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POSTERS (PO)

Congresso Português de Cardiologia 2022 (CPC 2022)

22 a 24 de Abril de 2022

Sexta-feira, 22 Abril de 2022 | 10:00-11:00

Sala Jardim de Inverno | Posters (Sessão 1 - Écran 1) - Imagem 1 - TC Cardíaca e Cardiologia Nuclear

PO 1. CARDIAC FAT AND MICROCALCIFICATION AS SURROGATE MARKERS OF CORONARY ATHEROGENESIS

João Borges Rosa, José Lopes de Almeida, Manuel Oliveira-Santos, Rodolfo Silva, Nuno Pereira da Silva, Antero Abrunhosa, Miguel Castelo-Branco, Lino Gonçalves, Maria João Ferreira

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Introduction: Calcification plays a major role in coronary atherogenesis. Positron emission tomography (PET) imaging with fluorine-18 sodium fluoride (Na[^{18}F]F) is able to detect microcalcification and is associated with cardiovascular (CV) risk factors. Thoracic fat volume (TFV) and epicardial adipose tissue (EAT) are associated with atherosclerosis, pro-inflammatory state, and CV events. We aimed to evaluate the association between Na[^{18}F]F uptake and cardiac fat variables.
Methods: Thirty-four high CV risk individuals without previous CV events were retrospectively scanned with Na[^{18}F]F PET-CT. Cardiac Na[^{18}F]F uptake was assessed as global molecular calcification score (GMCS): the sum of the product of the mean standardized uptake value times the area of the cardiac regions of interest times the slice thickness for all cardiac transaxial slices, divided by the total number of slices. TFV was assessed in computed tomography (CT) using automated software to sum the voxels consisting of fat (threshold of -190 to -30 Hounsfield units) between the bifurcation of pulmonary artery and the end of pericardial sac. EAT was segmented manually tracing the counter of the pericardium with 3DSlicer and the final volume calculated using the dedicated software. Coronary artery calcium score (CAC) was measured with dedicated software for calcium scoring (GE Healthcare Advantage Workstation 4.2).
Results: Thirty-four high CV risk individuals without previous CV events (50% with ≥ 5 CV risk factors) were retrospectively scanned with Na[^{18}F]F PET-CT. Mean age is 63.5 ± 7.8 years and 62% male. Median values are: GMCS 320.9 (240.8-402.8), TFV 167.8 (131.4-211.3) mL, EAT 81.3 (60.7-107.2) cm3, and CAC 0.0 (2.5-20.0). There is a positive correlation between GMCS and abdominal perimeter (r_s = 0.74), weight (r_s = 0.61), TFV (r_s = 0.47), and EAT (r_s = 0.41), all with p≤ 0.01. Thoracic and epicardial fat volumes are strongly correlated (r_s = 0.80, p < 0.01). Both TFV and EAT are correlated with abdominal perimeter (r_s = 0.60, p < 0.01 and r_s = 0.46, p < 0.01, respectively) and weight (r_s = 0.47, p < 0.01 and r_s = 0.42, p = 0.01, respectively). GMCS [356.7 (321.0-409.6) *vs.* 261.1 (225.6-342.1), p = 0.01] and thoracic fat volume [184.3 (153.2-303.7) *vs.* 142.1 (90.0-173.1) mL, p = 0.01] are higher in patients with ≥ 5 CV risk factors, but not EAT [92.5 (62.0-145.7) *vs.* 76.7 (56.2-86.8) cm^3, p = 0.14]. Neither GMCS (r_s = -0.06, p = 0.77), TFV (r_s = 0.20, p < 0.32) nor EAT (r_s = 0.06, p < 0.76) are correlated with CAC score.
Conclusions: In this exploratory analysis with high CV risk patients, the global cardiac microcalcification burden assessed by GMCS is associated with TFV and EAT, but there was no correlation between these variables and CAC. We hypothesize that both GMCS and cardiac fat variables might help to identify higher-risk patients in earlier phases than traditional CT.

PO 2. ASSOCIATION OF EPICARDIAL FAT AND CORONARY ARTERY CALCIUM SCORE IN PATIENTS WITH ATRIAL FIBRILLATION

Sara Lopes Fernandes[1], Inês Cruz[2], Ricardo Ladeiras-Lopes[3], Mariana Silva[3], Gualter Silva[3], Pedro Queirós[3], Sílvia O. Diaz[2], António S. Barros[2], Francisca Saraiva[2], Rita Faria[3], João Almeida[3], Paulo Fonseca[3], Nuno Ferreira[3], João Primo[3], Ricardo Fontes-Carvalho[3]

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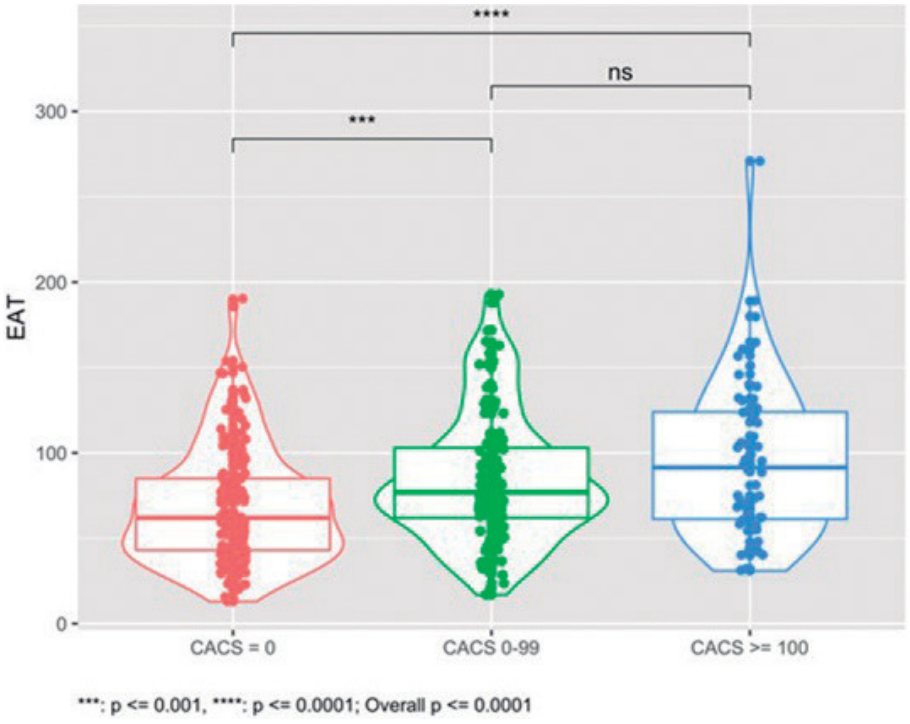
Introduction: Both coronary artery calcium (CAC) and epicardial adipose tissue (EAT) had been implicated in coronary artery disease (CAD) and risk of future adverse cardiovascular events. There are scarce data regarding the assessment and association of EAT volume and CAC score (CACS) in atrial fibrillation (AF) patients.
Objectives: To assess the association between EAT volume and the presence and severity of CAC in patients with AF.
Methods: Retrospective and single-centre study including consecutive patients with AF undergoing contrast-enhanced cardiac computed tomography for catheter ablation planning, from 2017 to 2019. Patients with known history of CAD and moderate to severe valvular heart disease were excluded. Baseline clinical and demographical data were collected, as well as their cardiovascular risk, based on the SCORE (Systematic Coronary Risk Evaluation) system and cardiovascular risk categories. We assessed CACS (Agatston method) and EAT volume and analysed their association. EAT was defined as the adipose tissue accumulated between the visceral pericardium and the myocardium and was semi-automatically reconstructed by manually tracing the pericardium. Patients were split into three groups according to CACS: 0, 1-99 and ≥ 100. A logistic regression (LR) analysis was performed to explore the relationship between EAT



PO 2 Figure

volume and the presence of CAC (CACS > 0), adjusted for age, gender, obesity, diabetes mellitus and hypertension.
Results: A total of 354 patients were included, with a mean age of 56 ± 12 years, 66% male and 21% with persistent AF. A CHA2DS2-VASc score ≥ 2 was present in 130 (37%) patients and most patients had a low to moderate cardiovascular risk (n = 213, 82%). More than half of the patients had a CACS> 0 (n = 185, 52%), of which 63 patients (18%) had a CACS≥ 100. The mean EAT volume was 79 ± 39 ml. There was a significant association between EAT volume and the presence of CAC: CACS = 0 69 ± 34 ml *vs.* CACS 1-99 84 ± 38 ml *vs.* CACS ≥ 100 95 ± 45 ml (p < 0.001) (Fig.). After covariate adjustment (LR model R^2 = 0.373, p < 0.0001), the presence of CAC was not associated with EAT volume (OR 1.00, 95%CI 1.00.1.01, p = 0.2) or obesity, and only with higher age, male gender, hypertension and diabetes mellitus.
Conclusions: In our cohort of patients with AF undergoing catheter ablation we observed an association between EAT volume and CACS. Nevertheless, EAT volume was not an independent predictor of CACS and only the classical cardiovascular risk factors remained significant.

