We conducted a retrospective, observational study including patients with the diagnosis of IE (according to Duke criteria) admitted in tertiary center between 2010 and 2022. Data on comorbidities, clinical presentation, microbiology and clinical outcomes during hospitalization were collected. Risk factors of in-hospital death were analyzed. Cox regression was used to define predictors.
Results: We included a total of 177 patients (64,4% male, 67 ± 14 years). 18,1% of the patients had prosthetic valves and the aortic valve was the most affected. *Staphyloccocus aureus* and *Streptoccocus bovis* were the most commonly isolated microorganisms. 53 pts (30%) underwent cardiac surgery. To evaluate the temporal trends of the epidemiology of endocarditis we analyzed patients with IE diagnosis from January 2010 to June 2016 (85 pts) and from July 2016 to December 2022 (92 pts). There was a notable change in the IE related microorganisms, with a higher prevalence of S. *aureus* between 2016 and 2022 (p = 0.007). This is probably explained by a significant increase in pts with central lines and cardiac devices (p = 0.02 and p = 0.04). There was no change regarding the in-hospital mortality rate or surgical rate. Observed in-hospital mortality rate was 22%. The identified risk-factors for in-hospital mortality were the presence of signs and/ symptoms of heart failure at admission (OR = 2.61 95%CI 1.34 -4.91, p = 0.003), sepsis (OR = 1.95 95%CI 1.02 – 3.73, p = 0.04) and left ventricular ejection fraction (LVEF) (OR = 0.97 95%CI 0.95-0.99, p = 0.004).
Conclusions: IE is still associated with a dismal prognosis with a significant rate of cardiac surgery and high in-hospital mortality rates. A mild increase in IE cases and notably a rise in S. *aureus* involvement, most likely explained by in hospital colonization and higher presence of central lines and implantable cardiac devices, was noted in our center in the last decade. Such findings translate into an increased complexity of IE cases, with significant challenges to clinical teams dealing with this pathology.

PO 288. RELATIVE CONTRIBUTION OF IMAGING TECHNIQUES FOR THE CONTEMPORARY DIAGNOSIS OF INFECTIVE ENDOCARDITIS: A SINGLE-CENTER EXPERIENCE

Rita Barbosa Sousa, Débora da Silva Correia, Samuel Azevedo, Daniel Gomes, Joana Certo Pereira, Mariana Sousa Paiva, Rita Almeida Carvalho, Marisa Trabulo, Regina Ribeiras, António Ferreira, Miguel Abecasis, Jorge Ferreira

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: In developed countries, the incidence of infective endocarditis (IE) is up to 6 cases per 100,000 individuals and in-hospital mortality rates are reported to reach 30%. The diagnostic recommendations for IE have been revised in the new ESC guidelines emphasizing the use of transesophageal echocardiography (TEE) and advanced imaging techniques (computed tomography [CT], magnetic resonance [MR], positron emission tomography [PET] and white blood cell scintigraphy [WBC-SPECT]).
Objectives: This research aims to investigate the practical applicability of established clinical guidelines in a real-world population with suspected IE.
Methods: We reviewed the hospital database from 06/2021 to 06/2023 using the international classification of disease codification (ICD-10) for IE. Only patients admitted to Cardiology or Cardiac Surgery departments were included. Diagnosis of IE was defined according to the modified Duke criteria. Firstly, we identified individuals in whom diagnosis was performed by clinical presentation, blood cultures and transthoracic echocardiogram (TTE). Subsequently, we identified those who required further imaging diagnostic investigation.
Results: A total of 63 patients were included (mean age 64 ± 14 years, 76% male (n = 48). Native IE was diagnosed in 53 (84%) patients, prosthetic IE in 7 (11%) and cardiac implantable electronic devices-related IE in 3 (5%). A total of 26 (41%) patients had at least one predisposing risk factor, 48 (76%) presented with fever, 24 (38%) suffered an embolic event and 1 (2%) had an immunological phenomenon. Out of 49 positive blood cultures (78%), typical microorganisms consistent with IE were isolated in 25 (78%): 13 (34%) *Staphylococcus aureus*, 10 (26%) oral *streptococci*, 9 (24%) *Enterococcus faecalis*, 5 (13%) *Streptococcus gallolyticus* and 1.0 (3%) HACEK group. Overall, in 22 (34%) patients, a definitive diagnosis of IE was established by means of clinical presentation, blood cultures and TTE. In the remaining, TEE was performed in 86% (n = 36). Of those, a

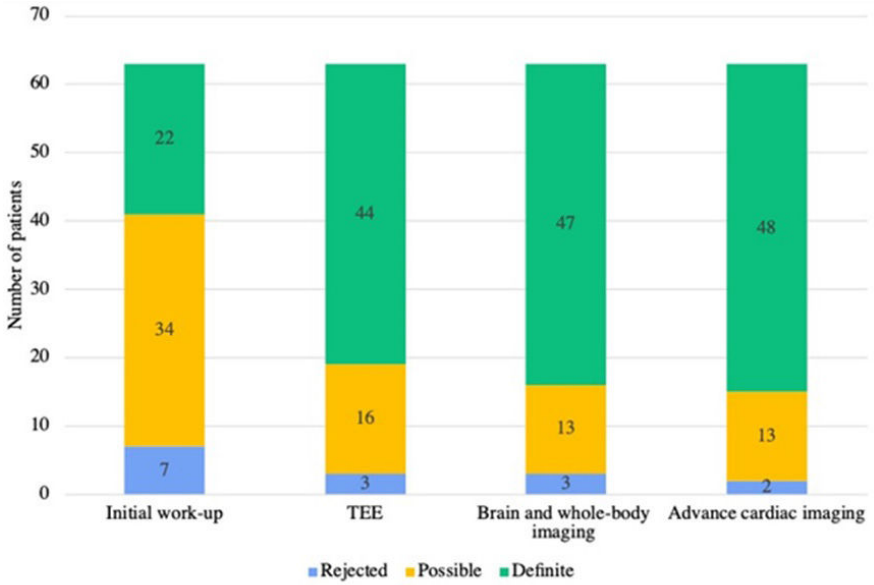


Figure 1 – Number of patients diagnosed with endocarditis, categorized as rejected, possible, or definite, throughout the diagnostic process.

Figure PO 288

definite diagnosis was established in 52% (n = 22) and possible diagnosis in 33% (n = 12). Brain and whole-body imaging upgraded the diagnosis from possible to definite in 3 (5%) patients. In the one patient in which a comprehensive clinical evaluation including TTE and TEE rejected IE, the diagnosis was ultimately established by means of PET. A total of 47 (75%) patients underwent surgery, with the most frequent indications being heart failure 46% (n = 21) and uncontrolled infection 28% (n = 13). Time from diagnosis to surgery was 10 (2-19) days, total hospital length of stay was 45 (35-70) days and in-hospital mortality 21%.

Conclusions: Clinical presentation, blood cultures and TTE plus TEE established the definite or possible diagnosis of IE in most patients with suspected IE. Advanced imaging techniques allowed the establishment of definite diagnosis in only 6% of patients.

PO 289. INFECTIVE ENDOCARDITIS RISK IN PATIENTS WITH BICUSPID AORTIC VALVE: SYSTEMATIC REVIEW AND META-ANALYSIS

Ana Lobato de Faria Abrantes[1], Sara Couto Pereira[2], Pedro Silvério António[2], Pedro Morais[2], Catarina Sousa[3], Cláudio David[4], Fausto J. Pinto[3], Ana G. Almeida[3], Daniel Caldeira[3]

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Introduction: Antibiotic prophylaxis in bicuspid aortic valve patients is currently a matter of debate. Although it is no longer recommended by international guidelines, some studies indicate a high risk of infective endocarditis. We aim to evaluate the risk of native valve infective endocarditis in bicuspid aortic valve patients and compare to individuals with tricuspid aortic valve.

Methods: Study search of longitudinal studies regarding infective endocarditis incidence in bicuspid aortic valve patients (compared with tricuspid aortic valve/overall population) was conducted through OVID in the following electronic databases: MEDLINE, CENTRAL, EMBASE; from inception until October 2020. The outcomes of interest were the incidence rate and relative risk of infective endocarditis. The relative risk and incidence rate (number of cases for each 10,000 persons-year) with their 95% confidence intervals (95%CI) were estimated using a random effects model meta-analysis. The study protocol was registered at PROSPERO CRD42020218639.

Results: Eight cohort studies were selected, with a total of 5,351 bicuspid aortic valve patients. During follow up, 184 bicuspid aortic valve patients presented infective endocarditis, with an incidence rate of 48.13 per 10,000 patients-year (95%CI 22.24–74.02), and a 12-fold (RR: 12.03, 95%CI 5.45–26.54) increased risk compared with general population, after adjusted estimates.

Conclusions: This systematic review and meta-analysis suggests that bicuspid aortic valve patients have a significant high risk of native valve infective endocarditis. Large prospective high-quality studies are required to estimate more accurately the incidence of infective endocarditis, the relative risk and the potential benefit of antibiotic prophylaxis.

PO 290. PREDICTORS OF EMBOLIC EVENTS IN INFECTIVE ENDOCARDITIS – REALITY IN PORTUGUESE CENTER

Nazar Ilchyshyn, Ana Catarina Gomes, Inês Cruz, Joana Varela de Sousa, João Grade Santos, Bárbara Ferreira, Mariana Martinho, Diogo Cunha, Oliveira Baltazar, Liliana Brochado, Hélder Pereira

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Introduction: Infective endocarditis (IE) is associated with high mortality and morbidity. Embolic events (EE) are common complications of IE, being neurological complications associated with poor prognosis. Several clinical and echocardiographic factors, as well as risk scores such as Embolic Risk French Calculator (ER- alculator) and qSOFA have been studied as predictors of EE associated with IE, but no definite predictors have been established.

Objectives: Our aim was to describe and compare the subgroups presenting with and without EE associated with IE, assess its clinical, echocardiographic, microbiological characteristics as well as to evaluate ER-Calculator and qSOFA scores as predictors of EE.

Methods: Retrospective analysis of all patients admitted with IE between 2010 and 2022. Medical records were analyzed for clinical, echocardiographic and microbiological data. We compared both groups by Mann Whitney test based on non-normal distribution for continuous variables and Pearson's chi-squared test for categorical variables. Binary logistical regression was performed to assess EE predictors.

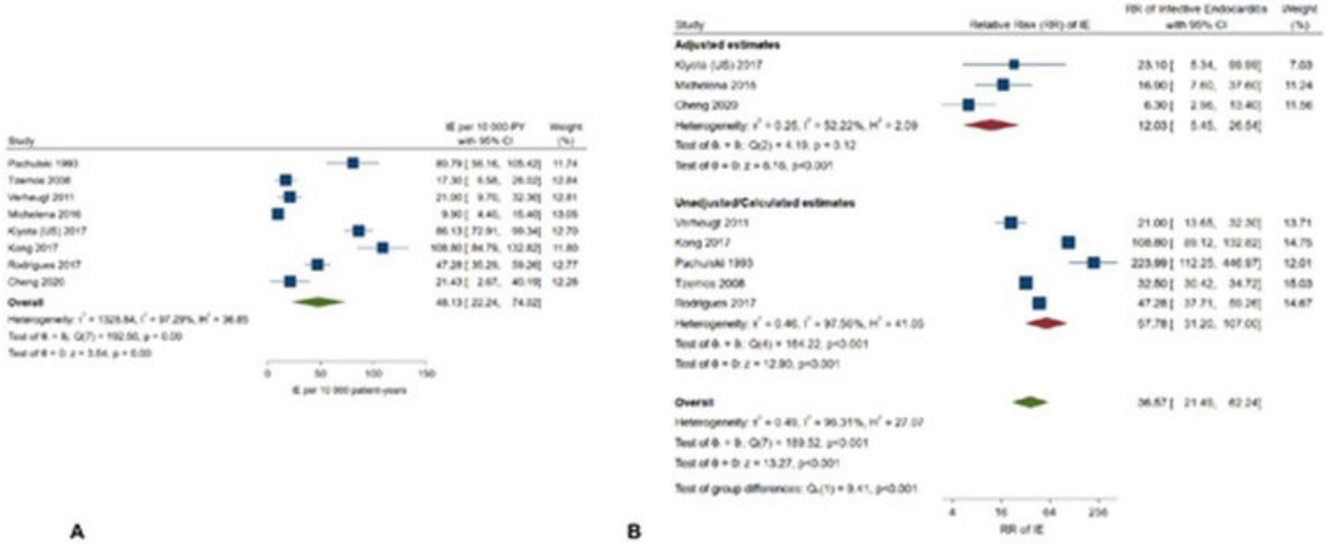

Figure 1: A – Forest plot of the estimated incidence rate of infective endocarditis in bicuspid aortic valve patients; **B** - Forest plot of the adjusted and calculated ratio of infective endocarditis in bicuspid aortic valve patients

Figure PO 289

Results: A total of 222 patients presented with IE, 84.2% with left heart IE. Most common microorganisms involved were *Staphylococcus aureus* (SA) (n = 61), followed by *Streptococcus viridans* (n = 26) and *Streptococcus bovis* (n = 19). Local complications were observed in 15.3%. EE were observed in 42.3%. EE was associated with younger age (median 65 years-old (IQR: 22), vs. 70 years-old (IQR: 20) (p = 0.003)), higher CPR value (8.59 mg/dL (IQR: 14.6) vs. 6.55 (IQR: 9.8) (p = 0.010)), vegetation size above 10 mm (53.4% vs. 35.8% (p = 0.014)), higher 7- and 28-days ER-Calculator score (4% (IQR: 4) vs. 3% (IQR; 4) (p = 0.009) and 6% (IQR:8) vs. 5% (IQR:7) (p = 0.009), respectively). Statistical trend was observed towards increased risk of embolization in HIV and SA infections (15.1% vs. 7.1% (p = 0.056) and 34.0% vs. 22.7% (p = 0.060), respectively). EE was not associated with gender (77.7% vs. 68.0% male (p = 0.112)), diabetes (24.5% vs. 19.5% (p = 0.377)), atrial fibrillation (18.7% vs. 26.0%, p = 0.206)), prosthetic valves (24.5% vs. 25.0% (p = 0.928)) or qSOFA score (0-1 points 82.1% vs. 88.8%, 2-3 points 17.9% vs. 11.2% (p = 0.181)). Logistic regression model revealed > 10 mm vegetation size (OR = 1.758, p = 0.005) and SA infection (OR = 1.949, p = 0.043) as predictors of EE in IE, whereas ≥ 75 years-old (OR = 0.458, p = 0.020) showed protective effect. Other EE associated factors did not show statistical significance in this model.

Conclusions: Predictors of EE in IE were vegetation size and SA infection. Old age had protective effect. 7- and 28-days ER-Calculator risk were associated with EE, whereas qSOFA score were not.

PO 291. UNDERSCORING THE NEED FOR INFECTIVE ENDOCARDITIS RISK STRATIFICATION AND MANAGEMENT

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Introduction: Infective endocarditis (IE) is still an infrequent yet life-threatening and disabling condition. Surgical intervention plays a crucial

Variable name	n=53
Age (years)	63.9 (±)15.3
Male sex	38 (71.7)
Hypertension	34 (64.2)
Diabetes Mellitus	11 (20.7)
Severe renal failure (CrCl<50 ml/min)	5 (9,4)
Prothestic valve	11 (20.8)
Previous heart surgery	10 (18.9)
Heart failure	18 (34)
Systemic or cerebral embolization	8 (15)
Immunological lesions	2 (3.7)
Acute kidney injury	19 (33.8)
Site of IE . Aortic . Mitral . Tricuspid	 34 (64.2) 17 (32.1) 2 (3.8)
Causative pathogen identified . Streptococcus bovis . *Staphylococcus aureus*	 15 (28.3) 7 (13.2)

Table 1. Baseline characteristics of the sample

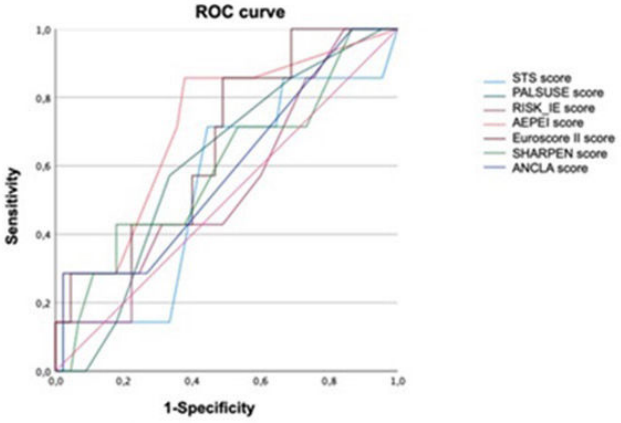

Fig. 1 A- ROC curve analysis of the studied scores.

Figure PO 291

role in IE, being required in almost half of patients. It represents a potential curative adjunctive intevention, helping to avert progressive heart failure, irreversible structural damage and systemic embolization. However, surgical therapy during the active phase of IE poses significant risks. Prognostic scores aid in assessing the risk of in-hospital mortality, guiding decisions on surgery indications.

Objectives: To assess the score with the best predictive value for in-hospital mortality in IE patients undergoing cardiac surgery at a tertiary hospital.

Methods: We conducted a retrospective cohort study including all patients admitted with the diagnosis of IE (modified Duke criteria) who underwent cardiac surgery between 2010 and 2022. Clinical, ECG and procedural data were obtained. The SHARPENscore, EuroSCORE II, STS-IE, PALSUSE, AEPEI, ANCLA and RISK-E scores were evaluated. Predictive abilities of these seven scores were compared using area under the receiver operating characteristics (ROC) curve for in-hospital mortality.

Results: A total of 53 patients were included (71.7% male sex, mean age 63.9 ± 15.3 years). The main characteristics of the population are described in the Table. Most pts were submitted to valve replacement (73.6%). The main reason for surgical approach was severe valvular regurgitation (62.3%) followed by failure of antibiotic therapy (22.6%). The in-hospital mortality was 19%. The AEPEI score showed the best discriminative power (AUC 0.78, 95%CI: 0.62-0.94, p = 0.005) among all evaluated surgical scores, followed by Euroscore II (AUC 0.769 95%CI 0.613-0.925, p = 0.009) and PALSUSE (AUC 0.724 95%CI 0.55-0.89, p = 0.029) (Figure). However, when comparing scores amongst themselves, we found no statistically significant differences regarding their discriminative power.

Conclusions: In patients with IE undergoing surgery, a 19% mortality rate was found in our institution. Our results suggest that the AEPEI was the best tool to predict in hospital mortality. However, none of the applied scores demonstrated a significantly superior discriminative power, with the area under the curve (AUC-ROC) deemed reasonable at best. These findings highlight the need for better tailored and accurate scores in this population and the importance of individualized, multidisciplinary and experienced approach to manage these patients.

PO 292. IMPACT OF ACUTE HEART FAILURE IN INFECTIVE ENDOCARDITIS: A REAL-WORLD STUDY

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Infective endocarditis (IE) is a challenging and complex disease, associated with severe complications and high mortality. The development of acute heart failure (AHF) during hospitalization has been described as a predictor of worse outcomes, however, its incidence and clinical impact are still uncertain. This study aimed to compare the clinical features, microbiological results, complications, and mortality between patients with infective endocarditis who developed AHF and those who did not. A retrospective study was conducted and patients diagnosed with definite or possible IE (according to the modified Duke criteria) between January 2015 and March 2023 in a secondary hospital were included. The main outcomes were in-hospital and 1-year mortality. Group 1 represents patients who did not present AHF during hospitalization and group 2 includes those who did it. Group comparisons and logistic regression were performed. A p-value less than 0.05 is statistically significant. Of the total 84 patients, 71.4% were male. The mean age was 67.2 years (Table 1). Fever was the main

TABLE 1. BASELINE CHARACTERISTICS

	Overall (n=84)	Group 1 (n=63)	Group 2 (n=21)	p-value
Male, n (%)	60 (71.4)	45 (71.4)	15 (71.4)	1.00
Age in years, mean (dp)	67.2 ± 15.5	67.8 ± 16.2	65.4 ± 13.3	0.55
Arterial hypertension, n (%)	47 (56.0)	36 (57.1)	11 (52.4)	0.70
Diabetes, n (%)	24 (28.6)	17 (27.0)	7 (33.3)	0.58
Heart failure, n (%)	20 (23.8)	16 (25.4)	4 (19.0)	0.55
HFpEF, n (%)	15 (17.9)	12 (19.0)	3 (14.3)	0.62
HFmrEF and HFrEF , n (%)	5 (6.0)	4 (6.3)	1 (4.8)	1.00
Coronary artery disease, n (%)	9 (10.7)	8 (12.3)	1 (4.8)	0.31
Valvular heart disease, n (%)	36 (42.9)	27 (42.9)	9 (42.9)	1.00
Valve repair/replacement, n (%)	29 (34.5)	24 (38.1)	5 (23.8)	0.23
Dilated cardiomyopathy with ICD or CRT-D, n (%)	3 (3.6)	2 (3.2)	1 (4.8)	1.00
Congenital heart disease, n (%)	8 (9.5)	4 (6.3)	4 (19.0)	0.09
Surgical correction of congenital anomaly, n (%)	3 (3.6)	2 (3.2)	1 (4.8)	1.00
Intravenous drug user, n(%)	2 (2.4)	2 (3.2)	0 (0.0)	1.00

HFpEF - heart failure with preserved ejection fraction; HFmrEF - Heart failure with mildly reduced ejection fraction; HFrEF - Heart failure with reduced ejection fraction; ICD-implantable cardioverter-defibrillator; CRT-D-implantable; cardiac resynchronization therapy defibrillator

TABLE 2. CLINICAL PRESENTATION AT ADMISSION

	Overall (n=84)	Group 1 (n=63)	Group 2 (n=21)	p-value
Fever, n (%)	50 (59.5)	40 (63.5)	10 (47.6)	0.20
Anorexia, malaise, weight loss, n (%)	40 (47.6)	30 (47.6)	10 (47.6)	1.00
Clinical signs of pulmonary congestion, n(%)	29 (38.2)	12 (12.4)	17 (85.0)	<0.01
Shortness of breathe, n (%)	20 (23.8)	11 (17.5)	9 (42.9)	0.02
Altered state of consciousness, n (%)	11 (13.1)	7 (11.1)	4 (19.0)	0.35
Focal neurologic deficits, n (%)	8 (9.5)	8 (12.7)	0 (0.0)	0.09
Chest pain, n (%)	4 (4.8)	3 (4.8)	1 (4.8)	1.00

TABLE 3. COMPLEMENTARY TESTS RESULTS

	Overall (n=84)	Group 1 (n=63)	Group 2 (n=21)	p-value
VEGETATION LOCATION				
Native valve, n (%)	48 (57.1)	32 (56.0)	16 (76.2)	0.04
Biologic prosthetic valve, n (%)	19 (22.6)	17 (27.0)	2 (9.5)	0.10
Mechanical prosthetic valve, n (%)	7 (8.3)	6 (9.5)	1 (4.8)	0.49
Implantable device, n (%)	8 (9.5)	6 (9.5)	2 (9.5)	1.00
Other, n (%)	2 (2.4)	2 (3.2)	0 (0.0)	1.00
MICROBIOLOGY BLOOD TEST RESULTS				
Gram-positive bacteria, n (%)	49 (58.3)	37 (58.7)	12 (57.1)	0.90
Staphylococcus aureus	16 (19.0)	10 (15.9)	6 (28.6)	0.20
Streptococcus gallolyticus	10 (11.9)	9 (14.3)	1 (4.8)	0.24
Streptococcus oralis	8 (9.5)	6 (9.5)	2 (9.5)	1.00
Gram-negative bacteria, n (%)	15 (17.9)	11 (17.5)	4 (19.0)	0.87
Enterococcus faecalis	11 (13.1)	8 (12.7)	3 (14.3)	0.85
Intracellular microorganism, n (%)	7 (8.3)	5 (7.9)	2 (9.5)	0.82
No microbiological isolation, n (%)	12 (14.3)	10 (15.9)	2 (9.5)	0.47

TABLE 4. IN-HOSPITAL COMPLICATIONS

	Overall (n=84)	Group 1 (n=63)	Group 2 (n=21)	p-value
LOCAL COMPLICATIONS, n (%)	**56 (66.7)**	**40 (63.5)**	**16 (76.2)**	**0.29**
Valve regurgitation[1], n (%)	29 (60.4)	20 (62.5)	9 (56.3)	0.68
Valve obstruction[1], n (%)	2 (4.2)	0 (0.0)	2 (12.5)	0.11
Prosthetic dysfunction[2], n (%)	16 (61.5)	14 (60.9)	2 (66.7)	1.00
Obstructive prosthetic valve [2], n (%)	9 (34.6)	8 (34.8)	1 (33.3)	1.00
Periprosthetic regurgitation [2], n (%)	6 (23.1)	5 (21.7)	1 (33.3)	1.00
Intraprosthetic regurgitation [2], n (%)	7 (26.9)	6 (26.1)	1 (33.3)	1.00
Leaflet/cusp perforation, n (%)	12 (14.3)	10 (15.9)	2 (9.5)	0.47
Abscess, n (%)	10 (11.9)	8 (12.7)	2 (9.5)	0.70
Pseudoaneurysm, n (%)	14 (16.7)	10 (15.9)	4 (19.0)	0.74
Fistula, n (%)	8 (9.5)	6 (9.5)	2 (9.5)	1.00
SYSTEMIC COMPLICATIONS[3], n (%)	**40 (47.6)**	**32 (50.8)**	**8 (38.1)**	**0.31**
Sepsis, n (%)	18 (21.4)	12 (19.0)	6 (28.6)	0.36
Cerebral embolization, n (%)	17 (20.2)	15 (23.8)	2 (9.5)	0.16
Splenic embolization, n (%)	11 (13.1)	9 (14.3)	2 (9.5)	0.58
Digital embolization, n (%)	5 (6.0)	5 (7.9)	0 (0.0)	0.33
Renal embolization, n (%)	4 (4.8)	3 (4.8)	1 (4.8)	1.00
Coronary embolization, n (%)	2 (2.4)	1 (1.8)	1 (4.8)	0.44
Retinal embolization, n (%)	1 (1.2)	1 (1.6)	0 (0.0)	1.00

[1] At least moderate regurgitation; of the total number of affected native valves (n=48). [2] Of the total number of infective endocarditis of prosthetic valves (n=26). [3] Excluding acute heart failure.

TABLE 5. MORTALITY

	Overall (n=84)	Group 1 (n=51)	Group 2 (n=21)	p-value
In-hospital mortality, n (%)	23 (27.4)	13 (20.6)	10 (47.6)	0.02
1-year mortality*, n (%)	34 (41.0)	20 (31.7)	14 (70.0)	<0.01

**Including in-hospital mortality*

Figure PO 292

presentation feature at admission (Table 2). We counted 48 (57.1%) native valve IE, 26 prosthetic valve IE, and 8 (9.5%) device-related IE. The most common isolated microorganisms were *Streptococcus aureus* (n = 16, 19.0%) and *Enterococcus faecalis* (n = 11, 13.1%) (Table 3). Fifty-six patients (66.7%) developed local complications and 40 patients (47.6%) had at least a systemic complication (other than heart failure) (Table 4). Twenty-one patients (25.0%) developed AHF during hospitalization, of which eight evolved in cardiogenic shock (9.5%). In-hospital mortality was 27.4% (n = 23) and 1-year mortality was 41.0% (n = 34) (Table 5). In multivariate analysis, patients who suffered from AHF during hospitalization present a significantly higher risk of in-hospital mortality (HR 8.5, 95%IC [1.8;40.7], p < 0.01) and of 1-year mortality (HR 7.6, 95%IC [2.1;28.1], p < 0.01) independently of comorbidities, and local or systemic complications. In conclusion, in our population, a quarter of patients with IE developed AHF during hospitalization. It has a significant impact on patients' prognosis, including both in-hospital and long-term mortality. These results suggest that we must redouble attention to patients with IE who present with signs and symptoms of heart failure upon admission.

PO 293. INFECTIVE ENDOCARDITIS IN ELDERLY - PREDICTORS OF 1 YEAR MORTALITY

Fernando Nascimento Ferreira, Bárbara Teixeira, Rita Ilhão Moreira, Miguel Figueiredo, Julien Lopes, Francisco Albuquerque, Madalena Coutinho Cruz, Ana Galrinho, Ana Teresa Timóteo, Pedro Rio, Luísa Moura Branco, Rui Cruz Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: The prevalence of infective endocarditis (IE) has been increasing in the elderly population due to the observed rise in life expectancy. The individual comorbidities prevalent in this age group make approaching this pathology challenging. Therefore, it is crucial to identify potential prognostic predictors.
Objectives: To evaluate possible predictors of 1-year mortality in individuals over 80 years old diagnosed with IE.
Methods: A retrospective study included patients aged 80 years or older with a definitive diagnosis of IE, according to the 2023 guidelines of the European Society of Cardiology, who underwent transesophageal echocardiography at a Cardiology center in a tertiary hospital between 2015 and 2021. Demographic, clinical, echocardiographic, and prognostic characteristics were assessed, and their association with 1-year mortality was evaluated.
Results: A total of 30 patients were included, with 63.3% male, with mean age of 84 years (± 3.0). The assessment by the Clinical Frailty Scale (CFS) revealed scores between 4 and 7 (4 - 56.7%, 5 - 6.7%, 6 - 20%, and 7 - 6.7%). 40% had history of atrial fibrillation, 56.7% had prior cardiac surgery, 40% had valvular prosthesis, 36.7% had cardiac device (CD), 36.7% had hospitalization or invasive procedure in the 3 months preceding the diagnosis and 6.7% had previous IE. The average Euroscore II was 10.2 (± 6.8), and the average mortality assessed by the STS score was 11.81 (± 6.49). The most frequent manifestation was fever (93.3%), the aortic valve was the most affected (54.9%), with multivalvular involvement in 10% of cases and the most common echocardiographic finding was vegetation (93.7%). *Staphylococcus* spp was the most frequent microorganism (26.1%), followed by organisms from the *gallolyticus* group and *pyogenes*, and *Enterococci* (each in 20% of cases). The most common complication was heart failure (26.7%). Cerebral embolization occurred in 13.3% of individuals, and peripheral embolization in 16.7%. Regarding therapeutic context, 43,3% had surgical indication, and 13.3% underwent surgical intervention. In-hospital and 1-year mortality was 23,3% and 36.7%, respectively. Concerning 1-year mortality, a statistically significant association was observed with CFS (p = 0.003), with a positive coefficient for scores higher than 4, and history of CD (HR 6.4 (1.156-35.437); p = 0.047), the second not independently. It is noteworthy that there was no significant association between surgical indication and its performance with 1-year mortality (OR 2.057 (0.455-9.304); OR 0.533 (0.049-5.862)).
Conclusions: The study revealed a clinically significant context with a notable prevalence of cardiovascular comorbidities and elevated surgical risk scores. One-year mortality seems to be associated with patients with higher pre-existing frailty and a history of CD, with no apparent association with surgical intervention.

SÁBADO, 20 ABRIL de 2024 | 16:30-18:00

Área de Posters 3 | Sessão de Posters 45 - Miocardiopatia hipertrófica

PO 294. TIME-TRENDS IN THE DECISION OF A PRIMARY PREVENTION STRATEGY IMPLEMENTATION IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY

Miguel Marques Antunes, Inês Ferreira Neves, Pedro Garcia Brás, Inês Grácio Almeida, José Viegas, Isabel Cardoso, André Ferreira, Guilherme Portugal, Pedro Silva Cunha, Rui Cruz Ferreira, Mário Martins Oliveira, Sílvia Aguiar Rosa

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Introduction: Hypertrophic cardiomyopathy (HCM) is a prevalent and potentially life-threatening condition. While the body of knowledge on this disease has progressed substantially, sudden cardiac death (SCD) prediction remains sub-optimal. Implantable cardioverter-defibrillators (ICD) have robust evidence supporting prevention of SCD in patients (P) in secondary prevention. However, the clinical decision on the use of these devices in primary prevention remains a matter of debate. From 2014 to 2023, the European Society of Cardiology (ESC) has emanated several recommendations regarding ICD implantation in primary prevention in P with HCM.
Objectives: To evaluate time trends in the decision-making process of ICD implantation in primary prevention for P with HCM.
Methods: We retrospectively analyzed data from P followed in a Cardiomyopathy Clinic. P characteristics, remote monitoring information, echocardiographic, and magnetic resonance imaging (CMR) data were recorded. We then classified P according to 3 groups (ICD not recommended, ICD may be considered, ICD should be considered) - in line with the 2014, 2022 and 2023 ESC Guidelines (GL). Classification into these groups started with the use of the HCM Risk SCD calculator (high > 6%, intermediate 4-6% and low < 4% 5-year risk). Significant late gadolinium enhancement (LGE) at CMR (≥ 15% of LV mass), LVEF < 50%, left ventricular apical aneurysm (AA) and sarcomeric pathogenic mutations were effect modifiers for P in the intermediate risk group for the 2022 SCD GL. LGE, LVEF < 50% and AA were considered risk-enhancers for the low-risk group in the 2022 SCD GL, while only the first two were considered in the 2023 GL (Table).
Results: 42 P with a median age of 56 [46-67] years, 26 (46%) of which male, were included (Table 2) - amounting a total of 26 568 days (72 years) at risk, averaging 1.7 patient/years. Median HCM SCD risk score was 4.75 [3.33-5.9] - classifying as an intermediate risk. There were no downgrades in the strength of recommendation since the 2014 HCM GL (Figure). The 2022 SCD GL had the highest number of P (52%) in the strongest recommendation group, with the main driver for upgrade being the presence of LGE > 15%. The 2023 Cardiomyopathy GL had the highest number of P in the intermediate recommendation group – 27 (64%). There were 4 ICD-appropriate therapies – 3 shocks and 1 anti-tachycardia pacing. Of these, 2 happened in the high-risk group (1 ventricular fibrillation and 1 ventricular tachycardia (VT)), 1 in the intermediate-risk group and 1 in the low-risk group, both for VT.
Conclusions: GL recommendations have generally increased the strength of recommendation for ICD implantation in recent years, with varying degrees of certainty regarding risk modifiers. ICD implantation in primary prevention remains a matter of debate and risk-prediction models are still sub-optimal.

Table 1 – Summary of recommendation trends between guidelines

	Recommendations	High risk	Intermediate Risk	Low Risk	LGE >15	LVEF <50%	Apical Aneurysm	Sarcomeric mutation	Abnormal BP in ET
2014 HCM guidelines	ICD should be considered								
	ICD may be considered								
	ICD generally not recommended								
2022 VA guidelines	ICD should be considered		*						
	ICD may be considered			*					
	ICD generally not recommended								
2023 Cardiomyopathy Guidelines	ICD should be considered								
	ICD may be considered			*					
	ICD generally not recommended								

Green - independently qualifies for recommendation level; Yellow – qualifies for recommendation level if * plus at least one other conditions are met; Red – presence goes against recommendation level; Gray – is not considered in these guideline set

Table 2 – General patient characteristics

Baseline characteristics	n = 42
Age - yr [IQR]	56 [46-67]
Male sex - n (%)	26 (62%)
Hypertension - n (%)	24 (57%)
Dyslipidemia - n (%)	19 (45%)
Active smoker - n (%)	7 (17%)
Angina – n (%)	11 (26%)
CCS class – [IQR]	0 [0-1]
NYHA class [IQR]	2 [1-2]
Drugs	
Beta-Blocker - n (%)	32 (76%)
Calcium channel blockers – n (%)	10 (23%)

Table 3 – Risk prediction features

SCD risk assessment	n = 42
HCM SCD 5 year risk score	4.75 [3.33-5.9]
High risk - n (%)	10 (24%)
Intermediate Risk - n (%)	14 (33%)
Low risk - n (%)	18 (43%)
Score features	**n = 42**
Maximum wall thickness [IQR]	21 [18-24]
Left atrial diameter mm	48 [43-52]
Family history of sudden cardiac death - n (%)	11 (26%)
Unexplained syncope - n (%)	6 (14%)
Non-sustained ventricular tachycardia - n (%)	23 (55%)
Left ventricular outflow tract [IQR]	43 [2-87]
SCD risk effect modifiers	
LGE > 15% - n (%) , 35 patients	30 (85%)
LVEF < 50% - n (%) , 42 patients	3 (7%)
Apical aneurysm - n (%) , 42 patients	3 (7%)
Presence of Sarcomeric Mutation - n (%), 26 patients	13 (50%)

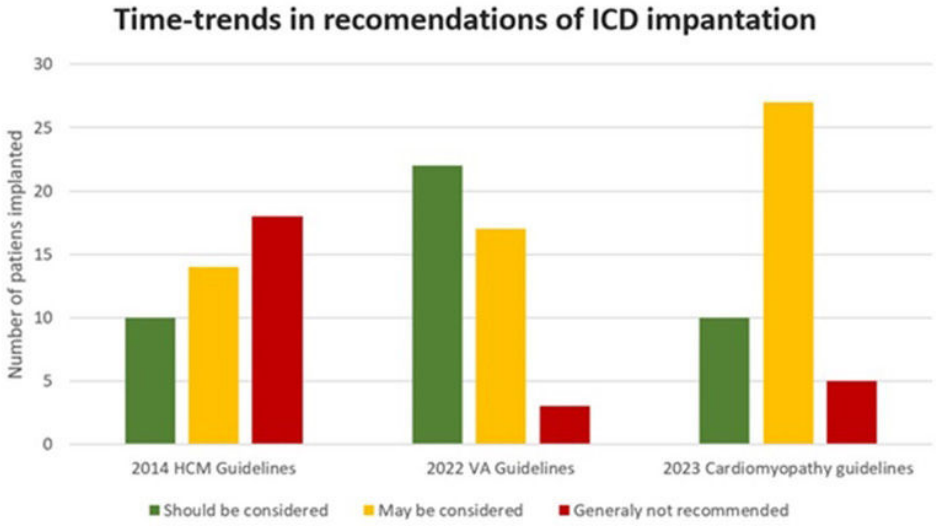

Figure PO 294

PO 295. CLINICAL OUTCOMES IN A POPULATION WITH HYPERTROPHIC CARDIOMYOPATHY AND MYBPC3 GENE DISEASE: THE SHORT VERSION OF A LONG HISTORY

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Introduction: Hypertrophic cardiomyopathy (HCM) is an autosomal-dominant disease with variable genotypic and phenotypic expressions. Mutations in cardiac myosin binding protein C (encoded by *MYBPC3* gene) are the most common cause of HCM. Mutations in this gene are described as associated with a later onset of disease and a more benign prognosis.
Objectives: To evaluate prevalence of events in patients with sarcomeric HCM and pathogenic or likely pathogenic(P/LP) variants in the *MYBPC3* gene.
Methods: A prospective analysis of *MYBPC3*-HCM patients (probands and affected relatives) followed in a tertiary centre was performed, considering only those who have a *MYBPC3* mutation classified as P/LP according to ClinVar. Data on clinical characteristics and events during the follow up were recorded. Descriptive and inferential statistics were performed.
Results: We included in this study 47 HCM patients from 24 *MYBPC3*-HCM unrelated families (53% male; mean age 45 ± 16 years), followed for a mean time of 12 ± 12 years. Twelve different P/LP variants were identified. Nineteen percent of patients had resting obstructive HCM at the initial evaluation, with a significant clinical and haemodynamic improvement during follow up to 4% (p = 0.033), achieved through medical and septal reduction therapy (septal myectomy was performed in 6% of patients). Six (25%) families reported a history of sudden cardiac death (SCD). Twenty-six percent of patients received an implantable cardioverter-defibrillator (ICD), with 42% for primary prevention and 58% for secondary prevention. Atrial fibrillation (AF) was documented in 36% of patients and was diagnosed at a mean age of 61 ± 14 years. Two patients with AF had a stroke, and no cerebrovascular events were identified in patients without AF. Nine percent developed heart failure (HF) with reduced left ventricular ejection fraction (LVEF), and among them, 2 had HF-related hospital admissions. Two patients with preserved LVEF also had HF hospital admissions. Six percent were admitted to the hospital with an initial diagnosis of acute coronary syndrome, but none had obstructive coronary disease. The mean maximum NT pro-BNP value in affected patients was 630 pg/mL. Eight patients died, half having cardiovascular-related causes (2 had SCD). The composite outcome of AF, and/or stroke, hemodynamically significant ventricular arrhythmias, or HF hospital admission, occurred in 47% of patients (Figure). The NT pro-BNP plasma value during follow up was associated with the occurrence of this outcome (p = 0.006).
Conclusions: We studied a cohort of patients with 12 MYBPC3 pathogenic variants, providing information about the clinical evolution and outcomes of these patients. Despite the relatively benign phenotype described, there are significant morbid events reflected in this population that need clinical and prognostic consideration and specific management.