PO 3. GENDER-SPECIFIC DIFFERENCES IN OBSTRUCTIVE CORONARY ARTERY DISEASE BY CORONARY CT ANGIOGRAPHY

Ana Filipa Cardoso[1], Paulo Pereira[2], Nuno Ferreira[3], Rita Faria[3], Wilson Ferreira[3], Mónica Carvalho[3], António Lourenço[1], Ricardo Fontes-Carvalho[3], Ricardo Ladeiras-Lopes[3]

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Introduction: Gender affects coronary artery disease (CAD) presentation. However, its impact in the atherosclerotic findings by coronary CT angiography (CCTA) in obstructive CAD is less described. Our aim was to evaluate gender differences in the clinical profile and atherosclerotic findings on CCTA in patients with obstructive CAD.
Methods: Single-centre retrospective cohort study of patients with no known CAD who performed a CCTA from January 2017 to May 2021. Patients with obstructive CAD on CCTA (CAD-RADS classification of 4A/4B/5) were included. Coronary artery calcium score (CACS) was calculated using the Agatston method. A comparative analysis between females and males was performed. A combined endpoint (EP) of acute coronary syndrome (ACS), coronary revascularization by percutaneous coronary intervention (PCI) or surgery (CABG) and cardiovascular (CV) death was evaluated during the follow-up.
Results: From a total of 3,436 exams, 298 (9%) patients with obstructive CAD were identified. Mean age was 60 ± 9 years and 81 (27%) were women. Females with obstructive CAD were older (64 ± 7 *vs.* 59 ± 10 years, p < 0.001). Their comorbidities were similar, except for a lower prevalence of smoking habits (15 *vs.* 43%, p < 0.001). They had more complaints of chest pain (77 *vs.* 61%, p = 0.011), but similar rates of typical angina (32 *vs.* 24%, p = 0.182). Their pre-test probability of obstructive CAD (according to the new ESC model) was lower (11%, IQR 6-16 *vs.* 22%, IQR 12-27, p = 0.010). Women had a lower median CACS (133 AU, IQR 30-348 *vs.* 194 AU, IQR 67-422; p = 0.045). This included 19% of females with a CASC< 10AU in comparison to only 10% of males (p = 0.039). A lower calcium volume (119 mm^3, IQR 34-219 *vs.* 186 mm^3, IQR 67-403; p = 0.014) was identified. Calcium density score was similar (p = 0.243). Females had less multivessel disease on CTTA (19 *vs.* 30%, p = 0.035). An invasive coronary angiogram was performed in 229 (77%) patients, including 67 women (p = 0.142). During a median follow-up of 29 (IQR 14-43) months, 126 (42%) patients had the combined EP (7 ACS; 92 PCI and 27 CABG). There were no CV deaths. The combined EP occurred in a similar proportion in both groups.
Conclusions: In this study, almost 1 out of 5 women with obstructive CAD had a CACS < 10 AU. They had a lower pre-test probability of obstructive CAD, lower CACS and less multivessel disease. Different pathophysiology mechanisms of CAD may justify these differences, which should be taken into account when evaluating these patients.

PO 4. LOW CORONARY CALCIUM SCORE IN PATIENTS WITH OBSTRUCTIVE CORONARY DISEASE

Ana Filipa Cardoso[1], Paulo Pereira[2], Nuno Ferreira[3], Rita Faria[3], Wilson Ferreira[3], Mónica Carvalho[3], António Lourenço[1], Ricardo Fontes-Carvalho[3], Ricardo Ladeiras-Lopes[3]

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Introduction: Coronary artery calcium score (CACS) is a marker of coronary atherosclerosis. However, a non-negligible number of patients has obstructive coronary artery disease (CAD) despite a low CACS. Our aim was to characterize patients with obstructive CAD on coronary computed tomography angiography (CCTA) and a low CACS.
Methods: Single-centre retrospective cohort study of patients with no known CAD who performed a CCTA from January 2017 to May 2021. Patients with obstructive CAD on CCTA (CAD-RADS classification of 4A/4B/5, therefore including at least a coronary stenosis of ≥ 70%) were included. A low CACS (calculated using the Agatston method) was considered if < 100 AU. A combined endpoint (EP) of acute coronary syndrome (ACS), coronary revascularization by percutaneous coronary intervention (PCI) or surgery (CABG) and cardiovascular (CV) death was evaluated during the follow-up.
Results: From a total of 3,436 exams, 298 (9%) patients were identified (73% male; mean age 60 ± 9 years). Ninety-three (31%) had multivessel disease and median CACS was 170 (IQR 54-406) AU. Low CACS was present in 105 (35%) patients, including 16 with a CACS of 0. Patients with a low CACS and obstructive CAD were younger (57 ± 11 *vs.* 62 ± 8 years, p < 0.001) and had a lower prevalence of hypertension (58 *vs.* 72%, p = 0.015) and diabetes (15 *vs.* 25%, p = 0.043). They had more frequently typical chest pain (34 *vs.* 22%, p = 0.025) and less dyspnoea (4 *vs.* 12%, p = 0.020). Their pre-test probability of obstructive CAD (according to the new ESC model) was lower (13% IQR 10-24 *vs.* 22% IQR 11-26, p = 0.010). Multivessel disease on CCTA was less frequent (20 *vs.* 38%, p = 0.002). During a median follow-up of 29 (IQR 14-43) months, 126 (42%) patients had the combined EP (7 ACS; 92 PCI and 27 CABG). There were no CV deaths. There were no significant differences in the incidence of the combined EP, despite a trend towards a higher number of events in the low CACS group (hazard ratio = 1.35, 95%CI 0.94-1.92; p = 0.103). This was due to higher rates of PCI in the low CACS group (43 *vs.* 27%; hazard ratio = 1.73, 95%CI 1.16-2.58; p = 0.007).
Conclusions: In our cohort, 35% of patients with obstructive CAD had a CACS lower than 100. Those patients were younger, had lower pre-test probability of CAD, but more typical presentation and higher rates of subsequent coronary revascularization by PCI. Our data adds value to the increasingly complex understanding of the association between CACS and presence of obstructive CAD.

PO 5. ARTIFICIAL INTELLIGENCE-ENABLED COMPREHENSIVE CORONARY PHENOTYPING IN PATIENTS WITH SUSPECTED CAD

José Miguel Viegas, João Ferreira Reis, Bárbara Teixeira, André Grazina, Tiago Mendonça, Ruben Ramos, Hugo Marques, Luísa Figueiredo, Rui Cruz Ferreira

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Introduction: The capabilities of artificial intelligence (AI) are rapidly progressing and the research community is getting increasingly interested in its possibilities. AI algorithms are able to work continuously and at high speed, reducing human workload and saving time that physicians can spend on more complex data or rarer cases. However, many clinical AI applications are currently only used in a research setting and lack proper testing and validation.
Objectives: This study aimed to determine the accuracy and performance of a novel AI-based software tool for coronary computed tomography angiography (CCTA) analysis compared to conventional expert evaluation.
Methods: We evaluated 100 CCTA exams from a cohort of symptomatic patients with mild-to-moderately abnormal non-invasive ischemia test. Stenosis severity assessed by AI-based analysis (automatic evaluation, AEv) was compared with a level III expert CCTA interpretation (manual evaluation, MEv). AI-based analysis reported exact% stenosis and obstructive coronary artery disease (CAD) was considered if maximal stenosis was ≥ 50%. Plaque phenotype was also estimated using AI algorithms.
Results: The study cohort was as follows: 52% male, mean age 68 ± 10 years. The prevalence of hypertension, dyslipidemia and diabetes was 77%, 81% and 23%, respectively, and 10-year cardiovascular risk was 19 ± 10% as predicted by Framingham risk score. Typical angina was present in 33%, of which 67% had a Canadian Cardiovascular Society angina grade ≥ 2. Overall prevalence of obstructive CAD determined by MEv and AEv was 25% and 21%, respectively, with a significant association between both assessments (p < 0.001). When compared to MEv as reference, AEv method performed with a sensitivity, specificity, positive and negative predictive values of 0.56, 0.91, 0.58 and 0.86, respectively. Area under the curve was 0.871 (p < 0.001) demonstrating high accuracy. AEv atherosclerosis quantification revealed significant differences between patients with and without obstructive CAD according to MEv: median total plaque volume (569 *vs.* 115 mm^3, p < 0.001), calcified plaque volume (297 *vs.* 19 mm^3, p < 0.001), non-calcified plaque volume (235 *vs.* 71 mm, p < 0.001), low-density non-calcified plaque volume (2.8 *vs.* 1.0 mm^3, p = 0.023) and percent atheroma volume (16.1 *vs.* 3.8 mm^3, p < 0.001).
Conclusions: In patients with suspected CAD and mild-to-moderately abnormal ischemia tests, a diagnostic strategy using AEv as a gatekeeper is effective, providing a quantitative stenosis evaluation with similar diagnostic performance for obstructive CAD when compared to MEv. AI-enabled approach additionally allows a fully automated quantification of coronary plaque volumes and composition, which would further enhance risk prediction.

Sexta-feira, 22 Abril de 2022 | 10:00-11:00

Sala Jardim de Inverno | Posters (Sessão 1 - Écran 2) - Arritmias 1 - Fibrilhação Auricular 1

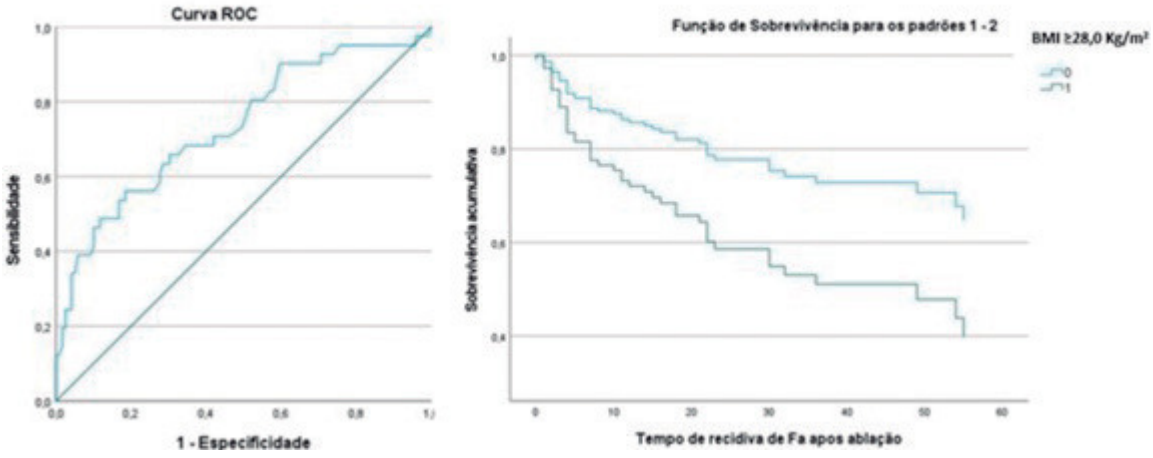
PO 6. BENEFIT OF SLEEP STUDY IN ALL PATIENTS WITH ATRIAL FIBRILLATION AND BMI> 28,0 KG/M^2 BEFORE CATHETER ABLATION

Rui Antunes Coelho, Leonor Parreira, José Maria Farinha, Ana Fátima Esteves, António Pinheiro Cumena Candjondjo, Joana Silva Ferreira, Jéni Quintal, Ana Rita Marinheiro, Ana Rita Piteira, Pedro Campos Amador, Dinis Mesquita, Artur Lopes, Susana Sousa, Rui Caria

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

Introduction: Sleep apnea and obesity are known risk factors for atrial fibrillation recurrence after catheter ablation. Despite this, in recent atrial fibrillation guidelines, it is unclear in which group of patients should be done sleep study before catheter ablation.
Objectives: Evaluate if body mass index (BMI) has a good discriminative power to predict sleep apnea in patients with atrial fibrillation proposed to catheter ablation.
Methods: We retrospectively studied 160 consecutive patients undergoing catheter ablation of paroxysmal or persistent atrial fibrillation in our institution. We evaluated recurrence of atrial fibrillation after catheter ablation and analysed diagnosis of sleep apnea, body mass index and other comorbidities and clinical characteristics. Receiver operator characteristics (ROC) curve and area under the curve (AUC) were obtained to determine the discriminative power of body mass index as predictor of sleep apnea. Optimal cut-point value was obtained (Youden index) and patients were divided according to this value.
Results: During a mean follow-up time of 22.8 ± 19.9 months, 46 patients (28.8%) had atrial fibrillation recurrence and none died. The recurrence was associated with hypertension, alcohol habits and untreated sleep apnea (HR 3.74; 95%CI 1.89-7.42; p < 0.001). Optimal cut-point value of BMI for predicting sleep apnea in patients with atrial fibrillation proposed to catheter ablation was 28.0 Kg/m^2 (AUC 0.733, p = 0.001, 95%CI 0.640-0.827). The group of patients with BMI of 28.0 Kg/m^2 had a 4-fold increased risk of sleep apnea (OR 3.95, 95%CI 1.85-8.42, p = 0.001) and 2-fold risk of atrial fibrillation recurrence (HR 1.96; 95%CI 1.10-3.51; p = 0.023).
Conclusions: In this group of patients undergoing catheter ablation of atrial fibrillation, a BMI ≥ 28.0 Kg/m^2 independently predict sleep apnea and

Figura 1 – Body mass index, sleep apnea and atrial fibrillation recurrence



PO 6 Figure

recurrence of atrial fibrillation. In patients with atrial fibrillation proposed to catheter ablation and BMI ≥ 28.0 Kg/m² is reasonable to perform a sleep study before catheter ablation.

PO 7. ROLE OF EPICARDIAL ADIPOSE TISSUE VOLUME AS PREDICTOR OF ATRIAL FIBRILLATION RECURRENCE

Inês Cruz[1], Sara Lopes[2], Ricardo Ladeiras-Lopes[3], Sílvia O. Diaz[1], Mariana Silva[3], António S. Barros[1], Francisca Saraiva[1], Rita Faria[3], João Almeida[3], Paulo Fonseca[3], Helena Gonçalves[3], Marco Oliveira[3], Nuno Ferreira[3], João Primo[3], Ricardo Fontes-Carvalho[3]

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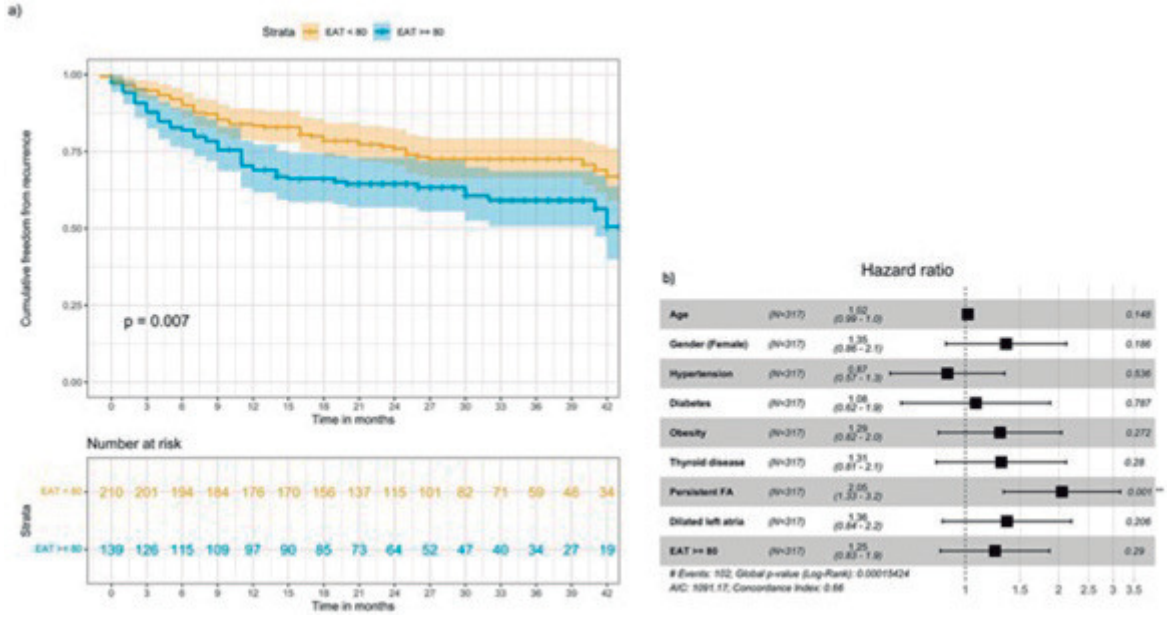
Introduction: Several studies have demonstrated the relation between general obesity and atrial fibrillation (AF). Epicardial adipose tissue (EAT), due to its local paracrine effect and the intimate relation with the atrium, could influence AF recurrence rates, but very few studies have explored this association. In this study, we aimed to evaluate, if epicardial fat could be a predictor of AF recurrence after an AF ablation procedure.

Methods: We included all consecutive patients submitted to AF ablation (2017-2019) who performed a CT scan prior to the procedure. EAT volume was semi-automatically reconstructed by manually tracing the pericardium. Adipose tissue was defined in the range between -150 and -50 Hounsfield units. Recurrence was defined as any documented (ECG/Holter) episode of AF, atrial flutter, or atrial tachycardia after 3 months of the procedure. Logistic regression with a restricted cubic polynomial transformation was used to model the non-linear relationship between recurrence and EAT volumes. Inspection of the partial effect curves suggested that a cutoff for EAT volume ≥ 80 mL could stratify patients at risk of recurrence and a Time-to-event analysis was carried.