PO 296. MYOCARDIAL BRIDGING IN HYPERTROPHIC CARDIOMYOPATHY: PREVALENCE, CHARACTERISTICS, AND CLINICAL IMPLICATIONS

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Introduction: Myocardial bridging has a prevalence ranging from 1% to 3% in the general population, previous studies have shown that it is significantly more prevalent in patients with Hypertrophic Cardiomyopathy (HCM), reaching about 25% in some cohorts. The clinical relevance of myocardial bridging in patients with HCM is still mostly unknown, with some studies suggesting that it has an impact on clinical and imagological outcomes, whilst others suggest that the condition is mostly benign and has no overall outcome impact. We aimed to study the prevalence, laboratory and imagological characteristics and clinical implications of myocardial bridging in a population of patients with HCM.
Methods: Patients with HCM accompanied at our center who had coronary anatomy studied by either cardiac catheterization (CAT) or Coronary computed tomography angiography (CCTA) were included. We retrospectively analyzed the prevalence of myocardial bridging in our population and correlated the phenomenon to cardiovascular risk factors (RF), symptoms, and laboratory and cardiac magnetic resonance (CMR) findings.
Results: Sixty-four patients with HCM (mean age 66.7 ± 11.6, 50% male sex) were included. Fifteen (23%) patients (age 60.73 ± 8.5, 73.3% male sex) had myocardial bridging. The groups had similar baseline characteristics, and no significant differences were registered when comparing clinical aspects such as angina, classified according to Canadian Cardiovascular Society (CCS) scale, or heart failure symptoms, classified according to New York Heart Association (NYHA) class. No significant differences were seen regarding the contemplated laboratory values. Regarding the CMR findings, there were no differences in the occurrence of perfusion defects or in late

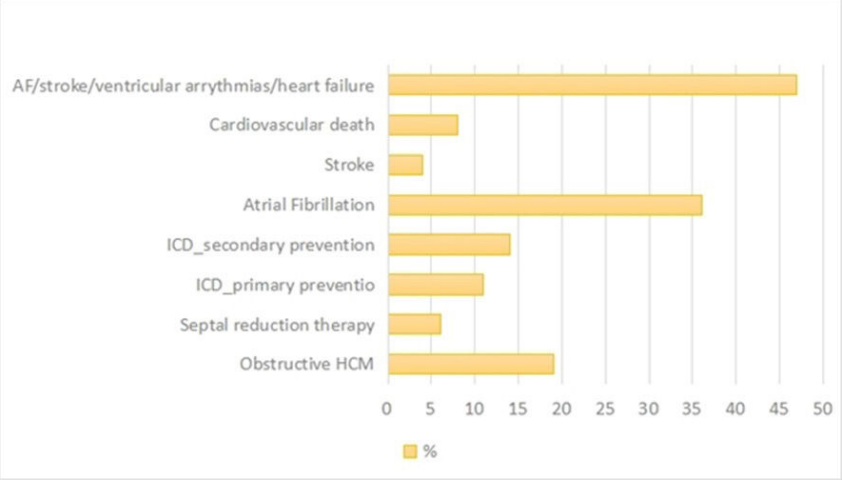

Figure PO 295

	All (n=64)	HCM without Bridging (n=49)	HCM with Bridging (n=15)	p value
Age - mean±SD	66.7±11.6	68.5±11.8	60.73±8.5	0.02
Male sex - n (%)	32 (50.0)	21 (42.9)	11 (73.3)	0.39
Comorbidities* - n (%)				
Hypertension	35 (54.7)	31 (63.3)	4 (26.7)	0.13
Type 2 DM	12 (18.8)	10 (20.4)	2 (13.3)	0.72
Dyslipidemia	37 (57.8)	32 (65.3)	5 (33.3)	0.03
Overweight/Obesity	50 (78.1)	41 (83.7)	9 (60.0)	0.08
Smoker	9 (14.1)	4 (8.2)	5 (33.3)	0.027
Previous smoker	3 (4.7)	2 (4.1)	1 (6.7)	0.56
Current alcohol abuse	2 (3.1)	1 (2.0)	1 (6.7)	0.42
Previous alcohol abuse	0	0	0	
Family history* - n (%)	28 (43.8)	24 (49.0)	4 (26.7)	0.127
Sedentary lifestyle* - n (%)	51 (79.7)	40 (81.6)	11 (73.3)	0.70
Medication - n (%)				
Beta-blocker	56 (87.5)	43 (87.8)	13 (86.7)	0.91
Calcium Channel Blocker	9 (14.1)	8 (16.3)	1 (6.7)	0.67
Disopyramide	5 (7.8)	4 (8.2)	1 (6.7)	1.00
Dapagliflozin/Empagliflozin	8 (12.5)	7 (14.3)	1 (6.7)	0.67
Espironolactone	9 (14.1)	7 (14.3)	2 (13.3)	1.00
Ranolazine	6 (9.4)	6 (12.2)	0	0.32
Angina - n (%)	25 (39.1)	21 (42.9)	4 (26.7)	0.26
CCS sacle - n (%)				0.45
No chest pain	38 (59.4)	28 (57.1)	10 (66.7)	
1	14 (21.9)	11 (22.4)	3 (20.0)	
2	11 (17.2)	9 (18.4)	2 (13.3)	
3	1 (1.6)	1 (2.0)	0 (0.0)	
HF symptoms - n (%)	55 (85.9)	44 (89.8)	11 (73.3)	0.19
NYHA class - n (%)				0.08
No HF symptoms	5 (7.8)	3 (6.1)	2 (13.3)	
I	26 (40.6)	18 (36.7)	8 (53.3)	
II	30 (46.9)	25 (51.0)	5 (33.3)	
III	3 (4.7)	3 (6.1)	0 (0.0)	
HS Troponin T (ng/L)* - median (IQR)	18 (16.0)	16.5 (16.0)	20.5 (78.0)	0.27
NT-proBNP (pg/mL)* - median (IQR)	685 (697.0)	528 (178.0)	843 (886.0)	0.69
Perfusion defects (MRI)*	38 (59.4)	30 (61.2)	8 (53.3)	0.37
Number of segments - mean±SD	4.73±3.7	4.96±5.0	4.70±7.0	0.5
LV % with ischemia - median (IQR)	15 (17.0)	15 (15.0)	16.5 (1.9)	0.37
LGE (MRI)*	55 (85.9)	43 (87.8)	12 (80.0)	1.00
Number of segments - mean±SD	8.0±4.5	8.86±4.78)	6.5±3.5	0.17
LV % with LGE - mean±SD	11.9±8.8	12.96±12.7	9.23±6.12	0.19

Footnote: IQR - Interquartile Range. SD - Standard deviation. HCM - Hypertrophic Cardiomyopathy. DM - Diabetes Mellitus. CCS - Canadian Cardiovascular Society. NYHA - New York Heart Association. HF - Heart Failure. HS - High Sensitivity; MRI - Magnetic Resonance Imaging. LGE - Late Gadolinium Enhancement; LV - Left Ventricle. *2 missing values for sedentary lifestyle; 48 missing values for HS Troponin T and NT proBNP; 18 missing values for perfusion MRI; 1 missing value for LGE.

Table 1: Population characteristics and group comparisons

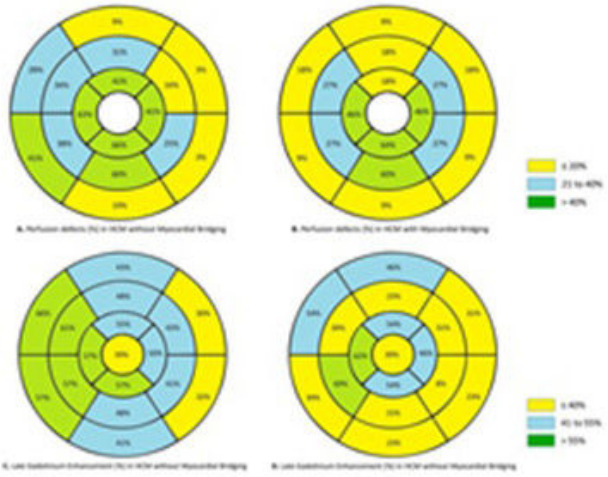

Figure 1: Distribution and prevalence of perfusion defects and LGE in the American Heart Association segments

Figure PO 296

gadolinium enhancement (LGE), considering the number of segments and the percentage of the left ventricle affected.
Conclusions: Our cohort of HCM patients had a prevalence of myocardial bridging similar to that described in previous studies. This condition seems to have no overall impact in the clinical presentation, ischemia and myocardial fibrosis.

PO 297. ASSESSMENT OF ECG AS A SCREENING TOOL FOR YPERTROPHIC CARDIOMYOPATHY: ADEQUACY AND PHENOTYPIC CORRELATIONS

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Introduction: Despite substantial advances in cardiac imaging and genetics, the electrocardiogram (ECG) remains pivotal in the initial assessment of patients with hypertrophic cardiomyopathy (HCM), family screening and preparticipation sports screening programs.
Objectives: This study aims to reassess the efficacy of ECG as a screening tool for HCM and explore its correlation with phenotypic expression.
Methods: A retrospective analysis was conducted on patients monitored at our centre's cardiomyopathy outpatient clinic. Patients with a confirmed diagnosis of HCM were included, and their initial ECG, clinical and imaging data were reviewed. ECG interpretation was performed using international criteria.
Results: A total of 88 HCM patients were identified, mostly male (63.6%), with a mean age at diagnosis of 58 ± 16 years. In the baseline ECG, T-wave inversion was the most prevalent abnormality (55.7%) and 43% of patients displayed left ventricular hypertrophy (LVH) voltage criteria. Seven patients (8%) had a normal ECG and 28.4% only exhibited nonspecific ventricular repolarization abnormalities. Most patients presented in sinus rhythm (88.6%), while 10.2% were in atrial fibrillation. In the initial echocardiography, median left ventricular ejection fraction (LVEF) was 65.2 ± 11% and mean interventricular septum thickness was 15.9 ± 4.0 mm. Obstructive phenotype was identified in 19.3% of patients and apical variant was observed in 20.4%. Cardiac magnetic resonance was performed at a median time of 8 months of follow-up (IQR 3-51) and revealed maximal wall thickness of 17.3 ± 3.7 mm and late gadolinium enhancement in 72.2% patients. Genetic testing revealed pathogenic sarcomere protein gene mutations in 14 patients. T-wave inversion and LVH criteria on ECG were more prevalent in apical variants ($p < 0.001$ and $p = 0.005$, respectively), while non-apical variants exhibited higher prevalence of pathologic Q waves ($p = 0.005$). Similar findings were noted in ECG patterns between sarcomere and non-sarcomere patients and in patients with or without family history of HCM. No statistically significant differences were found between mean maximal wall thickness on echocardiography and LVH criteria ($p = 0.789$), T-wave inversion ($p = 0.253$), and normal ECG ($p = 0.247$).
Conclusions: ECG continues to play an important role in HCM screening and diagnosis. In our study, 92% of HCM patients had abnormalities on initial ECG, particularly T-wave inversion and LVH criteria. However, these abnormalities do not consistently correlate with the severity or pattern of hypertrophy on echocardiography.

PO 298. MAVACAMTEN IN A REAL-WORLD HYPERTROPHIC CARDIOMYOPATHY (HCM) POPULATION: HOW MANY MAY BE ELIGIBLE?

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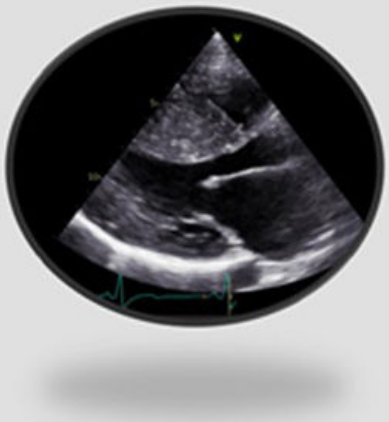

Baseline characteristics		Overall (N=361)	EXPLORER-HCM (N=35)	VALOR-HCM (N=6)	MAVERICK-HCM (N=27)
Clinical data					
Age, years (mean±SD)		63 ±16	69 ± 13	61 ± 21	69 ± 14
Male sex, n (%)		196 (54)	11 (31)	2 (33)	9 (33)
Arterial hypertension, n (%)		215 (60)	22 (63)	3 (50)	19 (70)
Atrial fibrillation, n (%)		134 (37)	10 (29)	0 (0)	18 (67)
Coronary artery disease, n (%)		42 (12)	2 (6)	1 (17)	3 (11)
Septal Reduction Therapy, n (%)		34 (9)	8 (23)	0 (0)	4 (15)
Intracardiac device, n (%)	PM	14 (4)	3 (9)	0 (0)	0 (0)
	CDI	127 (35)	8 (23)	2 (33)	6 (22)
	CRT	15 (4)	0 (0)	0 (0)	1 (4)
Medication, n (%)	Beta-blockers	278 (77)	31 (89)	3 (50)	23 (85)
	Verapamil/Diltiazem	21 (6)	1 (3)	1 (17)	1 (4)
NYHA, n (%)	I	191 (53)	0 (0)	0 (0)	0 (0)
	II	129 (36)	27 (77)	2 (33)	25 (93)
	III	27 (8)	8 (23)	4 (67)	2 (7)
	IV	12 (3)	0 (0)	0 (0)	0 (0)
Syncope, n (%)		25 (7)	0 (0)	3 (50)	0 (0)
Laboratory data					
Clearance creatinine, mL/min (mean±SD)		66 ± 24	73 ± 14	54 ± 15	71 ± 28
NT-proBNP, pg/mL (median [IQR])		960 (315-2247)	1053 (307-2121)	4809 (2700-6919)	1282 (613-2781)
Electrocardiographic data					
QTc (Fridericia's formula), ms (mean±SD)		440 ± 41	442 ± 35	417 ± 39	436 ±29
Echocardiographic data					
Non-obstructive HCM, n (%)		274 (76)	0 (0)	0 (0)	27 (100)
Obstructive HCM, (%)		60 (17)	35 (100)	6 (100)	0 (0)
Septal HCM, n (%)		272 (75)	35 (100)	6 (100)	18 (67)
Apical variant HCM, n (%)		79 (22)	0 (0)	0 (0)	9 (33)
LVEF, % (median [IQR])		59 (55-65)	62 ± 6	69 ± 4	60 (56-64)
Maximum thickness, mm (median [IQR])		18 (16-22)	21 (18-23)	23 ± 8	19 (15-23)
Intraventricular gradient, mmHg (mean±SD)	At rest	41 ± 36	60 ± 26	29 (25-50)	6 ± 6
	With provocatory manoeuvres	54 ± 38	81 ± 23	70 ± 15	9 ± 7

Figure PO 298

Introduction: Mavacamten is a newly approved drug for obstructive hypertrophic cardiomyopathy (oHCM) and is currently being studied in non-obstructive HCM (nHCM). Our goal was to evaluate how often patients with oHCM and nHCM in a real-world cohort would be eligible for the main mavacamten trials: EXPLORER-HCM, VALOR-HCM and MAVERICK-HCM.
Methods: Single-centre retrospective study enrolling consecutive patients with confirmed HCM, as per the 2023 ESC Guidelines, with at least yearly follow-up in our center, from 2017-2023. Key inclusion criteria from the three trials were considered: NYHA class II-III for all; obstructive forms (defined as peak left ventricle outflow tract [LVOT] gradient ≥ 50 mmHg at rest, after Valsalva manoeuvre or exercise) for EXPLORER-HCM and VALOR-HCM; left ventricular ejection fraction (LVEF) ≥ 55% for EXPLORER-HCM and MAVERICK-HCM; LVEF ≥ 60% and formal criteria for septal reduction therapy for VALOR-HCM, and NT-proBNP ≥ 300 pg/mL for MAVERICK-HCM. Key exclusion criteria (estimated glomerular filtration rate [eGFR] < 30 mL/kg/1.73 m^2, QTc using the Fridericia's formula > 500 ms, paroxysmal or intermittent atrial fibrillation present on screening electrocardiograph) were also considered.
Results: Overall, 410 patients were diagnosed with HCM, of whom 361 (88%) were alive at follow-up and were included in the analysis: mean age of 63 ± 16 years, 196 (54%) were male, 272 (75%) with septal HCM and 60 (17%) with oHCM. According to the criteria of EXPLORER-HCM, VALOR-HCM and MAVERICK-HCM, 35 (10%), 6 (2%) and 27 (7%) patients would be eligible for enrolment, respectively. In patients with oHCM, 35 (58%) would be eligible for the EXPLORER-HCM trial. In the overall cohort, 65 (18%) would have criteria for at least one of the trials. The main reasons for exclusion were as follows: 191 (53%) were NYHA I, 43 (12%) were NYHA IV, 12 (3%) had a LVEF < 55%, 8 (2%) had both HCM and infiltrative myocardial disease and/or moderate-to-severe aortic stenosis and 8 (2%) had an eGFR < 30 mL/kg/1.73 m^2. In patients with nHCM, 16 (5%) would have been excluded due to NT-proBNp < 300 pg/mL and 8 (3%) due to paroxysmal atrial fibrillation.
Conclusions: In a real-word HCM cohort, we found that approximately 1 in every 5 patients would have criteria for either of the mavacamten trials, with more than half of oHCM being potential candidates for the EXPLORER-HCM. The main reasons for non-eligibility were NYHA I and LVEF < 55%.

PO 299. CLINICAL PROFILE AND OUTCOMES OF PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY ASSOCIATED WITH MUTATIONS IN THE MYH7 GENE: A LONG LONGITUDINAL FOLLOW UP STUDY

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Introduction: Hypertrophic cardiomyopathy (HCM) is the most common genetic cardiovascular disease and is characterized by increased LV wall thickness with no other identified cause. Variants in *MYH7* gene are one of the most common underlying defects associated with HCM.
Objectives: To describe the clinical characteristics and outcomes of patients (pts) with HCM associated with pathogenic or likely pathogenic (P/LP) variants in the *MYH7* gene, followed over a long period of time.
Methods: Single center retrospective longitudinal study. Clinical, ECG and echocardiographic data from 29 unrelated HCM probands and their relatives with P/LP variants in the *MYH7* gene (G+) were evaluated at the time of diagnosis and at the last FUP visit.
Results: A total of 115 pts were included and studied (29 unrelated probands and 86 relatives). There were 75 genetic carriers (G+); at diagnosis, 51 (68%) had HCM phenotype (G+Ph+) and 24 (32%) had no ventricular hypertrophy (G+Ph-). Sixteen different variants were identified by Next Generation Sequencing but only 12 were classified as P/LP. The most frequent P/LP variants were: p.Ile263Thr [4Families (F), n = 28], p.Ala797Thr (4F, n = 8), p.Glu1356Lys (3F, n = 8), and p.Arg663His (1F, n = 7). One family express a co-dominance of two variants in the *MYH7* gene (p.Arg633His) and *MYBPC3* gene (p.Glu619Lys), however the *MYH7* variant was considered as the main responsible for the disease expression. The population G+ was evaluated during a FUP of 14.3 ± 2 years (0.2-46.8) years, globally the penetrance of

all P/LP variants was 67%. Ten (34.5%) out of 29 families had a known history of premature sudden cardiac death (SCD). The 51 G+/Ph+ pts, 24 male, 40 ± 2.6 years at diagnosis, maximal wall thickness (MWT) was 18.6 ± 0.84 mm, left atrial dimension (LAD) was 43.6 ± 0.9 mm and 12 (23.5%) had left ventricular tract obstruction (LVOTO) at rest. During a median follow-up of 8.5 (0.2-46.8) years, 6 (12%) pts had a hospital admission due to HF and 14 (27%) pts worsened at least one NYHA functional class. One patient progressed to a burn-out phase, 6 pts developed LVOTO, and 3 pts had a septal reduction procedure. Fifteen pts died during FUP, but no SCD occurred, however 9 (17%) pts received an ICD for primary prevention. At FUP, the MWT increased to 20.6 ± 0.8 (p = NS), and LAD increased significantly to 47.9 ± 10.4 mm (p = 0.01). Only 1 out the 24 G+/Ph- pts at diagnosis, developed phenotype during a FUP of 6.2 ± 1.6 years (mild LV hypertrophy of 14 mm) and no events occurred in any of the 24 pts. Comparing pts affected by the 4 most commons identified mutations, no differences were observed regarding HF admissions and survival during FUP (p = 0.09).

Conclusions: The majority of pts with *MYH7*-related HCM present with a benign phenotype over a long FUP period. However the risk of SCD exist in about 30% of pts demanding the need for preventive ICD implantation and in addition worsening HF affects more than 25% of the pts during their lifetime.

PO 300. PREDICTION OF ATRIAL FIBRILLATION IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY

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Introduction: Atrial fibrillation (AF) is an important step in the progression of hypertrophic cardiomyopathy (HCM) and is associated with impaired quality of life and risk for embolic stroke. The prediction of AF, as well as its detection and monitoring, are crucial for a comprehensive approach to patient care.

Objectives: To test the applicability of the HCM-AF score in our population and the possibility of improvement in accuracy with the add of left atrial volume index (LAVol).

Methods: We performed a retrospective study of patients (pts) followed in myocardiopathies consultation, in a single centre, with the diagnosis of HCM. The primary endpoint was development of atrial fibrillation during follow-up (FUP). HCM-AF score was calculated in each patient as described in Table 1. The score was then categorized in 3 groups: low-risk (score < 17), medium risk (score ≥ 18) and high risk (score ≥ 22). HCM-AFVol score was calculated as described in Table 2 with the add of LAVol instead of left atrial (LA) diameter. The score's capacity to predict AF was analyzed using ROC curves and their respective area under the curve (AUC).

Results: We included 73 pts, mean age 57.2 ± 16.8, 67.1% males. During a median follow-up of 3.0 (IQR 1.0-7.0) years, 14 (19.2%) pts developed AF, 4 in the first two years, 8 in 5 years and 11 in 10 years. Pts that developed AF had a greater LAVol (46.0 (IQR 50.0-52.0) vs. 35.4 (IQR 28.8-40.9), p = 0.018). Mean HCM-AF score was 20.22 ± 3.9, with 12(16.7%) pts in the low-risk group, 25 (34.2%) in medium risk group and 21 (28.8%) in the high-risk group. There were no differences in the score of pts who developed AF vs. the others (21.36 ± 3.61 vs. 19.96 ± 3.95, p = 0.29). During FUP, the rates of AF were similar in the 3 risk groups (16.7% low-risk, 16.0% medium risk and 25% in high risk, p = 0.78). In ROC curve analysis, HCM-AF score was a poor predictor of AF during follow up (AUC: 0.589, p = 0.362 and 95%CI 0.398-0.780). concerning HCM-AFVol Score, mean score was 10.11 ± 7.28 in our population. In ROC curve analysis HCM-AFVol score displayed excellent predictive power for atrial fibrillation (AUC: 0.827, p = 0.003 and 95%CI 0.685-0.970). The optimal score cut-off was 12.5 (87.5% sensitivity and 71.7% specificity). In our population, the adjusted probability of developing atrial fibrillation for patients with HCM-AFVol Score ≥ 12.5 was 35%. During follow-up, using a Kaplan-Meyer survival analysis, probability of developing AF was significantly higher in patients with HCM-AFVol score ≥ 12.5 (log-rank p = 0.024).

CLINICAL VARIABLE	RANGE	POINTS
LA diameter, mm	24-29	+8
	30-35	+10
	36-41	+12
	42-47	+14
	48-53	+16
	54-59	+18
	60-65	+20
Age at clinical evaluation, y	10-19	+3
	20-29	+6
	30-39	+9
	40-49	+12
	50-59	+15
	60-69	+18
	70-79	+21
Age at HCM diagnosis, y	0-9	+0
	10-19	-2
	20-29	-4
	30-39	-6
	40-49	-8
	50-59	-10
	60-69	-12
	70-79	-14
Heart failure symptoms (Yes/no)	Yes	+3
	No	+0

Table 1- Points for variables used in HCM-AF Score

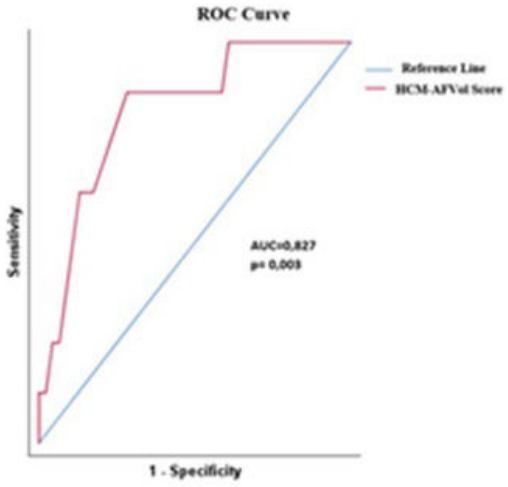

Figure 1- ROC Curve of HCM-AFVol Score

CLINICAL VARIABLE	RANGE	POINTS
LA Volume Indexed (ml/m2)	16-34	-3
	35-41	+3
	42-48	+9
	≥ 49	+15
Age at clinical evaluation, y	Same as HCM-AF score- See Table 1	
Age at HCM diagnosis, y		
Heart failure symptoms (Yes/no)		

Table 2- Points for variables used in HCM-AFVol Score

Figure PO 300

Conclusions: In our population HCM-AFVol score using LAVol instead of LA diameter was a better predictor of AF than HCM-AF score, suggesting that the addiction of LAVol could be implemented in future predictive models of AF.

PO 301. HYPERTROPHIC CARDIOMYOPATHY AND CORONARY ARTERY DISEASE: PREVALENCE, CHARACTERISTICS, AND IMPLICATIONS IN THE CONTEXT OF EVOLVING PHYSICAL EXERCISE RECOMMENDATIONS

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Introduction: The prognosis of patients with hypertrophic cardiomyopathy (HCM) might be associated with other cardiovascular conditions, namely atherosclerotic coronary artery disease (CAD). The etiology of chest pain in HCM patients is complex and may include myocardial ischemia in the context of CAD. The association between exercise and sudden cardiac death (SCD) in individuals with cardiomyopathy has traditionally led to conservative exercise recommendations, leading individuals to limit their physical activity, resulting in a sedentary lifestyle which may lead to the accumulation of risk factors (RF) for CAD.
Methods: Patients with HCM accompanied at our center were included. We retrospectively analyzed the prevalence of CAD in our population, the characteristics of the coronary lesions, cardiovascular RF, symptoms, and laboratory and imagological characteristics.
Results: 172 patients with HCM (mean age 61.1 ± 17.1, 56.4% male sex) were included. Fifteen (8.7%) had CAD diagnosed by either cardiac catheterization (CAT) or Coronary computed tomography angiography (CCTA) (2 [13.3%] with acute coronary syndrome [ACS], 13 [86.7%] with non-obstructive CAD [NOCAD]) and 157 (91.3%) had no documented CAD. There was a CAD prevalence of 8.7% in our population (either obstructive or NOCAD). From the patients with NOCAD, 8 (62.5%) were diagnosed with CCTA, with a median obstruction of 30% (IQR 24%). Angina was reported by 9 (60%) of the patients with HCM and CAD and 37 (23.6%) of patients with no CAD (p = 0.002). The NT-proBNP was significantly higher in the group with CAD (median 1865, IQR 2552.5, p = 0.01) There were no other relevant differences with statistical significance between the groups, including in the perfusion study and Late Gadolinium Enhancement (LGE) in MRI.
Conclusions: This study shows that CAD was more prevalent in our population than in the general population (8.7% *vs.* approximately 5% in the Heart Disease and Stroke statistics update: a report for the American Heart Association). Additionally, event thought most of these patients had non-obstructive CAD, there was a significative impact in angina and NT-proBNP level. Thus, optimal control of RF is of extreme importance. Prospective studies are necessary to evaluate the impact of the evolving exercise recommendations in the RF and CAD characteristics in this population.

PO 302. THE PHENOTYPIC EXPRESSION OF HYPERTROPHIC CARDIOMYOPATHY – INSIGHTS FROM A POPULATION WITH PATHOGENIC MUTATIONS IN THE MYBPC3 GENE

Ana Beatriz Garcia[1], Catarina Gregório[1], Catarina Simões de Oliveira[2], Ana Margarida Martins[2], Oana Moldovan[3], Daniel Caldeira[1], Hugo Madeira[4], Fausto J. Pinto[1], Dulce Brito[1]

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Introduction: Sarcomeric hypertrophic cardiomyopathy (HCM) is a heterogeneous genetic disorder that leads to left ventricular hypertrophy

	All (n=172)	HCM without CAD (n=157)	HCM with CAD (n=15)	p value
Age - mean±SD	61.1±17.1	59.9±17.3	73.3±7.1	<0.001
Male sex - n (%)	97 (56.4)	91 (58.0)	6 (40.0)	0.18
Comorbidities* - n (%)				
Hypertension	87 (50.6)	77 (49.0)	9 (60.0)	0.69
Type 2 DM	35 (20.3)	62 (39.5)	5 (33.3)	0.19
Dyslipidemia	70 (40.7)	62 (39.5)	8 (53.3)	0.41
Overweight/Obesity	121 (70.3)	111 (70.7)	10 (66.7)	0.77
Smoker	20 (11.6)	17 (10.8)	3 (20.0)	0.39
Previous smoker	13 (7.6)	12 (7.6)	1 (6.7)	0.84
Current alcohol abuse	4 (2.3)	3 (1.9)	1 (6.7)	0.33
Previous alcohol abuse	2 (1.2)	2 (1.3)	0 (0.0)	0.65
Family history of CAD* - n (%)	14 (8.1)	12 (7.6)	2 (13.3)	0.63
Sedentary lifestyle* - n (%)	120 (69.8)	106 (67.5)	14 (93.3)	0.19
Medication* - n (%)				
Beta-blocker	130 (75.6)	116 (73.9)	14 (93.3)	0.12
Calcium Channel Blocker	31 (18.0)	30 (19.1)	1 (6.7)	0.31
Disopyramide	9 (5.2)	8 (5.1)	1 (6.7)	0.60
Dapagliflozin/Empagliflozin	19 (11.0)	13 (8.3)	6 (40.0)	0.003
Espironolactone	19 (11.0)	17 (10.8)	2 (13.3)	0.67
Ranolazine	42 (14.5)	7 (4.5)	1 (6.7)	0.56
Angina - n (%)	46 (26.7)	37 (23.6)	9 (60.0)	0.002
CCS-socle* - n (%)				0.06
No chest pain	121 (70.3)	115 (73.2)	6 (40.0)	
1	32 (18.6)	25 (15.9)	7 (46.7)	
2	18 (10.5)	16 (10.2)	2 (13.3)	
3	1 (0.6)	1 (0.6)	0 (0.0)	
HF symptoms - n (%)	149 (86.6)	135 (86.0)	14 (93.3)	0.32
NYHA class* - n (%)				0.52
No HF symptoms	17 (9.9)	16 (10.2)	1 (6.7)	
I	72 (41.9)	66 (42.0)	6 (40.0)	
II	77 (44.8)	70 (44.6)	7 (46.7)	
III	6 (3.5)	5 (3.2)	1 (6.7)	
NT-proBNP (pg/mL)* - median (IQR)	680 (1143.3)	668 (863.0)	1865 (2552.5)	0.01
Perfusion defects (MRI)*	69 (40.1)	66 (42.0)	3 (20.0)	0.22
Number of segments - mean±SD	5.58±4.0	5.64±4.06	4.50±4.77	0.59
LV % with ischemia - median (IQR)	18 (20.0)	18 (18.0)	10.5 (43.0)	0.43
LGE (MRI)*	113 (65.7)	106 (67.5)	7 (46.7)	0.33
Number of segments - mean±SD	8.69±4.65	8.74±4.65	7.75±7.80	0.53
LV % with LGE - median (IQR)	13.1 (16.4)	14.9 (16.4)	11.1 (10.4)	0.49

Footnote: IQR - Interquartile Range, SD - Standard deviation, HCM - Hypertrophic Cardiomyopathy, DM - Diabetes Mellitus, CAD - Coronary Artery Disease, CCS - Canadian Cardiovascular Society, NYHA - New York Heart Association, HF - Heart Failure, MRI - Magnetic Resonance Imaging, LGE - Late Gadolinium Enhancement, LV - Left Ventricle. *10 missing values for current or previous alcohol abuse; 17 missing values for Family history of CAD; 18 missing values for sedentary lifestyle; 100 missing values for NT-proBNP; 87 missing values for perfusion MRI; 42 missing values for LGE.

Table 1: Population characteristics and group comparisons

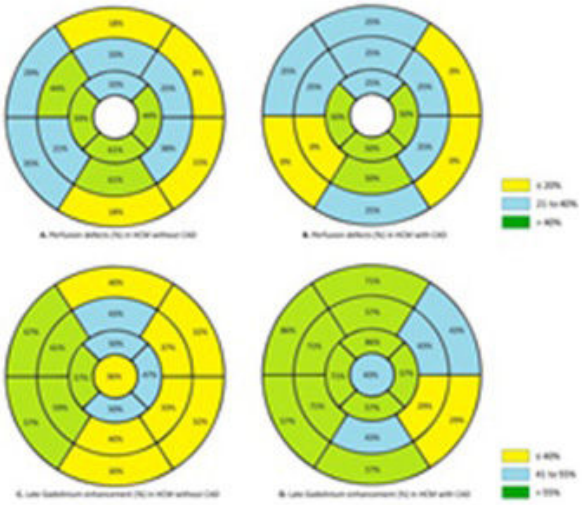

Figure 1: Distribution and prevalence of perfusion defects and LGE in the American Heart Association segments

Figure PO 301

and fibrosis. Myosin-binding protein C (*MYBPC3*) is the most frequently mutated gene. The disease has a complex genetic and phenotypic expression, posing challenges in the clinical evaluation and counselling of affected individuals.
Objectives: To analyse the HCM phenotype and the evolutive profile in *MYBPC3*-HCM families.
Methods: A prospective analysis of *MYBPC3*-HCM family members followed in a tertiary centre was performed, considering those who have a *MYBPC3* mutation classified as pathogenic or likely pathogenic (P/LP) according to ClinVar. Data on clinical evaluation, laboratory values, results on electrocardiography (ECG) and echocardiogram (Echo) were recorded.
Results: Twenty-four HCM probands (unrelated families) were included, totaling 123 studied individuals (99 relatives); 29 out of 123 were mutation carriers only (no phenotype) and 47/123 had phenotypic expression (defined by a wall thickness ≥ 15mm or ≥ 13 mm in relatives). Twelve different P/LP mutations were identified. On average, 5 relatives were studied per family (varying from 1 to 17), making possible the identification of 3 additional individuals at risk (mutation carrier only or already with the HCM phenotype) for each studied proband, with the inherent clinical implications and possibility of focused counselling. During a mean follow-up (FUP) time of 10 years, only 2 out of 29 carriers developed the disease. Considering the 47 patients with phenotypic expression, 53% were male and the diagnosis was done at a mean age of 45 ± 16 years. The diagnosis was primarily prompted by family screening (74%), with a minority of patients diagnosed due to symptoms (15%, mainly fatigue), ECG abnormalities (9%), and echocardiographic features (2%). Most patients were in NYHA functional class I at the initial evaluation. The mean maximum NT-proBNP value was 630 pg/mL. ECG analysis during FUP revealed an evolution toward the presence of abnormal repolarization (p = 0.001) and the appearance of necrosis-like patterns. Mean left ventricular ejection fraction (LVEF) was about 60%. Four patients (11%) developed heart failure (HF) with reduced LVEF. The mean maximum wall thickness was 18 mm at initial evaluation and 19 mm at FUP. Lef ventricular outflow tract (LVOT) obstruction was identified in 19% of affected patients at diagnosis, with a mean gradient at rest and with Valsalva manoeuvre of 64 and 139 mmHg, respectively. At FUP, only 4% had obstructive-HCM. Septal myectomy was performed in 6% of patients and 26% received an ICD.
Conclusions: This analysis gathers information about patients with 12 different pathogenic variants in the *MYBPC3* gene, contributing to a better understanding of the natural history of the disease.

Domingo, 21 Abril de 2024 | 08:30-09:30

Área de Posters 1 | Sessão de Posters 46 - TC Cardíaca

PO 303. COMPARISON OF RADIOMIC FEATURE STABILITY BETWEEN HUMAN SEGMENTATIONS AND AUTOMATIC SEGMENTATION TOOLS

Fábio Sousa Nunes[1], Carolina Santos[2], João Pedrosa[3], Miguel Coimbra[4], Jennifer Mancio[5], Ricardo Fontes Carvalho[1]

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Introduction: Radiomic feature analysis is only clinically relevant if feature reproducibility is fair, despite different segmentation techniques. A critical step in proving the external reproducibility of any radiomic study is, thus, to verify that the radiomic features assessed are robust and do not vary significantly despite segmentation techniques.
Methods: We segmented the cardiac area, as defined by the pericardial borders, in 312 non-contrast CT scans. These scans were all segmented by one human operator and one semi-automatic segmentation tool (Siemen's Cardiac Risk Assessment tool) to assess inter-observer variability between manual and automatic segmentations (H1 v. S – human 1 vs. Siemens). 30 scans were then re-segmented by the same human operator (H1 vs. H1), to assess for intra-observer variability and 30 scans were segmented by another human operator (H1 vs. H2), to evaluate for inter-observer variability. Dice Similarity Coefficient (DICE) was used to assess the variability of segmentations between all comparisons. Intraclass coefficient correlation (ICC) was used to measure the variability between radiomic features extracted after segmentation by all the methods.
Results: As assessed by DICE, segmentation reproducibility was excellent when performed by human operators (DICE = 0.954 for H1 vs. H1; DICE = 0.925 for H1 vs. H2). Reproducibility was more minor when automatic tools were used, with a DICE = 0.875 for H1 vs. S. Regarding the H1 vs. H1 comparison, a total of 94 in 107 radiomic features (87.85%) were considered reproducible (ICC = 0.92 ± 0.12 (mean ± SD). Regarding the H1 vs. H2 comparison, 77 in 107 radiomic features (71.96%) were considered reproducible (ICC = 0.80 ± 0.25). Regarding the H1 vs. S comparison, 41 in 107 radiomic features (38.32%) were considered reproducible (ICC = 0.59 ± 0.31). Of all 107 cardiac features, only 40 were deemed reproducible across all three comparisons, with an ICC > 0.8 for all comparisons.
Conclusions: We determined the most robust radiomic features among all comparisons. These 40 radiomic features have proven their internal validity and may be tested for external validity.

PO 304. CT-RADIOMIC FEATURES OF EPICARDIAL ADIPOSE TISSUE IN AF RECURRENCE AFTER CATHETER ABLATION

Inês Amorim Cruz[1], Sílvia O. Diaz[1], Fábio Sousa-Nunes[2], João Pedrosa[3], Inês Neves[2], Rafael Teixeira[2], Francisca Saraiva[1], João Almeida[2], João Primo[2], Francisco Sampaio[2], António S. Barros[1], Ricardo Fontes-Carvalho[2]

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Introduction: Obesity is an important risk factor for atrial fibrillation (AF). Advances in imaging techniques have enabled the exploration of regional body fat distribution. Epicardial adipose tissue (EAT) is a metabolically active tissue unique for its unobstructed proximity to the heart, which might influence the risk of AF or its recurrence. Radiomics is an emerging image analysis technique that leverages noninvasive tissue analysis and is potentially useful for AF risk stratification. We aimed to explore the radiomic features of EAT, which could improve the risk stratification of AF recurrence after catheter ablation.
Methods: We included all consecutive patients who underwent AF ablation (2017-2021) who performed a CT scan prior to the procedure. The EAT was segmented using a U-Net framework, which is a convolutional neural network (CNN) designed for image segmentation, with noncontrast acquisition automatically applied. The process of extracting radiomic features was carried out using the Pyradiomics software, resulting in a total of 851 features. The three primary categories into which they can be classified are: (i) shape attributes, (ii) first-order (intensity) features, and (iii) texture characteristics. We conducted an exploratory analysis by employing a univariate Cox regression model, adjusting for age, sex, BMI, and type of AF, and using non-transformed radiomic features.
Results: A total of 533 patients were included in the study, of whom 36% were women, with a median age of 58 years (interquartile range of 49-65), and 20% had persistent AF. During a median follow-up of 26 months [IQR 19-36], 130 patients (24%) developed AF recurrence. Univariate Cox regression showed that only measures of texture heterogeneity of EAT were higher in patients with a higher risk of recurrence, including contrast-related features (GLSZM – Gray-Level Non-Uniformity, HR 1.23 [95%CI, 1.01-1.51] p = 0.043) and non-uniform gray-level matrices (Size-Zone, Run-Length, and Dependence Non-Uniformity). Features related to the shape and EAT attenuation distribution (global signal intensity) were similar between the groups.

Characteristic	HR[1]	95% CI[1]	p-value	q-value[2]	*c-index*	*AIC*
GLSZM – Size-Zone Non-Uniformity	1.28	1.05, 1.58	**0.017**	0.028	0.633	1,421
GLDM - Dependence Non-Uniformity	1.26	1.03, 1.53	**0.023**	0.038	0.632	1,421
GLRLM – Run-Length Non-Uniformity	1.22	1.01, 1.49	**0.041**	0.068	0.631	1,422
GLSZM - Gray Level Non-Uniformity	1.23	1.01, 1.51	**0.043**	0.071	0.631	1,422

[1]HR = Hazard Ratio, CI = Confidence Interval; [2]False discovery rate correction for multiple testing

N events = 121, since 7 patients developed AF recurrence, but date is unknown and 2 had demographic missing information

Cox model was adjusted for age, gender, BMI, type of AF

Figure PO 304

Conclusions: In this group of patients with atrial fibrillation (AF), the qualitative characteristics (heterogeneity of tissue) of epicardial adipose tissue, as opposed to quantitative features like volume, were found to be linked to a faster recurrence of AF following catheter ablation.

PO 305. BEYOND EUROSCORE II - THE INTERPLAY BETWEEN EUROSCORE II AND AORTIC CALCIFICATION AS PREDICTORS OF CLINICAL OUTCOMES IN POSTOPERATIVE CARDIAC SURGERY

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Introduction: The EuroSCORE II is widely embraced as a reliable system for assessing the risk of mortality in cardiac surgery. Aortic calcification is a risk marker for clinical outcomes in postoperative cardiac surgery, and recent studies suggest that this may be due to its role as a marker of the patient's overall cardiovascular risk, rather than due to aortic manipulation. Due to the risk of perioperative adverse events associated with aortic calcification, computed tomography (CT) is frequently conducted before cardiac surgery (CS).
Objectives: The objective of the study was to quantify the volume of calcium in the thoracic aorta and correlate it with preoperative risk scores, namely EuroSCORE II.
Methods: A retrospective study encompassed patients who underwent cardiac surgery and had undergone preceding CT scan. Total aortic calcification (TAC) was measured through a volume-rendering technique. Comparative analyses of demographic information, comorbidities, and clinical events were conducted between the groups.
Results: We included 148 patients, mean age 70.5 ± 4.9, 60.8% men. The mean value of EuroSCORE II was 3.2 ± 10.4. The mean value of the thoracic aortic calcification volume (TACV) was 2.08 ± 2.39 cm^3, and the median was 1.20 cm^3. The sample was divided into 2 groups, according to the median of TACV: group A with TACV ≤ 1.2 cm^3 and group B with TACV > 1.2 cm^3. Group B patients were older (67.3 vs. 73.7y, p < 0.001) and had higher prevalence of chronic kidney disease (CKD) (GFR < 60 ml/min/1.73 m^2) (p < 0.001), as well as anemia (p = 0.015), dyslipidemia (p = 0.037) and diabetes (p = 0.043). Coronary artery disease and peripheral artery disease were also more prevalent in group B (p = 0.010 and p = 0.016, respectively). TACV demonstrated a correlation with the occurrence of any clinical outcome during the postoperative period (p = 0.036) as with the occurrence of atrial fibrillation (p = 0.05). Group B patients experienced longer hospitalization (8.04 vs. 13.66 days, p < 0.001). When compared, patients in group B had significantly higher EuroSCORE II than patients with less TACV (1.67 ± 1.19 vs. 2.95 ± 3.74, p < 0.001).
Conclusions: TACV correlates significantly with EuroSCORE II, CKD, age and postoperative events, underscoring its potential as a valuable preoperative risk marker. Notably, higher TACV aligns with prolonged hospital stays and increased susceptibility to clinical complications, emphasizing its utility in refining risk assessment and optimizing preoperative strategies for cardiac surgery patients. Whether the integration of aortic calcification into the score improves the discrimination of surgical risk remains to be clarified.