Results: A total of 354 patients (66% male, median age 57 years [IQR 48-65] and 21% persistent AF) were included. During a median follow-up of 34 months [IQR 24-43], 117 patients (33%) had AF recurrence. These patients had a significantly greater EAT volume (76 mL [IQR 55-111] *vs.* 72 mL [IQR 48-95], p = 0.03) when compared to those without recurrence. Also, patients with higher EAT volume (≥ 80 mL) had a higher risk of recurrence compared to patients with lower volume (Figure 1a, log-rank test p = 0.007). After adjusting for clinical risk factors (age, gender, hypertension, diabetes,



PO 7 Figure

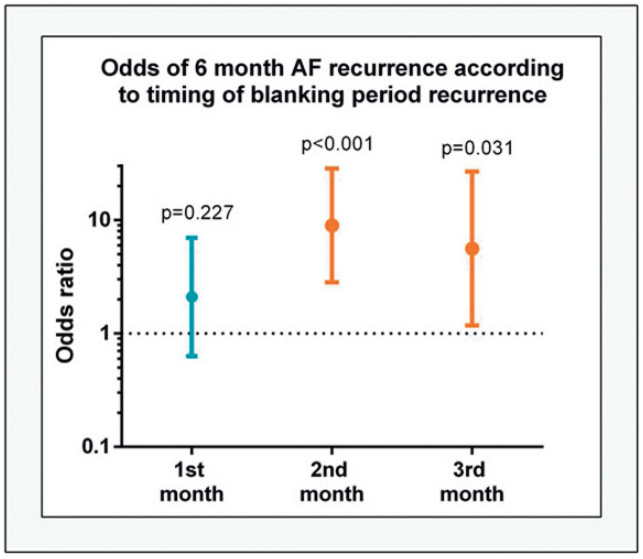
obesity, thyroid disease, AF type and LA enlargement), higher EAT volume did not remain an independent predictor of AF recurrence (Figure 1b, HR 1.25 [95%CI, 0.83-1.86] p = 0.3).
Conclusions: In this cohort of patients with AF submitted to catheter ablation, EAT volume ≥ 80 mL was associated with increased risk of AF recurrence. However, it was not an independent predictor of AF recurrence after adjustment to clinical risk factors.

PO 8. EVALUATING THE VALUE OF THE TIMING OF RECURRENCE DURING BLANKING PERIOD AFTER ATRIAL FIBRILLATION ABLATION

Gonçalo Lopes da Cunha, Gabriela Bem, Anaí Durazzo, Daniel Matos, Gustavo Rodrigues, João Carmo, Maria Salomé Carvalho, Pedro Galvão Santos, Francisco Moscoso Costa, Pedro Carmo, Diogo Cavaco, Francisco Morgado, Miguel Mendes, Pedro Adragão

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

Introduction: In the first weeks after atrial fibrillation (AF) ablation, the arrythmia may recur theoretically due to transient local inflammation and not due to treatment failure. This is defined as the blanking period, with a proposed duration of 3 months. Recently, this time period has been brought into question. The aim of this work was to evaluate the correlation between the timing of blanking recurrence and late AF recurrence.
Methods: This was a single-centre retrospective study including patients without structural heart disease that underwent first AF ablation and were subsequently enrolled in the post ablation structured program between 2018 and 2021. Patients were excluded if they had < 6 months follow-up. Appointment with ECG and Holter monitoring was performed at 1, 3, 6 and 12 months after ablation.
Results: We included a total of 193 patients (56% male, mean age 63 ± 12 years). Of these, 79% had paroxysmal AF and mean left atrial volume index was 58 ± 18 mL/m^2. During the 3-month blanking period, there were 39 (21%) recurrences, 18 (9%) of which in the first month. After blanking period, at 6 months, 25 (13%) patients had AF recurrence, 56% of which had already recurred during blanking period. AF recurrence in the 2nd and 3rd month of blanking increased the odd of recurrence at 6-month by more than 5-fold (odds ratio (OR) 8,944; 95%CI 2,817-28,400 p < 0.001 and OR 5,591; 95%CI 1,173-26,651; p = 0.031). On the other hand, recurrence of AF during the 1st month of blanking was not associated with increased chance of 6-month AF recurrence (OR 2,095, 95%CI 0,630-6,964, p = 0.227) (Fig.). There were no significant differences in clinical variables, including LA volume, between patients with 1-month recurrence and patients without recurrences. However, patients with AF recurrence in the 2nd and 3rd month of blanking had significantly increased LA volume.



Conclusions: Our study suggests that patients with AF recurrence in the 2nd and 3rd month of blanking have structurally different atria and are at a significantly higher risk of post blanking AF recurrence, in contrast with patients with AF recurrence in the 1st month of blanking, thus questioning the appropriate duration of the blanking period.

PO 9. X-RAY AF: RESULTADOS PRINCIPAIS DO REGISTO DE FIBRILHAÇÃO AURICULAR EM PORTUGAL CONTINENTAL

Francisco Moscoso Costa[1], Carlos Aguiar[1], Daniel Caldeira[2], Cristina Gavina[3]

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Introdução: A Fibrilhação Auricular (FA) é a arritmia mais frequente na prática clínica e está associada ao risco de acidente vascular cerebral. Em Portugal, é escassa a informação que permita caracterizar o perfil de risco destes doentes. O objetivo deste estudo foi caracterizar o perfil clínico e o padrão do tratamento antitrombótico dos doentes com FA não valvular em Portugal continental
Métodos e resultados: Estudo prospetivo, observacional de doentes com FA avaliados em consulta de medicina geral e familiar em Portugal continental. Foram incluídos 268 doentes (35 centros - Janeiro de 2016 a Dezembro de 2019), idade média 77 (± 8) anos, 56,3% do sexo masculino. O fator de risco mais frequente foi hipertensão arterial 87,1% seguido de diabetes 26%. O diagnóstico de insuficiência cardíaca estava presente em 22,1% dos doentes, dos quais 10% com internamento por descompensação nos últimos 12 meses. Observou-se disfunção renal (TFG < 60 ml/min) em 19,4%dos doentes, antecedentes de AVC em 12,4% (sendo 0,4% AVC hemorrágico) e neoplasia ativa em 6,1% dos doentes. No total, 78,8% tinham outra doença crónica concomitante, 15% fazia uso de apoio para a marcha (bengala ou equivalente) e 14,6% tiveram um episódio de queda. Nos doentes com FA conhecida, era utilizada terapêutica hipocoagulante em 97,6% dos casos, 62% antagonista da vitamina K *versus* 38% NOAC. Nos seis meses anteriores à inclusão verificou-se incumprimento terapêutico em 87,6% dos doentes, maioritariamente por esquecimento (89,8%) *versus* 8,9% por suspeita de efeito adverso. No momento da inclusão, apenas 19% dos doentes apresentava sintomas relacionados com a FA, 55,1% EHRA II e 22,4% EHRA III. A FA era permanente em 61,2%, persistente em 17,9% e paroxística em 19,4% (1,5% com FA inaugural). A estratégia de controlo de frequência foi adotada em 73,8% dos doentes *versus* 26,2% para o controlo de ritmo. Amiodarona foi o fármaco antiarrítmico mais utilizado (9,2% do total de doentes), seguida de propafenona (2,3%), flecainida (1,2%) e sotalol (1,2%).
Conclusões: Neste registo de doentes com FA em Portugal continental, verificou-se uma população com idade avançada (media 77 anos) e elevada frequência de comorbilidades. A hipocoagulação oral é utilizada na maioria dos doentes sendo o esquecimento a principal causa para incumprimento. O controlo de ritmo é adotado em apenas 26,2% dos doentes. Estes dados devem contribuir para redefinir e otimizar estratégias de prevenção e controlo da FA à escala nacional.

PO 10. AUTONOMIC DYSFUNCTION IS DIVERSE IN REFLEX SYNCOPE AND ATRIAL FIBRILLATION

Mónica Ferreira[1], Sérgio Laranjo[2], Pedro Cunha[3], Helena Fonseca[2], Mário Oliveira[2], Isabel Rocha[4]

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Introduction: Syncope and atrial fibrillation (AF) are both common entities and frequently occur together in an acute clinical scenario. Both are multifactorial in etiology. The autonomic nervous system (ANS) modulates the pathophysiology of both reflex syncope (Rs) and paroxysmal AF (PAF).