PO 306. RELATIONSHIP BETWEEN THE NEW SCORE2-DIABETES AND CORONARY ATHEROSCLEROTIC BURDEN - A CORONARY CALCIUM SCORE CORRELATION STUDY

Joana Certo Pereira, Miguel Domingues, Pedro Freitas, Pedro Lopes, Claúdia Silva, Francisco Gama, Sara Guerreiro, João Abecasis, Pedro Adragão, António M. Ferreira

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Recently, the European Society of Cardiology developed a prediction model (SCORE2-Diabetes) to estimate the 10-year risk of cardiovascular disease (CVD) in individuals with type 2 diabetes, adding diabetes-related variables to the conventional risk factors included in the SCORE2. While previous population-based studies have indicated a moderate predictive ability of this tool for CVD, its association with coronary atherosclerotic (CAS) burden remains unclear. This study aimed to analyse

	Group A	Goup B	p
Age	67.3	73.7	<0.001
Creatinine	0.99	1.37	0.039
CKD	11	32	<0.001
Anemia	13	26	0.015
Dyslipidemia	50	61	0.037
Diabetes	26	33	0.043
Coronary artery disease	24	40	0.010
Peripheral artery disease	2	10	0.016
Days hospitalization	8.04	13.66	<0.001
EuroSCORE II	1.67	2.95	<0.001

Tabela 1_C Characterization of the population regarding comorbidities and length of hospitalization; CKD: Chronic Kidney Disease; Group A: thoracic aortic calcification volume ≤1.2cm3; Group B: thoracic aortic calcification volume >1.2cm3

Figure PO 305

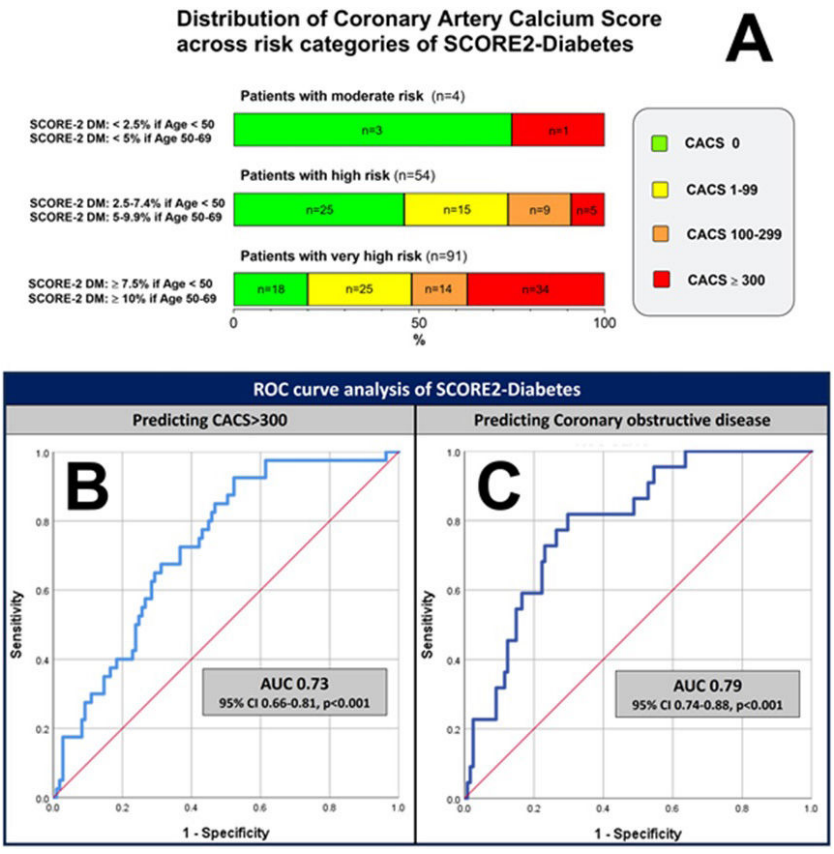

Figure PO 306

the relationship between SCORE-2 Diabetes and coronary artery calcium score (CACS) as an indicator of atherosclerotic burden.

Methods: Individuals 40-69 years with type 2 diabetes and without known CVD were identified from a single-center registry of patients undergoing CACS and coronary CT angiography for to suspected coronary artery disease (CAD). SCORE-2 Diabetes was categorized into risk groups according to the current European guidelines, and CACS was classified into four strata based on Agatston score ranges (0, 0-99, 100-299, or ≥ 300). We assessed the distribution of CACS across risk groups, the correlation between SCORE2-Diabetes and CACS, and the ability of SCORE2-Diabetes to identify patients with high atherosclerotic burden, defined as CACS ≥ 300. Additionally, we compared the performance of SCORE2-Diabetes against the classic SCORE2, intended for individuals without diabetes.

Results: A total of 149 patients (57% men, mean age 60 ± 7 years) were included. The mean HbA1c, age of diagnosis of diabetes, and eGFR were 7.2 ± 1.3%, 53 ± 10 years and 98 ± 32 mL/min/1.73 m^2, respectively. The distribution of patients across risk categories was 3% at moderate risk, 36% at high risk, and 61% at very high risk. The median CACS was 49 (IQR 0-399 AU), with 31% (n = 46) of patients having a CACS of 0 and 42% (n = 63) presenting CACS values ≥ 100. The distribution of CACS across SCORE2-Diabetes-defined risk groups is presented in Figure A. SCORE-2 Diabetes showed a moderate correlation with CACS (Spearman's R = 0.42; p = 0.001) and good discriminative ability to identify patients with CACS ≥ 300 (C-statistic of 0.73, 95%CI 0.66-0.81, p < 0.001). Moreover, SCORE-2 Diabetes also displayed a good predictive value to identify patients with obstructive CAD on coronary CT angiography (C-statistic 0.79, 95%CI 0.74-0.88, p < 0.001).Compared to SCORE2-Diabetes, the classic SCORE2 showed a numerically lower correlation with CACS (Spearman's R 0.38, p = 0.001) and also lower predictive value to identify patients with CACS ≥ 300 (C-statistic of 0.69, 95%CI 60-0.78, p < 0.001).

Conclusions: SCORE2-Diabetes seems to correlate moderately with CACS and have relatively good ability to identify patients with high atherosclerotic burden and/or obstructive CAD. These findings support the use of this new tool to assess cardiovascular risk in diabetic patients.

PO 307. CAN AORTIC CALCIUM SCORE PREDICT NEW CONDUCTION DISTURBANCES IN POS-TRANSCATHETER AORTIC VALVE IMPLANTATION?

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Introduction: Transcatheter aortic valve implantation (TAVI) may be the first line treatment for severe aortic stenosis according to overall patient characteristics. Semi-quantitative Agatston score (AS), which quantifies aortic calcium by cardiac computed tomography (CCT), has knowledgeable practical and clinical implications, and is performed in TAVI diagnostic workup. Since conduction disturbances continue to be the most frequent complication, further refinements are required to predict high-risk patients.

Objectives: To access if aortic AS relates with new conduction disturbances and permanent pacemaker (PPM) implantation in patients undergoing TAVI.

Methods: We retrospectively analyzed all patients who underwent TAVI at a tertiary center from October 2014 to November 2019; patients with previous permanent pacemaker (PPM) or had no aortic AS were excluded. Clinical and electrocardiogram (ECG) data were collected at admission and after the procedure. All categorical variables are reported as numbers and percentages. Continuous variables were analyzed using the two-tailed unpaired Student's t-test and are reported as mean values and the standard deviation. Statistical analysis was performed using the IBM SPSS.

Results: 172 patients with a mean age 79 ± 9.1 years old were included. AS was on average 3,008 ± 2,262 (see the Table for population and diagnostic workup and procedure descriptions). Comparing AS with new conduction disturbances, no statistically significant difference was found for new complete left branch block (LBBB) (no vs. new LBBB, AS: 3,179 ± 2,555 vs. 2,637 ± 1,388, p = 0.15) and with new complete atrioventricular block (AVB) (no vs. new AVB, AS: 2,834 ± 1,520 vs. 4,485 ± 5,285, p = 0.2). Considering PPM implantation after TAVI, there was a tendency for

higher AS and PPM implantation (no vs. PPM implantation, AS: 2,756 ± 1,451 vs. 4,242 ± 4,310, p = 0.07). In patients who had pre-ballooning, there was no difference relating to AS; however, in patients who had no pre-ballooning there was a trend to higher AS and PPM implantation (no vs. PPM implantation, AS: 2,417 ± 1,301 vs. 4,616 ± 4,969, p = 0.06). No statistically significant difference was found when comparing earlier (Portico, CoreValve Evolut R) vs. newer valves (CoreValve Evolut Pro; Edward Sapiens 3; Accurate Neo).

Table 1 Patients' and procedure characteristics	N (%)
Female	95 (55)
Arterial hypertension	151 (88)
Dyslipidemia	123 (72)
Diabetes Mellitus	60 (35)
Previous valve surgery	7 (4)
Previous complete branch block	
Right bundle branch block	23 (13)
Left bundle branch block	17 (10)
TAVI related features	**N (%)**
Valve morphology	
Tricuspid	163 (95)
Bicuspid	5 (3)
Surgical prothesis	3 (2)
Valve in valve	4 (2)
TAVI valve generation	
Earlier*	48 (28)
Newer	124 (72)
Balloon pre-dilatation	67 (39)
After TAVI	
New complete left branch block	54 (31)
New advanced atrioventricular block	18 (11)
Pacemaker implantation before discharge	29 (17)

*Earlier valve includes: Portico, CoreValve Evolut R; Newer valve includes: CoreValve Evolut Pro; Edward Sapiens 3; Accurate Neo. TAVI - Transcatheter aortic valve implantation

Conclusions: Aortic calcium measured by Agatston score did not show a correlation with new LBBB or new AVB after TAVI. Nevertheless, it seems to be a trend for higher AS and PPM implantation; this is more obvious when pre-ballooning is not performed.

PO 308. THE ROLE OF PERICARDIAL FLUID CT RADIOMIC ANALYSIS TO DIFFERENTIATE EXUDATE FROM TRANSUDATE.

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Introduction: Pericardiocentesis may be indicated to assess the etiology of a pericardial effusion. Radiomic analysis may allow the phenotyping of pericardial effusion to determine the underlying composition. This work aimed to evaluate the role of radiomic analysis of pericardial fluid to differentiate between exudate and transudate.
Methods: We included patients referred for CT-guided pericardiocentesis. We excluded patients whose final diagnosis of exudate or transudate was not made. A total of 118 patients were selected for analysis. We segmented the pericardial effusion for each patient, with the outer borders consisting of the pericardial membrane and the inner borders consisting of the heart wall. We selected the largest "slice" of pericardial effusion for each patient, thus rendering 118 segmentations for the final analysis. We extracted radiomic features using Pyradiomics®. A univariate analysis was performed to assess which radiomic features distinguished between both groups of patients.
Results: 105 radiomic features were computed. Two radiomic features provided incremental information to differentiate between exudate and transudate: Gray Level Size Zone Matrix (GLSZM) Size-Zone Non-Uniformity (OR 1.49 (95%CI 1.02-2.22, p-value = 0.037) and Gray Level Dependence Matrix (GLDM) dependence non-uniformity (OR 1.47, 95%CI 1.01-2.18, p = 0.043). These radiomic features describe the level of homogeneity in images, namely for zone volumes for GLSZM and pixel pairs in GLDM.
Conclusions: Two radiomic features allowed for the differentiation between exudate and transudate on pericardial effusion. Both features have plausible biological explanations as they describe the level of homogeneity in images.

Domingo, 21 Abril de 2024 | 08:30-09:30

Área de Posters 2 | Sessão de Posters 47 - TAVI

PO 309. PERCUTANEOUS CORONARY REVASCULARIZATION TIMING IN PATIENTS UNDERGOING TRANSCATHETER AORTIC VALVE IMPLANTATION

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Introduction: Percutaneous coronary revascularization (PCI) of bystander severe proximal lesions in patients undergoing transcatheter aortic valve implantation (TAVI) is common practice. Limited data exists regarding the best timing to perform PCI in such patients.
Objectives: To investigate clinical and procedure-related outcomes of patients who underwent TAVI and planned PCI according to the timing of PCI in relation to the TAVI.
Methods: Patients undergoing TAVI and a planned coronary revascularization strategy of bystander stable coronary lesions in a high-volume Portuguese tertiary centre from 2009 to 2022 were included. Significant coronary artery disease was defined as ≥ 70% obstruction in an epicardial vessel with ≥ 2 mm diameter or ≥ 50% obstruction in the left main coronary artery. Pts were divided in two groups according to the scheduling of PCI before (< 6 months) or concomitantly with TAVI. Comparison of groups was made using Chi-square, t-test and Mann-Whitney analysis. Primary endpoint was defined as time to all-cause mortality of last follow-up over 5 years after TAVI. Kaplan Meier survival curves were used to estimate the risk of events and Cox regression analysis was used to assess the prognostic relevance of different variables.
Results: A total of 78 pts (50% male) were included, with a mean age of 83 ± 5,4 years and a median follow-up of 28 months. 47 pts (60.3%) were submitted to PCI before TAVI and 31 pts (39.7%) were treated concomitantly. There were no differences between the groups regarding number of vessels involved, significant left main disease (p = 0,234) or proximal left anterior descending disease (p = 0.982). PCI concomitantly with TAVI was associated with higher mean contrast volume (420 ± 110 vs. 256 ± 120 mL, p < 0.001) and longer procedure duration (200 ± 58 vs. 154 ± 51 min, p = 0,006) of valve

Coronary Artery Disease	All (n=78)	PCI before TAVI (n=47)	PCI concomitantly (n=31)	p
Number of vessels involved				
1VD - n (%)	37 (47.4)	24 (51.1)	13 (41.9)	0.432
2VD - n (%)	20 (25.6)	11 (23.4)	9 (29.0)	0.580
3VD - n (%)	21 (26.9)	12 (25.5)	7 (14.9)	0.735
Left Main Disease - n (%)	15 (19.2)	7 (14.9)	8 (25.8)	0.234
Proximal LAD - n (%)	15 (19.2)	9 (19.1)	6 (19.4)	0.982
History of MI - n (%)	22 (28.2)	16 (34.0)	6 (19.4)	0.161
Previous CABG - n (%)	10 (12.8)	11 (23.4)	4 (12.9)	0.503
Previous PCI - n (%)	15 (19.2)	7 (14.9)	3 (9.7)	0.253

Technical and laboratory outcomes	All (n=78)	PCI before TAVI (n=47)	PCI concomitantly with TAVI (n=31)	p
PCI procedure				
Left Main PCI - n (%)	18 (23.1)	11 (23.4)	7 (22.6)	0.933
LAD PCI - n (%)	40 (53.3)	21 (47.7)	19 (61.3)	0.249
Number of stents - median (IQR)	1 (1)	1 (1)	1 (1)	0.698
Total stent length mm - median (IQR)	24 (20)	26 (22)	23 (19)	0.849
FFR iFR - n (%)	6 (7.7)	4 (10)	2 (6.9)	0.654
Rotational Atherectomy - n (%)	8 (11.9)	5 (13.2)	3 (10.3)	0.727
TAVI procedure				
Contrast volume (ml) mean ± SD	307±139	256±120	420±110	**<0.001**
Procedure duration (min) - mean ± SD	173±58	154±51	200±58	**0.006**
Laboratory values after TAVI				
min Hb - initial Hb (g/dL) - mean ± SD	-2.3±1.6	-2.0±1.6	-2.7 ± 1.5	**0.047**
min GFR - initial GFR - median (IQR)	-4.0 (11.1)	-4.5 (11.9)	-4.9 (10.4)	0.681

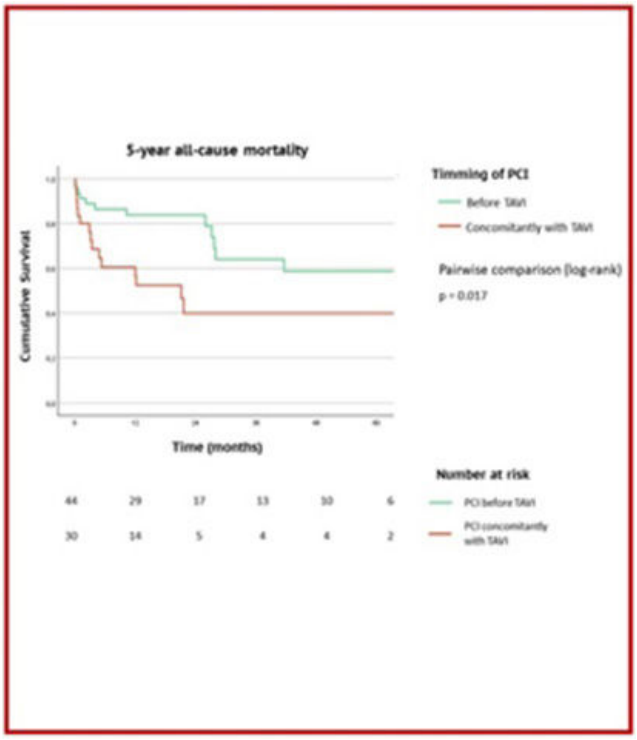

Figure PO 309

implantation. Regarding laboratory parameters, there was a greater decline in mean haemoglobin levels in the group of PCI concomitantly with TAVI (-2.7 ± 1.5 vs. -2.0 ± 1.6, p = 0.047), but no differences regarding GFR change (p = 0,681). There were no statistically significant differences between the groups regarding 30-day MACE (p = 0.254). Regarding long term follow-up, pts submitted to periprocedural PCI had statistically significant higher all-cause death at 5 years (log rank p = 0.017) with a HR of 2,5 (95%CI [1.146 - 5.285], p = 0.021), even after adjusting for clinical variables, with an HR of 3.0 (95%CI [1.198-7.505], p = 0.019).

Conclusions: Concomitant PCI with TAVI was associated with higher all-cause mortality at 5 years than PCI performed before TAVI. Concomitant PCI was also associated with higher mean contrast volume and longer procedure duration of TAVI, and greater decline in mean haemoglobin levels during the hospital stay. No statistically significant differences between the groups were found regarding 30-day MACE.

PO 310. TAVI VS AORTIC VALVE REPLACEMENT SURGERY: COMPARISON OF IN-HOSPITAL OUTCOMES IN PATIENTS WITH SEVERE AORTIC STENOSIS

Margarida Temtem[1], Joana Correia[2], Carlos Peña Gil[3], Marta Alonso Vázquez[3], Manuela Sestayo Fernández[3], Bibiana Villamayor Blanco[3], Carmen Neiro Rey[3], Belén Adrio Nazar[3], Diego López Otero[3], Ramiro Trillo Nouche[3], José Ramón González Juanatey[3], Violeta González-Salvado[3]

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Introduction: Valve replacement procedures in cases of aortic stenosis (AS), whether surgical or percutaneous, entail diverse risks dependent on both patient profile and the type of intervention, which can influence in-hospital prognosis. The aim of this study was to analyze and compare the in-hospital

	SURGERY (n=320)	TAVI (n=386)	p-value
Technical success of the intervention	309 (96,5%)	372 (96,4%)	p=0,13
Early reintervention (n, %)	28 (8,8%)	6 (1,6%)	**p<0,001**
Post-intervention atrial fibrillation	24 (7,5%)	27 (7%)	p=0,91
Pacemaker implant	25 (7,8%)	80 (20,7%)	**p<0,001**
In-hospital death	5 (1,6%)	11 (2,8%)	p=0,37
Average length of hospitalization (days)	18 ± 13,5	13 (± 9,7)	**p<0,001**
Peri-intervention complications			
Recovered cardiorespiratory arrest	2 (0,6%)	1 (0,3%)	p=0,87
Major bleeding	19 (5,9%)	21 (5,4%)	p=0,90
Acute heart failure	12 (3,8%)	17 (4,4%)	p=0,81
Stroke	5 (1,6%)	18 (4,6%)	**p=0,04**
Acute myocardial infarction	2 (0,6%)	0 (0%)	p=0,40
Coronary ostium occlusion/dissection	3 (0,9%)	1 (0,3%)	p=0,49
Early endocarditis	1 (0,3%)	1 (0,2%)	p=1
Delirium	9 (2,8%)	20 (5,2%)	p=0,17
*Numerical variables: Mean ± standard deviation; categorical variables (n, %)			

Figure PO 310

outcomes of patients undergoing surgical aortic valve replacement (SAVR) or transcatheter aortic valve implantation (TAVI).
Methods: Observational study at a single center involving consecutive patients with severe aortic stenosis (AS) undergoing aortic valve replacement (SAVR or TAVI) between 2018 and 2021. Technical success of the procedure, need for early reintervention, length of hospital stay, in-hospital mortality, and peri-interventional complications were analyzed. The Kruskal-Wallis test was used to compare numerical variables, and the Chi-square test for categorical variables.
Results: Results from 706 intervened patients were analyzed (n = 320 SAVR, n = 386 TAVI). The technical success of the procedure was similar in both groups (96.5% surgery vs. 96.4% TAVI, p = 0.13). Patients undergoing surgery showed a higher need for early reintervention (8.8%) compared to TAVI (1.6%, p < 0.001), whereas the TAVI group exhibited a higher prevalence of stroke (1.6% surgery vs. 4.6% TAVI, p = 0.04) and the need for pacemaker implantation (7.8% surgery vs. 20.7% TAVI, p < 0.001). No differences were detected in other peri-interventional complications, including acute heart failure, recovered cardiac arrest, major bleeding, myocardial infarction, coronary ostium occlusion/dissection, atrial fibrillation, or delirium. The length of hospitalization was significantly longer in the SAVR group (18 ± 13.5 days) compared to TAVI (13 ± 9.7). No differences were detected in in-hospital mortality.
Conclusions: This study suggests that both SAVR and TAVI offer similar rates of technical success in treating severe AS. No significant differences were found in in-hospital mortality or in most peri-interventional complications between both groups. However, there is room for improvement to prevent complications associated with both procedures.

PO 311. CLINICAL INSIGHTS: ULTRASOUND-GUIDED FEMORAL PUNCTURE IN TRANSCATHETER AORTIC VALVE REPLACEMENT - A COMPREHENSIVE ANALYSIS OF VASCULAR COMPLICATIONS AND MORTALITY RATES

Marta Miguez de Freitas Vilela[1], Catarina Simões de Oliveira[1], Ana Margarida Martins[1], Ana Beatriz Garcia[1], Ana Abrantes[1], Catarina Gregório[1], Miguel Nobre Menezes[2], João Silva Marques[2], Cláudia Jorge[2], Pedro Carrilho Ferreira[2], Pedro Cardoso[2], Fausto J. Pinto[2]

[1]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML,, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Arterial femoral access is the most commonly utilized access point for transcatheter aortic valve replacement (TAVR) and is recognized for its association with bleeding and vascular complications. Precise placement of the femoral sheath is crucial to avoid complications, making ultrasound (US)-guided puncture an indispensable tool.
Objectives: To compare the incidence of vascular complications between US-guided and non-US-guided femoral punctures.
Methods: A single-center study was conducted on consecutive patients (pts) undergoing transfemoral TAVR. Vascular complications were documented and further classified as minor (small dissection without flow compromise and small subcutaneous hematoma) and major complications. A comparative analysis between US-guided and non US-guided punctures and 30-day mortality rates were reported. Descriptive and comparative statistical analyses were employed.
Results: A total of 601 pts underwent transfemoral TAVR, with 54% being female (mean age of 82 years). The main co-morbidities included arterial hypertension (91.9%), dyslipidemia (76.3%), diabetes (37.4%), and chronic kidney disease (CKD, 29.6%). In 17.5% of TAVR, femoral artery puncture was US-guided. Major vascular complications (91 cases) and minor complications (50 cases) were observed (Figure). US-guided puncture was associated with fewer vascular complications (p < 0.001), including major complications (p = 0.017), and was also linked to fewer blood transfusion (p = 0.018). Among patient co-morbidities, CKD was associated with vascular complications (p = 0.020), and renal function replacement therapy was linked to major complications (p = 0.048). The main closures devices used were Perclose and MANTA, with the last associated with a lower incidence of vascular complications (p = 0.035). CKD and US-guided puncture emerged as independent predictors of vascular complications, with CKD posing a 1.6x increased risk (OR = 1.57, CI 1-2.4) and US-guided puncture indicating a 3x decreased risk (OR = 3, CI 1.3-7.7). Vascular complications were correlated with both in-hospital and 30-day mortality (p = 0.005).
Conclusions: US-guided femoral puncture independently predicts a lower incidence of vascular complications, which, in turn, are associated with higher in-hospital and 30-day mortality rates. This evidence supports the recommendation that US-guided puncture should be considered the standard of care for patients undergoing TAVR.

PO 312. PREVALENCE, PREDICTORS AND PROGNOSTIC SIGNIFICANCE OF ACUTE KIDNEY RECOVERY FOLLOWING TRANSCATHETER AORTIC VALVE IMPLANTATION

Ana Isabel Pinho[1], Catarina Amaral Marques[1], Cátia Oliveira[1], Luís Daniel Santos[1], André Cabrita[1], Teresa Pinho[1], Diana Martins[2], Isabel Miranda[2], Adelino Leite Moreira[1], Marta Tavares Silva[1], Carla Sousa[1], Rui André Rodrigues[1]

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Introduction: Diagnostic procedures, contrast agents and complications during Transcatheter Aortic Valve Implantation (TAVI) may adversely impact renal function; on the other hand, hemodynamic changes after TAVI

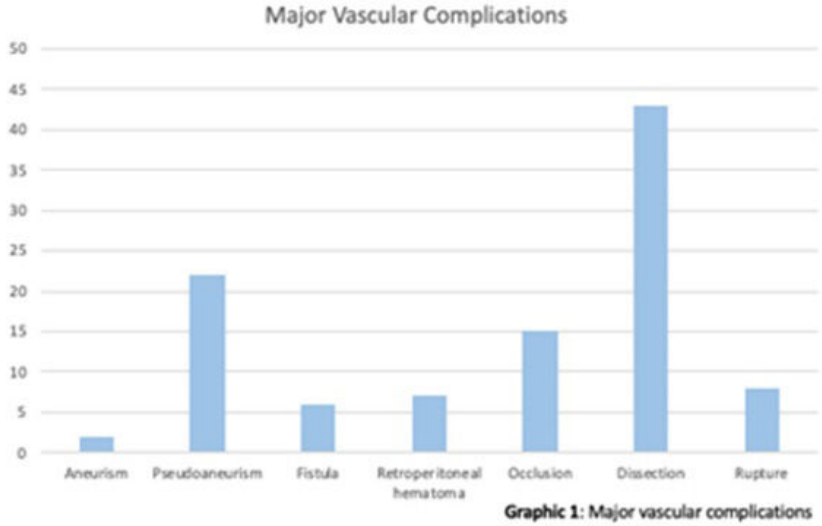

Figure PO 311

	All Cohort (n = 65)	AKR (n = 15)	UKF or AKF (n = 40)	p-value
Age - mean±SD	81.5 ± 4.9	80.9 ± 6.1	81.7 ± 4.6	0.619
Female sex - n (%)	44 (67.7)	10 (66.7)	34 (68.0)	0.578
BMI (kg/m²) - mean±SD	27.8 ± 4.5	26.3 ± 3.7	28.3 ± 4.6	0.137
Hypertension - n (%)	61 (93.8)	13 (86.7)	48 (96.0)	0.226
Diabetes Mellitus - n (%)	19 (29.2)	5 (33.3)	14 (28.0)	0.751
GFR 25-59 ml/min/1.73 m² - n (%)	27 (41.5)	10 (66.7)	17 (34.0)	0.024
GFR ≥ 60 ml/min/1.73 m² - n (%)	38 (58.5)	5 (33.3)	33 (66.0)	0.024
Chronic Medication n (%) **Diuretics**	51 (78.5)	9 (60.0)	42 (84.0)	0.047
Statins	51 (78.5)	13 (86.7)	38 (76.0)	0.491
Antiplatelet drugs	32 (49.2)	8 (53.3)	24 (48.0)	0.717
ACEI/ARB/ARNI	52 (80.0)	13 (86.7)	39 (78.0)	0.715
iSGLT2	14 (21.5)	5 (33.3)	9 (18.0)	0.282
MRA	5 (7.7)	0 (0.0)	5 (10.0)	----
β-blockers	23 (35.4)	3 (20.0)	20 (40.0)	0.155
Baseline Biological Markers				
Serum Cr (mg/dL) - mean±SD	0.98 ± 0.34	1.07 ± 0.20	0.95 ± 0.37	0.223
Blood Urea (mg/dL) - mean±SD	57.4 ± 22.5	54.1 ± 9.7	58.4 ± 25.1	0.322
eGFR (ml/min/1.73 m²) - mean±SD	62.8 ± 19.8	54.8 ± 13.1	65.2 ± 21.0	0.026
Haemoglobin (g/dL) - mean±SD	12.7 ± 1.4	12.9 ± 1.5	12.6 ± 1.4	0.440
BNP (pg/mL) - mean±SD	292.6 ± 253.1	295.8 ± 272.9	291.6 ± 249.5	0.956
Baseline Echocardiography				
LVEF (%) - mean±SD	62.2 ± 7.9	66.2 ± 5.5	61.1 ± 8.2	0.048
Indexed LV mass (g/m²)- mean±SD	113.04 ± 26.27	104.53 ± 29.97	115.59 ± 25.05	0.274
Peak flow velocity of the AV (m/s) -mean±SD	4.61 ± 0.50	4.66 ± 0.52	4.59 ± 0.49	0.626
Mean gradient (mmHg) - mean±SD	55.5 ± 13.0	56.0 ± 13.5	55.4 ± 13.0	0.889
AVAi (cm²/m²) - mean±SD	0.45 ± 0.09	0.47 ± 0.10	0.45 ± 0.09	0.477
eSPAP (mmHg) - mean±SD	30.2 ± 16.0	30.4 ± 12.4	30.1 ± 17.0	0.965
CT-AVC (AU) - mean±SD	3172 ± 1345	3184 ± 1615	3168 ± 1276	0.971
Procedure time (minutes) - mean±SD	50 ± 16	49 ± 13	50 ± 17	0.850
Contrast Volume (mL) - mean±SD	170 ± 48	169 ± 37	170 ± 51	0.814
Duration of hospitalization (days) - median (IQR)	5 (3)	5 (4)	5 (3)	0.807

Table 1. **Baseline and procedural characteristics.** Categorical variables are presented as numbers and percentages; continuous variables as mean ± standard deviation or median (interquartile range). Abbreviations: ACEI = Angiotensin-converting enzyme inhibitors; AKI = acute kidney injury; AKR = acute kidney recovery; ARBs = Angiotensin receptor blockers; ARNI = Angiotensin receptor-neprilysin inhibitor; AU = Agatston unit ; AV = aortic valve; AVAi = indexed Aortic Valve Area; BNP = Brain natriuretic peptide; Cr = Creatinine; CT-AVC = Computed tomography aortic valve calcium scoring; dL= deciliters; DVI = Doppler Velocity Index; eSPAP = estimated systolic pulmonary arterial pressure; g = grams; GFR = glomerular filtration rate; iSGLT2 = Sodium-glucose cotransporter type 2 inhibitors; LV = Left ventricle; LVEF = Left ventricle ejection fraction; mg = milligrams; mL = milliliters; MRA = mineralocorticoid receptor antagonist; pg = picograms; SD = standard deviation; UKF = unchanged kidney function

including increased cardiac output and reduced afterload and congestion may result in acute kidney recovery (AKR). Although acute kidney injury (AKI) has been associated with poor prognosis after TAVI, limited data exists on the reverse phenomenon.

Objectives: To investigate the incidence, predictors and prognostic impact of AKR in TAVI patients (pts).

Methods: We conducted a prospective observational study that included 65 pts admitted for elective transfemoral TAVI between November 2021 and November 2023. Exclusion criteria included unwillingness to provide written consent, chronic kidney disease (CKD) with a Glomerular Filtration Rate (eGFR) < 25 ml/min/1.73 m², atrial fibrillation, non-revascularized ischemic heart disease, severe hepatic disease, active autoimmune or neoplastic disease. Analytical markers were systematically collected before and after TAVI. AKR was defined as a ≥ 25% improvement in eGFR at 48 hours after TAVI.

Results: A total of 65 TAVI pts (mean age 81.5 ± 4.9, 67.7% female, 95.4% in NYHA class ≥ II) were included; 41.5% had CKD with an eGFR 25-59 ml/min/1.73 m². AKR was documented for 23.1%, AKI for 9.2% and unchanged kidney function (UKF) for 67.7% of the global cohort. In the univariate analysis, AKR was associated with higher pre-TAVI LVEF (p = 0.048), lower eGFR at baseline (p = 0.026), more CKD stage ≥ 3 (p = 0.024) and less chronic diuretic use (p = 0.047). No significant differences were noted regarding demographics, echocardiographic parameters, CT aortic valve calcium score, contrast media administration or duration of procedure (Table). Prevalence of post procedural intercurrences, including significant complications, was not statistically different (40% in AKR vs. 58% in AKI or UKF, p = 0.22). Median duration of hospitalization was similar (p = 0.807), 5 days (range 2-26) for the entire cohort. At a median follow-up of 37 weeks (range 1–108), 13.3% pts in AKR group and 8% pts in UKF or AKI group experienced an adverse cardiac or cerebrovascular event (MACE); survival analysis showed no differences in this composite endpoint (p = 0.525). Independent predictors of AKR post-TAVI by multivariable analysis were chronic diuretic use (adjusted OR 0.11, 95%CI 0.02-0.76), CKD (OR 5.50, 95%CI 1.07-28.31) and baseline LVEF (OR 1.22, 95%CI 1.04-1.44).

Conclusions: Given the interplay between heart and kidney function, AKR after TAVI is likely to reflect a partial reversible cardiorenal syndrome. Patients with CKD, higher baseline LVEF and lack of pre-TAVI diuretic use were more likely to exhibit AKR. Even though AKR had no significant impact in clinical outcomes, the limited sample size warrants further studies to investigate the prognostic role of AKR after TAVI.

PO 313. ENVIRONMENTAL IMPACT OF PERCUTANEOUS AORTIC VALVE IMPLANTS. PROCEDURE ASSESSMENT

João Queiroz e Melo[1], Henrique Figueiredo[2], Miguel Ângelo Castro[2], Tiago Nolasco[2], João Brito[2], Sílvio Leal[2], Luís Raposo[2], Pedro Gonçalves[2], Henrique Gabriel[3], Pedro Adragão[2], Rui Campante Teles[2], Manuel de Sousa Almeida[2]

[1]Conselho Português Saúde e Ambiente. [2]Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz. [3]Hospital de Santa Cruz.

The contribute of modern cardiac care to the significant environmental impact of healthcare is seldom addressed. This study aims at getting an initial assessment of the direct environmental impact of uncomplicated percutaneous aortic valve implants. Three consecutive standard routine cases were assessed in 2020. Data were collected from patient admission in the cath lab room until leaving it. Personal protection goods, instruments and all materials used, as well as energy consumption and waste, were recorded. Energy was converted in CO2e using the conversion factor 0,144 kg.CO2/kWh and considering that 63% of the energy was originated from renewable energy. Eleven people were in the room, using 5 gowns (single use), and 10 pair of gloves. Energy consumption was 73,6 KW/h, on average. Out of these, 57% was due to heating, ventilation and air conditioning; the remaining was due to hemodynamic equipment (23%), anesthesia (18%), and lightning (2%). On average, this energy was responsible, for the emission of 3,8 kg of CO2e. (4,3/ 2,8/ 4,3). All waste material was collected in bags according to its sorting category, according to our current outdated regulations, and each bag was weighted. A total of 14,8 kgs of waste were produced, out of these, potentially hazardous (67%), hazardous (5%), plastics (10%), and domestic (18%). The delay to leave the cath lab was on average 37 minutes (ranging from 10 to 60 minutes), thus generating unnecessary energy use of 31,9 KW. Our study reinforces the concept that bottom-up analysis is critical to get the reality of each cath lab environmental impact, to get appropriate knowledge and implement measures to improve its healthcare CO2 footprint. This analysis showed that improving the planning of the procedures, and using reusable gowns, will decrease the environmental impact of VAP. Additional improvements can be obtained regarding the use of preformed packs, waste sorting and appropriate recycling. To achieve it, besides behavior changes, current Portuguese regulations regarding waste and circular economy need to be updated to the state of art. To get a complete knowledge of the impacts of these procedures further studies are required, considering all its indirect inputs and outputs.

PO 314. ECMO-RELATED VASCULAR COMPLICATIONS: A SINGLE-CENTER EXPERIENCE IN A PORTUGUESE TERTIARY HOSPITAL

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Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Vascular complications, whether ischemic or haemorrhagic, remain a major source of morbidity during femoro-femoral (FF) VA-ECMO and may ultimately lead to increased mortality. Underlying mechanisms are possibly related to patient comorbidities, large bore cannulas and concomitant medical therapy, namely antithrombotic and vasoactive drugs. Therefore, a better knowledge of clinical predictors could reduce their overall burden.
Objectives: To perform a descriptive analysis of vascular complications in patients supported with FF VA-ECMO implantation and assess its predictors.
Methods Single-center retrospective study including all consecutive patients with cardiogenic shock submitted to VA-ECMO implantation from 01/2015-11/2023. Demographics, clinical, analytical, technical features and vasoactive support used were described. Anticoagulation type and adequate on-target levels (local protocol) during the ECMO-run were reported. Vascular complications included ischemic complications (acute limb ischemia, intestinal ischemia and ischemic stroke); and haemorrhagic complications (defined according to the VARC-3 consortium classification as major, life-threatening or leading to death). Independent predictors of each complication were analysed through multivariate logistic regression. Prognostic effect of vascular complications was evaluated using Cox regression analysis.
Results: A total of 79 patients underwent VA-ECMO cannulation – 61 (77%) male, mean age of 53 ± 15 years. 73 (92%) patients were cannulated at our hospital, 15 (19%) during cardiopulmonary resuscitation. A distal reperfusion cannula was placed in 55 (70%) patients. The mean time on VA-ECMO was 8 ± 7 days and 41 (52%) patients died before decannulation. 30-day mortality was 54% (n = 43). VA-ECMO-related vascular complications occurred in 54 (68%) patients: 25 (32%) had ischemic and 42 (53%) haemorrhagic

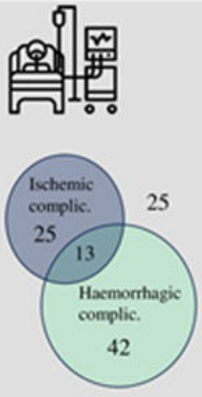

Table 1

		Ischemic complications (32%)	Haemorrhagic complications (53%)
Type of anticoagulation, n (%)	UFH	24 (96.0)	41 (97.6)
	Bilavuridin	1 (4.0)	1 (2.4)
On target?	Yes, n (%)	14 (56.0)	22 (52.4)
Above target, n (%)		6 (24.0)	14 (33.3)
Below target, n (%)		5 (20.0)	6 (14.3)
Percentage of UFH on target 24h pre-complication, % (mean±SD)		62.3 ± 34.8	63.9 ± 32.5
Anticoagulation withdraw, n (%)		3 (12.0)	9 (21.4)
PRC blood transfusion, n (median [IQR])		5.0 (2.0–11.5)	6.5 (3.0–13.0)

Table 2

	30-days mortality – HR 95% CI	*p*-value
SAVE score	1.848 (0.594-5.749)	0.289
Ischemic complications	1.066 (0.589-1.931)	0.832
Haemorrhagic complications	1.661 (0.907-3.045)	0.100

Legend: HR – Hazard ratio; IQR – Interquartil range; UFH – Unfractioned heparin; SAVE – Survival after Veno-Arterial ECMO score; SD – Standard deviation

Figure PO 314

complication; 13 (17%) had both. Patients with ischemic complications had a higher prevalence of peripheral artery disease (8% vs. 0%, p = 0.034) and cerebrovascular disease (12% vs. 0%, p = 0.009). Anticoagulation was on target in two-thirds of patients with any vascular complication (Table 1). The number of vasopressor drugs used was similar between those with or without each type of vascular complication. In multivariate analysis, only smoking (adjusted OR 3.77, [1.22–11.67], p = 0.021) predicted ischemic complications. The use of anticoagulation pre-ECMO was the only predictor of haemorrhagic complications (OR 2.60, [1.00–6.70], p = 0.048). Despite their high prevalence, neither type of vascular complication was associated with increased mortality at 30-days (Table 2).
Conclusions: Vascular complications are common in patients under VA-ECMO and difficult to predict. Patient selection and anticoagulation optimization before cannulation may help reduce their clinical impact.

Domingo, 21 Abril de 2024 | 08:30-09:30

Área de Posters 3 | Sessão de Posters 48 - Exercício, Estilos de Vida e Obesidade

PO 315. SARCOPENIC OBESITY - A HIDDEN PROBLEM IN CARDIOVASCULAR RISK

Patrícia Bernardes, Rita Marinheiro, Ana Rita Sousa, Crisálida Ferreira, Margarida Lopes Madeira, Joana Ferreira, Rui Coelho, Jéni Quintal, Catarina Pohle, Quitéria Rato, Filipe Seixo

Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo.

Introduction: Sarcopenic obesity is defined as the coexistence of body fat accumulation and muscle loss. It seems to be a more severe disorder than obesity alone.
Objectives: We aimed to determine the prevalence of probable sarcopenic obesity among the Portuguese elderly and the association between sarcopenic obesity and cardiovascular (CV) risk.
Methods: A prospective study based on the information collected through the application of the SARC-F questionnaire. SARC-F was used as a screening tool to identify probable sarcopenic patients (SARC-F ≥ 4). Obesity was defined as a body mass index (BMI) ≥ 30 Kg/m^2.
Results: We prospectively evaluated 215 participants, aged 65-90 years, recruited at a local cardiovascular screening event in May 2023; 54% were male. We found that 26% were probable sarcopenic and 27.4% had a BMI > 30 kg/m^2. The prevalence of sarcopenic obesity in our population was 13% and 61% of them were women. Also, there was a significant association between a higher body mass index and sarcopenia for SARC-F ≥ 4 (OR: 4.1, p < 0.001). There wasn't a statistically significant difference in the prevalence of hypertension (64.3% vs. 54.8%, p = 0.461), diabetes mellitus (64.3% vs. 51.6%, p = 0.325), smoking (39.3% vs. 35.5%, p = 0.763), hypercholesterolemia (64.3% vs. 38.7%, p = 0.05) and sedentary lifestyle (100% vs. 97%, p = 0.338) between individuals with probable sarcopenic obesity and obese adults with no sarcopenia. Cardiovascular risk, assessed by SCORE2 and SCORE2-OP, in the probable sarcopenic obesity group was statistically significantly higher than in obesity group with SARC-F < 4 (U = 91, p < 0.001) (Figure).
Conclusions: Using SARC-F as a screening tool for sarcopenia, this study found a similar prevalence of sarcopenic obesity, when comparing to the global numbers of this major health challenge. Although there wasn't a statistically significant difference in the prevalence of individual risk factors between groups, we conclude sarcopenic obese patients had a higher cardiovascular risk score when compared with obese patients, which is in agreement with its close relationship with cardiovascular disease. Since sarcopenia is not taking into account when cardiovascular risk is assessed, we demonstrate that screening tests for sarcopenia may be useful to add information to CV risk. More studies are needed to assess if sarcopenia is associated with an effective higher CV risk in a long-term follow-up, in addition to the tools that are used nowadays.

PO 316. PREVALENCE OF ELIGIBILITY CRITERIA FOR SEMAGLUTIDE ACCORDING TO THE SELECT TRIAL IN A PORTUGUESE COHORT OF ACUTE CORONARY SYNDROME

Vanessa Lopes, Rafaela Fernandes, Gil Cunha, Lino Gonçalves, On behalf of The Portuguese National Registry of Acute Coronary Syndromes

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: The SELECT trial evaluated the efficacy of semaglutide, a glucagon-like peptide-1 (GLP-1) receptor agonist, when added to standard of care, for preventing major adverse cardiovascular events (MACE) in overweight or obese patients with established cardiovascular disease,

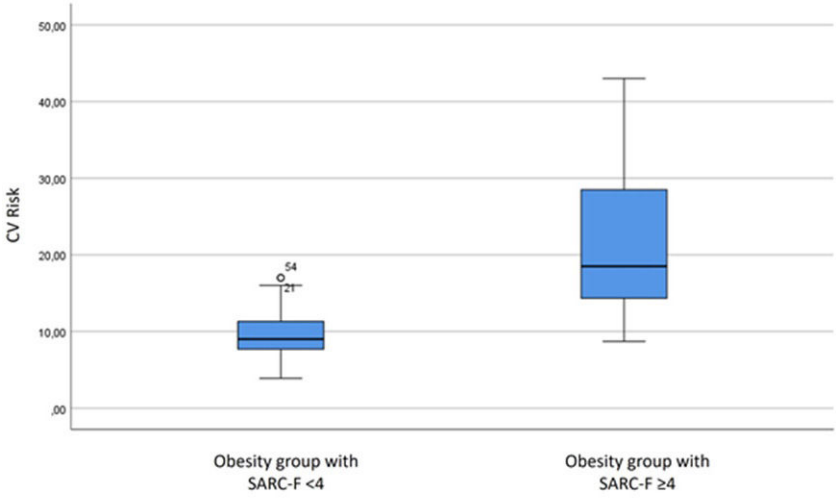

Image 1: Cardiovascular risk score in the probable sarcopenic obesity group was statistically significantly higher than in obesity group with SARC-F <4.

Figure PO 315

	Total (n=28512)	STEMI (n=14033, 49.2%)	NSTEMI (n=14479, 50.8%)	p value
Age (years) - mean±SD	65.5 ± 13.1	63.7 ± 13.3	67.3 ± 12.7	0.012
Age ≥45 - n (%)	26819 (94.1%)	12992 (92.6%)	13827 (95.5%)	<0.001
Male sex - n (%)	20822 (73.1%)	10564 (75.3%)	10258 (70.9%)	<0.001
Weight (kg) - mean±SD	76.4 ± 14.2	76.4 ± 14.4	76.4 ± 14.1	0.455
BMI (kg/m2) - mean±SD	27.4 ± 4.4	27.2 ± 4.3	27.7 ± 4.4	0.199
BMI ≥27 kg/m2 - n (%)	12056 (49.8%)	5800 (47.6%)	6256 (52.0%)	<0.001
BMI ≥30 kg/m2 - n (%)	5731 (23.7%)	2645 (21.7%)	3086 (25.6%)	<0.001
Diabetes - n (%)	8390 (30.3%)	3318 (24.4%)	5072 (26.1%)	<0.001
HbA1c - mean±SD	6.4 ±1.4	6.3 ±1.4	6.5 ±1.4	<0.001
Hba1c ≥6.5% - n (%)	2794 (30.4%)	1178 (26.2%)	1616 (34.3%)	<0.001
Chronic kidney disease - n (%)	1560 (6.3%)	502 (4.2%)	1058 (8.3%)	<0.001
GFR <15 mL/min/1.73m^2 - n (%)	426 (1.8%)	123 (1.1%)	303 (2.5%)	<0.001
Dyalisis - n (%)	261 (20.6%)	60 (14.8%)	201 (23.1%)	<0.001

Footnote: BMI - body mass index, GFR - glomerular filtration rate, SD - Standard deviation

Figure PO 316

including myocardial infarction, but without diabetes. More than three-quarters of the patients included in the trial had a previous myocardial infarction. Semaglutide in secondary prevention reduced MACE by 20% compared to placebo.

Objectives: To determine the prevalence of eligibility criteria for semaglutide in a Portuguese cohort of acute coronary syndrome, based on the SELECT trial inclusion and exclusion criteria.

Methods: Cross-sectional study including patients with acute myocardial infarction (AMI) enrolled in a nationwide registry of acute coronary syndrome between 2010 and 2023, who were alive at the time of hospital discharge. The presence of SELECT key inclusion [≥ 45 years old, body mass index (BMI) ≥ 27 kg/m^2] and exclusion criteria (history of diabetes, HbA1c ≥ 6.5%, end-stage renal disease or dialysis) were analyzed.

Results: A total of 28,512 AMI patients were included in the analysis: mean age was 65.5 ± 13.1 years, 73.1% of patients were male, and half were diagnosed with STEMI (STEMI 49.2% vs. NSTEMI 50.8%). Among AMI patients, most were older than 45 years (26,819, 94.1%), half were overweight or obese (BMI ≥ 27 kg/m^2 – 12,056, 49.8%; BMI ≥ 30 kg/m^2 – 5,731, 23.7%), and a third had diabetes (8,390, 30.3%). Patients with NSTEMI were more likely to be older than 45 years (STEMI 92.6% vs. NSTEMI 95.5%, p < 0.001), overweight or obese (STEMI 47.6% vs. NSTEMI 52.0%, p < 0.001), and diabetic (STEMI 24.4% vs. NSTEMI 26.1%, p < 0.001). Main results are presented in the Table. Of the patients included in the analysis, 11,255 (39.5%; STEMI 37.9% vs. NSTEMI 41.0%, p < 0.001) met the SELECT inclusion criteria and, after applying exclusion criteria, 6,834 (24.3%; STEMI 25.5% vs. NSTEMI 23.2%, p < 0.001) were eligible for therapy with semaglutide. Additionally, despite not being included in the SELECT trial, patients with diabetes are also eligible for the prevention of MACE.

Conclusions: Obesity is a prevalent risk factor in a Portuguese population of myocardial infarction patients, with half of the patients presenting a BMI of ≥ 27 kg/m^2. In this large nationwide cohort, excluding the diabetic population, 24% of patients were eligible for therapy with semaglutide for secondary prevention of MACE according to the SELECT criteria.

PO 317. EXCEEDING THE THRESHOLDS: CHARACTERIZATION AND CLINICAL IMPACT OF THE THIRD VENTILATORY THRESHOLD IN PATIENTS WITH HEART FAILURE

Joana Certo Pereira, Rita Amador, Rita Carvalho, Rita Bello, Rita Lima, Daniel A. Gomes, Sérgio Maltês, Bruno Rocha, Anaí Durazzo, Miguel Mendes, Pedro Adragão, Gonçalo Cunha

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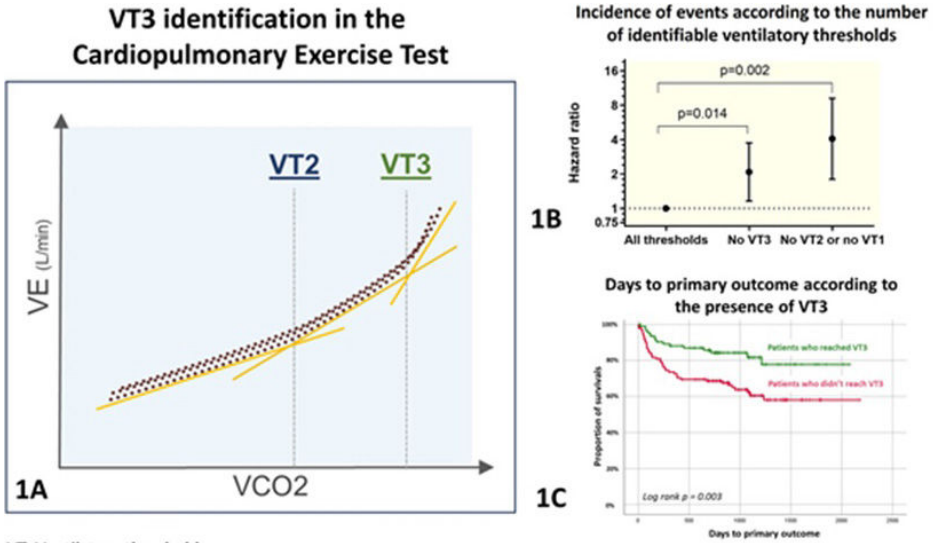
Introduction: One crucial element in cardiopulmonary exercise testing (CPET) involves identifying the first and second ventilatory thresholds (VT),



VT: Ventilatory threshold

1A - In the VE/VCO2 graph, the second threshold can be identified by an increase in the slope of the curve. Sometimes, a second increase in the slope of the curve can be observed, corresponding to VT3; 1B - Incidence of events according to the number of identifiable thresholds (when compared with patients who have 3 identifiable thresholds). 1C- Kaplan Meyer with the difference in the prevalence of events between patients with and without identifiable VT3.

Figure PO 317

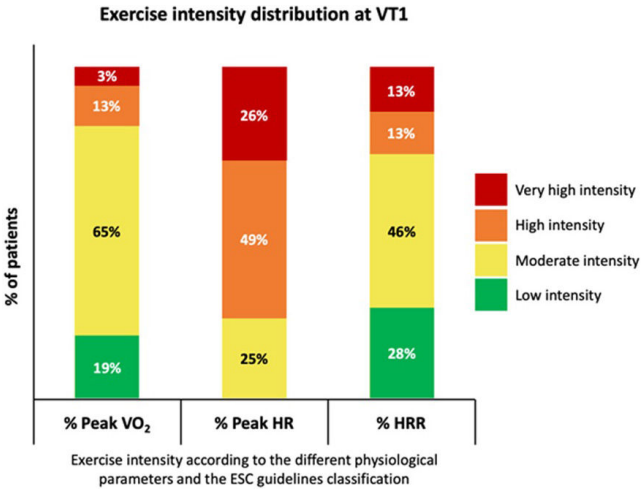
VT1 and VT2, which hold known prognostic implications. If the individual can sustain exercise considerably beyond VT2, a third breakpoint (VT3 – Figure A) may emerge, coinciding with heightened hyperventilation to counter metabolic acidosis. Historically, this point has been mainly described among athletes and its meaning is still not entirely clear. We aimed to assess the prognostic value of VT3 in patients with heart failure (HF).
Methods: Retrospective, single-center study enrolling HF patients undergoing CPET from 2015 to 2021. We evaluated the typical CPET parameters along with the three ventilatory thresholds: VT1, VT2, and the newly introduced VT3. The primary outcome was a composite of cardiovascular death, urgent heart transplant, need for left ventricle assistance device and HF hospitalizations.
Results: We included 221 patients (82% men, mean age 58 ± 12 years), among whom 69% had ischemic heart failure aetiology. The mean left ventricular ejection fraction (LVEF) was 34 ± 9%, with a mean respiratory exchange ratio 1.15 ± 0.082, mean pVO2 18.5 ± 6.3, and a mean VE/VCO2 slope of 41.3 ± 12.9. VT3 was attained by 43% (n = 94) of the patients. In comparison to those who did not achieve VT3, patients who reached this threshold were younger (56 ± 11 vs. 60 ± 12; p = 0.05), had a higher pVO2 (20.5 ± 6.9 vs. 17 ± 5.4; p = 0.05), higher RER (1.16 ± 0.86 vs. 1.13 ± 0.78; p = 0.05), and lower VE/VCO2 slope (39 ± 10.3 vs. 43 ± 14.3, p = 0.05). Regarding the three ventilatory thresholds (VT1, VT2, VT3), 7% (n = 17) achieved a maximum of one threshold, 50% (n = 110) achieved two thresholds, and 43% (n = 94) reached all three thresholds. After a median follow-up of 2,3 years patients with identifiable VT3 had significantly better prognosis (HR 0,434, 95%CI 0,246-0,767, p = 0,004) than those without this threshold. Furthermore, the number of identifiable ventilatory thresholds correlated positively with prognosis. In fact, patients with only 2 thresholds have twice the probability of developing an event and those with one or zero identifiable thresholds have a 4-fold increase in the probability of events (Figure C).
Conclusions: In a cohort of patients with HF, those with identifiable VT3 had a lower incidence of events. This parameter may aid in prognostic stratification in this population. However, these findings warrant further prospective validation.

PO 318. EXERCISE INTENSITY PRESCRIPTION IN HEART FAILURE PATIENTS: COMPARISON OF DIFFERENT PHYSIOLOGICAL PARAMETERS

David Sá Couto[1], Inês Lopes[2], Maria Isilda Oliveira[1], Cristine Schmidt[3], Sandra Magalhães[1], Hélder Dores[4], Fernando Ribeiro[5], Mário Santos[1]

[1]Centro Hospitalar Universitário do Porto, EPE/Hospital Geral de Santo António. [2]Instituto de Ciências Biomédicas Abel Salazar. [3]CIAFEL, Faculdade de Desporto da Universidade do Porto; Laboratório para a Investigação Integrativa e Translacional em Saúde Populacional. [4]Faculdade de Ciências Médicas de Lisboa/NOVA Medical School. [5]Universidade de Aveiro.

Introduction and objectives: Aerobic exercise intensity (EI) prescription is critical for the efficacy and safety of heart failure (HF) patients' cardiac rehabilitation programs. Usually, percentages of maximal physiological parameters are used to categorize EI domains (low, moderate, high, and very-high). The definition of these domains has not been adequately addressed for HF patients, as well as their correspondence with the ventilatory thresholds (VT) assessed by cardiopulmonary exercise test (CPET). We aimed to study the consistency among the commonly used physiological variables (% peak oxygen uptake (VO_2), % peak heart rate (HR) and% heart rate reserve (HRR)) in the classification within different EI domains, and their correspondence to the first VT (VT1) in patients with HF.
Methods: We retrospectively analysed data from 163 HF patients across left ventricle ejection fraction (LVEF) spectrum who underwent a maximal CPET. Percentages of peak VO_2, peak HR and HRR were obtained at VT1. VT1 was considered to correspond to moderate EI. To each parameter, we compared the classification within the different EI domains at VT1 (defined by the current guidelines) and assessed the rate of correspondence to the moderate EI domain. Two subgroup analyses were done, stratifying patients according to their LVEF and according to their overall physical fitness and exercise capacity.
Results: Of the 163 patients included in the analysis, 64% were male and the mean age was 61 years. Regarding the HF phenotype, 66% had reduced LVEF. Ischemic heart disease was the cause of HF in 38% of the cases. VT1 was observed at 82 ± 10% of peak HR, 54 ± 25% of HRR and 54 ± 17% of peak VO_2, corresponding to the high intensity for% peak HR, and moderate intensity domain for% HRR and% peak VO_2. Using% peak VO_2, 65% of the patients were classified in the correct EI domain (moderate intensity) at VT1 but this dropped to 46% when using % HRR and to 25% using % peak HR (Figure). Appropriate classification at VT1 was superior in patients with reduced LVEF and in patients with higher exercise capacity.



Conclusions: The present study shows the accuracy of EI prescription in HF patients across the LVEF spectrum based on a threshold-based approach, when compared to the other indices. In at least 1 out of 3 patients, EI will be misclassified if guided by current guideline recommended physiologic parameters, emphasizing the relevance of a CPET to an adequate exercise prescription in HF patients.

PO 319. THE IMPACT OF CARDIAC REHABILITATION ON MUSCLE STRENGTH – A CRUCIAL ELEMENT OF FUNCTIONAL CAPACITY

Marta Miguez de Freitas Vilela[1], Ana Beatriz Garcia[1], Catarina Simões de Oliveira[1], Ana Margarida Martins[1], Daniela Roxo[1], Marta Ramalhinho[1], José Poupino[1], Margarida Alves[1], Nelson Cunha[2], Inês Aguiar-Ricardo[2], F. J. Pinto[2], Ana Abreu[2]

[1]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Cardiac rehabilitation (CR) is defined as a multidisciplinary program encompassing exercise training, modification of cardiovascular risk factors, and psychosocial assessment. Physician-prescribed exercise is a crucial and safe component that can significantly enhance the quality of life and functional capacity.
Objectives: The purpose of this study is to assess whether improvements in muscular strength have an impact on functional capacity.
Methods: A prospective analysis of patients enrolled in a cardiac rehabilitation phase two program was conducted. Standardized forms were utilized to collect patient data, including baseline characteristics, muscle strength evaluation (upper and lower limb strength and Time Up and Go test), the six-minute walking test (6MWT), and cardiopulmonary exercise test. Descriptive and inferential statistics were performed.
Results: We enrolled 446 patients participating in the phase two CR program (81% male, mean age at the program's beginning was 61 years). The mean number of exercise sessions performed was 14. Among them, 85% had ischemic heart disease, 6% had valvular heart disease, and 3% had dilated cardiomyopathy. During the initial assessment, 73% of patients were in NYHA functional class II, 19% in NYHA I, and 8% in NYHA III. Forty-three percent of patients had a reduced left ventricular ejection fraction (LVEF < 50%).

Throughout the CR program, there was an improvement in lower limb (mean value increased from 15 Kg to 20 Kg, p = 0.001), upper limb strength (mean value increased from 19 to 23 Kg, p = 0.001), and in the time taken for the Up and Go test (a decrease in mean time from 14 s to 9 s, p = 0.001). Patients demonstrating improvement in at least one of these parameters also showed, at the end of the programme, enhanced 6MWT mean time (from 454 to 569 meters), peak VO2 (from 15 to 17 mL/Kg/min), and the duration of cardiopulmonary stress testing (from 7:50 to 8:39) (p = 0.001). In patients with reduced LVEF, there were a tendency toward enhanced 6MWT time in those who showed improvement in all the three upper and lower limb strength and in the Time Up and Go test compared with those who do not improve in all these tests (620 to 553 meters), which did not reach significance.
Conclusions: Strength exercise is a vital component of CR programs and can significantly contribute to improvements in functional capacity. Therefore, its practice should be emphasized to enhance overall program effectiveness. Particularly in patients with reduced ejection fraction, a global strength improvement can have a positive impact on daily life functional capacity.

PO 320. SUDDEN CARDIAC DEATH IN ATHLETES: A 20-YEAR ANALYSIS IN PORTUGAL

Carolina Miguel Gonçalves[1], Adriana Vazão[1], André Martins[1], Mariana Carvalho[1], Margarida Cabral[1], Fátima Saraiva[1], João Morais[1], Hélder Dores[2]

[1]Centro Hospitalar de Leiria/Hospital de Santo André. [2]Hospital da Luz Lisboa.

Introduction: Sudden cardiac death (SCD) is a tragic and highly visible event that may occur in apparently healthy athletes. Although some studies reporting a low frequency and cardiovascular diseases as the most common causes, the evidence about SCD in athletes remains scarce and controversial. The aim of this study was to analyze the SCD cases among competitive athletes in Portugal during a 20-year period.
Methods: An advanced Google search using a combination of keywords was performed. To further strengthen the results, a systematic search on websites of national newspapers (sports and general) and television stations was conducted, while the Portuguese sports federations (54 in total) and the Portuguese Institute of Sports and Youth were contacted by email and/or phone. All sports-related SCD cases in competitive athletes, occurring between 2003 and 2023 in Portugal, were included. For each case, all the available information on the demographics and circumstances of the event, was collected and analyzed. The total number of athletes used to calculate the incidence of SCD was based on official national records of competitive athletes by year, during the period of the study (https://www.pordata.pt/).
Results: During the study period, 42 SCD cases in athletes were identified, with median age of 27 [18;42] years, ranging from 12 to 70 years, and 93% were male (only 3 cases in women). Most events occurred in outdoor sports (N = 28; 67%), especially in football (N = 13; 31%), athletics (N = 4; 10%) and trail running (N = 4; 10%). Among indoor sports, the cases were mainly reported in handball (N = 3; 7%), futsal (N = 3; 7%) and basketball (N = 2; 5%). Most of the events (N = 27; 64%) occurred during competition or training sessions. The higher number of cases were reported in 2022 and 2021 (10 and 8, respectively), while in several years no occurrences were found. The average yearly incidence of SCD was 0.38 cases per 100 000 athletes per year.
Conclusions: The incidence of SCD in competitive athletes in Portugal is very low, being reported 42 cases between 2003 and 2023, especially in males and outdoor sports. Although the use of a previously tested searching methodology, this incidence is probably underestimated. A prospective national registry of SCD in athletes, with standardization of all the relevant data about its etiology and circumstances, is clearly needed. Understanding these events may help to identify high-risk groups and develop appropriate preventive strategies.

Domingo, 21 Abril de 2024 | 09:30-10:30

Área de Posters 1 | Sessão de Posters 49 - Cardiopatias Congénitas

PO 321. ARNI TREATMENT IN ADULTS WITH TETRALOGY OF FALLOT - A SINGLE-CENTRE EXPERIENCE

André Paulo Ferreira, Inês Ferreira Neves, Tânia Branco Mano, Tiago Rito, Pedro Oom da Costa, Rui Cruz Ferreira, Lídia de Sousa

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Surgical correction of Tetralogy of Fallot (TOF), typically performed in early childhood, has significantly improved survival rates. However, a substantial number of adults with repaired TOF still develop heart failure with reduced ejection fraction (HFrEF). The potential benefits of Angiotensin Receptor-Neprilysin Inhibitors (ARNi), such as Sacubitril/Valsartan (SV), in this subgroup are still not well established.
Objectives: To evaluate the potential reverse cardiac remodelling effects of SV in adult patients with TOF and depressed ventricular function.
Methods: A single-centre, retrospective study of adult patients with TOF and depressed left ventricle ejection fraction (LVEF) who received SV therapy between 2020 and 2023. Relevant clinical and echocardiographic data before and after SV therapy initiation was assessed. Patients were clinically evaluated every 3-6 months and therapy was titrated if possible.

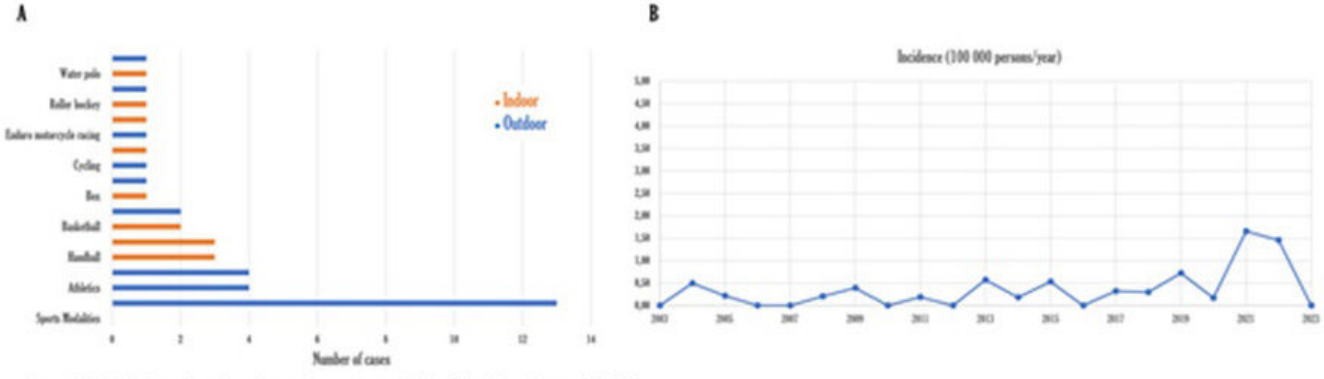


Figure 1. Distribution of number of cases by sports modalities (A) and incidence of SCD (B).

Figure PO 320

	TTE before SV	TTE after SV	p-value
Ejection fraction	36.2±6.9%	44.6±5.4%	p=0.02
End-diastolic volume	181.2±19.1ml	134.0±50.3ml	p=0.03
TAPSE	16.8±3.0mm	17.2±2.7mm	p=0.37

Table 1 – Remodeling effects of SV in adult patients with TOF and depressed ventricular function.

Figure PO 321

Results: A total of 6 TOF patients who received SV therapy during the study period were included. Patient's mean age was 46.6 ± 11.5 years, and 83.3% were male. After a median SV therapy duration of 24.0 [IQ 13.5-37.5] months, there was a significant improvement in LVEF (36.2 ± 6.9% vs. 44.6 ± 5.4%, p = 0.02) and in end-diastolic volume (181.2 ± 19.1 ml vs. 134.0 ± 50.3 ml, p = 0.03). There was no effect in the tricuspid annular plane systolic excursion of the subpulmonary ventricle (16.8 ± 3.0 mm vs. 17.2 ± 2.7 mm, p = 0.37). The medication was titrated up to the maximum tolerated dose in all patients. Adverse events were generally well-tolerated, and no significant safety concerns were identified. Adherence to therapy was maintained by all patients. During follow-up, 66.7% reported an increase in functional class status (New York Heart Association Class). Four patients were evaluated by cardiopulmonary exercise test at baseline and at 12 months after SV initiation, showing improvement in maximal oxygen uptake (14.4 vs. 16.4 ml/kg/min), and exercise duration (394.4 vs. 550.3 sec). No patients were hospitalised due to heart failure or other cardiovascular events, and there was no mortality.
Conclusions: This retrospective study provides initial evidence supporting the potential benefits of SV in adults with TOF and reduced ejection fraction. The observed improvements in LVEF and symptomatology suggest a potential role for SV in the medical management of TOF-related HFrEF.

PO 322. THE DUAL CHALLENGE: UNDERSTANDING AND MANAGING PULMONARY HYPERTENSION IN CONGENITAL HEART DEFECTS

Ana Margarida Martins[1], Ana Beatriz Garcia[1], Catarina Oliveira[1], Daniel Cazeiro[1], Pedro Alves da Silva[1], Tatiana Guimarães[1], Ana Rita Francisco[1], Ana Mineiro[2], Susana Martins[1], Nuno Lousada[1], Fausto J. Pinto[1], Rui Plácido[1]

[1]Department of Cardiology, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa.
[2]Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital Pulido Valente.

Introduction: Pulmonary arterial hypertension (PAH) is a well-known consequence of congenital heart disease (affecting 5-10% of this pts) and conveying a worse prognosis. This subgroup comprises an increasing proportion of PAH pts, adding complexity due to underlying anatomical and hemodynamic abnormalities. Additionally, most PAH clinical trials focus on pts with idiopathic or CTD-associated PH, with little evidence regarding CHD. Our aim was to characterize a population with CHD and PH followed in a tertiary centre from 2012-2022 and assess clinical, laboratory and echocardiographic parameters that could influence prognosis.
Methods: Observational single centre retrospective study including pts followed in a reference hospital for PH associated with CHD. Clinical, laboratorial, echocardiographic and invasive hemodynamic data were collected at beginning and during follow-up. Uni- and multivariate analyses were performed with Cox regression and Kaplan-Meier curves were used for survival analysis.
Results: We analysed 30 pts with CHD-associated PH. Mean age was 53,8 ± 17 years, with female predominantly represented (63,3%). Atrial septal defect (ASD) was the most prevalent CHD (66,6% - 80% simple ASD, 15% with anomalous venous return, and 5% with patent ductus arteriosus), followed by ventricular septal defect (16,6%) and patent ductus arteriosus (10%). During a mean follow-up of 4,7 ± 3 years, 26.7% pts died (n = 8), and 46,7% were hospitalized (n = 14) mostly due to heart failure. For the specified FUP, only 7 pts were deemed eligible for surgery, the remainder started PH-directed therapy: 2 were under monotherapy, 15 had double therapy with PDE5i and endothelin receptor antagonist (ERA) and 6 had triple therapy including selexipag. On univariate Cox analysis, NTproBNP (p = 0.011), 6-minute walk test distance (6MWD) (p = 0.036), right atrial area (p = 0.021) and PSAP (p = 0.045) correlated with cardiovascular events defined as a composite endpoint of death and cardiovascular admission. On multivariate analysis, only 6MWD (OR = 0.99, 95%CI 0.98-0.99, p = 0.029) was an independent predictor of CV outcomes. Since 6MWD was the sole strongest prognostic index, we identified 270m as the best cutoff for predicting CV outcomes after ROC curve analysis. Kaplan-Meier analysis showed a significant difference between the two groups (Log Rank 5.45, p = 0.02) (Figure), emphasizing its prognostic value and better tailoring the therapy for each patient.

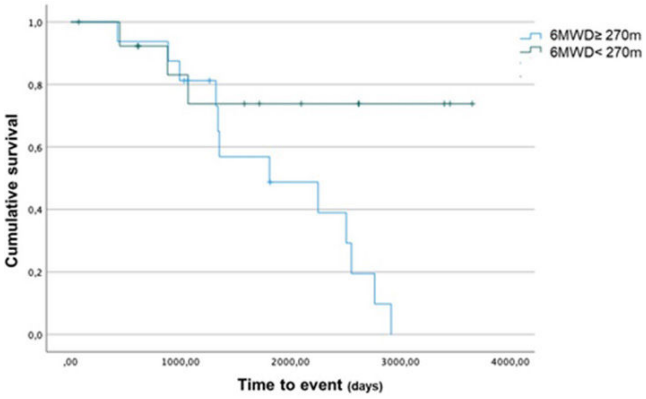


Figure 1 – Kaplan Meier survival analysis based on 6 minute walking distance test performance

Conclusions: Despite its lower representativeness in clinical trials, CHD remains an important cause for PH with a significant impact in mortality and CV admissions. Physical performance status, as evaluated by 6MWD, was seen as the most significant prognostic factor in our population, and those with less capacity displayed a far worse prognosis, reinforcing its importance in initial evaluation and need for early therapeutic intervention.

PO 323. PREDICTORS OF SUPRAVENTRICULAR ARRHYTHMIAS IN ADULTS WITH EBSTEIN ANOMALY

Julien Lopes, Ana Rita Teixeira, Madalena Coutinho Cruz, Guilherme Portugal, Tânia Branco Mano, Tiago Rito, Mário Martins Oliveira, Rui Cruz Ferreira, Lídia de Sousa

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Ebstein anomaly (EA) is a congenital heart disease characterized by the apical displacement of tricuspid valve leaflets. Arrhythmias are highly prevalent in this population, posing a clinical challenge. The aim of this study is to characterize supraventricular arrhythmias in an EA population and assess its predictors.
Methods: Single-center retrospective study of all consecutive patients with EA referred to a tertiary center for adult congenital heart disease outpatient

care. Demographic, clinical, electrocardiographic and imaging data were collected. Supraventricular arrhythmias (atrial fibrillation, atrial flutter and supraventricular tachycardia) arising during follow-up were noted. Predictors of supraventricular arrhythmias were assessed with logistic regression analysis.
Results: A total of 57 patients were included (mean age 49 ± 16.48 years; 54.4% female) with a median follow-up of 11 (IQR 21.63) years. Surgical intervention was required for 21 patients (36.8%) (12 tricuspid valve repair, 5 tricuspid valve replacement, 3 heart transplant). The mean tricuspid valve apical displacement was 30.14 ± 12.3 mm, with 89.8% of patients presenting with tricuspid regurgitation. 56.1% of patients had evidence of complete right bundle branch block, 15.8% had incomplete right bundle branch block. 13 patients had a documented preexcitation. Supraventricular tachyarrhythmias were noted in 59.6% of patients (n = 34), 19.4% with more than one type of arrhythmia (12 with supraventricular tachycardia, 17 with atrial fibrillation and 10 with atrial flutter). 13 patients required electrophysiological study, with 3 patients submitted to cavotricuspid isthmus ablation (5.2%) and 7 patients submitted to accessory pathway ablation (12.3%). Variables significantly associated with supraventricular arrhythmias were prior cardiac surgery (OR 5.200; p = 0.006); presence of an additional heart defect (OR 14.929; p < 0.001); 1st degree AV block (OR 5.600; p = 0.007); QRS duration (OR 1.024 p = 0.032); tricuspid annular plane systolic excursion (TAPSE) (OR 0.683; p = 0.015) and Tissue Doppler tricuspid s' (OR 0.390; p = 0.025). In the multivariate model there were no statistically significant independent predictors.
Conclusions: Supraventricular arrhythmias were highly prevalent in this population of EA patients. However, no independent predictors for supraventricular arrythmias were identified. This underlines the importance of multimodality testing and monitoring of these patients.

PO 324. EVALUATION OF FETAL CARDIAC FUNCTION IN GESTATIONAL DIABETES MELLITUS BY TWO-DIMENSIONAL SPECKLE-TRACKING TECHNOLOGY

Maria Ana Estevens[1], Graça Nogueira[1], Susana Cordeiro[1], Jorge Lima[2], Rui Anjos[1]

[1]*Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.* [2]*Hospital da Luz Lisboa.*

Introduction: Subclinical fetal cardiac dysfunction is recently described as an effect of gestational diabetes (GD). Two-dimensional speckle-tracking technology for fetal heart evaluation is currently available. Feasibility, reproducibility and normal range values have already been reported. This study aimed to assess the effect of GD on fetal cardiac function by two-dimensional speckle-tracking technology.
Methods: We performed a prospective observational study that included 89 pregnant women, 42 with GD and 47healthy. A four-chamber 3s cine-loop was recorded and analyzed with Fetal Heart Quantification (FetalHQ® from GE®). Global longitudinal strain (GLS) for both ventricles was calculated. Demographic data shows no 3rd trimester scans or uncontrolled GD. Demographic and cardiac differences between the two groups were analyzed.
Results: Gestational age (GA) was 23 (SD 3.02) weeks. GLS of left ventricle (LV): -21.88% (SD 5.81%), right ventricle (RV) -17.16% (SD 6.89%), left atrium (LA) 22.32% (SD 8.10%). T test and linear regression analysis show statistic correlation between LV and RV GLS (beta 0.423; p-value 0.0006, Multiple R-squared: 0.13). No significant correlation was found between GD and GLS values nor between gestational age and GLS values.
Conclusions: GLS was a feasible and reproductible technique. LV and RV strain have a significant correlation as expected. No significant correlation was found between LV and LA strain. No evidence in this study of cardiac dysfunction in GD patients at 2nd trimester in a well-controlled cohort. Larger studies are needed.

PO 325. SACUBITRIL/VALSARTAN IN ADULTS WITH CONGENITAL HEART DISEASE AND DEPRESSED VENTRICLE FUNCTION

André Paulo Ferreira, Rita Teixeira, Tânia Branco Mano, Tiago Rito, Pedro Oom da Costa, Rui Cruz Ferreira, Lídia de Sousa

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Previous studies have shown that Sacubitril/valsartan (SV) promotes favourable cardiac remodelling in heart failure patients with reduced ejection fraction. However, data regarding the effects of SV in adults with congenital heart disease (ACHD) and depressed ventricular function is still lacking.
Objectives: To demonstrate the reverse cardiac remodelling effects of SV in ACHD with depressed ventricular function.
Methods: A single-centre, retrospective study of ACHD patients with depressed systemic ventricle ejection fraction (SVEF) who received SV therapy between January 2019 and May 2023. Baseline and clinical characteristics were assessed. Transthoracic echocardiogram (TTE) data was analysed before and after SV therapy initiation. Patients without TTE data after a minimum of six months of SV therapy were excluded from the study.
Results: A total of 17 patients who received SV therapy during the study period were included. Patient's mean age was 54.1 ± 16.0 years, and 76.5% were male. The primary diagnoses were: Tetralogy of Fallot (n = 6), interventricular septum defect (n = 3), patent ductus arteriosus (n = 2), cor triatriatum sinister (n = 1), dextro-transposition of the great arteries (n = 1), subpulmonary stenosis (n = 2), subaortic stenosis (n = 1), and univentricular heart (n = 1). One patient had a right systemic ventricle. After a median SV therapy duration of 23.0 [IQ 15.5-46.0] months, there was a significant improvement in SVEF (38.9 ± 9.0% vs. 48.1 ± 9.8%, p = 0.01) and in end-diastolic diameter (62.3 ± 9.2 mm vs. 54.8 ± 12.9 mm, p = 0.04), as well as in the annular plane systolic excursion of the subpulmonary ventricle (15.5 mm [IQ 14.0-18.0] vs. 17.8 mm [IQ 15.0-20.0], p = 0.02). There was no effect in diastolic function parameters, such as the ratio between early mitral inflow velocity and mitral annular early diastolic velocity (9.0 ± 3.6 vs. 9.3 ± 5.2, p = 0.53). The medication was temporarily discontinued in 1 patient due to symptomatic hypotension. During follow-up, 11 patients (64.7%) reported an increase in functional class status (New York Heart Association Class), 2 patients were hospitalised due to heart failure, and 2 patients died (one due to Sars-CoV infection and another of unknown causes).
Conclusions: In a cohort of ACHD with depressed systemic ventricle function, SV showed beneficial reverse cardiac remodelling by improving SVEF and reducing end-diastolic diameters. More extensive studies are needed to corroborate these results.

	TTE before SV	TTE after SV	p-value
Ejection fraction	38.9±9.0%	48.1±9.8%	**p=0.01**
End-diastolic diameter	62.3±9.2mm	54.8±12.9mm	**p=0.04**
TAPSE	15.5 [14.0-18.0]mm	17.8 [15.0-20.0]mm	**p=0.02**
E/e'	9.0±3.6	9.3±5.2	p=0.53

Table 1 – Remodeling effects of SV in ACHD with depressed ventricular function.

Figure PO 325

PO 326. PULMONARY REGURGITATION IN TETRALOGY OF FALLOT - THE EXPERIENCE OF A SINGLE TERTIARY CENTER

Catarina Martins da Costa, Ana Filipa Amador, Teresa Pinho, Cristina Cruz

Centro Hospitalar Universitário de S. João, EPE.

Introduction and objectives: Pulmonary regurgitation (PR) is the most common complication in repaired tetralogy of Fallot (TOF) patients. Severe chronic PR can be tolerated for decades, but if not treated, it can progress to symptomatic, irreversible right ventricular dilatation and dysfunction. We investigated clinical associations with pulmonary valve replacement (PVR) among patients with significative PR and how interventional developments can change their management.
Methods: All adult patients with repaired TOF who were followed at an Adult Congenital Heart Disease Clinic at a single center from 1980 to 2022 were included on their first outpatient visit. Follow-up was estimated from the time of correction surgery until one of the following events occurred first: PVR, death, loss to follow-up or conclusion of the study.
Results: We included 221 patients (116 males) with a median age of 19 (18-25). At a median age of 33 (10) years old, 114 (51%) patients presented significant PR. Among patients with significant PR, PVR was associated with male gender, older age at surgical repair, and longer QRS duration in adulthood. PVR was performed in 50 patients, including four transcatheter pulmonary valve implantations (TPVI), at a median age of 34 (14) years (Figure).
Conclusions: PR affects a large percentage of TOF adult patients, requiring long-term clinical and imaging follow-up. Sex, age at surgical repair and longer QRS are associated with the need of PVR among patients with significative PR. Clinical practice and current literature support TPVI as the future gold standard intervention.

Domingo, 21 Abril de 2024 | 09:30-10:30

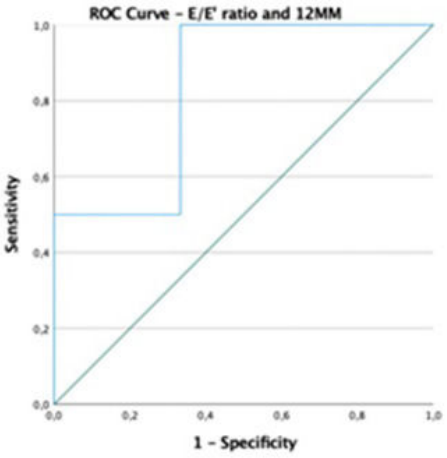
Área de Posters 2 | Sessão de Posters 50 - Doença coronária - diferenças demográficas

PO 327. SEX DIFFERENCES IN ECHOCARDIOGRAPHIC PARAMETERS IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION AND PRESERVED EJECTION FRACTION

Oliver Correia Kungel, Vanda Devesa Neto, António Costa, Inês Pires, Joana Correia, Gonçalo Ferreira, João Gouveia Fiúza, Mariana Duarte Almeida, Francisco Rodrigues dos Santos

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio.

Introduction: Heart failure with preserved ejection fraction (HFpEF) is more common in women compared to men. Women tend to develop HFpEF at an older age and are more likely to have comorbid conditions such as hypertension, diabetes mellitus, and obesity, which are significant contributors to HFpEF. Although, historically, ischemic heart disease has been more prevalent in men. The aim of this study is to determine the interaction between sex and echocardiographic parameters in patients admitted due to Acute Myocardial Infarction (AMI) with HFpEF and correlate the findings with 12 months-mortality (12MM).
Methods: A retrospective analysis of 276 patients admitted to a Cardiology ward diagnosed with AMI and with left ventricle ejection fraction (LVEF) > 50% by transthoracic echocardiogram (TTE) during hospital stay. The primary endpoint was defined as 12MM. Mann-Whitney U and Chi-square test were used for mean comparison between variables. Baseline echocardiographic data were compared between males and females, and cox multivariate regression analysis was performed to elucidate the effect of sex, echocardiographic measures and baseline characteristics.



Results: Mean patient age was 63.0 (± 13.6) years; 79% were male. No differences were found between sex regarding the presence of obesity (p = 0.49), type 2 diabetes mellitus (p = 0.152), arterial hypertension (p = 0.51), dyslipidemia (p = 0.51), smoking habits (p = 0.12), chronic kidney disease (p = 0.72) and chronic pulmonary disease (p = 0.27). Higher Global Longitudinal Strain (GLS) (p = 0.04) and Mitral Annular Plane Systolic Excursion (MAPSE) (p < 0.01) were found in males and higher E/E' ratio (p < 0.01) was found in females. No differences were found regarding other TTE parameters such as left ventricular ejection fraction (LVEF), tricuspid annular plane systolic excursion, E/A ratio, wall motion score index and left atrium volume. No differences were found between sex regarding 12 months-mortality (p = 0.11). Cox regression analysis revealed that E/E' was an independent predictor of 12 months-mortality, even when adjusted to GLS (p = 0.022; HR 1.19; 95%CI 1.03-1.38). ROC curve analysis demonstrated that E/E' effectively predicts 12 months mortality in women (AUC 0.833) but, in men, the performance is less effective (AUC 0.644).
Conclusions: GLS, E/E' ratio and MAPSE are significantly different in males and females. The increase in E/E' ratio is associated with a higher risk of 12MM in women, which is independent from the effect of other clinical and echocardiographic variables.

Figure PO 326

PO 328. DEMOGRAPHIC AND ANGIOGRAPHIC CHARACTERISTICS IN PREMATURE CASES OF ACUTE CORONARY SYNDROME

Joana Guimarães, Eric Monteiro, Diogo Fernandes, Gonçalo Costa, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: The incidence of acute coronary syndromes (ACS) among younger individuals is on the rise. While previous studies have explored risk factors and coronary angiographic profiles in young versus old patients with ACS, few have specifically compared the angiographic profiles in young patients based on the type of acute coronary syndrome. Therefore, this study aims to investigate the variations in demographic and coronary angiographic profiles between young patients experiencing ST-elevated myocardial infarction (STEMI) and those with non-ST-elevated myocardial infarction (NSTEMI) or unstable angina (UA).
Methods: A retrospective analysis was conducted on individuals under the age of 40 diagnosed with ACS and who underwent coronary angiography at our centre from January 2017 to December 2023. The study compared coronary risk factor profiles and angiographic features between patients with STEMI and those with NSTEMI or UA.
Results: We enrolled a total of 98 patients, under the age of 40 years old, who underwent coronary angiography due to ACS. Mean age was 34.7 ± 5.3 years old and 84.7% were male. Of them, 56 (57.1%) exhibited STEMI and 41 (42.9%) exhibited NSTEMI/UA. The angiographic examination unveiled no difference in the prevalence of single-vessel disease between the STEMI and NSTEMI/UA groups (75.8% vs. 85.7%, respectively; p = 0.376). Conversely, triple-vessel disease was more frequent in the NSTEMI/UA group compared to the STEMI group (9.5% vs. 3.0%, respectively; p = 0.041). There was no difference in left anterior descending coronary artery involvement in the STEMI group compared to the NSTEMI/UA group (72.7% vs. 76.2%, respectively; p = 0.777). Similarly, the left circumflex coronary artery and right coronary artery were equally implicated in the NSTEMI/UA group and in the STEMI group (19.0% vs. 21.2%; p = 0.847 and 28.6% vs. 33.3%: p = 0.713, respectively). It is noteworthy that a smoking history emerged as the most prominent coronary risk factor, exhibiting a prevalence as high as 62% in both groups.
Conclusions: Upon comparing young patients with STEMI and NSTEMI/UA, our study indicated a higher prevalence of triple-vessel disease in the NSTEMI/UA group. No significant differences were observed regarding the most affected coronary artery between the two groups. The affected patients were predominantly male and exhibited a high prevalence of a smoking history. However, more extensive studies are necessary to establish specific associations between the presentation of acute coronary syndromes and angiographic profiles in young patients.