The level of functional autonomic deficit related to each condition has implications on therapeutic decisions and is influenced by the corresponding degree of autonomic dysfunction which is still a matter of debate. Thus, in the present study, we intend to analyze the autonomic modulation and sensitivity and efficacy of arterial baroreflex during the passive orthostatism test (HUT) in patients with RS and PAF.
Methods and results: 20 subjects with PAF were compared with 20 patients with RS and 20 healthy subjects. Each subject was submitted to HUT. The systolic blood pressure (SBP) peaks and the R-R intervals were analysed in 4 intervals: 2 minutes in the supine position; first 2 minutes of orthostatism (TA1); next 2 minutes (TA2); 2 minutes of rest. Significant differences were identified in both the blood pressure and chronotropic profiles of the different groups during HUT. As for the SNA activity patterns, PAF and Rs presented a globally decreased heart rate variability when compared with the control group. Three different profiles could be found: a progressive increase in sympathetic activity and a decrease in parasympathetic activity during TA1 were observed in the control group. In the FAP group, the increase of sympathetic activity was blunted in TA1, being delayed to TA2 where a significant increase was seen, with no changes in parasympathetic activity. In the Rs group an initial significant increase in sympathetic activity was seen, followed by a progressive decrease. In the baroreflex response there was a progressive and significant increase in the number of ramps/min in the control group, which wasn't replicated in the Rs and FAP groups. The sensitivity of the baroreflex was similar between the groups in the basal period, with a significant decrease after orthostatism, values being significantly lower in the PAF and Rs groups. The baroreflex efficacy index was significantly lower in the Rs and PAF group in all periods analysed, when compared with the control group.
Conclusions: There are different patterns of hemodynamic, autonomic response and baroreflex adaptability between the three groups These results seem to translate some degree of diverse autonomic impairment in FAP and Rs.

Sexta-feira, 22 Abril de 2022 | 10:00-11:00

Sala Jardim de Inverno | Posters (Sessão 1 - Écran 3) - Doença Cardiovascular em Populações Especiais 1

PO 11. PERI-PROCEDURAL, 30-DAY AND 1 YEAR-OUTCOMES IN CHRONIC DIALYSIS PATIENTS UNDERGOING TRANSCATHETER AORTIC VALVE IMPLANTATION

Francisco Albuquerque, Maria Rita Lima, Rui Campante Teles, Daniel A. Gomes, Pedro Lopes, Afonso Félix de Oliveira, Mariana Gonçalves, João Brito, Luís Raposo, Sílvio Leal, Henrique Mesquita Gabriel, Pedro de Araújo Gonçalves, Manuel de Sousa Almeida, Miguel Mendes

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

Introduction: Patients on chronic dialysis (CD) due to end-stage renal disease (ESRD) with symptomatic severe aortic stenosis eligible for transcatheter aortic valve implantation (TAVI) were excluded from randomized clinical trials. Our study aimed to investigate the outcomes of patients with chronic dialysis who underwent TAVI.
Methods: Single-center analysis on prospectively collected data of all consecutive patients who underwent TAVI between January 2011 and December 2020 according to baseline renal function: chronic dialysis group (CD) and control group (CTRL). Procedural, 30-day, and 1-year outcomes were assessed. Outcomes were defined in accordance with the VARC-3 criteria.
Results: A total of 875 patients underwent TAVI during the study period, of whom 22 (2.5%) were on chronic dialysis. Patients on CD were younger (median age 80 years, [IQR 73-84] *vs.* 84 years, [IQR 80-87]; p < 0.001), more likely to be men [365/863 (42.8%) *vs.* 18/22 (81.8%); p < 0.001] and more likely to have peripheral vascular disease [41/853 (4.8%) *vs.* 7/22 (31.8%); p = 0.031] and lower body mass index (median 24.1 Kg/m², [IQR 21.5-26.5] *vs.* 26.3 Kg/m², [IQR 23.7-29.3]). Short-term major or life-threatening bleeding were significantly higher in CD patients (odds ratio [95% confidential interval]: 3.67 [1.50-8.96], p 0.005). In contrast, no differences were found regarding rates of vascular complications requiring intervention (OR [95%CI]: 1.35 [0.31-5.90], p = 0.662), permanent pacemaker implantation (OR [95%CI]: 0.87 [0.25-2.98], p = 1.000) or stroke (OR [95%CI]: 1.51 [0.20-11.64], p = 0.504). Importantly, dialysis patients had significantly higher rates of in-hospital, 30-day and 1-year mortality rates (13.6 *vs.* 2.1%, p < 0.001; 18.9 *vs.* 2.9, p < 0.001 and 26.4 *vs.* 10.7%, p < 0.001, respectively). On multivariate analysis, after adjusting for age, gender, relevant co-morbidities, and procedure-related complications, CD remained independently associated with mortality at 1-year. Survival curves during follow up are presented in the Figure.

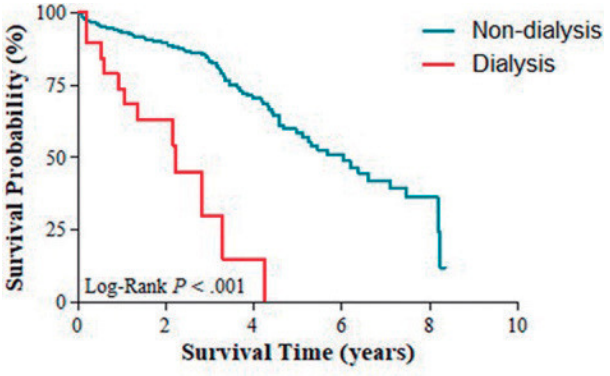


Figure 1

Conclusions: Chronic dialysis patients submitted to TAVI had significantly higher rates of short-term life-threatening and/or major bleeding, short-term and long-term mortality. Careful selection of patients who would benefit from TAVI among patients with ERDS requiring dialysis is necessary to prevent high rates of postprocedural complications and improve outcomes of this high-risk population.

PO 12. SCREENING PULMONARY HYPERTENSION IN SYSTEMIC SCLEROSIS USING CARDIOPULMONARY EXERCISE TEST

Maria Isilda Oliveira, Inês Furtado, Luísa Carvalho, Fabienne Gonçalves, Abílio Reis, Mário Santos

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

Introduction: Pulmonary arterial hypertension (PAH) is one of the most severe complication of systemic sclerosis (SSc). Its early detection and treatment improve prognosis. We aimed to study the diagnostic performance of cardiopulmonary exercise testing (CPET) for PAH screening in SSc patients.
Methods: We retrospectively reviewed clinical data from SSc patients from February 2019 to November 2021. SSc patients were considered not having PAH if they present (1) normal invasive hemodynamics or, in the absence of invasive hemodynamics, if (2) patients presented a normal resting echocardiogram, normal NT-proBNP and FVC/DLCO ratio ≤ 1.6. Informed by previous studies, our CPET variables of interest were VO2 peak% predicted, VO2 peak L/min/Kg, VE/VCO2 slope and peak PetCO2. For minimizing the false-positive results, we studied the thresholds for each parameter to have a sensitivity of 100%.

Results: Of 34 SSc patients with suspected PAH (61 ± 13 years; 94% female), 5 (15%) had the diagnosis of PAH (mean PAP 35 ± 11 mmHg ; PVR 4.1 ± 1.8 WU). Of patients without PAH who underwent right heart catheterization (n = 15), 27% had group 2 pulmonary hypertension. Patients with PAH had lower VO2 peak (14.4 ± 1.2 *vs.* 17.8 ± 3.4 L/min/Kg, p = 0.04), predicted VO2 peak (74 ± 10 *vs.* 83 ± 18%, p = 0.04) and peak PetCO2 (26.6 ± 4.6 *vs.* 32.9 ± 5.0 mmHg ; p = 0.01), and increased VE/VCO2 slope (40.7 ± 7.6 *vs.* 34.3 ± 6.0; p = 0.04). For these variables, the area under the curve for detecting PAH were 0.84, 0.68, 0.84 and 0.77, respectively. With a sensitivity of 100%, the threshold and specificity (S) for each parameter were: VO2 peak < 13 L/min/Kg (S-7%), predicted VO2 peak < 59% (S-7%), peak PetCO2 < 22 (S-4%) and VE/VCO2 slope > 32 (S-41%).
Conclusions: In patients with SSc, CPET parameters of maximal exercise capacity and ventilatory efficiency are associated with the presence of PAH. Peak VO2 and PetCO2 are the best discriminator of the presence of PAH. Despite the reduction in specificity for attaining a sensitivity of 100%, our data suggests the utility of CPET to reduce unnecessary right heart catheterization in SSc patients.

PO 13. ACUTE CORONARY SYNDROMES IN YOUNG PEOPLE: APPLICABILITY OF THE GRACE AND CRUSADE SCORES

Lisa Maria Ferraz[1], Pedro Carvalho[1], Diana Carvalho[1], Raquel Ferreira[1], em Nome dos Investigadores do Registo Nacional de Síndromes Coronárias Agudas[2]

[1]Centro Hospitalar do Baixo Vouga, EPE/Hospital Infante D. Pedro. [2]CNCDC - Centro Nacional de Coleção de Dados em Cardiologia.