PO 329. ACUTE CORONARY SYNDROMES: MEN AND WOMEN - SAME SPECIES, SAME DISEASE, SAME MANIFESTATION?

Carolina Pereira Mateus[1], Mariana Passos[1], Filipa Gerardo[1], Inês Miranda[1], Joana Lima Lopes[1], Mara Sarmento[1], Inês Fialho[1], David Roque[1], em nome dos investigadores do Registo Nacional de Síndromes Coronárias Agudas[2]

[1]Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra. [2]CNCDC.

Introduction: Acute Coronary Syndromes (ACS), like many other disease spectra, exhibit differences not only in incidences in men and women but also in manifestation, treatment and prognosis.
Objectives: This study aims to characterize ACS manifestation in both men and women.
Methods: We conducted an observational study with retrospective analysis of all patients included between 2002 and 2019 in the Portuguese Registry of Acute Coronary Syndromes (ProACS), a voluntary, observational, prospective, continuous registry of the Portuguese Society of Cardiology and the National Center for Data Collection in Cardiology.

		Men	Women	p-value	OR
Age, average ± SD		64 ± 13	72 ± 12	<0.001	
Previous medical history					
Hypertension		60.4%	75.9%	<0.001	2.06
Diabetes Mellitus		26.0%	35.9%	<0.001	1.59
Obesity		20.4%	23.8%	<0.001	1.22
Smoker		32.6%	8.5%	<0.001	0.19
Previous stable angina		23.8%	29.1%	<0.001	1.32
Predominant symptom at presentation					
Chest pain		96.8%	94.7%	<0.001	0.59
Dyspnea		1.4%	2.5%	<0.001	1.79
Fatigue / Tiredness		0.2%	0.4%	0.007	1.62
Syncope		0.6%	1.0%	<0.001	1.63
Cardiac arrest		0.2%	0.2%	0.616	0.9
Other		0.7%	1.2%	<0.001	1.71
Diagnosis at admission					
STEMI		44.4%	37.5%	<0.001	0.75
NSTEMI		43.0%	47.5%	<0.001	1.20
Unstable angina		9.7%	10.1%	0.191	1.04
Killip score	I	85.2%	75.3%	<0.001	0.53
	II	9.4%	15.8%	<0.001	1.80
	III	3.7%	6.2%	<0.001	1.74
	IV	1.7%	2.7%	<0.001	1.62
GRACE score, average ± SD		145.4 ± 38.9	158.4 ± 41.2	<0.001	
Adverse Events during Hospital Admission					
Heart Failure		19.4%	31.1%	<0.001	1.87
Shock		4.3%	7.1%	<0.001	1.71
Mechanical complications		0.8%	1.7%	<0.001	2.12
AV Block		2.8%	3.6%	<0.001	1.31
Stroke		0.6%	1.3%	<0.001	2.15
Atrial Fibrillation		4.4%	6.6%	<0.001	1.55
Death		3.7%	6.9%	<0.001	1.94

Table 1. Gender differences in age, previous medical history, symptoms, diagnosis, mortality scores, and adverse events during hospital admission in patients with Acute Coronary Syndromes. AV: Atrioventricular; NSTEMI: Non-ST-Elevation Myocardial Infarction; STEMI: ST-Elevation Myocardial Infarction.

Figure PO 329

Results: A total of 49,113 patients (34,936 men and 14,177 women) were included for analysis. Women with ACS were, on average, 8 years older than men (Table). The proportion of smoking women was smaller than that of men (8.5% vs. 32.6%, p < 0.001). However, women had a higher prevalence of obesity (23.8% vs. 20.4%, p < 0.001), hypertension (75.9% vs. 60.4%, p < 0.001), and diabetes (35.9% vs. 26.0%, p < 0.001). Women also had a more frequent previous history of stable angina (29.1% vs. 23.8%, p < 0.001). Men had a higher incidence of ST-Elevation Myocardial Infarction (STEMI) than women, while women more frequently experienced Non-ST-Elevation Myocardial Infarction (NSTEMI) or Unstable Angina (Table). Chest pain was the predominant symptom in both genders, but women had a higher frequency of equivalent symptoms (dyspnea, fatigue, syncope) (Table). Men had fewer normal coronary angiographies (5.7% vs. 11.7%, p < 0.001), yet women presented with higher Killip and GRACE scores, as well as intra-hospital adverse events, including heart failure, shock, mechanical complications, atrioventricular block, stroke, and death (Table).
Conclusions: A compelling paradox is evident in our findings: despite having a higher prevalence of stable angina prior to hospital admission, and lower likelihood of obstructive lesions on coronary angiography, female patients experienced worse cases of ACS. This is evident in the elevated Killip and GRACE scores, pointing towards a worse prognosis, also reflected by this registry. This paradox prompts further explanation. While the older age of female patients with ACS and a higher prevalence of other comorbidities may offer some explanation, it raises intriguing questions about the interplay of various factors influencing the clinical course of ACS in men and women. In conclusion, this study reinforces the need for healthcare providers to move beyond a one-size-fits-all approach and consider the nuanced differences between genders in the diagnosis, treatment, and long-term management of ACS. Only through this nuanced understanding can we hope to bridge the gaps in outcomes and deliver more equitable and effective care to all patients.

PO 330. IS THE CARDIOPROTECTIVE EFFECT OF PRE-INFARCTION ANGINA BLUNTED BY AGE?

Mariana Pereira Santos, André Alexandre, Andreia Campinas, David Sá-Couto, Diana Ribeiro, Raquel Baggen Santos, Bruno Brochado, João Silveira, André Luz, Severo Torres

Centro Hospitalar Universitário do Porto, EPE/Hospital Geral de Santo António.

Introduction: Pre-infarct angina (PIA) has been demonstrated to reduce infarct size and improve prognosis in ST-elevation myocardial infarction (STEMI). However, the effects of ischemic preconditioning with aging are controversial.
Objectives: We aimed at evaluating the effect of pre-infarction angina (PIA) on infarct size in two age groups.
Methods: We retrospectively studied consecutive STEMI patients treated by primary percutaneous coronary intervention (PCI) from January 2008 to December 2017. PIA was diagnosed if a patient had arm, jaw, or chest pain in the preceding eight days. Peak creatine kinase (CK) concentration (U/L) was used as a surrogate of infarct size. Patients were divided into two groups based on the median age: ≤ 62 years and > 62 years. Multiple linear regression was used to identify independent predictors for infarct size and included total ischemic time and classic cardiovascular risk factors (hypertension, diabetes, dyslipidaemia, and smoking). Interaction between age and PIA was evaluated by a 2-way factorial ANOVA.
Results: From the 1,131 patients included in the study, 590 (52.2%) had ≤ 62 years and 541 (47.8%) had > 62 years. Older patients were more often women (17.2% vs. 8.6%, p < 0.001) and had longer total ischemic time [4.6 (3.0-9.0) vs. 3.5 (2.3-6.0) hours, p < 0.001]. They also had higher prevalence of hypertension (32.8% vs. 22.8%, p < 0.001), diabetes (30.7% vs. 18.7%, p < 0.001) and were less likely to be smokers (26.9% vs. 71.4%, p < 0.001). The prevalence of PIA was similar across age groups (≤ 62Y 31.2% vs. > 62Y 32.0%, p = 0.668). In older patients, PIA was associated with smaller infarct size [1.29 (0.72-2.33) vs. 1.76 (0.97-2.91) U/L × 10^3, p < 0.001]. This was not statistically significant for younger patients [1.72 (0.95-3.40) vs. 1.81 (0.94-3.37) U/L × 10^3, p = 0.392]. There was no significant interaction observed between the existence of PIA and age on peak CK (p = 0.280 for interaction) (Figure). In multivariate analysis, overall, PIA was associated with reduced peak CK (β = -0.320, p = 0.011). On subgroup group analysis, PIA was a predictor of infarct size only in the older patients (β = -0.459, p = 0.005), but not in the younger (β = -0.182, p = 0.394).
Conclusions: Older patients with PIA had significantly lower infarct size compared to patients in the same age group without PIA. After adjustment for risk factors and total ischemic time, PIA was a predictor of lower infarct size only for the older patients. This cohort's results suggest that the effect of pre-ischemic conditioning is not blunted by age, indicating that older patients should not be excluded from clinical trials of cardioprotective strategies for STEMI.

Figure 1 - Distribution of peak CK according to the existence of PIA and age group.

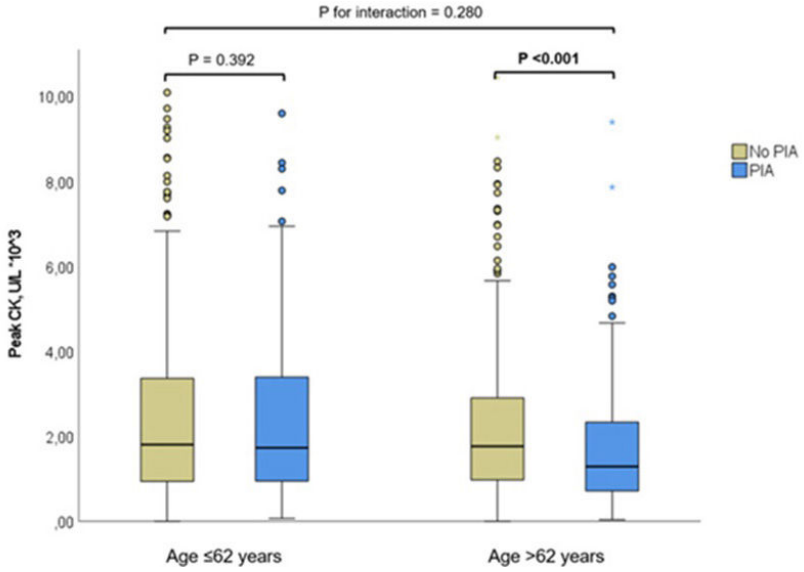


Figure PO 330

PO 331. GENDER DIFFERENCES IN OUTCOMES FOLLOWING ACUTE CORONARY SYNDROME IN YOUNG ADULTS

Pedro Mangas Palma, Miguel Rocha, Helena Moreira, Luís Santos, Cátia Oliveira, Ana Pinho, André Cabrita, Catarina Marques, Joana Rodrigues, Afonso Rocha, Paula Dias, Rui Rodrigues

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Acute coronary syndrome (ACS) is less frequent in young adults, but it has become a significant health problem associated with the increasing prevalence of modifiable risk factors. Evidence on the impact of gender on prognosis after ACS among younger adults is lacking.
Objectives: We evaluated gender differences in long-term cardiovascular outcomes after ACS in young adults.
Methods: We performed a retrospective single-centre cohort study which included all patients < 55 years old who were referred to a cardiac rehabilitation program from 2010 to 2020. Clinical, echocardiographic and blood test data were recorded. The endpoint of study was major adverse cardiovascular events (MACE) - acute coronary syndrome, stroke, heart failure, all-cause and cardiovascular death. The effect of gender on the cumulative freedom from MACE was estimated using the Kaplan-Meier curves, log-rank test and a Cox proportional hazard model adjusted for clinically relevant characteristics.
Results: A total of 585 patients were included (75% male, with a mean age of 46.8 ± 6.14 years and a median follow-up of 5.25 years). At the time of diagnosis, women were less likely to smoke (69.9% vs. 86.5%, p < 0.001) and to have a previous coronary revascularization (11.8% vs. 4.2%, p = 0.009), but were more likely to have diabetes (20.3% vs. 10.5%, p = 0.003) and family history of premature coronary artery disease (CAD) (42.6% vs. 31.9%, p = 0.020). Men presented more frequently with ST elevation myocardial infarction (54.9% vs. 36.4%, p < 0.001) and multivessel CAD (32.4% vs. 18.0%, p < 0.001). During follow-up, MACE occurred more frequently in women (27.2% vs. 14.8%, p = 0.001). ACS was the most frequent event in both genders (47.5% vs. 36.9% in men, p = 0.035), followed by cerebrovascular events (30.0% vs. 24.6%, p = 0.544), heart failure (10.0% vs. 20.0%, p = 0.178) and death (10.0% vs. 18.5%, p = 0.243). Kaplan-Meier survival curves showed that men had better survival compared to women (log-rank test p < 0.001). Multivariate analysis with Cox regression also revealed that women had a higher risk of MACE (Hazard Ratio = 2.52, 95% confidence interval 1.47-3.42, p < 0.001).
Conclusions: In young adults with ACS occurrence of MACE was independently associated with the female gender. Further research is needed to unveil the physiological and biological processes leading to this gender disparity.

Domingo, 21 Abril de 2024 | 09:30-10:30

Área de Posters 3 | Sessão de Posters 51 - Enfarte agudo do miocárdio sem supra ST

PO 332. IMPACT OF ACUTE CULPRIT OCCLUSION IN PATIENTS PRESENTING WITH NON-ST SEGMENT ELEVATION MYOCARDIAL INFARCTION

Mafalda Griné, João Borges-Rosa, Gonçalo Terleira Batista, Tomás Carlos, Bernardo Resende, Ana Luísa Gomes Rocha, Manuel Oliveira-Santos, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: There is acute coronary occlusion beyond the ST-segment elevation myocardial infarction (STEMI) criteria. Around 15-30% of patients presenting without significant ST-segment elevation have an occluded culprit in the coronary angiography. The clinical impact of these missed diagnoses remains unclear. We sought to evaluate the one-year outcomes of this subset of patients.
Methods: Retrospective analysis of consecutive patients admitted to our centre between January 2016 and November 2022 with a diagnosis of myocardial infarction. Those without follow-up data were excluded. Patients were divided into three cohorts according to baseline electrocardiographic and angiographic criteria: Cohort 1 (STEMI), Cohort 2 (non-ST segment elevation myocardial infarction (NSTEMI) without acute culprit occlusion) and Cohort 3 (NSTEMI with acute culprit occlusion). The primary endpoint was all cause mortality at one year after the index event.
Results: A total of 555 patients were included and classified accordingly: Cohort 1 (n = 317), Cohort 2 (n = 200), and Cohort 3 (n = 38). Mean age was 67.7 ± 13.4 years and 67.4% were male. At one-year, all-cause mortality occurred in 15.8% of patients in Cohort 1 versus 18.4% of patients in Cohort 3 (hazard ratio: 0.76; 95%CI: 0.36 - 1.59; p = 0.462) versus 5.6% in Cohort 2 (hazard ratio: 0.24; 95%CI: 0.10 - 0.59; p = 0.002). A trend that remained significant after multivariate adjustment (hazard ratio: 0.28; 95%CI: 0.11 - 0.71; p = 0.007).
Conclusions: Patients with NSTEMI who have an occluded culprit have higher one-year all-cause mortality than those who do not. These findings support the need for timely and accurate identification of patients with acute coronary occlusion.

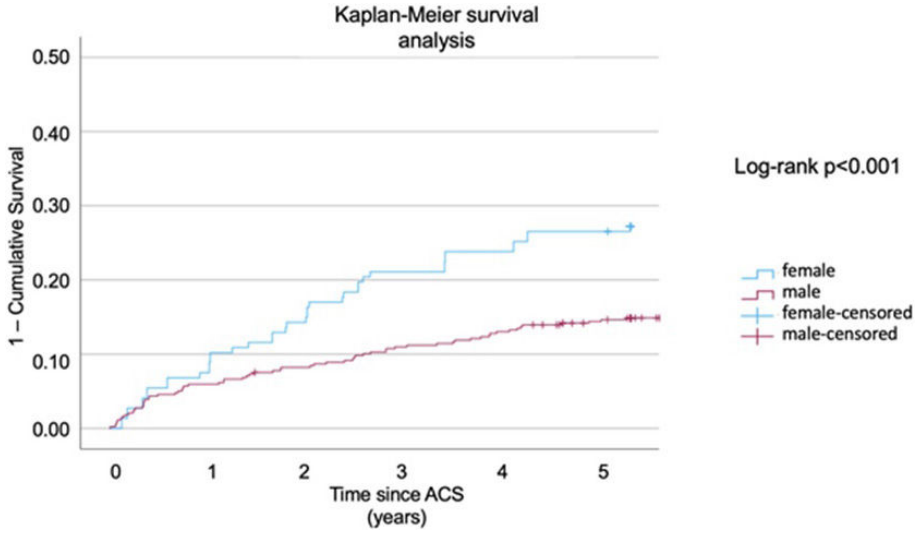


Figure PO 331

PO 333. CORONARY ANGIOGRAPHY IN HIGH-RISK NON-ST-ELEVATION ACUTE CORONARY SYNDROME – THE SOONER THE BETTER?

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Introduction: Current guidelines recommend an early invasive coronary angiography (ICA), in the first 24 hours, for high-risk non-ST elevation acute coronary syndrome (NSTE-ACS) patients. However, several studies have failed to demonstrate a significant improvement in all-cause mortality, with controversial results regarding recurrent ischemia and myocardial infarction.
Objectives: To evaluate the optimal timing of ICA in high-risk NSTE-ACS.
Methods: This was a national multicentre retrospective study of patients hospitalized for NSTE-ACS between October 2010 and October 2023. Patients presenting in Killip class IV, with mechanical complications, life-threatening arrhythmias or cardiac arrest were excluded. Participants were divided into three groups, according to the timing of ICA: in the first 24 hours (D0), between 24 and 48 hours (D1) and between 48 and 72 hours (D2). The incidence of in-hospital complications and mortality, as well as 1-year mortality rate and cardiovascular rehospitalization, was compared for the three groups.
Results: A total of 9,949 patients was included, 98.2% with non-ST elevation myocardial infarction (NSTEMI) and 1.8% with unstable angina with high-risk criteria (GRACE risk score > 140 or transient ST-segment elevation). Most patients were submitted to early ICA (46.7%), with 26.7% and 26.6% in D1 and D2, respectively. Interestingly, patients in higher Killip class (II or III) were referred for ICA latter than patients in Killip class I (9.0% in D0 vs. 11.3% in D1 vs. 13.5% in D2, p < 0.001). Regarding in-hospital complications, early ICA was associated with a lower incidence of acute heart failure (8.5% vs. 11.1% vs. 11.5%, p < 0.001) and shorter length of stay (7 vs. 6 vs. 10 days, p = 0.01). However, it did not reduce in-hospital mortality (1.2% vs. 0.7% vs. 0.8%, p = 0.07), recurrent myocardial infarction (0.9% vs. 1.5% vs. 1.3%, p = 0.09), cardiogenic shock (7.9% vs. 5.7% vs. 5.4%, p = 0.19), mechanical complications (0.1% vs. 0.2% vs. 0.1%, p = 0.50) or sustained ventricular tachycardia (0.8% vs. 0.6% vs. 0.4%, p = 0.12). Left ventricular ejection fraction was also similar between groups (54% ± 12, p = 0.97).
There were also no significant differences between groups regarding 1-year mortality or cardiovascular rehospitalization (15.1% vs. 15.9% vs. 15.7%, p = 0.89).
Conclusions: In high-risk NSTE-ACS patients, early ICA resulted in lower incidence of acute heart failure and shorter length of stay. However, timing of ICA didn't show a significant impact on in-hospital mortality or complications, nor in 1-year mortality rate or cardiovascular rehospitalization.

PO 334. ARE WE GENDER-BIASED IN PRESCRIPTION PRACTICES? AN ANALYSIS OF THE PORTUGUESE REGISTRY OF ACUTE CORONARY SYNDROMES

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Introduction: Acute Coronary Syndromes (ACS), a prevalent disease spectrum in the 21st century, demands prompt diagnosis and treatment.

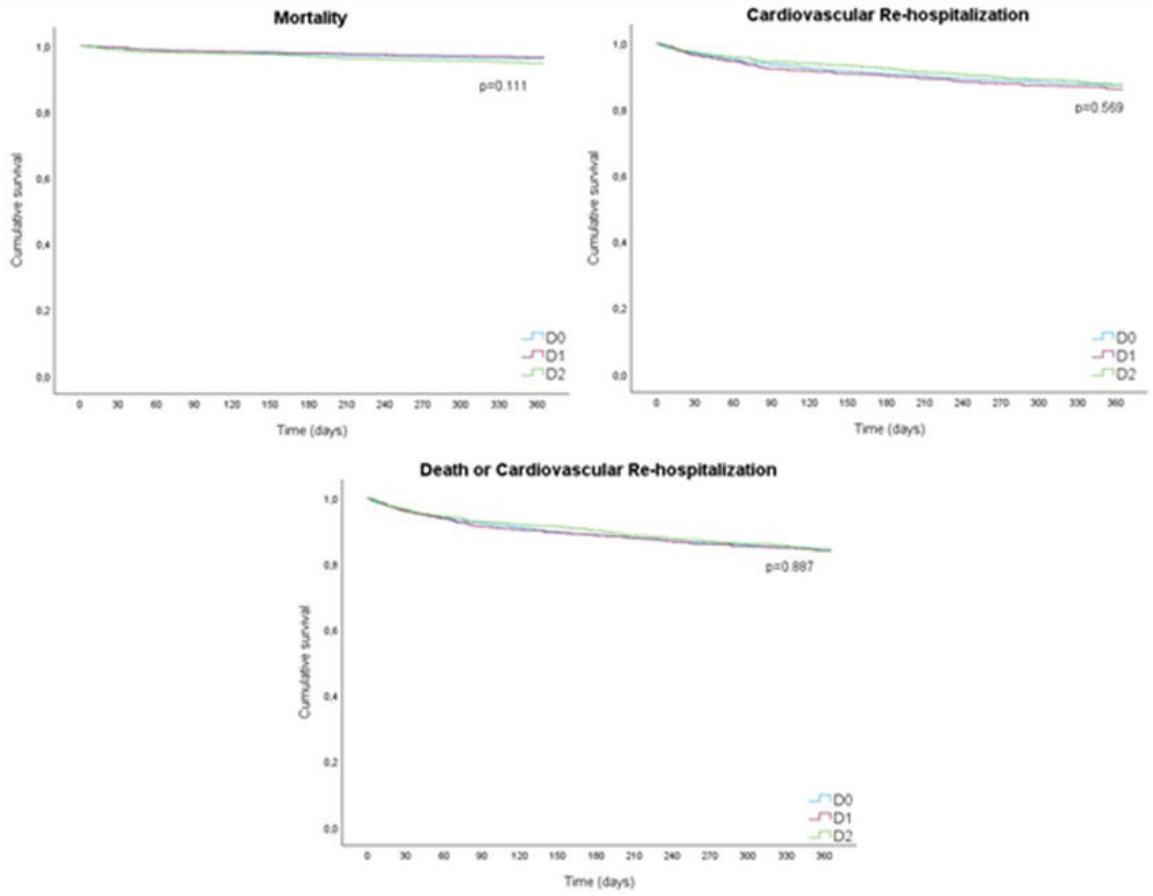

Fig. 1 – Early invasive coronary angiography did not reduce one-year mortality rate or cardiovascular re-hospitalization.

Figure PO 333

However, achieving optimal guideline-recommended medical therapy remains challenging despite healthcare providers' efforts.
Objectives: This study aims to elucidate gender-related discrepancies in the therapy prescribed at discharge following an ACS.
Methods: An observational study was performed with retrospective analysis of all patients included between 2002 and 2019 in the Portuguese Registry of Acute Coronary Syndromes (ProACS), a voluntary, prospective, observational, continuous registry of the Portuguese Society of Cardiology and the National Center for Data Collection in Cardiology.
Results: This study included 49,113 patients (34,936 men and 14,177 women). Men with ACS were significantly younger than women (64 ± 13 years vs. 72 ± 12 years, p < 0.001). Women more frequently presented with Non-ST-Elevation Myocardial Infarction (NSTEMI) (47.5% vs. 43.0%, p < 0.001) or Unstable Angina (10.1% vs. 9.7%, p < 0.001) than ST-Elevation Myocardial Infarction (STEMI) (37.5% vs. 44.4%, p < 0.001). Female patients had a more frequent absence of a planned revascularization strategy (7.8% vs. 6.0%, p < 0.001), but also a higher rate of normal coronary angiography (11.7% vs. 5.7%, p < 0.001). Left Ventricular Ejection Fraction (LVEF) was similar between men and women with ACS (Table), but men had a higher rate of Beta-blockers prescribed at discharge (75.6% vs. 71.0%, p < 0.001). Women were more often prescribed mineralocorticoid receptor antagonists (MRA) (11.9% vs. 10.9%, p < 0.001) and diuretics (34.2% vs. 22.6%, p < 0.001). Men had a higher prescription of aspirin, P2Y12 inhibitors, and statins, while women were more likely than men to receive nitrates, amiodarone and digoxin (Table).

	Men	Women	p-value	OR
Normal coronary angiography	5.7%	11.7%	<0.001	2.22
Left Ventricular Ejection Fraction (LVEF)				
Average LVEF, ± SD	52 ± 14	53 ± 14	0.021	
LVEF ≥50%	61.4%	60.8%	0.284	0.98
LVEF 40-49%	19.4%	19.2%	0.675	0.99
LVEF 30-39%	11.9%	12.3%	0.265	1.04
LVEF <30%	7.3%	7.7%	0.214	1.05
Planned Revascularization Strategy				
PCI	88.0%	87.4%	<0.001	1.33
PCI + CABG	0.6%	0.3%	0.034	0.62
CABG	5.5%	4.4%	<0.001	0.8
None	6.0%	7.8%	<0.001	1.33
Adverse Events during Hospital Admission				
Heart Failure	19.4%	31.1%	<0.001	1.87
Atrial Fibrillation	4.4%	6.6%	<0.001	1.55
Death	3.7%	6.9%	<0.001	1.94
Post-Discharge Medication				
Acetylsalicylic acid	94.1%	91.7%	<0.001	0.69
Clopidogrel	60.4%	54.1%	<0.001	0.77
Prasugrel	0.3%	0.3%	0.606	0.80
Ticagrelor	22.8%	17.9%	<0.001	0.73
Beta-blockers	75.6%	71.0%	<0.001	0.79
ACEi or ARBs	77.4%	76.7%	0.090	0.96
Statin	91.7%	88.0%	<0.001	0.66
Other hypolipidemic drugs	6.2%	4.3%	<0.001	0.68
Nitrates	37.7%	45.6%	<0.001	1.39
Calcium channel blockers	12.5%	15.6%	<0.001	1.30
MRA	10.0%	11.9%	<0.001	1.21
Diuretics	22.6%	34.2%	<0.001	1.78
Amiodarone	3.4%	5.3%	<0.001	1.62
Digoxin	0.7%	1.3%	<0.001	1.94

Table 1. Differences between men and women in normal coronary angiography, Left Ventricular Ejection Fraction, Planned Revascularization Strategy and Post-Discharge Medication. ACEi: Angiotensin-Converting-Enzyme Inhibitors; ARB: Angiotensin Receptor Blockers; CABG: Coronary Artery Bypass Graft; LVEF: Left Ventricular Ejection Fraction; MRA: Mineralocorticoid Receptor Antagonists; PCI: Percutaneous Coronary Intervention.

Conclusions: Based on the available data, it remains uncertain whether the differences in prescription of aspirin, P2Y12 inhibitors, beta-blockers and statins could be explained by the higher rate of normal coronary angiographies in women and, therefore, alternative diagnoses. Women received higher rates of diuretics, MRA and anti-arrhythmics (amiodarone and digoxin), likely associated with the increased incidence of Heart Failure (HF) and Atrial Fibrillation during hospital admission. Interestingly, the higher incidence of HF does not correlate with a worse LVEF, adding complexity to the interpretation of these associations. The absence of a planned revascularization strategy in more women than men might explain the higher prevalence of nitrates and calcium channel blockers, but does not explain why women receive less statins or anti-platelet agents. In conclusion, this registry shows substantial gender-based discrepancies in prescribing practises for ACS patients, which should be addressed in order to improve healthcare equity.

PO 335. COMPARATIVE SAFETY AND EFFICACY OF ROTATIONAL ATHERECTOMY IN NSTE-ACS AND SA PATIENTS: A RETROSPECTIVE STUDY

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Introduction: Rotational atherectomy (RA) has been a recognized medical procedure for over 15 years, yet its clinical outcomes in specific high-risk groups, such as patients with non-ST-elevation acute coronary syndromes (NSTE-ACS) are not thoroughly established. This study was conducted to evaluate the safety and effectiveness of RA in patients who had suffered acute or recent NSTE-ACS.
Objectives: The objective of this study was to evaluate the safety and efficacy of rotational atherectomy (RA) in patients with non-ST-elevation acute coronary syndrome (NSTE-ACS) including non-ST-elevation myocardial infarction and unstable angina.
Methods and results: This observational retrospective registry compared outcomes of RA in patients with stable angina (SA) and NSTE-ACS. The primary endpoint was in-hospital major adverse cardiac events (MACE) and procedural complications. Out of 99 patients, 26% (26 patients) presented with NSTE-ACS, and 74% (73 patients) had SA. Angiographic success rates were comparable between the groups (NSTE-ACS: 96.2% vs. SA: 97.3%, p = 0.65). Univariate analysis revealed procedural complications to be more frequent in NSTE-ACS patients (15.4% vs. 6.8% in SA, p = 0.03). In-hospital MACE rates were similar (NSTE-ACS: 7.7% vs. SA: 5.5%, p = 0.61). Multivariate analysis indicated a trend towards increased risk in NSTE-ACS patients, although not statistically significant. Over a median follow-up of 27.9 months, MACE was higher in the NSTE-ACS group (18.5% in NSTE-ACS vs. 12.3% in SA (p = 0.10), as confirmed by multivariate analysis.
Conclusions: In a study of 99 patients, rotational atherectomy (RA) showed similar safety and efficacy in treating patients with non-ST-elevation myocardial infarction (NSTE-ACS) and stable angina (SA). NSTE-ACS patients had a slightly higher rate of procedural complications compared to SA patients, but the in-hospital major adverse cardiac event (MACE) rates were comparable between the two groups.

PO 336. REVASCULARIZATION STRATEGIES IN ELDERLY PATIENTS WITH ACUTE CORONARY SYNDROMES AND MULTIVESSEL DISEASE: A COMPARATIVE ANALYSIS OF CULPRIT-ONLY VS. COMPLETE REVASCULARIZATION

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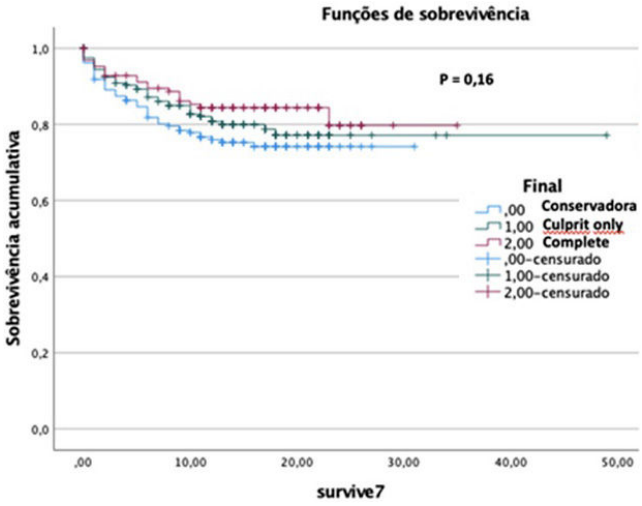
Introduction: Acute syndromes (ACS) are more challenging in elderly patients, particularly when related to multivessel disease (MVD). Concerns about outcomes, and the lack of evidence, lead to more conservative treatment. While benefits of complete revascularization are well established among the youngest, doubts persist in older patients. Despite FIRE trial having showed superiority of complete revascularization with coronary physiology, in older patients with ACS and MVD, more evidence is needed.
Methods: Multicenter retrospective cohort of 629 patients, older than 75 years, with ACS and MVD, was divided into complete or culprit-only revascularization groups. In-hospital outcome of death and major adverse cardiovascular events (MACE) and follow-up outcome of death and cardiovascular hospital admission were assessed.
Results: From the 629 patients, 383 (61%) were submitted to PCI, of which 66% (n = 254) were submitted to culprit-only revascularization and 34% (n = 129) to complete revascularization. Culprit-only group's mean age was 83 ± 5 years and median age in complete revascularization group was 81 (IQ 78-84) years. There was similar number of female patients in both groups (42% and 37%, p = 0.26), and the culprit only group was significantly older (p = 0.006). There were more ST-segment elevation myocardial infarctions in culprit-only group

(p < 0.001). Regarding diabetes, previous ACS, Killip classification, heart failure, stroke, peripheral artery disease, and chronic kidney disease, there were no statistically significant differences between groups (p > 0.05). Complete revascularization was associated with lower in-hospital events, with 36% against 48% in culprit-only (p = 0.025 OR 0.62 [0.4-0.9]), mainly due to lower in-hospital deaths, with 3% against 13% (p < 0.01 OR 0.3 [0.15-0.67]) but also due to lower in-hospital MACE with 29% against 27% (p = 0.02 OR 0.6 [0.4-0.9]). The mean follow-up was 13 ± 7 months, during which, in complete revascularization group, there was non-statistically significant decrease of deaths, with 13% against 15% (p = 0.4), hospital readmissions, with 21.8%, in comparison with 24.9% (p = 0.2), and composite outcome, with 35% and 40% (p = 0.16) of composite events in the culprit-only group There was a non-statistically significant decrease of the mean for survival time for culprit only group which was 10 ± 8 months comparing with complete group of 13 ± 8 months (p = 0.16).



Conclusions: In older patients with ACS and MVD the ideal strategy is yet to be determined. Still complete revascularization strategy showed a statistically significant decrease of in-hospital death and MACE, and non-statistically significant decrease in follow-up mortality and readmissions. This study suggests, like FIRE trial, that when clinically and anatomically feasible, it seems legit to attempt complete revascularization in elderly patients with ACS and MVD.

Domingo, 21 Abril de 2024 | 10:30-11:30

Área de Posters 1 | Sessão de Posters 52 - Intervenção na doença valvular

PO 337. OUTCOMES OF VALVE-IN-VALVE AND VALVE-IN-RING PROCEDURES FOLLOWING 1.6 YEARS OF FOLLOW-UP

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Introduction: Valvular bioprosthesis are prone to degeneration, often needing high-risk surgery. Valve-in-valve (ViV) and valve-in-ring (ViR) procedures offer increasingly common and viable alternatives.

Objectives: To assess outcomes of ViV and ViR procedures, including factors predicting survival.
Methods: This retrospective study, carried out at a tertiary center, followed 24 patients after ViV and ViR procedures between August 2020 and August 2023. Baseline and follow-up data were collected from hospital and primary care center records. Following this, we explored the correlation with mortality using bivariate analysis, followed by binary logistic regression and Cox Regression. The multivariate analysis considered various factors, namely gender, diabetes, hypertension, dyslipidemia, tobacco use, body mass index, post-procedural myocardial injury, heart failure, type of procedure and valve, prior myocardial infarction or stroke and pre/post-procedure valvular mean gradients and ejection fraction. Bivariate analysis employed Chi-square/Fisher tests for categorical variables and parametric/non-parametric tests based on the normal distribution of continuous variables. Statistical significance was set at p < 0.05.
Results: Over a mean follow-up of 1.6 years, we monitored 24 patients who underwent ViV or ViR procedures, with 71% being aortic ViV, 8% mitral ViV, 4% tricuspid ViV and 29% mitral ViR. The median age at implantation was 80 years, with 42% being male, 58% hypertensive, 21% diabetic and 50% having dyslipidemia. During follow-up, 75% were on anticoagulants, while 25% were on antiplatelets. Additionally, four patients died during follow-up, and three experienced procedure-related complications. The absence of anticoagulation post-procedure was associated with increased mortality, both in bivariate analysis and after adjusting for potential confounders (adjusted: p = 0.035, OR: 16, 95%CI: 1.22-210.6). This association was further reinforced by Cox regression analysis (p = 0.049, HR 11.8, 95%CI: 1.01-137.6). No other variable demonstrated a significant adjusted association with survival.
Conclusions: The enduring benefits and safety of ViV and ViR procedures are evident in mid-term outcomes. While the weak association between survival and the absence of anticoagulation post-procedure requires further validation and analysis with larger cohorts, this finding remains noteworthy in the context of existing literature.

PO 338. TRICUSPID INTERVENTION FOR SEVERE TRICUSPID REGURGITATION IN PATIENTS WITH CARDIAC IMPLANTABLE ELECTRONIC DEVICES - MANAGEMENT, FATE OF LEADS AND OUTCOMES

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Introduction: Prevalence of lead induced tricuspid regurgitation (LITR) is 7-45%. The most frequent mechanism is lead impingement. However, RV remodelling, pacing-induced cardiomyopathy and tricuspid annular dilatation also can contribute. Only a subset of patients (pts) are candidate to surgical treatment due to high operative risk. Percutaneous treatments have emerged as alternatives, even in pts with preexisting CIED leads.
Objectives: Despite its importance, there is a scarcity of data concerning the impact of the CIED-associated TR in terms of management, fate of leads and pts outcome. The purpose of the current work is to improve some of the gaps in evidence identified above.
Methods: A retrospective, single centre analysis was made including pts with CIEDs referred to study of eligibility for tricuspid percutaneous intervention. All CIED lead-related TR were evaluated using both transthoracic echocardiography (TTE) and transoesophageal echocardiography (TEE). Data were collected regarding pts evaluation, management and follow-up.
Results: From 2020 to 2023, of the 97 pts referred for study of tricuspid percutaneous intervention eligibility, 37% had a CIED, with 39% presenting lead impingement as TR mechanism. The majority of pts were female (58%), median age of 78 (72-83) years. Median Euroscore II was 6% (3-9), with 51% of pts having a previous heart surgery. Prior to CIED implantation, 14% already presented severe TR. When analysing post CIED TR, 30% increased 1 grade of TR at 1 year follow up (FU) and 68% increased 1 grade of TR at 5 years FU. Desynchrony was present in 30% of pts. At time of referral for eligibility for percutaneous intervention all pts presented severe TR and 30% underwent intervention (22% percutaneous and 8% surgical). All pts remained with previous electrodes, without need for intervention for dysfunction during

FU. When analysing LITR pts, 29% were submitted to intervention. Of those, 7% had edge to edge therapy, 7% heterotopic bicaval device implantation and 15% surgical correction. Subgroups analysis of desynchrony, LITR or type of intervention had no statistically significant differences in outcome, probably due to the small cohort.
Conclusions: On our study population more than one third presented lead impingement as TR mechanism and one third presented with desynchrony at 5 years post CIED implantation. There were no statistically significant differences in mortality when evaluating desynchrony, LITR or type of intervention.

PO 339. IMPACTO DO TEMPO DE ESPERA NOS DOENTES EM LISTA PARA SUBSTITUIÇÃO VALVULAR AÓRTICA

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Introdução: A Substituição Valvular Aórtica (SVA) é o único tratamento eficaz para a estenose aórtica (EA) severa e deve ser realizada mais rapidamente possível após estabelecimento de indicação clínica, com vista a reduzir o risco de insuficiência cardíaca (IC) e de mortalidade. Sabe-se que a capacidade de resposta de vários centros europeus aos doentes com EA severa tem permanecido abaixo do ideal.
Objetivos: Avaliar o tempo desde a referenciação ao centro cirúrgico até à SVA de uma amostra de doentes com diagnóstico de EA severa e o impacto que este poderá ter na hospitalização e mortalidade.
Métodos: Estudo retrospetivo, observacional, descritivo, com inclusão de doentes com EA severa que tenham sido submetidos a SVA no centro cirúrgico de referência entre janeiro de 2018 e dezembro de 2021 ou que tenham falecido em lista de espera nesse período (N = 241). Resultados: Num total de 174 doentes submetidos a SVA em regime de ambulatório, 82,2% realizaram cirurgia de substituição valvular (SAVR) e 17,8% implantação percutânea de prótese valvular aórtica (TAVI). Num total de 56 doentes submetidos a SVA em regime de internamento 89,3% realizaram SAVR e 10,7% TAVI. Em regime de ambulatório a mediana de tempo de espera para SAVR e TAVI foi de 226 e 426 dias, respetivamente. Em regime de internamento, a média de tempo de espera para SAVR e TAVI foi de 9 e 15 dias, respetivamente. A 3 meses, da lista de espera tinham sido internados 1,6% dos doentes e aos 6 meses, 4,3%. No total de tempo de estudo, foram internados 13% dos doentes. As mortes ocorreram apenas após os 3 meses de espera, sendo que 1,1% dos doentes faleceram até aos 6 meses. A mortalidade total foi de 6% no período avaliado. No fim do estudo, a estimativa de sobrevivência global fixou-se nos 69,1%.
Conclusões: A intervenção valvular mais realizada é a SAVR. O tempo de espera para TAVI é superior ao de SAVR tanto em regime de ambulatório como de internamento. Os tempos de espera para SVA descritos em regime de ambulatório são consideravelmente superiores aos recomendados. Tempos prolongados de espera em ambulatório estão associados uma incidência crescente de eventos adversos e mortalidade.

PO 340. CONSERVATIVE APPROACH FOR SIGNIFICANT VALVULAR HEART DISEASE – HOW GRIM IS THE PROGNOSIS?

Carolina Pereira Mateus[1], Inês Fialho[1], Joana Lima Lopes[1], Mariana Passos[1], Filipa Gerardo[1], Márcio Madeira[2], João Bicho Augusto[1], Miguel Santos[1], Sérgio Bravo Baptista[1], Pedro Farto e Abreu[1], Carlos Morais[1], José Neves[2]

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Introduction: The Heart Team (HT) has the goal of defining the best treatment for each patient, sometimes recommending a conservative approach. The goal of this study was to compare the outcomes of valvular heart disease (VHD) patients proposed for a conservative vs. interventional approach in a contemporary dedicated HT meeting.
Methods: A single-center study included all consecutive patients evaluated by the valvular HT from January 2018 to June 2021. Demographics, comorbidities, therapeutic decisions, and major adverse cardiovascular events (MACE, i.e. all-cause mortality, stroke, myocardial infarction, hospital readmission and worsening heart failure) at 6 months after the HT meeting were analyzed. Group comparisons used appropriate statistical tests, and survival analysis employed the Mantel-Cox log-rank test.

	Conservative approach (n=24)	Interventional approach (n=287)	p-value
Age (years)	79.3±9.7	73.6±12.4	0.029
Female Sex (%)	13 (54.2)	141 (49.1)	0.635
Primary VHD, n (%)			
aortic stenosis	13 (54.2)	222 (77.4)	0.011
mitral regurgitation	4 (16.7)	40 (13.9)	0.712
infective endocarditis	5 (20.8)	14 (4.9)	0.002
aortic regurgitation	1 (4.2)	20 (7.0)	0.599
Baseline status			
Euroscore-II, %	Median 6.7 (IQR 3.0 - 16.8)	Median 3.5 (IQR 1.8-5.8)	0.003
Glomerular filtration rate, mL/min/1.73m²	46.4±27.4	58.2±29.7	0.061
Preserved EF, n (%)	16 (69.6)	217 (75.9)	0.499
Moderate to severe Pulmonary hypertension, n (%)	9 (37.5)	45 (15.8)	0.007
MACE, n (%)	12 (52.2)	73 (25.7)	0.006
All-cause mortality, n (%)	11 (45.8)	36 (12.6)	<0.001

Table 1 Characteristics of conservative and interventional groups and respective p values

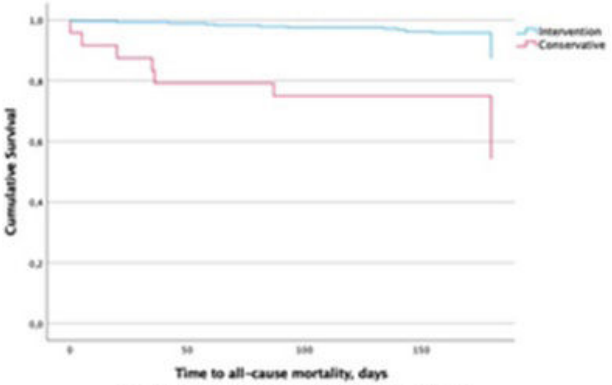

Figure 1A. Six month survival (Log-rank p<0.001)

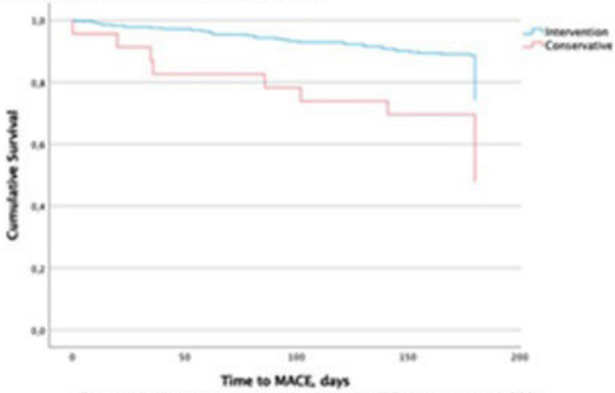

Figure 1B. Six month survival free from MACE (Log-rank p=0.002)

Figure PO 340

Results: A total of 312 patients with VHD were discussed in the HT meeting. A final decision of a conservative approach (CA) was made for 8.0% of patients (n = 24), and interventional approach (IA) in 92.0% (n = 287) of patients (surgery in 63.4% and percutaneous valvular interventions in 36.6%). The baseline characteristics from both groups are summarized in the Table: patients in the CA group were significantly older (79.3 ± 9.7 vs. 73.6 ± 12.4 years, p = 0.029), had a higher prevalence of significant pulmonary hypertension (37.5 vs. 15.8%, p = 0.007), infective endocarditis (20.8 vs. 4.9%, p = 0.002) and higher EuroScore II (median 6.7 [3.0–16.8] vs. 3.5 [1.8–5.8]%, p = 0.003). The CA group showed significantly lower six-month survival free from all-cause mortality (45.8 vs. 12.6%, log-rank p < 0.001, Figure A) and MACE (52.2 vs. 25.7%, log-rank p = 0.002; Figure B).
Conclusions: In a contemporary valvular HT meeting cohort, patients recommended a conservative approach faced a grimmer prognosis at 6 months, with nearly half experiencing major short-term events. These findings highlight the importance of close follow-up and dedicated palliative strategies in patient subgroup.

PO 341. PREDICTORS OF MAJOR ADVERSE CARDIOVASCULAR EVENTS IN PATIENTS WITH SEVERE AORTIC STENOSIS AWAITING AORTIC VALVE REPLACEMENT

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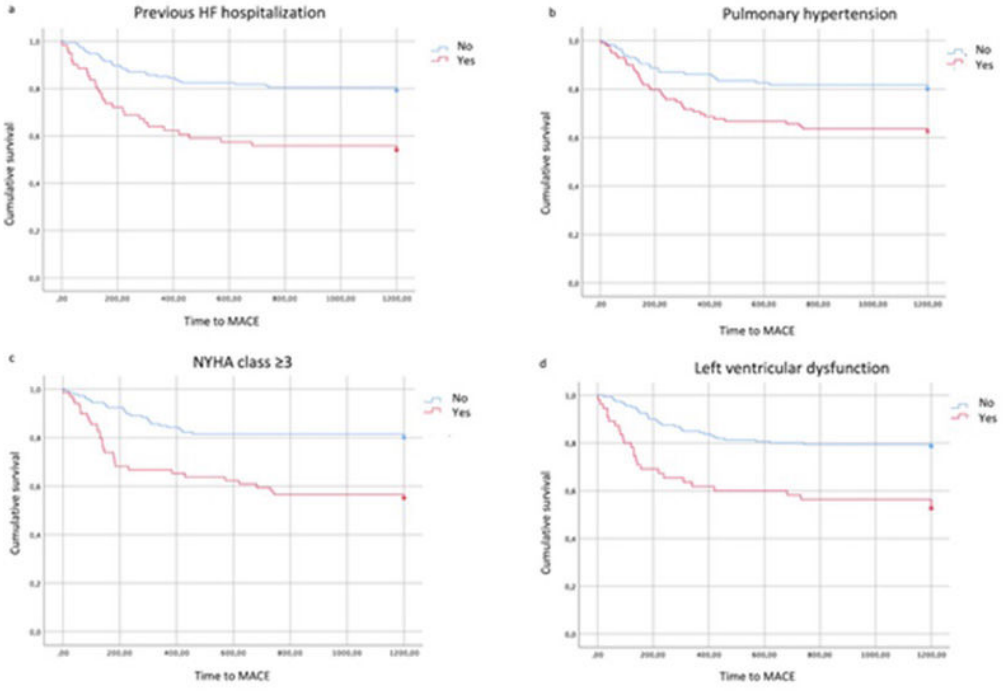
Introduction: Severe aortic stenosis (AS) is a progressive disease associated with an increased risk of heart failure (HF) and mortality if left untreated. Aortic valve replacement (AVR) is the treatment of choice. However, it is not always immediately available, and some patients have experienced major cardiovascular events (MACE) while waiting for AVR. The identification of reliable predictors of MACE can help clinicians risk-stratify severe AS patients and tailor their management to prevent adverse outcomes.
Objectives: We aimed to evaluate predictors of MACE in real-world patients with severe AS who are waiting for AVR.
Methods: We conducted a prospective registry of consecutive patients discussed in the Heart Team meeting of a single centre, between January 2018 and June 2021. All patients with severe AS were included. For each patient we recorded demographic data, blood test results, echocardiogram parameters, and MACEs (a composite of death, HF hospitalization, non-fatal acute myocardial infarction, and non-fatal stroke). MACEs were recorded until the patient underwent AVR. The median follow-up time was 187 days (IQR 59-352).
Results: Overall, 235 patients were included (mean age 76.7 ± 10.7 years, 48.1% male). Previous HF hospitalization (HR 2.77, 95%CI 1.66 – 4.62), HF symptoms with New York Heart Association (NHYA) class ≥ 3 (HR 2.64, 95%CI 1.58 – 4.39), and the presence of left ventricular dysfunction (HR 2.86, 95%CI 1.71 – 4.78) were independent predictors of MACE (Figure). The presence of pulmonary hypertension (HR 2.16, 95CI 1.27 – 3.66), but not right ventricular dysfunction (HR 2.34, 95CI 0.45–12.08, p = 0.31), was associated with MACE until AVR. Concomitant moderate to severe tricuspid regurgitation (HR 10.88, 95CI 1.41 – 83.94) and moderate to severe mitral regurgitation (HR 5.91, 95CI 1.50 – 23.34) were associated with a worse prognosis, even when adjusted for other relevant MACE predictors. Laboratory data such as serum creatinine, haemoglobin, and NT-proBNP levels were not associated with the occurrence of MACE in this population (HR 1.00). Past medical history of hypertension, diabetes, chronic kidney disease, and chronic obstructive pulmonary disease were not associated with MACE. Age was a limited predictor of MACE (HR 1.03, 95CI 1.00 – 1.06, p = 0.04).
Conclusions: Previous HF hospitalization, NYHA class ≥ 3 symptoms, left ventricular dysfunction, and pulmonary hypertension were independent predictors of MACE in patients with severe AS awaiting AVR. Additionally, concomitant moderate to severe tricuspid and mitral regurgitation were also associated with worse prognosis. These findings may help identify those at high risk of MACE who would benefit most from early intervention and close monitoring.



Graph 1 – Time to MACE (days) in aortic stenosis with reduced ejection fraction (green) and preserved ejection fraction (blue) (Cox-Mantel log rank p=0.035).

Figure PO 341

PO 342. ANTICOAGULATION FOLLOWING VALVE-IN-VALVE, VALVE-IN-RING AND VALVE-IN-MAC - A SYSTEMATIC REVIEW WITH METAANALYSIS

Gonçalo Terleira Batista, Gonçalo Ferraz Costa, Tatiana Pereira dos Santos, Mariana Rodrigues Simões, Ana L Silva, Joana Guimarães, Diogo Fernandes, Bernardo Resende, Eric Monteiro, Rafaela Fernandes, Joana Delgado Silva, Lino Gonçalves

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Introduction: Antithrombotic therapy after transcatheter valve implantation (TVI) is well established. However, antithrombotic management of valve-in-valve (ViV), valve-in-rings (ViR), and valve-in-mitral annular calcification (ViMAC) procedures is controversial.
Objectives: To compare anticoagulation regimens after valve-in-valve (ViV), valve-in-ring (ViR), and valve-in-MAC (ViMAC) procedures with no anticoagulation regimens.
Methods: We systematically reviewed Pubmed. Embase and Cochrane Central Register of Controlled Trials, and the grey literature for observational and interventional studies published until August 2023, comparing both antithrombotic strategies. Major bleeding and the rate of both clinical and non-clinical valve thrombosis were the primary outcomes. The Newcastle-Ottawa scale and the Cochrane risk of bias tool were employed to evaluate the risk of bias. RevMan 2.0 was incorporated for analyzing the data. The statistical software SPSS (v.28.0.1) was used to conduct secondary analysis.
Results: After screening and exclusion of duplicates, we obtained six studies, giving a total of 1,082 participants (614 patients on anticoagulation arms, 468 on no anticoagulation arms). The rate of clinical thrombosis was 5.8% in ViV and ViR procedures and 4.2% for all procedures. The incidence in anticoagulation groups was significantly lower (1.1%) compared to that of the non-anticoagulated groups (9.4%), thus an anticoagulation regiments demonstrated significant effectiveness in reducing clinical valve thrombosis (OR: 0.18; 95% Confidence Intervals [CI]: 0.08-0.45, I2: 0%, p = 0.0002) along with total valve thrombosis (OR: 0.16; 95%CI: 0.07-0.37, I2: 0%, p < 0.0001). Bleeding and Mortality analysis was not performed due to lack of reporting of events.
Conclusions: In conclusion, our pooled analysis suggests that anticoagulation may be an effective option in reducing the exceedingly high rates of clinical and non-clinical valve thrombosis that take place in patients following ViV, ViR, and ViMAC procedures.

Domingo, 21 Abril de 2024 | 10:30-11:30

Área de Posters 2 | Sessão de Posters 53 - Complicações de TAVI

PO 343. POST-TAVI CARE: ASSESSING THE NEED FOR CARDIAC DEVICE IMPLANTATION

João Mendes Cravo[1], Marta Miguez Vilela[2], Ana Margarida Martins[2], Catariana Simões de Oliveira[2], Miguel Nobre Menezes[3], João Silva Marques[3], Cláudia Jorge[3], Pedro Carrilho Ferreira[3], João de Sousa[3], Pedro Marques[3], Pedro Cardoso[3], Fausto J. Pinto[3]

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Introduction: Despite advancements in technical procedure, new-onset conduction abnormalities following transcatheter aortic valve implantation (TAVI) remain a common complication. The need for cardiac device (CD) implantation is a crucial consideration, with reported rates varying across studies.
Objectives: To evaluate predictors of cardiac device implantation in patients (pts) submitted to TAVI.
Methods: Single center retrospective study of consecutive pts submitted to TAVI for severe aortic stenosis without prior history of cardiac device implantation, from September 2012 to November 2022. Clinical and electrocardiography (ECG) data was collected. Chronic kidney disease (CKD) was defined as creatinine clearance below 60 ml/min/1.73 m^2. For statistical analysis t-Student, Chi-square tests and logistic regression were performed.
Results: We included 687 pts, 55% females, mean age 84 ± 7 years, with high burden of cardiovascular risk factors (hypertension: 90%, dyslipidemia: 74%, diabetes: 37%, CKD: 31%, smoking habits: 20%), 53% of pts with a NYHA functional class above III. Prior diagnosis of atrial fibrillation (AF) and stroke was present in 40% and 14% of pts, respectively. ECG at baseline showed sinus rhythm in 74% of pts, AF in 26%, a median PQ and QRS interval duration was 170 and 101 ms, respectively. Self-expanding valves were implanted in the majority of pts (65%), pre and post dilatation ballooning was performed in 31% and 19% of pts, respectively. During a mean follow-up of 2.5 years, 30% of pts required a CD (pacemaker in 96% of pts), and the reason for implantation was high degree atrioventricular block (AVB) in 68% of pts followed by QRS enlargement in 16% and brady AF in 7% of pts. Early new-onset conduction disturbances (< 24h) occurred in 57% of pts and 82% of devices were implanted before discharge. On bivariate analysis, history of AF and use of self-expanding valves were associated with a 1.7 and 1.5 fold higher odds for the requirement of CD. Furthermore, valve size (CD: 27 ± 3 mm vs. non-CD: 26 ± 3 mm, p ≤ 0.001), pre and post procedure QRS duration (pre CD: 113 ± 23 vs. non-CD: 103 ± 21 ms, p = 0.019; post CD 140 ± 27 vs. non-CD: 124 ± 37 mm, p = 0.032) and post-TAVI PQ duration (CD: 200 ± 55 vs. non-CD: 183 ± 43 ms, p ≤ 0.001) were associated with higher risk of CD implantation. On multivariate analysis, prior history of AF was the only independent predictor for CD implantation (OR 2.2, CI 1.12-4.9).
Conclusions: Within our pt cohort, AF, valve characteristics, and pre-existing conduction abnormalities emerged as predictors for CD implantation predictors. These factors should be considered to optimize post-TAVI care.

PO 344. POST-TAVI MYOCARDIAL INJURY: DEFINING A DIAGNOSIS

Gonçalo Terleira Batista, Ana Luísa Rocha, Tomás Carlos, Ana L Silva, Maria Rodrigues Simões, Tatiana Pereira dos Santos, Diogo Fernandes, Joana Guimarães, Gonçalo Ferraz Costa, Joana Delgado Silva, Marco Costa, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra.

Introduction: In the high-sensitivity troponin (hsTN) era, understanding post transcatheter aortic valve implantation (TAVI) elevated hsTN values and their impact on mortality is critical. This study aims to clarify the link between hsTNI levels and post-TAVI survival, with a focus on identifying the optimal clinical significance cutoff.
Methods: In a retrospective study at a tertiary center, we analyzed TAVI patients from July 2021 to November 2022. Peak hsTNI values at 72 hours post-TAVI were collected, and cutoff values were explored using area under the curve (AUC) analysis and Youden's index. The association between hsTNI levels and death was assessed via bivariate analysis, followed by binary logistic regression and Cox regression. The multivariate analysis included gender, diabetes, hypertension, dyslipidemia, atrial fibrillation, tobacco use, peripheral artery disease, congestive heart failure (HF), other valvular disease, malignant neoplasm, laboratory parameters at admission [hemoglobin (Hb), c-reactive protein (cRP) and creatinine], as well as previous myocardial infarction, angioplasty, stroke, and cardiac surgery as independent variables. Patients with life-threatening procedural-related complications were excluded.
Results: A cohort of 318 patients, median age 82 years and 54% male was monitored for an average of 561 days post-TAVI. Characteristics included 37% diabetics, 85% hypertensives, 31% had HF; median Hb of 12.4 g/dL and cRP of 0.27 mg/dL. Median hsTNI was 345 ng/L, with 39 recorded deaths.

In the bivariate analysis, hsTNI demonstrated a significant association with mortality (p = 0.009), confirmed by AUC of 0.64 (95%CI: 0.54-0.73). This association persisted after adjusting for confounders (p = 0.024). HsTNI values divided by 100, in both unadjusted and adjusted Cox regressions, indicated an association with survival (unadjusted HR 1.015, 95%CI: 1.005-1.025; adjusted HR 1.018, 95%CI: 1.007-1.028). Regarding cutoff values, hsTNI at 10 times the upper reference limit was associated with increased mortality (p = 0.07). Patients exceeding this cutoff showed elevated mortality in both unadjusted (HR 3.01, 95%CI: 1.41-6.43) and adjusted Cox regression (HR 2.73, 95%CI: 1.23-6.10).
Conclusions: Establishing optimal cutoffs for post-procedural myocardial injury in the hsTN era is an ongoing challenge. Our study reaffirms the link between elevated hsTNI values post-TAVI and survival while suggesting a potentially suitable cutoff.

PO 345. IMPACT OF TRANSCATHETER AORTIC VALVE IMPLANTATION ON KIDNEY FUNCTION IN PATIENTS WITH SEVERE AORTIC STENOSIS

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Introduction: Aortic valve stenosis may diminish renal perfusion and promote congestion, thereby worsening kidney function (KF). Transcatheter aortic valve implantation (TAVI) is expected to interrupt this cycle and improve cardio-renal function. This study aimed to clarify the effect of TAVI on KF in the acute and chronic phases.
Methods: We conducted a prospective observational study that included patients (pts) undergoing transfemoral TAVI at a Portuguese hospital between November 2021 and May 2023. Exclusion criteria included unwillingness to provide written consent, chronic kidney disease (CKD) with a Glomerular Filtration Rate (eGFR) < 25 ml/min/1.73 m², atrial fibrillation, non-revascularized ischemic heart disease, active autoimmune or neoplastic disease. Serum creatinine (sCr) levels were collected on the day before TAVI (baseline sCr), 48 hours after TAVI and at 6 months follow-up.
Results: Forty-seven pts (mean age 82 ± 5, 64% female) with a complete 6-month follow-up were included. Baseline sCr was 1.00 ± 0.36 mg/dL and pre-TAVI eGFR was 55 ± 20 ml/min/1.73 m²; 43% of the pts had CKD with an eGFR 25-59 ml/min/1.73 m². Compared to baseline levels, mean sCr marginally decreased without statistical significance (0.95 ± 0.50 vs. 1.00 ± 0.36, mean difference -0.06 ± 0.33 mg/dL, p = 0.25) and eGFR significantly improved (68 ± 23 vs. 55 ± 20, mean difference +6 ± 13 ml/min/1.73 m², p = 0.003) on the second day after TAVI. At 6 months follow-up, both sCr (1.09 ± 0.39 vs. 1.00 ± 0.36, mean difference +0.09 ± 0.26 mg/dL, p = 0.02) and eGFR (57 ± 19 vs. 62 ± 20, mean difference -5 ± 13 ml/min/1.73 m², p = 0.01) deteriorated compared to baseline levels. Brain natriuretic peptide levels improved at 6 months (277 ± 250 vs. 132 ± 135 pg/mL, p < 0.001). Pts were divided in 2 groups according to baseline eGFR: no relevant CKD (baseline eGFR ≥ 60 ml/min/1.73 m²) and CKD. Both groups displayed acute improvement in KF but the group with no CKD presented a decline in baseline KF at follow-up compared with CKD (difference in sCr to baseline levels: +0.16 ± 0.19 vs. -0.01 ± 0.31 mg/dL, p = 0.006, difference in eGFR to baseline levels: -10 ± 12 vs. +2 ± 12 ml/min/1.73 m², p = 0.03) (Figure). At follow-up, 28% of the patients had worsened KF, defined as ≥ 20% decrease in baseline eGFR; significant deterioration of KF occurred more often in pts with no previous CKD (37% vs. 15%, p = 0.02).
Conclusions: Our study suggests that cardiorenal syndrome is partially responsible for CKD in pts in need of TAVI and that there is potential for improvement in both renal and cardiac function after this procedure. Pts with previous CKD showed improvement in eGFR immediately after TAVI and stable KF at follow-up. Interestingly, patients with no previous relevant CKD showed higher rates of significant renal deterioration at 6 months. The fact

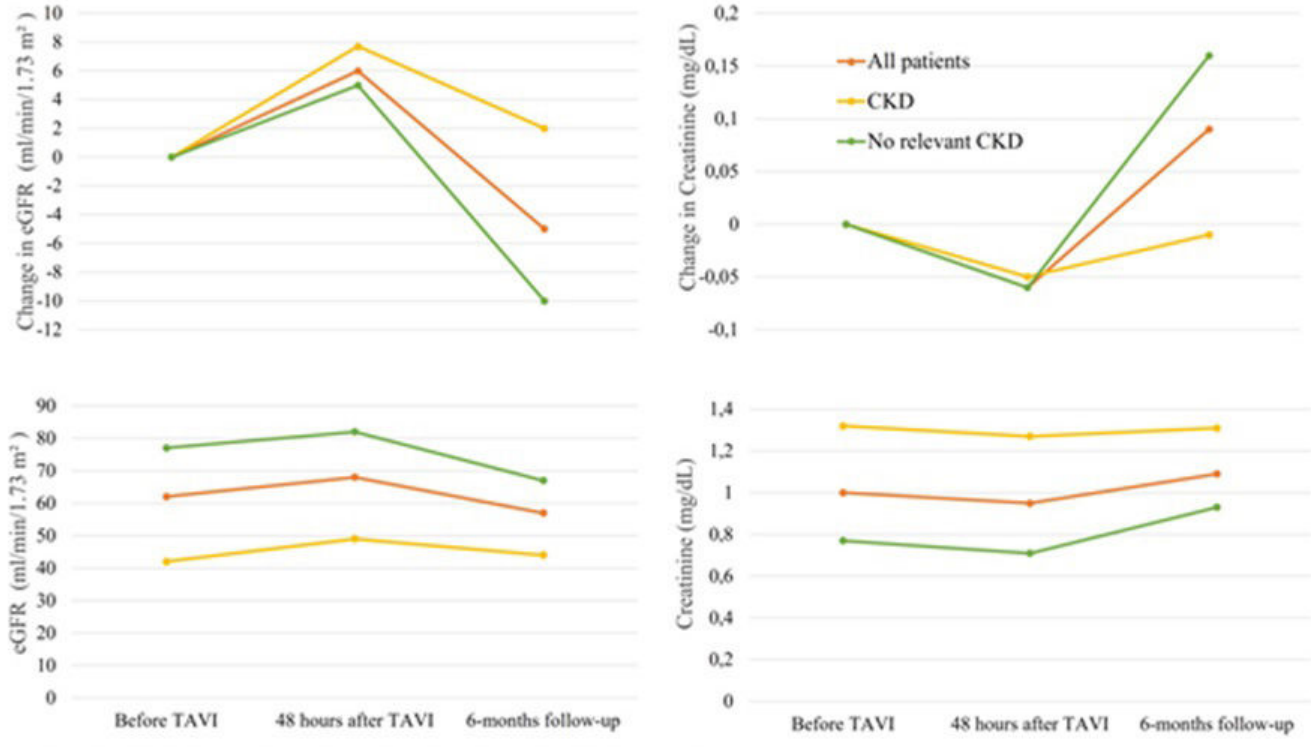

Figure 1. **Kidney function before TAVI, 48 hours after the procedure and at 6-months follow-up.**
Data are given as means. Differences to baseline glomerular filtration rate (eGFR; ml/min/1.73 m²) (1A) and baseline creatinine (1B) and trends during follow-up (1C and 1D) are shown for the entire cohort, patients with previous chronic kidney disease (CKD - baseline eGFR 25-60 ml/min/1.73 m²) and patients with no previous relevant CKD (baseline eGFR ≥ 60 ml/min/1.73 m²).

Figure PO 345

that some pts sustained significant KF impairment warrants more studies for identification of pts at risk and potential preventive measures.

PO 346. AORTIC VALVE CALCIFICATION AS A SURROGATE PARAMETER FOR PARAVALVULAR REGURGITATION FOLLOWING TRANSCATHETER AORTIC VALVE IMPLANTATION

Fabiana Silva Duarte[1], Rafael Silva-Teixeira[2], Fábio Nunes[2], Inês Neves[2], Marta Leite[2], André Lobo[2], Marta Almeida[2], Pedro Braga[2], Nuno Dias Ferreira[2], Ricardo Fontes-Carvalho[2]

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Introduction: Transcatheter aortic valve replacement (TAVR) is the preferred treatment for elderly patients with severe aortic stenosis, regardless of surgical risk. Recent data have extended its use for younger patients with lower surgical risk. Albeit its demonstrated safety profile, paravalvular aortic regurgitation (AR) complication rates remain relatively high. The amount and spatial distribution of calcium in the aortic valve have been explored as potential predictors of paravalvular AR.
Objectives: We aimed to evaluate the accuracy of aortic valve calcium score, total aortic valve calcium volume and individual aortic valve leaflet calcium quantification in predicting paravalvular AR complications.
Methods: Retrospective single-center analysis included 97 patients who underwent TAVR since January 2018. Aortic valve calcification was measure on non-contrast EKG-gated multi-detector computed tomography (CT). Quantification of individual aortic valve leaflets calcification was performed through short-axis reconstructions. All patients had at least one echocardiography reevaluation in the first month after the procedure.
Results: In our cohort, mean age was 76.1 ± 8.2 years and the mean body mass index was 1.8 ± 0.2 kg/m^2; 89.6% had hypertension, 82.3% dyslipidemia and 42.7% diabetes. CT scans performed before TAVR revealed a median calcium volume of 1,843 mm^3 (IQR 170 – 6,031) and a median total aortic valve calcium score of 2033 (IQR 170 – 7,892).
Twenty-one (21.9%) patients developed post-TAVR paravalvular regurgitation, with 8.3% being moderate-to-severe cases. Aortic valve calcium score (2,390 vs. 1,859, p = 0.030) and volume (1,859 vs. 1,490, p = 0.016) were higher in patients with any degree of paravalvular AR. However, individual aortic valve leaflet score was not associated with differences in prosthetic regurgitation (p > 0.05). In multivariate analysis, no baseline characteristics predicted paravalvular AR.
Conclusions: Our study supports that a higher aortic valve calcium score and volume, assessed by CT scan, were associated with higher rates of paravalvular regurgitation following TAVR. However, the same was not verified for individual valve leaflet calcium distribution. Further studies are required to validate additional markers of potential complications following TAVR.

PO 347. EXPLORING ATRIOVENTRICULAR CONDUCTION DISTURBANCES AND VENTRICULAR PACING RATE IN PATIENTS WITH PACEMAKER IMPLANTATION AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION

Marta Catarina Almeida, Rafael Teixeira, André Lobo, Fábio Nunes, Inês Neves, Marta Leite, Mariana Brandão, Diogo Santos-Ferreira, Elisabeth Santos, Francisco Sampaio, Pedro Braga, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE.

Introduction: Atrioventricular (AV) conduction disturbances leading to in-hospital post-procedure pacemaker (PPM) implantation are a common complication after transcatheter aortic valve implantation (TAVI). Literature reporting ventricular pacing rate (VPR) during follow-up is scarce. The aim of this study was to explore AV conduction disturbances and VPR in patients with in-hospital PPM implantation after TAVI.
Methods: Patients who underwent TAVI and needed in-hospital PPM implantation between 2019 and 2021 were included in a retrospective analysis. Patients with prior pacemakers and valve-in-valve procedures were excluded. Patients with VPR < 1% in one year follow-up were compared to patients with VPR ≥ 1%. A sub-analysis in patients with pacemakers capable of minimized ventricular pacing algorithms or active hysteresis was also conducted. Mann-Whitney and Chi-square tests were used as appropriate.
Results: In-hospital PPM implantation was performed in 76 of 446 patients (17%). In these patients, median age was 81 years, 59% were male and 30% had history of atrial fibrillation/flutter (AF). Upon admission, 75% of the patients were in sinus rhythm and 50% had no intraventricular conduction disturbances. TAVI was an elective procedure in 72% of the cases and 67% received a balloon-expandable valve. Advanced AV block was the indication for PPM implantation in 68% of the patients (dual chamber in 60% of these cases). At discharge, 49% of the patients were in ventricular paced rhythm. During the initial year post-TAVI, 70% of the patients displayed a VPR ≥ 1%. Patients with history of AF had significantly higher odds of having a VPR ≥ 1% (OR 0.94, p = 0.02). There were no other factors related to VPR, including PR and QRS intervals or valve type. Among patients with pacemakers capable of minimized ventricular pacing algorithms or active hysteresis (n = 44), 40% of patients had a VPR < 1%.
Conclusions: In-hospital post-TAVI pacemaker implantation was performed in 17% of patients, 68% due to advanced AV block. However, less than half of these patients were in ventricular paced rhythm at discharge. History of AF was associated with higher odds of having VPR ≥ 1% at follow-up. Notably, 40% of the patients with pacemakers capable of minimized ventricular pacing algorithms or active hysteresis had a VPR < 1%. This study emphasizes the need for identification of patients who may only require rhythm support due to transitory advanced AV conduction disturbances.

PO 348. CUSP-OVERLAP TECHNIQUE TO REDUCE PERMANENT PACEMAKER IMPLANTATION RATE AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION

Miguel Abrantes de Figueiredo, Inês Rodrigues, Bárbara Teixeira, André Grazina, Francisco Albuquerque, Ricardo Carvalheiro, Duarte Cacela, Rúben Ramos, António Fiarresga, Tiago Mendonça, Rui Cruz Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Persistent conduction disturbances requiring permanent pacemaker (PPM) implantation are one of the most common complications after Transcatheter Aortic Valve Implantation (TAVI). Cusp-Overlap Technique (COT) is a novel approach for self-expandable valve implantation to minimize the rate of procedural complications, mainly PPM implantation.
Objectives: To determine if the COT during TAVI with self-expandable valves leads to a reduction of PPM implantation rate in the real-world setting.
Methods: A retrospective analysis of consecutive patients undergoing TAVI between January 2020 and November 2023 in one high-volume tertiary care center in Portugal was conducted. Two groups were defined, the COT group and the control group based on the fluoroscopic approach. A baseline comparison between the 2 groups was made using independent-samples t-test and chi-square analysis to determine if there was a difference between the prevalence of known risk factors for PPM implantation after TAVI. Afterwards, chi-square analysis was used to determine if COT led to a reduction in the PPM implantation rate.
Results: Of the 539 completed procedures in this timeframe, 289 were excluded due to previous pacemaker implantation, use of a valve not amenable to COT or valve-in-valve implantation. COT was used in 57.6% of eligible cases. Baseline comparison did not show a significant difference in the prevalence of several known risk factors for PPM implantation, including complete right bundle branch block, atrio-ventricular block, calcium score, aortic ring dimensions and pre/post-dilation. PPM implantation after TAVI was required in 31.6% of cases. In the COT group the PPM implantation rate was 22.9% and in the control group 43.4%. Chi-square analysis showed a very statistically significant difference between the 2 analyzed groups (p-value = 0.001).
Conclusions: PPM implantation remains a frequent complication of TAVI. However, this study showed that the utilization of COT leads to a reduction of the PPM implantation rate.

Domingo, 21 Abril de 2024 | 10:30-11:30

Área de Posters 3 | Sessão de Posters 54 - Intervenção valvular mitral

PO 349. EXPLORATORY ANALYSIS OF CLINICAL OUTCOMES IN PATIENTS WITH SECONDARY MITRAL REGURGITATION: THE IMPACT OF COAPT TRIAL CRITERIA

Francisco Barbas de Albuquerque, Miguel Abrantes Figueiredo, Vera Ferreira, António Fiarresga, Rúben Ramos, João Pedro Reis, Ana Teresa Timóteo, Pedro Rio, Ana Galrinho, Luísa Moura Branco, Rui Ferreira, Duarte Cacela

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Mitral regurgitation (MR) is a common valvulopathy associated with poor prognosis. The COAPT-trial had a pivotal role for defining which patients would benefit the most from mitral transcatheter edge-to-edge repair (TEER) in patients with severe functional MR comparing to medical therapy alone. Nevertheless, in the real word setting some patients are submitted to mitral TEER despite not fulfilling the COAPT trial inclusion/exclusion criteria.
Objectives: To perform an exploratory analysis of clinical outcomes in patients with severe functional MR submitted to MitraClip ® that did not fulfill the COAPT trial criteria versus those who did.
Methods: Single-center prospective registry analysis of patients with severe MR that were submitted to mitral TEER between 2013 and 2023. Functional MR patients were selected for the exploratory analysis. Patients that fulfilled all COAPT trial criteria were considered in COAPT-group. Patients were considered in the non-COAPT group if any of the following verified: left ventricle (LV) ejection fraction (EF) < 20%, end-systolic LV diameter (ESLVD) > 70 mm and systolic pulmonary artery pressure (SPAP) > 70 mmHg. Clinical outcomes of interest were the composite of all-cause mortality or heart failure (HF) hospitalization (HFH) at 1 year and all-cause mortality at the median total follow-up time. Kaplan-Meier survival curves were calculated using log-rank test. Cox regression was used to assess differences in the two groups. A *p* value ≤ 0.05 was considered significant.
Results: From a total of 76 MitraClip® implanted during the study period, 57 were implanted in functional MR. Of these, 49 patients were in the COAPT-group and 8 in the non-COAPT group. The Figure depicts the baseline and echocardiographic characteristics of subgroups. Most characteristics are balanced. Of note, patients in non-COAPT group had higher LVESD (p = 0.013) and PSAP (p = 0.003) and a lower TAPSE (p = 0.002) comparing to COAPT group. At 1 year follow-up, the composite endpoint of all-cause mortality or heart failure (HF) hospitalization (HFH) rate was 26.5% (n = 13) in COAPT-group versus 37.5% (n = 3) in non-COAPT group [HR = 0.55, 95%CI (0.16-1.9), p = 0.35] (Figure). During a median total follow-up time of 2.1 year per patient, the all-cause mortality rate was 30.6% (n = 15) in COAPT-group versus 50% (n = 4) in non-COAPT group [HR = 0.54, 95%CI (0.18-1.6), p = 0.26] (Figure).
Conclusions: In a real-world patient setting of severe functional MR that were implanted MitraClip ®, patients that would be formally excluded from COAPT-trial had similar clinical outcomes at 1 year than those who fulfilled the criteria. At longer-term follow-up of 2.1-year, similar all-cause mortality rates were observed between groups. This provides valuable insights regarding the tailored and personalized decision-making process when considering patients for mitral TEER.

PO 350. INTRODUCTION OF A MINIMALLY INVASIVE MITRAL VALVE PROGRAM. A SINGLE CENTER ANALYSIS

Hagen Kahlbau, Pedro Félix, Valdemar Marques Gomes, Luís Miranda, Pedro Coelho

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Minimally invasive cardiac surgery (MICS) on the mitral valve (MV) has gained an increasing popularity as it is a completely sternum sparing

Table 1. Baseline characteristics of patients submited to MitraClip with funcional MR (n=57)

	COAPT group (n= 49)	non-COAPT group (n=8)	p value
Variable			
Age, years	68 [55-77]	64 [49-73]	0.35
Male sex	32 (65%)	6 (75%)	0.64
Hypertension	37 (76%)	6 (75%)	0.89
Dyslipidemia	38 (78%)	4 (50%)	0.08
Diabetes Mellitus	15 (31%)	2 (25%)	0.72
Smoking	27 (55%)	3 (38%)	0.33
Previous MI	16 (33%)	3 (38%)	0.82
Atrial Fibrillation	28 (57%)	2 (25%)	0.09
Previous Cardiac Cx	11 (22%)	3 (38%)	0.38
NYHA II	33 (67%)	6 (75%)	0.73
NYHA III	7 (14%)	1 (13%)	0.88
BNP (ng/dL)	490 [245-1008]	1226 [411-2270]	0.06
NTpro-BNP (ng/dL)	3977 [1564-17436	5742 [1518-15975	0.95
STS score (%)	1.8 [1.1-4.9]	0.85 [0.49-3.1]	0.18
EuroScore (%)	5.6 [3.4-8]	3.8 [2.3-8.2]	0.39
Hb (g/dL)	12.6 ± 2	12.9 ± 1.6	0.81
Creatinin (mg/dL)	1.2 [0.97-1.59]	1.1 [1.02-1.4]	0.81
GDMT	40 (82%)	8 (100%)	0.21
Echocardiographic variable			
LVEF (%)	33 [28-42]	30 [22-41]	0.25
LVEDV (mL/m2)	113 [78-114]	149 [112-167	0.09
LVESD (mm)	52 [47-61]	59.5 [57-70]	**0.013**
MR 3+	12 (24%)	2 (25%)	0.69
MR 4+	35 (71%)	6 (75%)	0.64
Regurgitant Volume (mL)	48 [38-65]	44 [35-69]	0.96
EROA (mm2)	36 [27-49]	42 [29-51]	0.59
PSAP (mmHg)	47 [35-57]	65 [55-70]	**0.003**
E/e'	19 [12-24]	22 [15-28]	0.41
TAPSE (mm)	18 [16-20]	14 [12-15]	**0.002**
Device-related			
Implantation success	42 (86%)	6 (75%)	0.14
MR ≤ 2+	38 (78%)	6 (75%)	0.26
Mean gradient ≤ 5mmHg	47 (96%)	7 (88%)	0.28

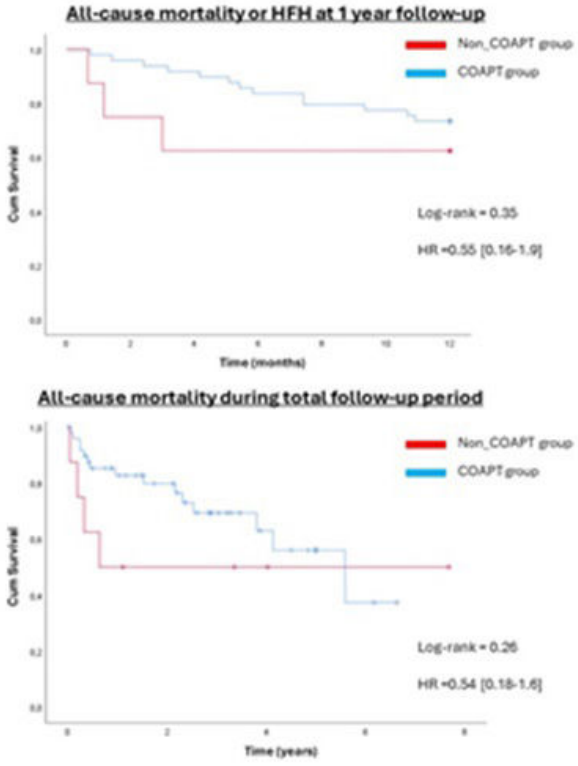

Figure PO 349

Table 1: Preoperative patients charateristics	
Male	17 (85%)
Female	3 (15%)
Mean age	60 (CI: 31; 78)
Mean NYHA classification	2,4
Mean EuroScore2	0,98%
Mean STS Score (Mortality)	0,867%
Mitral valve regurgitation	18 (90%)
Mitral valve stenosis	2 (10%)
Good left ventricular function	20 (100%)
Sinus rhythm	15 (75%)
Paroxysmal Atrial Fibrillation	3 (15%)
Permanent Atrial Fibrillation	2 (10%)
Hypertension	17 (85%)
Dislipidemia	9 (45%)
Active Smoker	1 (5%)
Former Smoker	4 (20%)
Chronic Onstructive Pulmonary Disease	2 (10%)
Diabetes mellitus	1 (5%)
Renal Insufficiency	0 (0%)

Table 2: Operative characteristics	
Repair in Mitral Regurgitation	17 (94,5%)
Replacement in Mitral Regurgitation	1 (5,5%)
Replacement in Mitral Stenosis	2 (100%)
Concomitant Crioablation	3 (15%)
Closing of Left Atrial Appendage	10 (50%)
Closing of patent foramen ovale	1 (5%)
Tricuspid Procedures	0 (0%)
Mean procedure time	270 min
Mean CPB time	167 min
Mean aortic cross clamp time	126 min
Autotransfusion	4 (20%)
Reclamping due to unsatisfatory result on transesophageal echocardiography	2 (10%)
Conversion to full sternotomy (bleeding complication)	1 (5%)
Intraoperative mortality	0 (0%)

Table 3: Postoperative characteristics	
Mean ventilation time	6,3 h
Reintubation	1 (5%)
Mean total hemorrage	790 ml
Blood transfusion	6 (30%)
Fresh frozen plasma transfusion	3 (15%)
Revision of hemostasis	1 (5%)
Mean ICU stay	2 d
Mean hospital stay	6 d
Cerebrovascular events	0 (0%)
Renal complications	0 (0%)
Respiratory complications	1 (5%)
White right lung syndrome	3 (15%)
New arrhythmia complications	3 (15%)
Wound infections	0 (0%)
Postoperative permanent Pacemaker	1 (5%)
Postoperative Echocardiography with no MR	10 (50%)
Postoperative Echocardiography with mild MR	10 (50%)
Postoperative Echocardiography with moderate or severe MR	0 (0%)
30 day mortality	0 (0%)

Figure PO 350

surgery, maintaining however all the advantages of a surgical procedure, in particular the MV repair. The objective of this study is to analyze short term outcomes of patients undergoing a MICS valve program introduced in 2023.

Methods: Knowledge and technical expertise in MICS was acquired in a tertiary hospital center in Switzerland over a course of six months and through accredited practical hands-on courses. Contraindications were severe left ventricular dilatation, significant aortic insufficiency, ascending aortic aneurysms, active endocarditis, difficult peripheral vessel access and deformities of the thorax. A total of 20 patients were operated through a minimally invasive access (pre-operative characteristics table 1).

Results: Operative results are described in table 2. The repair rate in the mitral regurgitation (MR) group was 94,5%. In 3 patients atrial fibrillation ablation (crioablation) was performed and in 10 patients the left atrial appendage closure. In 2 patients an unsatisfactory result on transesophagic echocardiography could be adequately corrected in a second cross clamp time. In one patient occurred a bleeding complication of the pulmonary artery and had to be converted to full sternotomy. There was no intraoperative mortality. Postoperative characteristics are shown in table 3. Mean time of ventilation was 6,3 hours, mean total hemorrhage 790 ml with necessity of in mean one blood transfusion in 30%. There were no cerebrovascular events or renal complications. In one patient a permanent Pacemaker implantation was necessary. Mean ICU stay was 2 days and mean hospital stay 6 days. Pre-discharge echocardiography showed no residual MR in 10 patients (50%), mild MR in 10 patients (50%), and no moderate or severe MR. There was no mortality at 30 days.

Conclusions: Continuous training of the surgical team during at least six months in a reference center is of crucial importance for a successful initiation of a MICS MV program. As our results of the initial 20 patients clearly underline the non-inferiority described in the literature, we would in the next phase of our program include patients with mitral and tricuspid pathologies. All patients in our group had good surgical outcome with no moderate or severe MR at discharge and no major cardiac, renal or cerebrovascular events.