Introduction: There is scarse information regarding the use GRACE and CRUSADE scores in acute coronary syndromes without ST-segment elevation (NSTEMI) occurring at an early age.
Objectives: To identify the main predictors of in-hospital mortality and major bleeding during hospitalization in patients (P) with NSTEMI and early age, and assess the adequacy of GRACE and CRUSADE risk scores in this population.
Methods: Retrospective study of 3,106 consecutive P included in the National Registry of Acute Coronary Syndromes diagnosed with NSTEMI at an early age (men < 55 and women < 65 years), between October 1, 2010 and December 31, 2020: 65% (n = 2018) men, 50 ± 7 years. Demographics, cardiovascular risk factors, clinical and laboratorial parameters, medication, coronary angiography, complications, GRACE and CRUSADE scores were evaluated. The main predictors of in-hospital mortality (IM) and major bleeding (MB) were evaluated and the adequacy of the GRACE and CRUSADE risk scores was analyzed.
Results: Female gender (64.3 *vs.* 33.3%, p < 0.001), renal failure (14.3 *vs.* 2.8%, p < 0.001) and left ventricular systolic function < 50% (53.8 *vs.* 21.7%, p < 0.001) were independent predictors of MB. The mean CRUSADE score was 17 ± 13, with 132 P (6%) with CRUSADE score ≥ 41. MB occurred in 14 P of which 35.7% had CRUSADE score ≤ 20; 14.3% CRUSADE score between 21 and 30; 28.6% CRUSADE score between 31 and 40 and 21.4% had CRUSADE score ≥ 51. The presence of previous angina pectoris (55.6 *vs.* 21.1%, p = 0.004) and acute myocardial infarction (55.6 *vs.* 17.5%, p = 0.007) were predictors of IM. Survival during hospitalization was associated with the most frequent medication with beta-blockers (88.3 *vs.* 55.6%, p < 0.001) and iACE/ARA (85.5 *vs.* 55.6%, p < 0.001), a Killip Kimball class I at admission (95.7 *vs.* 77.8%, p < 0.001) and the absence of left main coronary artery disease (97.8 *vs.* 66.7%, p < 0.001). The mean GRACE score was 102 ± 25, with 167 P (6.7%) with GRACE score > 140. IM occurred in 10 P of which 33.3% had GRACE score ≤ 108; 33.3% GRACE score 109-140 and 33.3% GRACE score > 140. On ROC curve analysis, there was a moderate diagnostic acuity of the GRACE score to identify P with in-hospital death (AUC 0.69, 95%CI 0.50-0.89, p = 0.048), and of the CRUSADE score to identify P with MB (AUC 0.68, 95%CI 0.52-0.84, p = 0.02).
Conclusions: For NSTEMI ocurring at an early age, the scores GRACE and CRUSADE were not able to correctly classify most P at risk of IM and MB, respectively, and showed only a moderate discriminative capability for these events. These data suggest the need for new scores, adjusted for this age group.

PO 14. PREVALENCE AND MANAGEMENT OF CARDIOVASCULAR DISEASE IN PATIENTS WITH PRIOR RENAL TRANSPLANTATION

Rita R. Amador, Sérgio Maltês, Bruno M. L. Rocha, Gonçalo J. L. Cunha, Catarina Mateus, Carlos Aguiar, André Weigert, Miguel Mendes

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

Introduction: Kidney transplantation (KT) is the preferred treatment for end-stage kidney disease and approximately 500 KT are performed annually in Portugal. Yet, despite successful KT rates, cardiovascular disorders (CVD) remain one of the major causes of death and allograft failure. Several transplantation-specific and cardiovascular (CV) risk factors pertain a higher risk for CVD. Our goal was to assess the prevalence of CV risk factors and structural heart disease in a KT population and assess the use of Optimal Medical Therapy (OMT) in this population.
Methods: We conducted a single-center retrospective study enrolling all 324 KT patients between Jan-15 and Jul-21. Those without 2D transthoracic echocardiogram (TTE) after transplantation were excluded. Patient data regarding cardiovascular (CV) risk factors or previous CVD were obtained from electronic clinical records. Structural heart disease was defined by the presence of at least one of the following on TTE: left ventricle ejection fraction (LVEF) < 50%; at least moderate valvular heart disease (VHD) or previous valvular heart surgery; right ventricular dysfunction as per the EACVI definition.
Results: A total of 124 patients were included (mean age 58 ± 11 years; 64% male; median time on renal replacement therapy prior to KT 5.9 [3.8-7.4] years; mean left ventricle ejection fraction [LVEF] by TTE 56 ± 8%). A high prevalence of CV risk factors was observed: 103 patients (83%) were hypertensive; 25 (20%) with diabetes; 52 (42%) with dyslipidemia; 34 (27%) with current or previous smoking. Out of the hypertensive patients, 7 (2%) were prescribed ACEi, and other anti-hypertension drugs were preferred. Overall, 31 patients (25%) had established structural heart disease: 13 (10%) with LVEF < 50%; 5 patients (4%) with right ventricular dysfunction, 11 (7%) had valvular disease that was at least moderate, 3 (2.5%) were submitted to surgical (aortic) valve replacement after KT. Moreover 97 (78%) had an indexed left atrial volume > 35 mL/m², 75 (61%) had pulmonary hypertension (defined as pulmonary artery systolic pressure > 35 mmHg) and 74 had left ventricle (LV) hypertrophy. Out of the patients with LVEF< 50%, 3 (21%) received Renin-Angiotensin-Aldosterone System inhibitors (RAASi), 1 (7%) received a Mineralocorticoid Antagonist, 8 (57%) received a beta-blocker and 1 (7%) received a SGLT2 inhibitor.

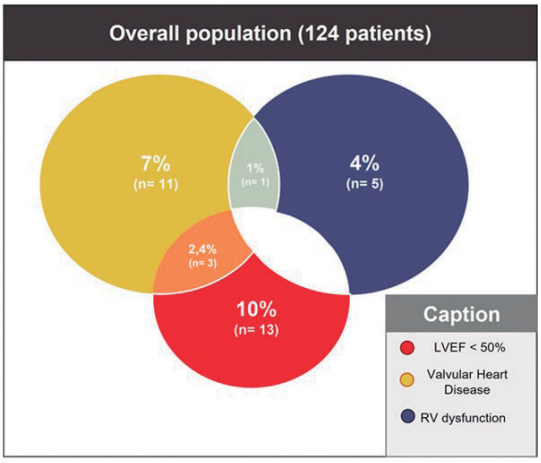


Figure 1 – Venn Diagram showing prevalence of LVEF < 50%, RV dysfunction and Valvular Heart Disease

Conclusions: In a cohort of KT patients, structural heart disease was common and over what one would expect in the general population. Management of LV dysfunction may be suboptimal with a significant proportion of patients not receiving disease modifying treatment. Our findings suggest that structural heart disease in KT recipients should be routinely performed, in order to promote early detection and facilitate treatment optimization.

PO 15. SEX DISPARITIES IN LIPID-LOWERING THERAPY AND DYSLIPIDEMIC CONTROL IN A CORONARY REHABILITATION PROGRAM

Tânia Proença[1], Ricardo Alves[1], Miguel Martins Carvalho[1], Catarina Costa[1], Filipa Amador[1], João Calvão[1], André Cabrita[1], Catarina Marques[1], Carlos Xavier Resende[1], Pedro Diogo, Sofia Torres, Joana Rodrigues, Vítor Araujo, Paula Dias, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Lipid control is one of the most important secondary cardiovascular prevention targets. Although cardiovascular disease is the most common cause of death for both sexes, several studies have consistently shown that women are less likely to receive guideline-recommended secondary prevention medications after an acute coronary syndrome (ACS).
Objectives: To compare sex disparities in dyslipidemic control in a secondary prevention population with ACS in light of the ESC Dyslipidemia Guidelines.
Methods: We retrospectively analysed all patients who participated in a Coronary Rehabilitation Program (CRP) after an ACS from January 2011 to October 2019. Clinical data was collected at presentation and during 12 months follow-up. Doses of atorvastatin ≥ 40 mg, rosuvastatin ≥ 20 mg or a combination of a statin and ezetimibe were considered high-intensity LDL-lowering therapy (HIT).
Results: Of a total of 881 patients enrolled, mean age 55.0 ± 10.0 year-old, 16.1% were female. At baseline there were no differences respecting clinical features between genres. 51.4% of patients had ST-elevation myocardial infarction. 63% patients had dyslipidemia, 46% had hypertension, 19% were diabetic, 76% were smokers or previous smokers, 27% had family history of coronary disease and 12% had previous coronary disease (ACS or > 50% coronary artery stenosis). At hospital admission, females and males had similar mean LDL-levels [120.7 *vs.* 118.1 mg/dL, t(708) = 0.691, p = 0.496]. The vast majority of patients of both genres were discharged on statin (99.5%) and maintain it during follow-up (99.3%). Female patients received more HIT during follow-up (67.8 *vs.* 53.9% at baseline, p = 0.015; 75.6 *vs.* 59.0% after CRP, p = 0.003; and 79.8 *vs.* 65.1% at 1-year-follow-up, p = 0.007). During follow-up, at the end of the CRP (about 3 months after event), male exhibit a better control of LDL [82.0 *vs.* 75.6 mg/dL, t(597) = 2.4, p = 0.016)] with 12.8 *vs.* 16.4% below 55 mg/dL and 29.8 *vs.* 44.5% below 70 mg/dL (p = 0.008). At 1-year follow-up, both genres exhibited similar LDL-control thanks to a worsening control of male population (81.9 *vs.* 80.6 mg/dL, t(540) = 0.52, p = 0.605). Only 13.3% of females had LDL below 55 mg/dL (*vs.* 12.9%, p = 0.921) and 32.5% below 70 mg/dL (*vs.* 37.0%, p = 0.432).
Conclusions: This real life study showed that guideline recommended LDL target is not achieved in the majority of patients even under a structured CRP. Unlike to other reports, women received more potent anti-dyslipidemic therapy. Nevertheless, they showed a poor control of LDL-concentration after three months of ACS and a similar control after 1-year; this highlights the uncertainties related to the efficacy of lipid-lowering therapy in women, a underrepresented population in clinical trials.