PO 351. FUNCTIONAL MITRAL REGURGITATION IMPROVEMENT AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT: A COMPREHENSIVE SINGLE-CENTER STUDY

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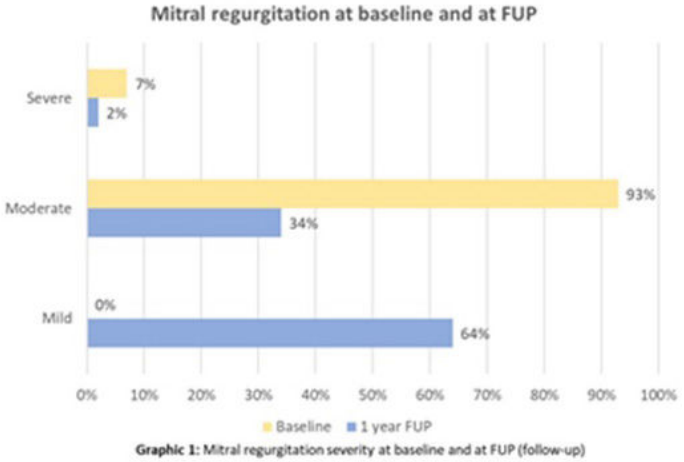
Introduction: Moderate to severe mitral regurgitation (MR) is frequently observed in patients (pts) with severe aortic stenosis, contributing to worse prognosis. The potential improvement of MR following transcatheter aortic

Baseline		1 year FUP		
NYHA class (n)		NYHA class		p<0.001
1	3	1	60	
2	50	2	49	
3	55	3	5	
4	6	4	0	
LVEF (%)	53	LVEF (%)	61	P<0.001
LVEDD (mm)	53	LVEDD (mm)	47	P<0.001
LVESD (mm)	32	LVESD (mm)	29	p=0.093
LVEDV (ml)	54	LVEDV (ml)	48	p= 0.241
TAPSE (mm)	20	TAPSE (mm)	21	p=0.785
sPAP (mmHg)	53	sPAP (mmHg)	34	P<0.001
TR (n)		TR (n)		P<0.001
Trivial	11	Trivial	29	
Mild	65	Mild	73	
Moderate	34	Moderate	12	
Severe	4	Severe	0	

Table 1: Clinical and echocargiographic caracteristics at baseline and at 1 year FUP. **LVEF** left ventricle ejection fraction; **LVEDD** left ventricle end diastolic diameter; **LVESD** left ventricle end sistolic diameter; **LVEDV** left ventricle end diastolic volume; **sPAP** systolic pulmonar artery pressure; **TR** tricuspid regurgitation



Graphic 1: Mitral regurgitation severity at baseline and at FUP (follow-up)

Figure PO 351

valve replacement (TAVR) may obviate the need for subsequent mitral interventions.
Objectives: This study aims to assess the change in MR severity after TAVR.
Methods: Single-center prospective study that enrolled consecutive pts with moderate to severe MR undergoing TAVR. Baseline (pre-TAVR) and 1-year follow-up (FUP) data, including clinical, laboratory, and echocardiographic characteristics, were collected. Functional MR was subcategorized into atrial MR (aMR), characterized by atrial enlargement and mitral annulus dilation, and ventricular MR (vMR), associated with changes in left ventricle (LV) geometry. Descriptive and comparative statistical analyses were employed.
Results: A total of 114 pts diagnosed with moderate-severe MR before TAVR were included, 106 (93%) had moderate and 8 (7%) severe MR. Functional etiology was identified in 51 pts (76%, n = 39 classified as aMR and 24%, n = 12 as vMR). Most pts were female (61.4%) and most frequent comorbidities were hypertension (94.7%), dyslipidemia (76.3%), chronic kidney disease (41.2%), and diabetes (37.7%). Paroxysmal and persistent/permanent atrial fibrillation (AFib) were present in 23.7% and 25.4%, respectively. Significant improvement in MR severity was observed at the 1-year FUP ($p < 0.001$), but MR remained moderate in 24 pts and severe in 2 (Figure). Additionally, there was a significant improvement in LV ejection fraction (LVEF) ($p < 0.001$), tricuspid regurgitation (TR) ($p < 0.001$), a decrease in LV end-diastolic diameter (LVEDD) ($p < 0.001$) and pulmonary artery systolic pressure (sPAP) ($p < 0.001$) (Table). When comparing functional etiology at baseline, the most substantial MR improvement was observed in the atrial type (aMR $p < 0.001$ vs. vMR $p = 0.025$). In aMR, there was also a notable reduction in TR ($p = 0.025$), sPAP ($p = 0.041$), LVEDD ($p = 0.015$), and an improvement in LVEF ($p = 0.016$). As anticipated, there was no significant improvement in the severity of primary MR after TAVR ($p = 0.083$).
Conclusions: TAVR positively impacts functional MR, particularly aMR, as well as LV geometry, function, and right heart hemodynamics. Our data support that is advisable to adopt a watchful-waiting approach for functional MR after TAVR, as a mitral intervention may not be necessary during FUP.

PO 352. CAN ELDERLY PATIENTS WITH SEVERE MITRAL REGURGITATION BE IDEAL CANDIDATES FOR MITRACLIP?

Ana Rita Teixeira, André Paulo Ferreira, João Ferreira Reis, Francisco Barbas de Albuquerque, Vera Vaz Ferreira, Luísa Moura Branco, Pedro Rio, Ana Galrinho, António Fiarresga, Duarte Cacela, Rui Cruz Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: The MitraClip® system is a well-established percutaneous mitral valve intervention for patients (pts) with severe mitral regurgitation (MR) non-eligible for surgery. However, limited data exist on its efficacy in elderly pts. This study aims to elucidate the procedural safety and 1-year clinical, echocardiographic, and cardiopulmonary exercise testing (CEPT) outcomes in septuagenarians or older.
Methods: A retrospective single-center analysis included all patients who underwent MitraClip® implantation for severe and symptomatic MR. Clinical, echocardiographic, and CEPT variables were evaluated at baseline and 12 months post-procedure. Data were analyzed using chi-square for categorical and independent t-tests for continuous variables. Paired-samples t-test compared dependent variable means pre/post MitraClip®, with significance set at $p < 0.05$.
Results: Of 65 pts, 33 were ≥ 70 years, with a mean age of 79 ± 5 years and a mean left ventricle ejection fraction (LVEF) of 44 ± 12%. NYHA class ≥ 3 was present in 18 pts. MR grade IV was observed in 66.7%, with 54.5% having a non-ischemic etiology. COAPT inclusion criteria were met in 11 pts. The Table presents baseline and echocardiographic characteristics. The elderly cohort had a higher prevalence of atrial fibrillation and a higher STS mortality risk score, but lower tobacco abuse. Younger pts had a more dilated left ventricle and lower LVEF. Successful implantation was achieved in 97% of elderly pts, with 23 presenting mild MR post-procedure. No procedure-related deaths occurred, but 3 immediate complications were noted: 2 chordae ruptures and 1 mitral leaflet perforation. The 1-year survival rate was 79.3%, with 4 pts experiencing at least one heart failure hospitalization (Table). MitraClip® significantly improved NYHA functional class ($p = 0.01$). The reduction in MR severity achieved after the procedure was sustained at 1-year. Significant improvements were seen in both mitral gradient ($p = 0.045$) and regurgitant volume ($p < 0.001$). No significant changes in LV systolic function ($p = 0.324$) or volumes were noted in the elderly group, nor in TAPSE and sPAP. No significant CPET parameter changes were reported.

	AGE GROUP (years old)		
	< 70 (n=32)	≥ 70 (n=33)	*p*-value
BASELINE CLINICAL DATA			
Gender (n; %)			
Male	21 (65.6)	21 (63.6)	0.867
Female	11 (34.4)	12 (36.4)	
NYHA functional class	2.8±0.6	2.6±0.6	0.085
Comorbidities (n; %)			
Systemic hypertension	22 (68.8)	27 (81.8)	0.221
Diabetes mellitus	12 (37.5)	9 (27.3)	0.378
Hypercolesterolemia	21 (65.6)	22 (66.7)	0.929
Smoker	19 (59.4)	6 (18.2)	**< 0.001**
Peripheral arterial disease	5 (15.6)	7 (21.2)	0.562
Atrial fibrillation	14 (43.8)	26 (78.8)	**0.004**
Prior myocardial infarction	12 (37.5)	13 (39.4)	0.875
Previous percutaneous intervention	9 (28.1)	9 (27.3)	0.939
Previous coronary artery bypass graft	5 (15.6)	11 (33.3)	0.098
Prior stroke	4 (12.5)	4 (12.1)	0.963
Anaemia	22 (68.8)	21 (63.6)	0.663
Chronic kidney disease ≥ 3	30 (93.8)	28 (84.8)	0.247
Chronic obstructive pulmonary disease	6 (18.8)	8 (24.2)	0.590
LV ejection fraction < 35% (n, %)	21 (65.6)	9 (27.6)	**< 0.001**
Functional MR (n, %)	29 (90.6)	22 (66.7)	**0.019**
EuroSCORE II	5.5±4.4	7.5±6.0	0.065
STS mortality risk	2.0±1.7	6.5±4.4	**< 0.001**
BASELINE ECHOCARDIOGRAPHIC DATA			
MR ≥ 4 (n, %)	23 (71.9)	22 (66.7)	0.590
LV ejection fraction (%)	32.4±9.8	44.2±11.7	**< 0.001**
LVEDV (mL)	219.4±92.2	167.5±81.0	**0.007**
LVESV (mL)	155.5±68.1	97.4±59.0	**0.003**
LVEDD (mm)	69.5±10.3	62.0±11.0	**0.038**
LVESD (mm)	54.3±11.5	44.5±13.4	**0.002**
SPAP (mmHg)	52.8±16.9	47.5±14.5	0.177
TAPSE (mm)	17.1±3.7	17.6±4.2	0.578
PROCEDURAL OUTCOMES			
In-hospital mortality (n, %)	2 (6.3)	0 (0.0)	0.145
30-days readmissions (n, %)	3 (9.7)	2 (6.3)	0.615
Procedural complications (n, %)	6 (18.8)	3 (9.1)	0.260
1-year HF-related readmissions (n, %)	7 (29.2)	4 (13.8)	0.170
1-year mortality (n, %)	5 (20.8)	6 (20.7)	0.990

Table 1 – Baseline clinical and echocardiographic characteristics of younger and elderly patients with MitraClip® system. NYHA: New York Heart Association, LV: left ventricle; MR: mitral regurgitation; STS: society of thoracic surgeons; LVEDV: left ventricular end-diastolic volume; LVESV: left ventricle end-systolic volume; LVEDD: left ventricle end-diastolic diameter; LVESD: left ventricle end-systolic diameter; SPAP: systolic pulmonary artery pressure; TAPSE: tricuspid annular plane systolic excursion. Values are mean ± standard deviation.

Conclusions: In our population, MitraClip® proved safe and effective in elderly patients with severe MR and high surgical risk. Results suggest that advanced age alone should not limit MitraClip® edge-to-edge repair in well-selected patients.

PO 353. THE EFFECTS OF MITRACLIP FOR SEVERE MITRAL REGURGITATION ON RIGHT VENTRICULAR FUNCTION AND REMODELLING

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Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra.

Introduction: MitraClip revolutionized the treatment of mitral regurgitation (MR). There is an uncertainty about its capacity to improve right ventricle (RV) function and reverse remodelling. We hypothesized that the reduction of RV afterload after MitraClip could contribute to RV function and reverse remodelling.

Methods: Single-centre retrospective observational study in patients with MR who underwent MitraClip procedure between November 2018 and September 2023. We aimed to evaluate RV remodelling after MitraClip procedure. Patients had to perform a basal and follow-up transthoracic echocardiography (TTE). RV function was assessed by tricuspid annular plane systolic excursion (TAPSE) and lateral tricuspid annulus peak systolic velocity (S'). RV reverse remodelling was determined by RV end-diastolic diameter (RVEDD), tricuspid regurgitation maximal velocity (TRV), pulmonary artery systolic pressure (PSAP) and RV-pulmonary artery (RV-PA) coupling (obtained as the ratio between TAPSE and PSAP). Data was collected through a revision of informatized clinical files. Statistical analysis used Kolmogorov-Smirnov test to assess normality, and T Student test or non-parametric equivalent tests for variable analysis.
Results: 45 patients were included. Most were male (32/71%), with a significant prevalence of cardiovascular risk factors (obesity = 17/29.8%, diabetes = 22/36.1%, dyslipidaemia = 40/65.6%, hypertension = 42/68.9%, smoker = 5/16.4%). Median age was 79 ± 12 years. Majority had severe MR (40/88.9%), and nearly half (26/48.1%) had symptomatic heart failure (HF) classified as III-IV by the New York Heart Association (NYHA). Mean follow-up time was 27.4 ± 16.4 months. TTE was performed in a mean time of 7.50 ± 6.68 months after procedure. During follow-up, 5 (11.1%) patients died but only in one case the cause was decompensated HF. An improvement of HF symptoms was observed as most patients achieved a I-II NYHA class (36/90.0%). There were no statistically significant differences in RV function measured by TAPSE or S'. Also, baseline TAPSE ≤ 15 mm was not associated with increased mortality. No statistically significant differences were found in RV reverse remodelling assessed by RVEDD, TRV, PSAP or RV-PA coupling.
Conclusions: MitraClip is an essential technique for MR, with a strong benefit on clinical outcomes. However, controversy remains of its impact on RV function and possible RV reverse remodeling.

PO 354. MITRAL TRANSCATHETER EDGE-TO-EDGE REPAIR: 10-YEAR EXPERIENCE FROM A TERTIARY CARE CENTER

Francisco Barbas de Albuquerque, Miguel Abrantes Figueiredo, Vera Ferreira, António Fiarresga, Rúben Ramos, João Pedro Reis, Ana Teresa Timóteo, Pedro Rio, Ana Galrinho, Luísa Moura Branco, Duarte Cacela, Rui Ferreira

Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Mitral regurgitation (MR) is a common valvulopathy and is associated with poor prognosis. Mitral transcatheter edge-to-edge repair (TEER) have emerged as a therapeutic approach for both primary and secondary MR in selected patients. This technique is associated with improvement in clinical outcomes.
Objectives: To describe patients' characteristics and clinical outcomes of mitral TEER intervention in our tertiary center.
Methods: Single center prospective analysis of consecutive patients with both primary and functional MR submitted to mitral TEER, between 2013 and 2023. Clinical, demographic, laboratory and echocardiographic data were collected through clinical records according to our institutional protocol. Clinical outcomes of interest were assessed by Kaplan-Meier curves. IBM SPSS Statistics 26 was used.
Results: Seventy-six patients were implanted MitraClip® device during the ten-year period. Regarding MR etiology, 19 were primary and 57 were secondary. The Figure illustrate the main baseline characteristics of our study population, divided by MR etiology. In patients with primary MR, mean regurgitant volume (RV) was 61 ± 19 mL, mean effective regurgitant orifice area (EROA) was 41 ± 11 mm^2, mean mitral valve (MV) mean gradient (MG) was 2.9 ± 1 mmHg and mean systolic pulmonary artery pressure was 50 ± 11 mmHg. Regarding secondary MR patients, mean left ventricle (LV) ejection fraction was 34 ± 10%, mean RV was 53 ± 22 mL, mean EROA was 39 ± 16 mm^2, mean end-systolic LV dimension was 54 ± 11 mm and mean end-diastolic LV volume was 118 ± 47 mL/m^2. Overall, immediate implantation success was achieved in 89% of procedures. Device-related complications occurred in 10 patients: 5 had cordae rupture, 3 had device partial detachment and 2 had leaflet perforation. Regarding clinical complications, 1 patient had cardiac arrest, 1 had emergent cardiac surgery, 2 had a stroke and 3 had vascular complications. Before discharge, MR ≤ 2+ was achieved in 87% of patients and 65 (86%) patients had MV MG ≤ 5 mmHg. At 30-days, all-cause mortality incidence was 5% (n = 4) and heart failure (HF) hospitalisations (HFH) incidence was 8% (n = 6). At 1 year follow-up, all-cause mortality incidence was 17% (n = 13) and HFH incidence was 26% (n = 20). During a total median follow-up time per patient of 2.1 years, the all-cause mortality incidence was 34% (n = 26). No differences in all cause-mortality were observed between MR etiology (HR 1.25, 95%CI 0.5-3) (Figure). Furthermore, 1 patient was submitted to mitral valve surgery and 2 patients received heart transplanted during follow-up.
Conclusions: Mitral TEER was a feasible and safe procedure in patients with both primary and secondary severe MR. Immediate success was achieved in most patients. Clinical outcomes at 30 days, 1 year and longer-term were satisfactory and no differences in all-cause mortality between primary and secondary MR were observed.

Baseline characteristics	Total (N=76)	Secondary MR (N=57)	Primary MR (N=19)	p value
Mean age, years	68 ± 14	65 ± 14	77±8	0.001
Gender, male	49 (65%)	38 (67%)	11 (58%)	0.49
Hypertension	59 (77%)	43 (75%)	16 (84%)	0.54
Diabetes	24 (31%)	17 (30%)	7 (37%)	0.57
Dyslipidemia	58 (75%)	43 (75%)	15 (79%)	0.76
Ischemic heart disease	34 (44%)	26 (46%)	8 (42%)	0.9
Previous cardiac surgery	22 (29%)	14 (25%)	8 (42%)	0.14
STS score, %	4,2%	3,7%	5,6%	0.32
Functional Class				
NYHA II	23 (30%)	16 (28%)	7 (37%)	0.67
NYHA III	45 (59%)	33 (58%)	12 (63%)	0.19
NYHA IV	8 (11%)	8 (14%)	-	
BNP	813±824	918±905	473±295	0.015
NT-proBNP	7595±9359	8825±10392	4058±4081	0.078
MR severity				
3+	23 (30%)	14 (25%)	9 (47%)	0.061
4+	52 (68%)	42 (74%)	10 (53%)	0.087

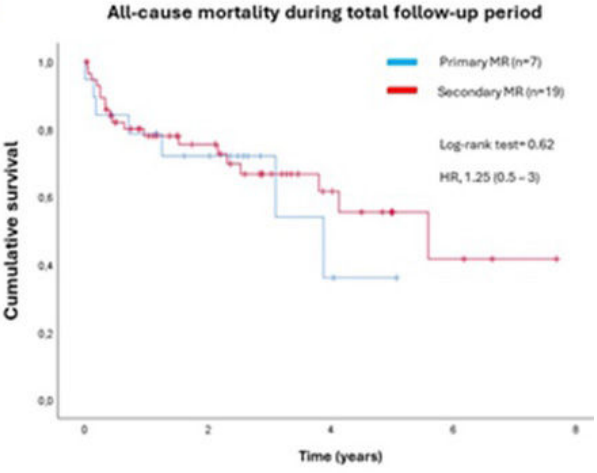

Figure PO 354

Domingo, 21 Abril de 2024 | 11:30-12:30

Área de Posters 1 | Sessão de Posters 55 - RM Cardíaca

PO 355. AUTOMATIC MEASUREMENT OF ATRIAL LONGITUDINAL SHORTENING BY ARTIFICIAL INTELLIGENCE IN CMR IN THE ASSESSMENT OF LEFT ATRIAL FUNCTION IN PATIENTS WITH HCM AND MCD

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Introduction: Anatomical and function parameters can be obtained by cardiovascular magnetic resonance (CMR), by automatic processing of imaging. Artificial intelligence (AI) utilization in analyzing automatic parameters in CMR for left atrial longitudinal shortening enhances the precision, speed, and depth of assessment. This technology offers immense potential in improving the diagnosis, treatment planning, and research endeavors related to left atrial function and associated cardiovascular conditions.
Objectives: This study aims to determine if there is a relationship between the measurement of longitudinal left atrial shortening and other functional parameters in CMR within a clinical setting.
Methods: We retrospectively analyzed a population of patients submitted to CMR and divided them into three groups: those without structural disease, those with dilated cardiomyopathy (DCM) and those with hypertrophic cardiomyopathy (HCM). We documented demographic factors, left atrial ejection fraction (LAEF), and the longitudinal LA shortening obtained through AI in CMR for all groups. We then performed univariate analysis by Pearson correlation to establish the relationship between variables.
Results: Out of 103 patients, 22.3% (n = 23) had no structural disease, considered the control group, 37.9% (n = 39) had HCM and 39.8% (n = 41) had DCM. 59.2% were male, with mean age of 55 ± 16 years, with no differences between groups. When comparing the control and HCM groups, these patients had significantly lower LAEF (64.8% vs. 46.5%, p > 0.001) and also lower absolute values of longitudinal LA shortening (-41.1% vs. -17.3%, p < 0.001). Similar results were verified between the control and DCM group – they had significantly lower LAEF (64.84% vs. 47.5%, p = 0.001) and longitudinal LA shortening (-41.1% vs. -22.1%, p = 0.009). Overall, there is a strong positive correlation (r = 0.774, p < 0.001) between longitudinal LA shortening and the LAEF. A moderate inverse correlation is also proven between the longitudinal LA shortening and left atrial volume (r = -0.443, p < 0.001).
Conclusions: There is a strong positive correlation between longitudinal LA shortening and the LAEF in patients with cardiomyopathies, and in turn, an inverse correlation between longitudinal shortening and atrial volume. This AI generated parameter could be helpful in diagnosing atrial disfunction and possibly contribute to the prediction of patients at a higher risk of developing supraventricular arrythmias such as atrial fibrillation.

PO 356. HISTOPATHOLOGICAL MYOCARDIAL CHANGES IN PATIENTS WITH SEVERE AORTIC STENOSIS REFERRED FOR SURGICAL VALVE REPLACEMENT: A CMR CORRELATION STUDY

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Introduction: Myocardial fibrosis (MF) takes part in left ventricular (LV) remodeling in patients with aortic stenosis (AS), driving the transition from hypertrophy to heart failure. The structural events that occur in this transition are not fully enlightened.
Objectives: to describe histopathology changes at endomyocardial biopsy (EMB) in patients with severe AS referred to surgical aortic valve replacement (AVR); to correlate them with LV tissue characterization from pre-operative cardiac magnetic resonance (CMR).
Methods: one-hundred-fifty-eight patients (73 [68-77] years, 50% women) referred for surgical AVR because of severe symptomatic AS, with pre-operative CMR (n = 143) with late gadolinium enhancement (LGE), T1, T2 mapping and extracellular volume fraction (ECV) quantification. Intra-operative septal EMB was obtained in 129 patients. MF was assessed through Masson´s Trichrome histochemistry. Immunohistochemistry was performed for both inflammatory cells and extracellular matrix (ECM) characterization (Type I Collagen, Fibronectin, Tenascin C).
Results: non-ischemic LGE was present in 106 patients (67.1%) (median fraction: 5.0% [2.0-9.7]). Native T1 was above normal: 1,053 ms [1,024-1,071] and T2 within normal range (39.3 ms [37.3-42.0]). Median MF was 11.9% [6.54-19.97], with predominant type I collagen perivascular distribution (95.3%). Subendocardial cardiomyocyte ischemic-like changes were identified in 45% of EMB. There was no inflammation, despite ECM remodeling expression.

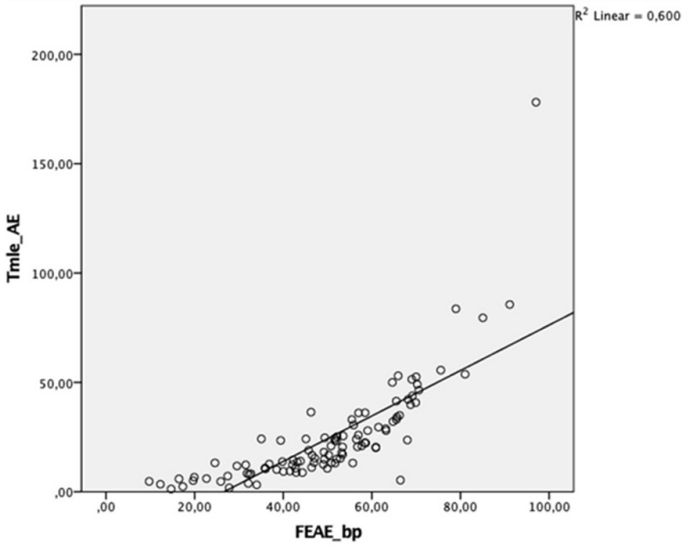

Figure PO 355

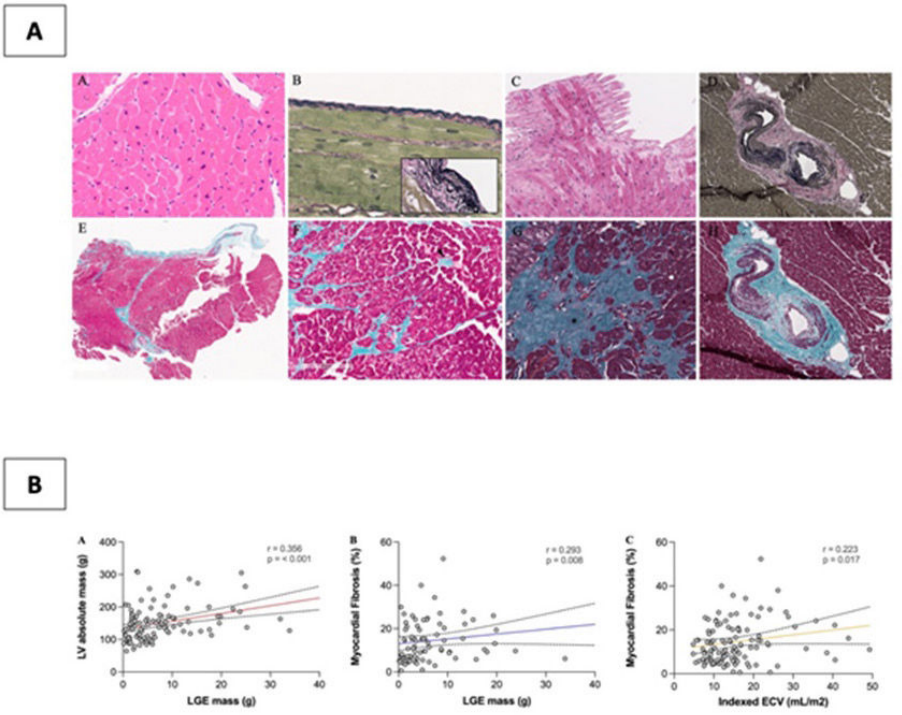

Figure 1A - Histomorphology findings. A) Cardiomyocyte hypertrophy in cross-section (Hematoxilin-eosin x100); B) Mild subendocardial elastosis at elastic van Gieson`s stain (x100). Detail of elastic fibers (box) from another patient with prominent endocardial thickening (x200); C) Herringbone architecture pattern defining myocardial disarray (Hematoxilin-eosin x100); D) Intramyocardial dysplastic arteries put in evidence at elastic van Gieson`s stain (x40), with media thickening, elastic extra-deposition and luminal distortion; E) Overview of a biopsy specimen with endocardial inclusion (Masson´s Trichrome x10); F) Coalescent areas of interstitial fibrosis described as microscars (arrowhead) (Masson´s Trichrome x40); G) Large area of replacement fibrosis (*) (Masson´s Trichrome x100); H) Extensive perivascular fibrosis (Masson´s Trichrome x40, same area as D).

Figure 1B - Correlations among LV mass and LGE as assessed by CMR (A) and between invasive MF quantification and CMR derived quantifications of LGE and iECV.

Figure PO 356

MF quantification at EMB was correlated with LGE mass and indexed ECV (p = 0.008; p = 0.017, respectively).
Conclusions: patients with severe symptomatic AS referred for surgical AVR have unspecific histological myocardial changes, including signs of cardiomyocyte ischemic insult. ECM remodeling is ongoing, with MF heterogeneity. These features may be recognized by comprehensive CMR involving LGE, T1 mapping derived indexes and their combination with LV morphofunctional characterization.

PO 357. SAFETY OF MAGNETIC RESONANCE IMAGING IN PATIENTS WITH COMPATIBLE CARDIAC IMPLANTABLE ELECTRONIC DEVICES: A SAFETY AND ACUTE PERFORMANCE EVALUATION

Mário Martins Oliveira, Tomás Gaspar, Luís Brandão, Sofia Almeida, João Mesquita, Ana Trindade, Pedro Valente, Tiago Muxagata, Susana Castela, Rui Plácido, João Augusto, Pedro Matos

Hospital CUF Tejo.

Introduction: Magnetic resonance imaging (MRI) is a growing valuable imaging modality. It is estimated that a large majority of patients (P) with cardiovascular implantable electronic devices (CIEDs) will have an indication for MRI. MRI-conditional CIEDs have demonstrated safety during MRI scanning, yet many physicians are still reluctant to refer these P to MRI. In this study, we aimed to evaluate the acute impact of an MRI session on the functional parameters indicators of CIED performance.
Methods: Our institution protocol included: confirmation of MRI compatibility, time since implantation > 6 weeks and exclusion of abandoned leads, followed by interrogation of CIED parameters - atrial and ventricular sensing, capture threshold, pacing impedance and battery voltage in all P, and also shock impedance in cardioverter-defibrillators (ICD). The next stage looked at pacing dependency (if yes, the PM was programmed in VOO/DOO; if no, it was programmed in VOO/DOO mode or off-pacing – OVO/ODO). In ICD P, pacing programmed like PM P and with tachyarrhythmia therapies turned off. MRI protection was enabled. P underwent MRI sessions while monitoring symptoms, ECG and blood oxygen levels. After MRI scan, all parameters were (re)checked, EGMs analyzed (looking for noise detection) and original programming settings were restored.
Results: Between January/2022 and December/2023, 122 consecutive P with MRI-compatible CIEDs were submitted to a MRI scan in our institution – 99 men, mean age 73.4 years (42-92). Ninety-eight patients had a pacemaker (73.5% DDDR), 15 an ICD, and 9 a CRT (P/D). CIEDs manufacturers were: Medtronic (n = 39), Abbott (n = 30), Biotronik (n = 25), Boston Scientific

(n = 25), and Microport (n = 3). There was no generator/lead(s) brands mismatch. P underwent 37 thoracic (including 11 cardiac) and 85 non-thoracic MRI, all performed with a magnetic field strength of 1.5 Tesla (GE Voyager equipment). There were no statistically significant differences regarding lead parameters or battery voltage. One P developed atrial fibrillation with rapid ventricular rate during MRI, without clinical consequences. No other symptoms or clinically adverse events were reported. There was a notable change in device parameters (≥ 50% change from baseline) immediately after MRI for P-wave amplitude in 10% of the P, R-wave amplitude in 5%, atrial or ventricular capture threshold in 8% and lead impedance in 5%, which were in the range of normal values and transitory. There were no variations in shock impedance and no noise was detected in ICD P.
Conclusions: This study demonstrates that MRI scans performed in P with MRI-compatible CIEDs under a strict protocol and with appropriate monitoring can be done safely.

PO 358. CARDIOVASCULAR MAGNETIC RESONANCE VS HISTOPATHOLOGIC STUDY FOR BENIGN AND MALIGNANT CARDIAC TUMOURS DIAGNOSIS – A SYSTEMATIC REVIEW AND METANALYSES

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[1]Faculdade de Medicina da Universidade do Porto. [2]Hospital São João, Porto.

Objectives: Cardiac tumours diagnosis's gold standard is histopathological examination. Cardiovascular magnetic resonance (CMR) is a valuable non-invasive radiation-free tool for identifying and characterising cardiac tumours. Our aim is to understand CMR diagnosis of cardiac tumours, by distinguishing benign vs. malign and different tumours, when compared to the gold standard.
Methods: A systematic search was performed in PubMed, Web of Science and Scopus databases up until December 2022 and the results were reviewed by two independent investigators. Studies reporting CMR diagnosis were included in a meta-analysis and pooled measures were obtained. The risk of bias was assessed using the Quality Assessment Tools from the National Institutes of Health.
Results: A total of 2,321 results were obtained; ten studies were eligible, including one identified by citation search. Eight studies were included in the meta-analysis, which presented a pooled sensitivity of 93% and specificity of 94%, a diagnostic odds ratio of 185 and an AUC of 0.98 for CMR diagnosing benign vs. malignant tumours. Additionally, 4 studies evaluated whether CMR diagnosis of cardiac tumours matched specific histopathological subtypes, with 73.6% of correct diagnoses.
Conclusions: To the best of our knowledge, this is the first published systematic review on the diagnosis of CMR cardiac tumours. Compared to histopathological results, the ability to discriminate benign from malignant tumours was good; the ability to distinguish subtypes was not outstanding. However, significant heterogeneity may have an impact on our findings.

PO 359. CORRELATION BETWEEN ELECTROCARDIOGRAM AND CARDIAC MAGNETIC RESONANCE IMAGING IN ACUTE MYOCARDITIS

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[1]Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria. [2]Department of Cardiology, Centro Hospitalar Lisboa Norte, CAML, Faculdade de Medicina, Universidade de Lisboa. [3]Department of Cardiology, Centro Hospitalar Lisboa Norte, CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: The presentation of acute myocarditis (AM) can be similar to acute coronary syndrome (ACS), with chest pain and ST segment changes. In ACS, ST segment elevation (STE) directly correlates with left ventricular wall motion changes. In acute myocarditis, the presence of STE has not been shown to directly correlate with localized findings on either echo or Cardiac Magnetic Resonance (CMR), but uncertainties remain.
Objectives: Evaluate the concordance between the location of STE and myocardial fibrosis/necrosis assessed by late gadolinium enhancement (LGE) on CMR in acute myocarditis.
Methods: Prospective single-center study of patients diagnosed with acute myocarditis from 2007 to 2023 at a tertiary cardiology center. Comprehensive datasets comprising clinical records, imaging studies, and laboratory findings from hospital admissions were gathered and analyzed. Given the often focal nature of myocarditis, the presence of STE in a single-lead was considered positive for each wall: anterior (STE in leads V1-V4), inferior (STE in leads II, III and aVF) and lateral (STE in leads I, aVL, V5-V6). The posterior wall was excluded from the analysis. Concordance was assessed per wall individually using crosstabulation and Chi-Square testing, using CMR as reference. We also assessed concordance globally using the following criteria: LGE in a single location with matching STE, plus absence of STE in all three locations; LGE in two locations with matching of STE in at least one of them, plus absence of STE in all three locations; LGE in three walls with STE in at least two. Chi-Square was used for testing the statistical significance of individual wall concordance.
Results: We included a cohort of 168 patients, comprising 13.6% females, with a mean age of 33 ± 13 years. LGE was subepicardial in 85.8% of cases, intramural in 10.8%, and transmural in 3.4%. Specifically, 22% exhibited anterior LGE, 61% manifested lateral LGE and 3% presented with inferior LGE. Regarding individual wall analysis, the STE accuracy, positive predictive value (PPV), negative predictive value (NPV), sensitivity and specificity was 64%, 18.8%, 76.9%, 16.2% and 78.6% for the anterior wall, respectively; 60%, 25%, 68.4%, 15.7% and 79.5% for the inferior wall, respectively; and 50%, 73.8%, 42.1%, 29.8% and 82.8% for the lateral wall, respectively. Concordance was not statistically significant in any location. Globally, the concordance of STE and LGE using the above-mentioned criteria was 64%.
Conclusions: In a large cohort of acute myocarditis patients, ECG STE location correlated poorly with LGE location on CMR. When findings are assessed globally using a set of partial concordance criteria, matching occurred in almost two-thirds of cases. This suggests there may be some degree of concordance between STE and LGE, which is likely limited due to the often focal and heterogeneous expression of LGE in acute myocarditis.

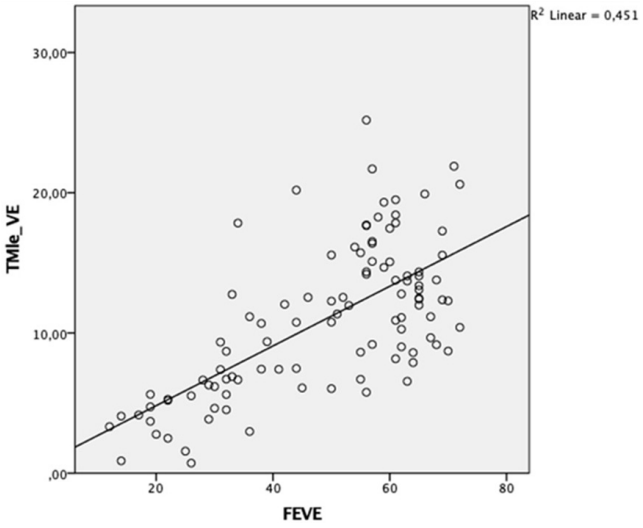
PO 360. AUTOMATIC PARAMETER OBTAINED BY ARTIFICIAL INTELLIGENCE IN CMR FOR THE ASSESSMENT OF LEFT VENTRICULAR FUNCTION IN PATIENTS WITH DILATED AND HYPERTROPHIC CARDIOMYOPATHY

Miguel Carias de Sousa, Marta Paralta, António Almeida, Rafael Viana, Bruno Piçarra, Ângela Bento, Manuel Trinca

Hospital do Espírito Santo, EPE, Évora.

Introduction: Artificial intelligence (AI) plays a crucial role in the assessment of left ventricular (LV) function in cardiac magnetic resonance (CMR) due to its ability to streamline and enhance the analysis of complex imaging data. The generation of automatic parameters for LV function can revolutionize the way cardiac imaging data is analyzed, offering greater efficiency, accuracy, and potential for early detection and personalized treatment strategies.
Objectives: This study aims to determine if there is a relationship between the measurement of longitudinal LV shortening and other functional parameters in CMR within a clinical setting.
Methods: We retrospectively analyzed a population of patients submitted to CMR and divided them into three groups: those without structural disease, those with dilated cardiomyopathy (DCM) and those with hypertrophic cardiomyopathy (HCM). We documented demographic factors, LV ejection fraction (LVEF) and the longitudinal LV shortening obtained through AI in CMR for all groups. We then performed univariate analysis by Pearson correlation to establish the relationship between variables.
Results: Out of 103 patients, 22.3% (n = 23) had no structural disease, considered the control group, 37.9% (n = 39) had HCM and 39.8% (n = 41) had DCM. 59.2% were male, with mean age of 55 ± 16 years, with no

differences between groups. While both the control and HCM had preserved LVEF (58.65% vs. 61.95%), there were significant differences between the longitudinal LV shortening (-16.94% vs. -11.30%, p < 0.001). Similar results were verified between the control and DCM group – they had significantly lower LVEF (58.65% vs. 30.51%, p < 0.001) and longitudinal LV shortening (-16.94% vs. -7.19%, p < 0.001). Overall, there is a strong positive correlation (r = 0.672, p < 0.001) between longitudinal LV shortening and the LVEF.



Conclusions: There is a strong positive correlation between longitudinal LV shortening and the LVEF. In HCM, even with preserved LVEF, there is a significantly decreased value of longitudinal LV shortening when compared to normal controls, which suggests this AI generated data could be an early predictor of subclinical disease progression and functional decay even before there is a significant decrease in LVEF.

Domingo, 21 Abril de 2024 | 11:30-12:30

Área de Posters 2 | Sessão de Posters 56 - Medicina Cardiovascular: a Pessoa e a Doença

PO 361. A HOME-BASED CARDIAC REHABILITATION PROGRAM AIMED AT IMPROVING THEIR CARDIAC CONDITION AND FUNCTIONAL CAPACITY IN PATIENTS WITH LVEF

Carina Rebelo[1], Jose Bastos[2], Vera Afreixo[2], Ana Abreu[3]

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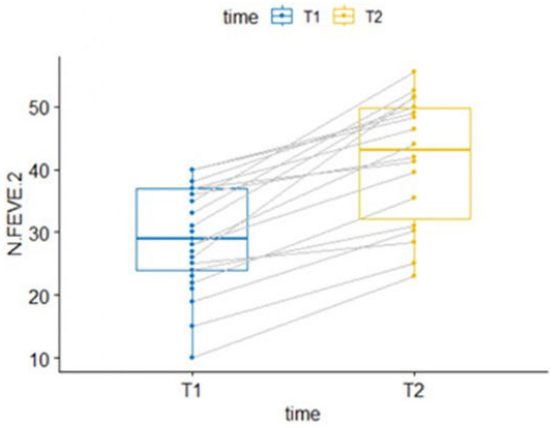
Introduction: Patients hospitalized, with decreased left ventricular ejection fraction (LVEF) experience limitations in daily activities and an increase in dependence. Mobility is one of the most affected factors, namely postural balance, walking, among others. This fact can hinder the resolution of the underlying pathology, which can delay recovery, promote frailty, and increase the risk of comorbidities. Exercise inertia is a well-defined cardiovascular (CV) risk factor, that causes greater physical dependence, greater frailty, and less responsiveness to disease.
Objectives: To assess the physical fitness of patients undergoing a home-based cardiac rehabilitation (CR) program aimed at improving their cardiac condition and functional capacity in patients with LVEF.
Methods: A prospective and experimental study, carried out on patients admitted with LVEF. After patients informed consent, sociodemographic data were collected and exercise and education sessions were carried out during hospitalization (time 1 – T1). Upon discharge, they were advised a home exercise program. Over the course of 12 weeks, regular contacts were made to monitor the program and at the end, a new assessment of patients was carried out (time 2-T2). Dynamic balance and mobility (Fullerton battery of tests), upper body strength (handgrip strength test), cardiorespiratory fitness was used to evaluate physical fitness. Also were submitted to STOP-Bang scale and IPAQ. Using R version 4.2.2, descriptive and inferential analyses were conducted, and all test results p < 0.05.
Results: Evaluated 25 patients, there was a statistically significant improvement (p < 0.001) between the T1 and T2 groups in the assessment Fullerton battery test: functional physical fitness (lower and upper limb strength, flexibility of the upper and lower limbs, motor agility/dynamic balance and aerobic resistance -6MWT) and the assessment of dynamic balance. Also, in the assessment of handgrip strength, the IPAQ questionnaire and in the EQ-5D there was a statistically significant difference between the T1 and T2 patients reviews. The differences between T1 and T2 concerning LVEF can be seen in the boxplot diagram below.

Fig. 1 - LVEF Comparison T1 and T2	p-value[1]
Balance assessment - Fullerton battery of tests	< 0.001
6MWT	< 0.001
IPAQ	< 0.004
Handgrip strength	<0.001
EQ5D	<0.001



Conclusions: Patients with LVEF ≤ 40% exhibit high-risk CV score. The results showed an improvement in the functional capacity, balance and quality of life of the patients, which suggests that CR's efficacy could be evaluated using balance. Disability and frailty indicate poor performance.

PO 362. CONTRIBUTOS PARA A VALIDAÇÃO DO CORONARY ARTERY DISEASE EDUCATION QUESTIONNAIRE II PARA PORTUGUÊS EUROPEU

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[1]Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa. [2]Escola Superior de saúde do Politécnico do Porto. [3]Faculdade Economia Universidade Coimbra.

Introdução: Os programas de Reabilitação Cardíaca (RC) após um evento cardiovascular (CV) aterosclerótico reduzem as hospitalizações, o risco de enfarte agudo miocárdio e morte CV, tendo uma recomendação classe I nível de evidencia A. Os principais componentes da RC incluem a gestão e controle de fatores de risco CV, aconselhamento e prescrição de treino físico, aconselhamento dietético e sobre tabaco, gestão psicossocial e apoio

vocacional. Tendo por base esta premissas, os instrumentos de avaliação do *patient outcome reports* são fulcrais para avaliação destes programas. O CADE-Q II é um questionário que avalia o conhecimento sobre cinco domínios: condição médica, fatores de risco CV, exercício, nutrição e risco psicossocial.
Objetivos: Traduzir, adaptar culturalmente e contribuir para a validação do questionário *Coronary Artery Disease Education Questionnaire* II (CADE-Q II), para a língua portuguesa (Europeia).
Métodos: Para a validação do questionário CADE-Q II, para a língua portuguesa (Europeia) foi obtida autorização da autora, realizada a tradução e retro-tradução, revisão por um grupo de especialistas em RC e o teste-reteste foi avaliado pelo coeficiente correlação intraclasse (n = 40). A fiabilidade foi avaliada através da consistência interna pelo α-Cronbach, e a validade de critério foi avaliada em relação à escolaridade, rendimento familiar mensal e nível de literacia (dados obtidos através do questionário: HLS-EU-PT-16), numa amostra de 229 doentes. O nível de significância escolhido para todos os testes foi de 5%.
Resultados: O questionário apresentou bom nível global de fiabilidade (α-Cronbach = 0,845). Foram obtidas boas correlações entre os valores totais médios e as variáveis rendimento mensal, escolaridade e níveis de literacia. A mediana (Q3-Q1) da pontuação total foi de 48 (16) pontos, correspondendo a 51,6% da pontuação total máxima.
Conclusões: Este estudo de validação do questionário CADE-Q II para Português Europeu, demonstrou que a versão portuguesa possui fiabilidade e validade, permitindo de utilização da mesma em estudos futuros.

PO 363. PREVALENCE OF SARCOPENIA IN ELDER PATIENTS WITH HEART FAILURE- AN UNDERDIAGNOSED COMORBIDITY

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Introduction: Sarcopenia (SP) is a complex and multifactorial syndrome associated with aging, changes in nutritional and physical activity patterns, related to the decline in cognitive function and quality of life, with socioeconomic impact. The prevalence of sarcopenia in heart failure (HF) is increased and frequently undervalued.
Objectives: To evaluate the prevalence of SP in a population of patients (pts) over 65 years of age with HF.
Methods: We performed a prospective single center study to determine SP prevalence in pts with HF admitted in an outpatient clinic. Probable SP was defined as the presence of a hand grip strength < 27 kg in men and < 16 kg in women. SARC-F questionnaire score and chair stand test were also evaluated. Informed consent was obtained in all pts. Basal characteristics were determined. The population was divided and compared according to the presence or absence of SP. NYHA class IV pts were excluded.
Results: 161 people were evaluated between October and November of 2023, 65% of whom were male, mean age of 77 ± 7 years; 83% in Class I/II of NYHA; 76% had "slight" dependence/independence (Barthel score between 76-100). Regarding BMI assessment, 48% were obese and 10% were underweight. SP was present in 58% of the pts; 56% had a SARC-F ≥ 4 and 64% had a chair rise test > 15s. SP was more prevalent in elder patients (45% 65-69 years; 47% 70-79 years, 76% > 80 years, p = 0.002)) in pts with advanced NYHA class (29% NYHA I, 57% in NYHA II and 81% NYHA III, p = 0.004), with Chronic kidney disease (79 vs. 52%, p = 0.002), in pts with pulmonary disease (71 vs. 52%, p = 0.023) and in pts with higher levels of dependence (severe dependence 75% vs. moderate dependence 90% vs. slight dependence 50%, p < 0.001).
Conclusions: Sarcopenia was present in more than 50% of the individuals evaluated. Sarcopenia can be considered one of the most important causes of low physical performance and reduced cardiorespiratory fitness in elderly patients with HF, so early diagnosis and implementation of strategies to treat this condition in these patients is crucial to reduce the impact on the quality of life, morbidity and mortality of HF patients. The impact of SP in this population in adverse clinical events will be evaluated in the future and a rehabilitation plan regarding nutricional and exercice intervention is being developed.

PO 364. IS THE BALANCE OF PATIENTS WITH A VENTRICULAR EJECTION FRACTION = 40% A VIABLE METRIC FOR ASSESSING THEIR OVERALL HEALTH?

Carina Rebelo[1], Jose Bastos[1], Vera Afreixo[2], Ana Abreu[3]

[1]Centro Hospitalar do Baixo Vouga, EPE/Hospital Infante D. Pedro. [2]Universidade de Aveiro. [3]Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Hospitalized patients exhibiting a reduced left ventricular ejection fraction (LVEF) encounter constraints in their daily activities and an elevation in dependency levels. Such circumstances may impede recovery, foster frailty, and elevate the susceptibility to comorbidities.
Objectives: To evaluate the physical fitness of patients participating in a cardiac rehabilitation (CR) program aimed at improving their cardiac condition and functional capacity in patients with left ventricular ejection fraction (LVEF) issues.
Methods: Longitudinal, prospective, experimental study of inpatients with coronary artery disease. Dynamic balance and mobility (Fullerton battery of tests), upper body strength (handgrip strength test), cardiorespiratory fitness was used to evaluate physical fitness. Also were submitted to Morisky Medication Adherence Scale, STOP-Bang scale, and IPAQ. Using R version 4.2.2, descriptive and inferential analyses were conducted, and all test results p < 0.05.
Results: We evaluated 115 patients, with median age of 66 and interquartile range (58, 73), of whom 31% had LVEF ≤ 40%; 83% had hypertension, 81% had dyslipidemia, 69% drank alcoholic beverages daily (30% < 0.75 l/day, and 39% > 0.75 l/day), 35% had a prior history of smoking, and 19% were active smokers. Physical exercise, sporadic (13%), 3x/week 10% and 7% daily. For the Fullerton battery test 75% could not safely rotate 360º, requiring four or more steps in both directions; 93% could not walk independently and uninterruptedly over a straight line on the ground; 81% could not balance on one leg autonomously and maintain the position for 20 seconds. We also found that 65% were at high risk for sleep apnea. LVEF data were divided into classes (LVEF ≤ 40; LVEF 41-50; LVEF ≥ 50) and association assessment was performed using Kruskal-Wallis test, and Fisher's/Pearson's Chi-squared tests), there was a positive association (p < 0.001) between LVEF and: balance, diagnosis, 6MWT, IPAQ, LCADL and EQ 5D.
Conclusions: Patients with LVEF ≤ 40% exhibit high-risk cardiovascular scores, decreased performance and increased disability. This group represents a promising population for successful CR. We hypothesize that assessing balance may serve as a future tool for quantifying the efficacy of CR, given that frailty and disability are indicators of inferior performance.

PO 365. HIGH SCREENING BLOOD PRESSURE IS FOUND IN MOST OBESE PRIMARY SCHOOL CHILDREN FROM THE NORTH OF PORTUGAL: PRELIMINARY RESULTS FROM THE GREAT STUDY

Milena Moraes[1], Irene Guimarães[2], Marta Amaral[1], Rui Miranda[1], Rita Martins[1], Inês Azevedo[1], Sara Araújo[1], Rosa Cardoso[1], Lúcia Gomes[1], Miguel Costa[1], Rui Baptista[1], Carla Araújo[1]

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Introduction: Paediatric obesity prevalence has increased worldwide over the past five decades, with socioeconomic disparities within countries. Schools, as distinctive environments, possess the potential to mitigate such inequities, yet remain an often-overlooked collaborator in the implementation of primordial prevention strategies.
Objectives: To study the prevalence of overweight, obesity, high body fat percentage (BF%), high waist-to-stature ratio (WSR), and high screening blood pressure (BP) in children from primary schools in Portugal.
Methods: Cross-sectional study of preliminary data from 277 children from 3 primary schools (mean age 8.7 years-old, age range: 6.4-11.7 years-old; 51.3% girls) participating in the ongoing GREAT (Target in promoting children's health: a research-driven school-based physical activity intervention) prospective cohort study, at baseline (June 2023). Anthropometric measures

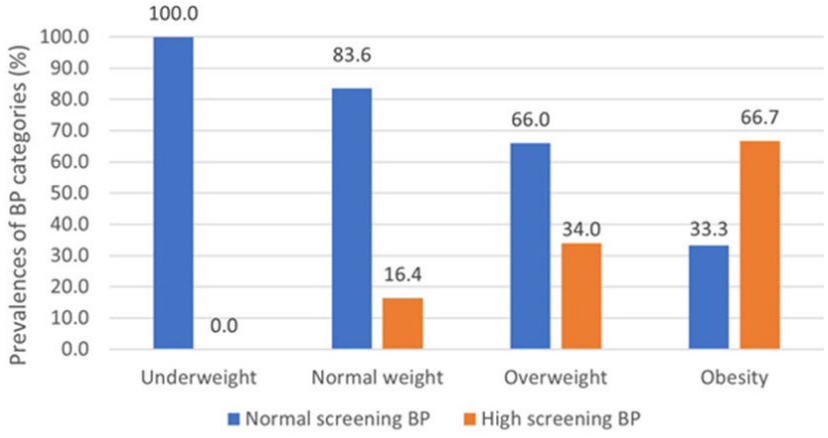

Figure 1. Prevalence of high screening blood pressure (BP), according to categories of body mass index.

Figure PO 365

and BP were obtained by a trained team using standardized techniques and appropriate equipment. Body composition was analysed by bioelectrical impedance (RJL System), and fat-free mass, obtained by a validated equation for this age range. Overweight was defined as body mass index (BMI) (kg/m^2) ≥ 1SD and obesity as BMI ≥ 2SD of the median for age and sex, according to the WHO 2007 Growth Reference. BF% was high when ≥ 25% for boys and ≥ 30% for girls. A WSR of more than 0.5 was an indicator of abdominal adiposity. Screening BP values requiring further evaluation were defined according to the 2017 American Guidelines.

Results: The prevalence of overweight or obesity was 28% in the whole population. The prevalence of obesity and of high body fat percentage was higher in boys than in girls (14.3 vs. 7.7%, p = 0.082; 16.3 vs. 7.4%, p = 0.003, respectively). High abdominal adiposity was observed in 9.5% of the children, with no significant difference by sex. More boys than girls presented screening BP values requiring further evaluation (31% vs. 18%, p = 0.013). It was observed a gradient of increase of this parameter with BMI (normal BMI: 16.4%, overweight: 34% and obesity: 66.7%, p < 0.001) (Figure). About 40% of participants (110 children) were signalized as having at least one criterium leading to referral for further medical evaluation.

Conclusions: This cohort of primary school children in Portugal exhibits a high prevalence of health indicators associated with adulthood health trajectories of cardiometabolic and psychosocial comorbidity increased risk.

PO 366. DESENVOLVIMENTO DE UM SISTEMA M-HEALTH PARA A AUTOGESTÃO DO DOENTE COM INSUFICIÊNCIA CARDÍACA: VIVERCOMIC

Patricia Silva[1], Paulo Veloso Gomes[2], Jorge Condeço[3], Sónia Ferreira[1], Inês G. Campos[1], Rafaela G. Lopes[1], Mauro Moreira[1], Bruno Bragança[1], Isabel Cruz[1], Aurora Andrade[1]

[1]Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa. [2]LabRP, Center for Rehabilitation Research, School of Health, Polytechnic of Porto. [3]School of Health, Polytechnic of Porto.

Introdução: A insuficiência cardíaca (IC) é considerada um grave problema de saúde publica nos países desenvolvidos, pela sua elevada prevalência e pelos custos associado, com elevado impacto na qualidade de vida dos doentes. A capacitação para o autocuidado (AC) e para a autogestão é um dos pilares dos cuidados ao doente com IC. O emergir das novas tecnologias nomeadamente dos sistemas de *mHealth* têm demostrado resultados não apenas na melhoria dos patient-reported outcome, mas também na redução dos custos, pela redução da taxa de internamento e do número de dias de trabalho perdidos.

Objetivos: Levantamento dos requisitos para o desenvolvimento de um sistema de telemonitorização não invasiva (sistema de mHealth) para apoio na autogestão do doente com IC – VIVERcomIC.

Métodos: Estudo qualitativo. Inicialmente procedeu-se a uma revisão sistemática da literatura sobre as aplicações móveis para telemonitorização do doente com IC. Posteriormente foram realizados *focus groups* e entrevistas com os diferentes *stakeholders* (gestor de unidades de saúde, engenheiro informático, cardiologistas, enfermeiros, doentes e prestadores de cuidados) de forma a identificar os requisitos funcionais e não funcionais para o desenvolvimento da app.

Resultados: A revisão sistemática permitiu aferir que o uso da telemonitorização não invasiva com recurso a sistemas de *mHealth* é uma ferramenta útil no apoio ao seguimento de doentes com IC, demostrando sua eficácia na melhoria do AC do doente, da qualidade de vida e na redução dos internamentos. Quanto aos requisitos não funcionais e segundo a perspetiva do gestor das unidades de saúde, o uso de sistemas mHealth permitirá a criação de valor em saúde. Na perspetiva do engenheiro informático a aplicação deverá atender a várias formalidades: de privacidade, de integração, de carga, de desempenho e de usabilidade. No que diz respeito aos requisitos funcionais identificados pelos utilizadores focam em cinco principais funcionalidades: a monitorização de sinais e sintomas, os alertas e *feedback*, o registo da terapêutica farmacológica, os tutoriais educativos e os canais de comunicação.

Conclusões: Os sistemas de mHealth são uma ferramenta promissora na prestação de cuidados a doentes com IC, mostrando eficácia na melhoria do AC da QV e na redução dos custos em saúde, com a redução dos internamentos. O desenvolvimento destes aplicativos devem ser adaptados aos contextos da prestação de cuidados, e ter em conta a expectativas e necessidades tantos dos profissionais de saúde como dos doentes e prestadores de cuidados.

Domingo, 21 Abril de 2024 | 11:30-12:30

Área de Posters 3 | Sessão de Posters 57 - Diferenças de género em Cardiologia

PO 367. SEX DIFFERENCES IN PLASMA LIPIDOMIC PROFILES OF HEALTHY SUBJECTS AND PATIENTS WITH CARDIOVASCULAR DISEASE

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Introduction: The prevalence and burden of cardiovascular diseases (CVD) differ in women and men. Unraveling the sex-related lipid profiles and

metabolism will contribute to emphasize lipid-linked pathophysiology of CVD with prospective application towards a more effective stratification and management of CVD risk.
Objectives: To explore sex-specific plasma lipidome of healthy participants and those with CVD through top-down shotgun lipidomics.
Methods: Five hundred and ninety-six lipids were measured in 322 participants (healthy and CVD patients - including chest pain without an indication of stable angina pectoris, unstable angina pectoris, acute myocardial infarction with and without ST-elevation in the ECG and patients who suffered an acute ischemic stroke). Lipids were normalised to their total sum (to minimise systematic variation between subjects), logarithmic transformed (to reduce skewness) and standardised (to give the same a priori weight to all lipids). Sex-specific differences were explored through both a) multivariate analysis (principal component analysis – PCA, partial least squares discriminant analysis – PLS-DA and orthogonal (O)-PLS-DA) and b) logistic regression (LR) adjusted to weight, the square of height and statin use. Lipids were considered sex-relevant if they had VIP (variable importance to projection) > 1 (OPLS-DA model) and a p-value < 0.05 (LR model).
Results: One hundred and forty-one participants were women (44%). Age was comparable in women and men (median age was 67 and 65, respectively, p = 0.6), while body mass index (BMI) was lower in women (median 25.4 kg/m^2 vs. 27 kg/m^2, p 0.004). Statin use was less frequent in women (37% vs. 49%, p = 0.036). The prevalence of CVD was different in women and men (p < 0.01), with chest pain (without angina) and stroke being more frequent in women (respectively 21% vs. 17% and 9.9% vs. 3.9%) and angina (stable and unstable) and myocardial infarction being less frequent in women (respectively 24% vs. 38% and 7.8% vs. 24%). CVD was absent in 37% of women vs. 18% of men. Regarding the plasma lipidome, a total of 40 lipids were found to be different between sexes. Fifteen were phosphocholines (PC), 13 phosphoethanolamines (PE), 4 phosphoinositols (PI), 3 lyso-PC (LPC), 2 ceramides (Cer), 2 sphingomyelins (SM) and 1 cholesterol ester (CE). Of these, the strongest associations were found for PE16:0-22:6 (Odds Ratio-OR 2.57 [95% confidence interval-CI 1.70-4.04]), PE17:1-17:1 (1.99 [1.28-3.20]), PI18:0-18:2 (1.93 [1.30-2.96]), PE16:0-18:2 (1.93 [1.31-2.95]) and PE16:0-20:3 (1.75 [1.19-2.69]) higher in women and Cer42:1:2 (0.56 [0.36-0.83]) higher in men.
Conclusions: Despite the small cohort, we identified a sex-specific lipid profile that should be further explored regarding its use for the stratification and management of cardiovascular disease risk.

PO 368. HEART FAILURE DISPARITIES BY SEX: A COMPARATIVE ANALYSIS OF A REAL-WORLD POPULATION FOLLOWED IN A REGIONAL HOSPITAL

Adriana Vazão, Carolina Gonçalves, André Martins, Mariana Carvalho, Margarida Cabral, João Carvalho, Célia Domingues, Joana Correia, João Morais

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Introduction: Men and women exhibit different heart failure (HF) phenotypes and are known to experience distinct outcomes regarding advanced HF. Nevertheless, current guidelines lack sex-specific recommendations.
Objectives: Compare sex-based disparities in patients (pts) with HF with ejection fraction (EF) < 50% followed up at a specific HF clinic in a Portuguese regional hospital.
Methods: Retrospective single-center cohort study of adult pts followed up for ≥ 6 months from 2018 to 2022. Pts with end-stage renal disease or Stage D HF (ACC/AHA classification) were excluded. Data regarding clinical characteristics, cardiac procedures, HF characterization based on EF and etiology was obtained. Expanded major adverse cardiac events (MACE) over an 18-month period were defined as all-cause mortality, cardiovascular (CV) mortality, myocardial infarction, coronary revascularization, stroke and HF hospitalization. We compared pts based on their sex – male pts and female pts.
Results: A total of 209 pts were included, of which 60 (29%) were female. Female pts were less frequently smokers (13 vs. 52%) and alcohol abusers (3 vs. 38%) (both p < 0.001) and had lower rates of coronary artery disease (17 vs. 42%, p < 0.001) or previous ischemic stroke (2 vs. 15%,p = 0.005), but more frequently had overweight (50 vs. 32%, p = 0.016), depression (23 vs. 3%, p < 0.001), hypothyroidism (15 vs. 6%, p = 0.037) and asthma (8 vs. 2%, p = 0.045). Family history of CV disease was more common in women (17% vs. 5%, p = 0.008). Regarding procedures, female pts were less submitted to coronary artery bypass graft (2 vs. 11%, p = 0.023). Regarding HF characterization, the majority of pts had EF < 40% (91 vs. 94%, p = 0.751) and the mean lowest EF was similar (EF 30% vs. EF 29%, p = 0.210). Ischemic cause was less frequent in females (25 vs. 46%, p = 0.004). Female pts more frequently experienced improvement in EF throughout follow up, with 35% having recovered EF (EF > 50% on latest echocardiography) versus 22% of male pts (p = 0.042). Concerning chronic medication, no statistically

	Total (n=209)	MALE (n=149)	FEMALE (n=60)	p-value
Current age (years) - mean ± SD	68 ± 12	67 ± 12	70 ± 12	0,063[c]
Past medical history				
Dyslipidemia (%)	142 (68)	97 (66)	45 (75)	0,184[a]
Hypertension (%)	130 (62)	89 (60)	41 (68)	0,246[a]
Prior decompensated HF admission (%)	110 (53)	81 (54)	29 (48)	0,430[a]
Atrial Fibrillation /Atrial Flutter (%)	91 (44)	69 (46)	22 (37)	0,203[a]
History of smoking (%)	85 (41)	77 (52)	8 (13)	<0,001[a]
Overweight (%)	78 (37)	48 (32)	30 (50)	0,016[a]
History of coronary artery disease (%)	72 (34)	62 (42)	10 (17)	<0,001[a]
Diabetes Mellitus (%)	71 (34)	47 (32)	24 (40)	0,243[a]
Alcohol abuse (%)	59 (28)	57 (38)	2 (3)	<0,001[a]
Prior Myocardial infarction (%)	46 (22)	35 (24)	11 (19)	0,448[a]
Poor therapeutic compliance (%)	33 (16)	26 (17)	7 (12)	0,300[a]
Chronic Kidney Disease (%)	31 (15)	23 (15)	8 (13)	0,699[a]
Obstructive Sleep Apnea (%)	29 (14)	21 (14)	8 (13)	0,886[a]
History of cancer (%)	28 (13)	16 (11)	12 (20)	0,075[a]
Ischemic stroke/TIA (%)	24 (12)	23 (15)	1 (2)	0,005[a]
COPD (%)	21 (10)	17 (11)	4 (7)	0,302[a]
Depression (%)	19 (9)	5 (3)	14 (23)	<0,001[a]
Hypothyroidism (%)	18 (9)	9 (6)	9 (15)	0,037[a]
Valvular heart disease (%)	16 (8)	10 (7)	6 (10)	0,403[b]
Peripheral Artery Disease (%)	9 (4)	8 (5)	1 (2)	0,451[b]
Asthma (%)	8 (4)	3 (2)	5 (8)	0,045[b]
Dementia (%)	6 (3)	4 (3)	2 (3)	1,000[b]
Chronic liver disease (%)	6 (3)	4 (3)	2 (3)	1,000[b]
Drug use (%)	2 (1)	2 (1)	-	-

Table 1. Patient baseline characteristics [[a]Chi-square test; [b]Exact's Fisher test [c] t-student test; COPD - Chronic obstructive pulmonary disease; HF - Heart Failure; SD - Standard deviation; TIA - transient ischemic attack]

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significant difference was found between groups. Women and men had similar rates of worsening heart failure (17 vs. 15%), and no difference was found on all-cause mortality (5 vs. 4%) or 18-month MACE (17 vs. 15%) (all p > 0.05).
Conclusions: In this HF population, we found differences regarding baseline characteristics and HF characterization, but outcomes, particularly regarding worsening heart failure and MACE, did not significantly differ between sexes.

PO 369. SEX DIFFERENCES IN LONG-TERM ATTENDANCE AND DROPOUT RATES IN PHASE III CARDIOVASCULAR REHABILITATION PROGRAMS

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Introduction: There are notably reported differences in terms of phase II cardiac rehabilitation (CR) adherence regarding men and women, with women being underrepresented and having lower attendance rates. These sex differences are still unclear regarding long-term phase III CR programs. Understanding and comparing the behaviour of long-term attendance and trends of dropout between sex, might be useful to early identify patients at risk of not completing a 12-month phase III CR program.
Objectives: To analyse attendance and dropout behaviour between men and women in patients with cardiovascular disease (CVD) attending for 12-months a phase III long-term CR program.
Methods: CVD patients attended 3 or 2 times/week exercise sessions at a phase III CR program. Attendance (sessions attended/sessions proposed) and dropouts were recorded (reason of dropout and final date were registered). Clinical information was consulted. Chi-square and independent sample t tests were used (or non-parametric alternative).
Results: CVD patients (N = 197) enrolled a long-term phase III CR program (23.4% women, 61 ± 10 years-old, 86.3% coronary artery disease, 82.2% phase II CR). Regarding dropout rates, between enrolment and 12-months, 17 women (36.95%) and 39 men (25.83%) dropped out of the CR phase III program with the main reason attributed to incompatibility of work schedule/CR sessions (men: 11.9% vs. women: 42.9%), followed by health-related issues (men: 6.62% vs. women: 15.22%). The biggest dropout was between 0 and 3-months (men: 8,61% vs. women: 13,04%) and between 6 and 12-months (men: 13,25% vs. women: 17,39%). In terms of attendance, women had lower attendance at 3 months (68.08% ± 18.17 vs. 74.16% ± 18.17; p = 0.003), at 6 months (69.88% ± 16.52 vs. 60.2% ± 17.57, p = 0.005) and at 12 months (57.54% ± 19.88% vs. 68.85% ± 17.07, p-value = 0.002), compared to men. Furthermore, having completed a phase II CR program was associated with completing one year of the phase III CR program [x^2 (1,N = 197) = 6.252, p-value = 0.012]. Comparisons between those who did and did not attend a phase II CR program indicated a greater attendance in men that did attend (3-months: 75.39 ± 17.80% vs. 66.89% ± 19.05%, p = 0.042; 6-months: 71.24% ± 16.47% vs. 62.24% ± 15.01%, p = 0.015; 12-months: 70.31% ± 16.68% vs. 59,14% ± 16.97%, p = 0.015).
Conclusions: these findings suggest that the discrepancies observed between men and women in phase II CR programs in terms of attendance and dropout rates remains in long-term phase III CR programs, and that not attending a phase II might be a good predictor of dropping out in the first year of a phase III CR program. Interventions in phase III CR programs are needed to decrease dropouts and increase attendance, specifically in women and in patients who did not attend a phase II CR program.

PO 370. SEX-RELATED DIFFERENCES IN CONDUCTION DISTURBANCES AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION

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Introduction: Considerable advances in procedural techniques are leading to the extension of Transcatheter Aortic Valve Implantation (TAVI) indications. However, atrioventricular conduction disturbances (CD) requiring permanent pacemaker implantation (PPMI) are a frequent and relevant complication after TAVI. Current data on the prognostic impact of sex on outcomes after TAVI are conflicting. Recent studies showed favorable outcomes in women after TAVI, and updating data on sex differences in CD and PPMI is crucial.
Objectives: To determine the prognostic impact of sex among patients (pts) presenting with CD and requiring PPMI post-TAVI.
Methods: Sixty pts who underwent transfemoral elective TAVI between November 2021 and November 2023 and who provided written consent were included. Exclusion criteria included previous pacemaker device, atrial fibrillation, stage 5 chronic kidney failure, non-revascularized ischemic heart disease and active autoimmune or neoplastic disease. Data were prospectively collected. The primary endpoint was development of de novo CD after TAVI and need for PPMI.
Results: Of the 60 pts (mean age 81 ± 5, mean BMI 27.9 ± 4.6 kg/m^2, mean LVEF 62 ± 8%, 97% in NYHA class ≥ II), 41 (68%) were women and 19 (32%) were men. As expected, compared with men, women had lower aortic valve calcium score from pre-TAVI computed tomography (2,735 ± 1,113 versus 3,955 ± 1,346, p < 0.001); the remaining baseline characteristics and procedural details were similar between the sexes, except for chronic use of diuretics (Table). Prevalence of in-hospital intercurrences, including stroke, vascular or valvular complications, new CD, need for PPMI, acute kidney injury and infection, was lower in women (44% vs. 79%, odds ratio [OR] 0.09, 95% confidence interval [CI] 0.01-0.91; p = 0.04); particularly development of new CD (20% vs. 58%; OR 0.18, 95%CI 0.05-0.58; p = 0.004) and PPMI (17% vs. 42%; OR 0.28, 95%CI 0.83-0.96; p = 0.043). Hospital length of stay showed a trend toward increased duration of hospitalization in men, without reaching statistical significance (5 [IQR 3] days for women vs. 6 [IQR 6] days for men, p = 0.056). Mean follow-up time was 11 ± 8 months for the entire cohort. During follow-up, 6 pts suffered an intercurrence, including stroke, need for PPMI and rehospitalization for heart failure or kidney failure: 4 women (10%) and 2 men (11%) (p = 0.899).
Conclusions: In our study, there were significant sex-related disparities in intercurrences during hospitalization after TAVI, including CD. No significant differences were noted in follow-up outcomes between men and women. Our data revealed that, while there were more women than men undergoing TAVI, men had a 5.7 higher odd of developing post-TAVI CD and a 3.5 higher odd of needing PPMI than women. The susceptibility to conduction disturbances requiring PPMI in men warrants further investigation and should be recognized as the indications for TAVI expand.

PO 371. SEX-BASED DIFFERENCES IN INFECTIVE ENDOCARDITIS: A REAL-WORLD STUDY

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Infective endocarditis (IE) is an uncommon but potentially life-threatening disease with a higher incidence in men. Although the causes for this sex-specific difference are not fully understood, it is thought that men have a higher prevalence of pre-disposing cardiac pathology, which could explain the higher incidence of IE in this gender. Conversely, women are classically less likely to receive a guideline-based diagnosis and less invasive treatment. The differences in mortality rates remain controversial. This study aimed to analyse sex-based differences in clinical features,

	All Cohort (n = 60)	Women (n = 41)	Men (n = 19)	p-value
Age - mean±SD	81.2 ± 5.0	81.3 ± 4.7	81.1 ± 5.7	0.908
BMI (kg/m²) - mean±SD	27.9 ± 4.6	28.6 ± 4.4	26.3 ± 4.7	0.065
Comorbidities - n (%)				
Diabetes Mellitus	18 (30.0)	15 (36.6)	3 (15.8)	0.102
Hypertension	56 (93.3)	39 (95.1)	17 (89.5)	0.585
Chronic Obstructive Pulmonary Disease	21 (35.0)	16 (39.0)	5 (26.3)	0.337
Chronic Kidney Disease stage III-IV	25 (41.7)	18 (43.9)	7 (36.8)	0.606
Significant Aortic Regurgitation	14 (23.3)	8 (19.5)	6 (31.6)	0.338
Chronic Medication - n (%)				
β-blocker	22 (36.7)	15 (36.6)	7 (36.8)	0.985
ACEI/ARB/ARNI	49 (81.7)	35 (85.4)	14 (73.7)	0.301
Antiplatelet drugs	29 (48.3)	18 (43.9)	11 (57.9)	0.313
Diuretics	46 (76.7)	35 (85.4)	11 (57.9)	0.046
Baseline ECG - n (%)				0.664
No conduction disturbances	46 (76.7)	31 (75.6)	15 (78.9)	
Left Bundle Branch Block	2 (3.3)	1 (2.4)	1 (5.3)	
Right Bundle Branch Block	5 (8.3)	3 (7.3)	2 (10.5)	
First-degree Atrioventricular Block	7 (11.7)	6 (14.6)	1 (5.3)	
Baseline Biological Markers				
Serum Creatinine (mg/dL) - mean±SD	0.98 ± 0.34	0.92 ± 0.31	1.10 ± 0.39	0.068
eGFR (ml/min/1.73 m²) - mean±SD	63 ± 20	61 ± 19	67 ± 21	0.283
Haemoglobin (g/dL) - mean±SD	12.7 ± 1.4	12.6 ± 1.4	12.9 ± 1.5	0.523
BNP (pg/mL) - mean±SD	299 ± 262	292 ± 230	314 ± 331	0.773
Baseline Echocardiography				
LVEF (%) - mean±SD	62 ± 8	64 ± 6	59 ± 11	0.061
Indexed LV mass (g/m²)- mean±SD	111.7 ± 26.1	116.9 ± 27.3	100.8 ± 20.2	0.079
Mean gradient (mmHg) - mean±SD	56 ± 13	57 ± 14	53 ± 12	0.300
AVAi (cm²/m²) - mean±SD	0.45 ± 0.09	0.44 ± 0.09	0.47 ± 0.08	0.202
eSPAP (mmHg) - mean±SD	30 ± 17	31 ± 18	29 ± 15	0.830
CT-AVC (AU) - mean±SD	3135 ± 1316	2735 ± 1113	3955 ± 1346	<0.001
Valve				0.871
CoreValve Evolut PRO – n(%)	37 (61.7)	26 (63.4)	11 (57.9)	
SAPIEN 3 Ultra – n(%)	10 (16.7)	6 (14.6)	4 (21.1)	
ACURATE neo2 – n(%)	8 (13.3)	6 (14.6)	2 (10.5)	
Other – n(%)	5 (8.3)	3 (7.3)	2 (10.5)	
Procedure time (minutes) - mean±SD	50 ± 17	49 ± 18	52 ± 13	0.452

Table 1. Baseline and procedural characteristics. Categorical variables are presented as numbers and percentages; continuous variables as mean ± standard deviation. Abbreviations: ACEI = Angiotensin-converting enzyme inhibitors; ARBs = Angiotensin receptor blockers; ARNI = Angiotensin receptor-neprilysin inhibitor; AU = Agatston unit ; AV = aortic valve; AVAi = indexed Aortic Valve Area; BNP = Brain natriuretic peptide; CT-AVC = Computed tomography aortic valve calcium scoring; dL= deciliters; eSPAP = estimated systolic pulmonary arterial pressure; g = grams; GFR = glomerular filtration rate; LV = Left ventricle; LVEF = Left ventricle ejection fraction; m2 = square meters; mg = milligrams; mL = milliliters; pg = picograms; SD = standard deviation

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microbiological results, complications, treatment, and mortality in patients admitted due to infective endocarditis. A retrospective study was conducted, and patients diagnosed with definite or possible IE (according to the modified Duke criteria) between January 2015 and March 2023 in a secondary hospital were included. The main outcomes are surgical treatment, in-hospital, and 1-year mortality. Group 1 represents male patients with IE and group 2 includes female ones. Group comparisons and logistic regression were performed. A p-value less than 0.05 is statistically significant. We analysed eighty-four patients, 60 men and 24 women. The baseline features were similar between groups (Table 1), except for a higher prevalence of heart failure with preserved ejection fraction in women (p-value = 0.02). Clinical presentation, as well as the type of valve affected and microbiological isolation (Tables 2 and 3), did not present differences between groups. Regarding in-hospital complications (Table 4), only local complications, namely intracardiac fistula, were more common in women (p = 0.03). Around 30% of patients underwent a surgical procedure,

TABLE 1. BASELINE CHARACTERISTICS

	Overall (n=84)	Group 1 (n=60)	Group 2 (n=24)	*p*-value
Age in years, mean (dp)	67.2 ± 15.5	65.5 ± 16.5	71.3 ± 12.0	0.13
Arterial hypertension, n (%)	47 (56.0)	33 (55.0)	14 (58.3)	0.78
Diabetes, n (%)	24 (28.6)	16 (26.7)	8 (33.3)	0.54
Heart failure, n (%)	20 (23.8)	10 (16.7)	10 (41.7)	0.02
HFpEF, n (%)	15 (17.9)	7 (11.7)	8 (33.3)	0.02
HFmrEF and HFrEF , n (%)	5 (6.0)	3 (5.0)	2 (8.3)	0.61
Coronary artery disease, n (%)	9 (10.7)	5 (8.3)	4 (16.7)	0.27
Valvular heart disease, n (%)	36 (42.9)	24 (40.0)	12 (50.0)	0.40
Valve repair/replacement, n (%)	20 (34.5)	19 (31.7)	10 (41.7)	0.38
Dilated cardiomyopathy with ICD or CRT-D, n (%)	3 (3.6)	1 (1.7)	2 (8.3)	0.20
Congenital heart disease, n (%)	8 (9.5)	6 (10.0)	2 (8.3)	0.81
Surgical correction of congenital anomaly, n (%)	3 (3.6)	2 (3.3)	1 (4.2)	1.00
Intravenous drug user, n(%)				

HFpEF - heart failure with preserved ejection fraction; HFmrEF - Heart failure with mildly-reduced ejection fraction; HFrEF - Heart failure with reduced ejection fraction; ICD-implantable cardioverter-defibrillator; CRT-D-implantable; cardiac resynchronization therapy defibrillator

TABLE 2. CLINICAL PRESENTATION AT ADMISSION

	Overall (n=84)	Group 1 (n=60)	Group 2 (n=24)	*p*-value
Fever, n (%)	50 (59.5)	35 (58.3)	15 (62.5)	0.73
Anorexia, malaise, weight loss, n (%)	40 (47.6)	25 (41.7)	15 (62.5)	0.08
Shortness of breathe, n (%)	20 (23.8)	14 (23.3)	6 (25.0)	0.87
Altered state of consciousness, n (%)	11 (13.1)	7 (11.7)	4 (16.7)	0.54
Focal neurologic deficits, n (%)	8 (9.5)	7 (11.7)	1 (4.2)	0.29
Chest pain, n (%)	4 (4.8)	2 (3.3)	2 (8.3)	0.33

TABLE 3. COMPLEMENTARY TESTS RESULTS

	Overall (n=84)	Group 1 (n=60)	Group 2 (n=24)	*p*-value
VEGETATION LOCATION				
Native valve, n (%)	48 (57.1)	36 (60.0)	12 (50.0)	0.40
Biologic prosthetic valve, n (%)	19 (22.6)	13 (21.7)	6 (25.0)	0.74
Mechanical prosthetic valve, n (%)	7 (8.3)	6 (10.0)	1 (4.2)	0.38
Implantable device, n (%)	8 (9.5)	4 (6.7)	4 (16.7)	0.16
Other, n (%)	2 (2.4)	1 (1.7)	1 (4.2)	0.49
MICROBIOLOGY BLOOD TEST RESULTS				
Gram-positive bacteria, n (%)	49 (58.3)	36 (60.0)	13 (54.2)	0.62
Staphylococcus aureus	16 (19.0)	10 (16.7)	6 (25.0)	0.38
Streptococcus gallolyticus	10 (11.9)	9 (15.0)	1 (4.2)	0.17
Streptococcus oralis	8 (9.5)	6 (10.0)	2 (8.3)	0.81
Gram-negative bacteria, n (%)	15 (17.9)	8 (13.3)	7 (29.2)	0.09
Enterococcus faecalis	11 (13.1)	6 (10.0)	5 (20.8)	0.18
Intracellular microorganism, n (%)	7 (8.3)	6 (10.0)	1 (4.2)	0.38
No microbiological isolation, n (%)	12 (14.3)	9 (15.0)	3 (12.5)	0.77

TABLE 4. IN-HOSPITAL COMPLICATIONS

	Overall (n=84)	Group 1 (n=60)	Group 2 (n=24)	*p*-value
LOCAL COMPLICATIONS, n (%)	**56 (66.7)**	**40 (66.7)**	**16 (66.7)**	**1.00**
Valve regurgitation[1], n (%)	29 (60.4)	23 (63.9)	6 (50.0)	0.39
Valve obstruction[1], n (%)	2 (4.2)	1 (2.8)	1 (8.3)	0.44
Prosthetic dysfunction[2], n (%)	16 (61.5)	11 (57.9)	5 (71.4)	0.53
Obstructive prosthetic valve [2], n (%)	9 (34.6)	7 (36.8)	2 (28.6)	0.69
Periprosthetic regurgitation [2], n (%)	6 (23.1)	4 (21.1)	2 (28.6)	1.00
Intraprosthetic regurgitation [2], n (%)	7 (26.9)	5 (26.3)	2 (28.6)	0.91
Leaflet/cusp perforation, n (%)	12 (14.3)	9 (15.0)	3 (12.5)	0.77
Abscess, n (%)	10 (11.9)	7 (11.7)	3 (12.5)	0.92
Pseudoaneurysm, n (%)	14 (16.7)	9 (15.0)	5 (20.8)	0.52
Fistula, n (%)	8 (9.5)	3 (5.0)	5 (20.8)	0.03
SYSTEMIC COMPLICATIONS, n (%)	**51 (60.7)**	**37 (61.7)**	**14 (58.3)**	**0.78**
Acute heart failure, n (%)	21 (25.0)	15 (25.0)	6 (25.0)	1.00
Sepsis, n (%)	18 (21.4)	12 (20.0)	6 (25.0)	0.61
Cerebral embolization, n (%)	17 (20.2)	13 (21.7)	4 (16.7)	0.61
Splenic embolization, n (%)	11 (13.1)	9 (15.0)	2 (8.3)	0.41
Digital embolization, n (%)	5 (6.0)	3 (5.0)	2 (8.3)	0.62
Renal embolization, n (%)	4 (4.8)	3 (5.0)	1 (4.2)	1.00
Coronary embolization, n (%)	2 (2.4)	2 (3.3)	0 (0.0)	1.00
Retinal embolization, n (%)	1 (1.2)	1 (1.7)	0 (0.0)	1.00

[1] At least moderate regurgitation; of the total number of affected native valves (n=48). [2] Of the total number of infective endocarditis of prosthetic valves (n=26).

TABLE 5. MAIN OUTCOMES

	Overall (n=84)	Group 1 (n=60)	Group 2 (n=24)	*p*-value
Surgical treatment, n (%)	27 (31.1)	19 (31.7)	8 (33.3)	0.88
In-hospital mortality, n (%)	23 (27.4)	18 (30.0)	5 (20.8)	0.40
1-year mortality*, n (%)	34 (41.0)	24 (40.7)	10 (41.7)	0.93

**Including in-hospital mortality*

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with no differences between groups in both univariate analysis (p = 0.88) and multivariate analysis that includes local and systemic complications (p = 0.34). In-hospital mortality was 27.4% (n = 23) and 1-year mortality was 41.0% (n = 34) (Table 5), similar between genders. In conclusion, in our population, women are slightly older (but not significantly), have more heart failure with preserved ejection fraction, and present more intracardiac fistula. Furthermore, we do not observe significant differences regarding referral to surgical treatment, in-hospital and 1-year mortality. So, according to recent guidelines, we should similarly approach both genders.

PO 372. PREGNANCY AS A MODEL TO EXPLORE STRETCH-INDUCED COMPLIANCE MECHANISM IN PHYSIOLOGICAL HYPERTROPHY

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Introduction: Considering that pressure-overload-induced cardiac hypertrophy compromises stretch-induced compliance (SIC) following acute volume overload (AVO), we hypothesized that SIC might change in physiological hypertrophy induced by pregnancy's chronic volume overload.

Objectives: To compare the SIC-mechanism between 1st and 3rd trimesters (1stT versus 3rdT) of pregnancy (that showed distinct basal hemodynamic preload and cardiovascular remodeling); as well as to explore the impact of cardiovascular risk factors (CRF), parity, and age in SIC.

Methods: Thirty-seven and thirty-one women independently recruited in 1stT and 3rdT, respectively, prospectively underwent echocardiography's before (T0), immediately after (T1), and 15 minutes (15min) after AVO induced by passive leg elevation (T2). Blood samples were collected before and after the AVO, and plasmatic NT-proBNP (DY3604-05, R&D Systems) was quantified using ELISA Assay Kit. Mixed-effects models was applied to explore the impact of CRF, parity and age in SIC.

Results: A significant increase in the inferior vena cava diameter (p < 0.001) and stroke volume (1st T: p = 0.009, 3rdT: p = 0.010) from T0 to T1 in both trimesters confirmed an effective AVO. A significant increase in the left ventricle (LV) end-diastolic volume (LVEDV, p < 0.001) and E/e' (1st T: p = 0.005, 3rdT: p = 0.008) was observed immediately after AVO in the 1stT and 3rdT groups. SIC (15 min after AVO) was characterized by a significant decrease of E/e' in both trimesters (1st T: p = 0.005, 3rdT: p = 0.020), counterbalanced with additional expansion of LVEDV only in the 1stT (p = 0.006). During the entire AVO period, LV stiffness decreased significantly in both trimesters (1st T: p = 0.005, 3rdT: p = 0.020). NT-proBNP concentration increased slightly after AVO only in the 1stT (102 ± 10 pg/mL to 106 ± 15 pg/mL, p = 0.160 vs. 3rdT: 109 ± 15 pg/mL to 107 ± 13 pg/mL, p = 0.510). The presence of CRF significantly impacted SIC (in all echocardiographic variables included p < 0.005), contrasting with the non-significant effect of parity and age.

Conclusions: A distinct functional response to SIC was observed between 1stT and 3rdT, influenced by CRF. Despite the LV of 3rdT pregnant women showing a structural limitation to dilate and accommodate increased volume upon AVO, its physiological hypertrophy did not compromise the SIC-mechanism, suggesting it is exacerbated.