Sexta-feira, 22 Abril de 2022 | 10:00-11:00

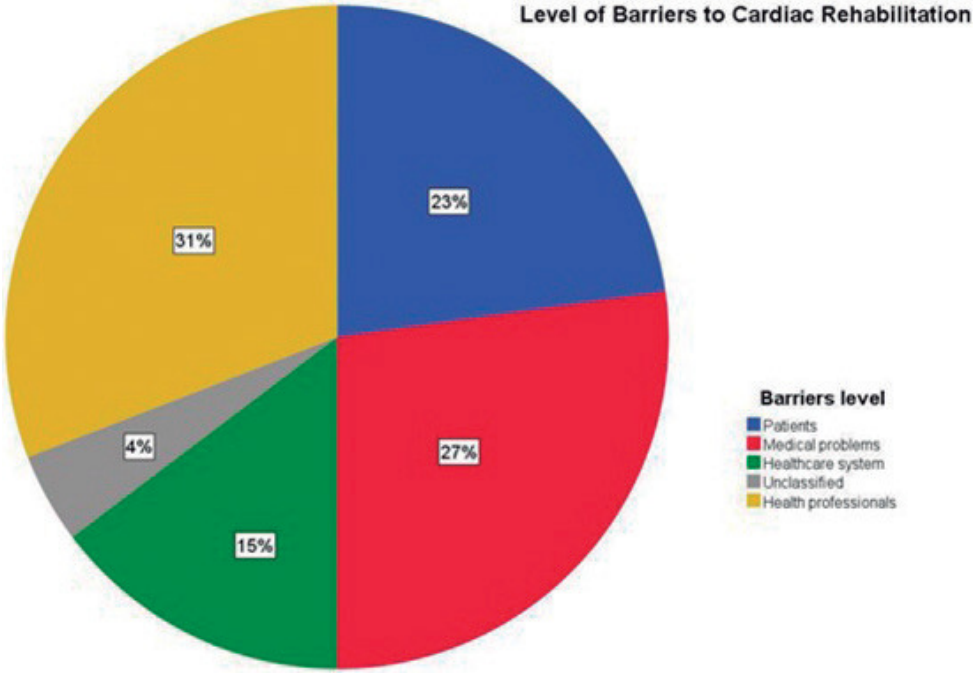
Sala Jardim de Inverno | Posters (Sessão 1 - Écran 4) - Insuficiência Cardíaca 1 - Vários 1

PO 16. CLINICAL DETERMINANTS AND BARRIERS TO CARDIAC REHABILITATION ENROLMENT OF HEART FAILURE PATIENTS

André Alexandre[1], Andreia Campinas[1], Cristine Schmidt[2], Sandra Magalhães[1], José Preza-Fernandes[1], João Silveira[1], Catarina Gomes[1], Mário Santos[1], Severo Torres[1]

[1]Centro Hospitalar Universitário do Porto, EPE/Hospital Geral de Santo António. [2]Departamento de Cirurgia e Fisiologia, Faculdade de Medicina da Universidade do Porto; CIAFEL, Faculdade de Desporto da Universidade do Porto.

Introduction: Cardiac rehabilitation (CR) is a recommended treatment for patients with heart failure with reduced ejection fraction (HFrEF).



PO 16 Figure

Despite the robust evidence supporting its safety and benefits, there is an incomplete understanding of the reasons of the underutilization of CR programs in HFrEF. These reasons are complex and probably encompass healthcare system- and patient-level barriers.
Objectives: To study the clinical determinants and barriers to enrolment in a CR program for HFrEF patients.
Methods: We conducted a study of consecutive heart failure patients followed at a dedicated HFrEF cardiology clinic from January 2019 to April 2021. Patients were divided according to previous enrolment in CR program. Data were collected from electronic health records, and in case of missing data patients were asked by telephone about the reason for not participating in CR using a structured and validated questionnaire for this purpose.
Results: Of 228 patients with HFrEF, 60% had not been enrolled in a CR program; they were older (63 *vs.* 58 years; p < 0.01) and more likely to have comorbidities such as hypertension (56 *vs.* 41%; p = 0.03) or concomitant chronic obstructive pulmonary disease (20 *vs.* 8%; p = 0.01). Conversely, patients enrolled in CR programs were more likely to have a previous history of acute myocardial infarction (34 *vs.* 20%; p = 0.02). Regarding heart failure-related clinical features (NYHA functional class, LVEF, ICD/CRT), we did not find any significant differences between groups. The main reasons for not being enrolled in CR programs were: no medical referral (31%), concomitant medical problems (27%) such as musculoskeletal problems, patient refusal (11%) and geographical distance to the hospital (9%).
Conclusions: Despite the high proportion (40%) of HFrEF patients who underwent CR program compared to previous studies, the enrolment to CR can be further improved. The main barriers are related to health professionals (no referral), healthcare system (geographical distance to the hospital) and patients (concomitant noncardiac problems). Innovative strategies should target these factors to increase the delivery of CR program in HFrEF.

PO 17. PHYSICAL ACTIVITY AND HEART FAILURE: A FORGOTTEN INDICATOR

M. Inês Barradas, Fabiana Duarte, Luís Resendes de Oliveira, Cátia Serena, António Xavier Fontes, André Viveiros Monteiro, Carina Machado, Raquel Dourado, Emília Santos, Nuno Pelicano, Miguel Pacheco, Anabela Tavares, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: Low levels of physical activity may be associated with comorbidities, sedentary lifestyle or clinical worsening in heart failure (HF) patients. Cardiovascular implantable electronic devices (CIEDs) detect and analyse physical activity data that is often integrated in multifactorial algorithms for predicting HF decompensations, but its potential is probably underestimated.
Objectives: We hypothesized that low physical-activity levels, obtained from remote monitoring of CIEDs, help predict clinical outcomes in HF patients, independently from multifactorial algorithms.
Methods: We retrospectively evaluated consecutive patients with HF and CIEDs through clinical assessments and remote monitoring (two monitoring systems were used). Low activity was defined as < 1 hour/day of physical activity and two groups of patients were defined: patients with low activity alerts (group 1) and patients without low activity alerts (group 2). Primary outcome was defined as death by all causes and secondary outcome as HF hospitalizations and sustained ventricular tachycardia (VT) or ventricular fibrillation (VF) episodes.
Results: From 121 patients with RPM, physical activity data was obtained in 104 (85.9%). Mean age was 63.98 ± 12.44 years, 70.2% were males and follow-up was 59.19 ± 38.491 months. Fifty-four (51.9%) had implantable cardiac resynchronization therapy (CRT) defibrillator (CRT-D), 46 (44.2%) transvenous implantable cardioverter defibrillator (ICD), and 4 (3.8%) CRT pacemaker (CRT-P). The aetiology was idiopathic in 42.5% and ischemic in 40.2%. Mean left ventricular ejection fraction was 34.08 ± 11.40% and mean physical activity duration was 2.25 ± 1.84 hours/day. Forty-eight (53.7%) patients had low activity alerts (group 1) and 56 (46.3%) had no low activity alerts (group 2). In group 1 mean period of low activity was 52.978 ± 15.75 days/year. Patients from group 1 were older (p = 0.001), had more oncological disease (p = 0.041) and peripheral artery disease (p = 0.028). Three deaths occurred in total, all in group 1 (p = 0.039) and HF hospitalizations were more frequent in group 1 (1.68 ± 2.59 *vs.* 0.69 ± 1.32, p = 0.005). Low activity burden was also associated with atrial fibrillation burden (r = 0.473, p < 0.05) and number of episodes of VT or VF (r = 0.267, p = 0.007). A decrease of 50% or more in mean duration of physical activity, but above 1 hour/day, was associated with increase HF hospitalizations (1.83 ± 2.13 *vs.* 1.05 ± 1.95, p = 0.006).
Conclusions: Low physical activity data obtained from CIEDs was associated with HF hospitalizations, arrhythmic events and death by all causes, independently of multifactorial algorithms. A decrease in basal activity even above alert threshold, was associated with HF hospitalizations and may be an even earlier sign of HF decompensations.

PO 18. HEART FAILURE- ONE ONLY DISEASE OR A GROUP OF DIFFERENT ENTITIES?

José João Monteiro, Sara Borges, Pedro Carvalho, Catarina Carvalho, Marta Bernardo, Joaquim Chemba, Fernando Goncalves, Jose Pedro Guimarães, Hélder Ribeiro, José Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de São Pedro.

Introduction: Left ventricular ejection fraction (LVEF) recovery is usually associated with better long-term outcomes in heart failure patients (pts). However, the degree of recovery of EF is quite heterogeneous between heart failure etiologies and had different structural features associated.
Objectives: To study the evolution of structural and clinical features in a cohort of pts with heart failure secondary to different etiologies.
Methods: Were included consecutive pts with heart failure diagnosis with reduced LVEF (< 40%) and regular follow-up (fup) for at least 12 months in a heart failure unit (n = 207, mean fup of 17.83 ± 6.97 months). They were divided in 4 groups, according with heart failure etiology: ischemic (n = 70), toxic (n = 22), tachicardiomiopathy (n = 12), and others (familiar, idiopathic, and hypertensive, n = 103). Then, was evaluated the trend of LVEF, End Diastolic Left Ventricle Diameter (EDLVD), and a combined outcome of cardiovascular death, hospital admissions, and urgency department visits secondary to heart failure (MACE), during the fup period and compared them between each group. To characterize these differences was used a One Way ANOVA Test and Qui Square Test to compare baseline differences of the population of each group (Table).
Results: Pts from ischemic heart failure group had more dyslipidemia (71.4%) than other groups (p = 0.027), pts from the group of "other etiologies" had few smokers than other groups, 16.5% (p < 0.01), and those from tachycardiomiopathy group had more atrial fibrillation, 83.3% (p < 0.001) (see table 1). Pts were under similar heart failure modifying-disease drugs, except mineralocorticoid receptor antagonists, less prevalent in the tachicardiomiopathy group (p < 0.001). Pts with tachicardiomiopathy showed the higher LVEF recovery, 16.2% ± 11.39%, and those from the ischemic group had the slighter increase, 5.24% ± 9.47, (p = 0.014). Use of loop diuretic drugs decreases during fup time, and the magnitude of decrease was higher in tachicardiomiopathy, with no statistically significant differences between groups. EDLVD decreases in all groups, mainly in the toxic heart failure group, although without reaching statistical significance. NYHA Class variation and MACE didn't achieve significant differences between different groups.
Conclusions: Our results suggest that tachicardiomiopathy is possibly a more reversible form of heart failure, showing a higher percentage of LVEF recovery during fup time in our heart failure unit. Loop diuretic dose reduction varied in a similar trend, being more pronounced in pts with tachicardiomiopathy, although not reaching statistic significance. In spite of these differences in EF and loop diuretic dose, ventricle reverse remodeling showed a more pronounced trend in the toxic heart failure group. These results highlight the importance of heart failure etiology in the natural history of the disease.

	Ischemic heart failure (n=70)	Toxic heart failure (n=22)	Tachicardiomiopathy (n=12)	Other etiologies of heart failure (n=103)	Statistic significance
Male sex (%)	82.9	81.8	83.3	51.5	**P<0.001**
Age (years)	69.84	73.36	65.92	70.56	P=0.308
Diabetes Mellitus (% of patients)	37.1	31.8	41.7	28.2	P=0.56
Dyslipidemia (% of patients)	71.4	50.0	66.7	49.5	**P=0.027**
HTA (% of patients)	71.0	72.7	83.3	64.1	P=0.47
Smoking (% of patients)	50.0	40.9	50.0	16.5	**P<0.01**
Chronic Kidney failure (% of patients)	12.3	0	9.1	8.5	P=0.427
Atrial Fibrillation(% of patients)	20	31,8	83.3	28.4	**P< 0.001**
ACE inhibitor or ARNI (% of patients)	98.6	100	100	100	P= 0.60
Beta blockers (% of patients)	94.0	100	100	88.4	P= 0.14
MRAs (% of patients)	72.9	77.3	8.3	75.7	**P< 0.001**
SGLT2 inhibitors (% of patients)	32.90	27.3	25.0	36.9	P= 0.73
LVEF baratino (%)	5.24	9.2	16.2	8.6	**P=0.014**
EDLVD variation (mm)	-0.25	-11.4	-0.07	-2.92	P=0.064
Loop diuretic variation (mg)	-4.79	-0.91	-15.0	-2.94	P=0.65
NYHA Class variation	-0.33	-0.41	-0.17	-0.4	P=0.675
MACE (% of patients)	30.0	22.7	0	24.3	P= 0.169
Mean Follow-up Time (months)	17.59	20.48	13.92	17.91	P=0.074

Table 1- Differences between each group of heart failure etiology. ACE- Angiotensin conversion enzyme; ARNI angiotensin receptor neprilysin inhibitor; EDLVD- End Diastolic left Ventricle Diameter; LVEF- Left Ventricular Ejection Fraction; MRA mineralocorticoid receptor antagonist; NYHA- New York Heart Association

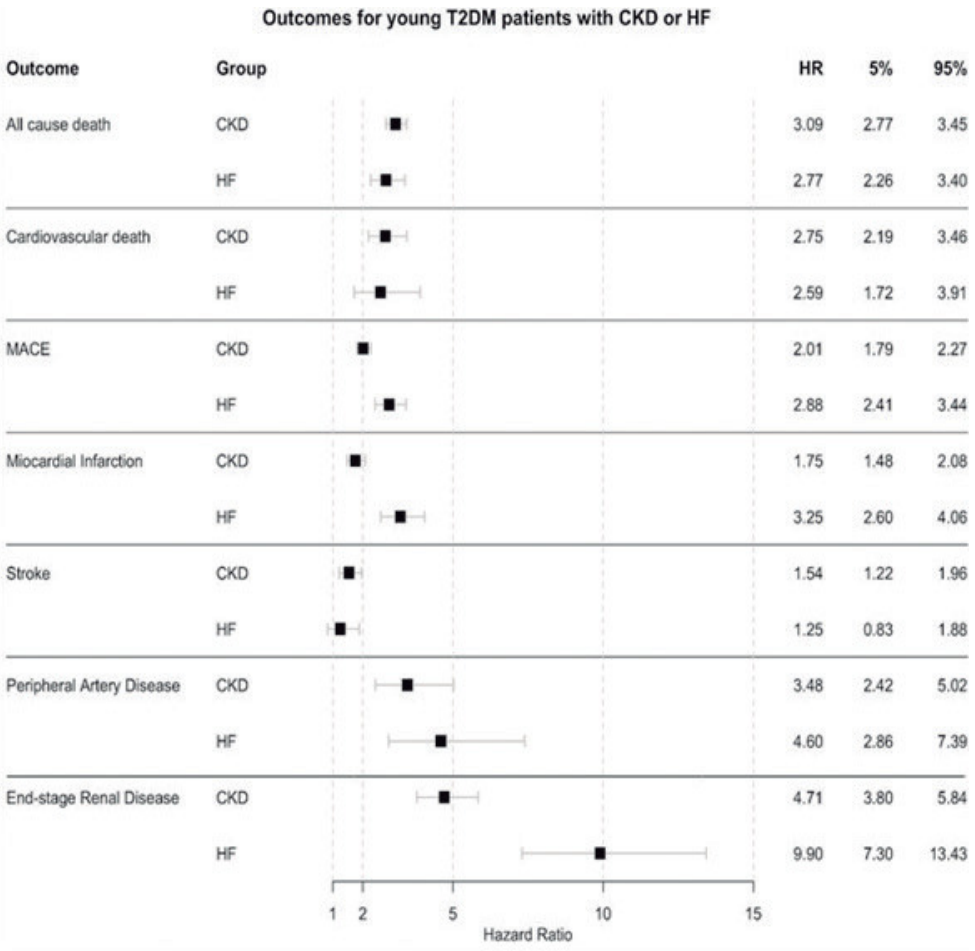
PO 18 Figure

PO 19. HEART-KIDNEY CROSSTALK: HEART FAILURE AND THE RISK OF CARDIOVASCULAR EVENTS AND END STAGE RENAL DISEASE IN YOUNG TYPE 2 DIABETIC PATIENTS

Daniel Seabra-Carvalho[1], Filipa Bernardo[2], Carla Santos Araújo[1], Tiago Taveira-Gomes[3], Cristina Gavina[1]

[1]*Unidade Local de Saúde de Matosinhos, EPE/Hospital Pedro Hispano.* [2]*AstraZeneca.* [3]*Faculdade de Medicina da Universidade do Porto.*

Introduction: Type-2 diabetes mellitus (T2DM) is one of the most relevant risk factors for both heart failure (HF) and chronic kidney disease (CKD). Target organ damage causes significant morbi-mortality, especially when these two conditions are combined with diabetes. Understanding the natural history of the combination of these conditions is crucial to implement tailored preventive measures.
Objectives: To estimate the risk of all-cause death, cardiovascular (CV) death, non-fatal major CV events (MACE) and End Stage Kidney Disease (ESKD) in young T2D patients with HF (T2D-HF) or CKD (T2D-CKD) compared to the young T2D patients without these conditions in a real-world clinical setting.
Methods: Retrospective cohort study (2000-2019) performed in a healthcare centre that provides primary and secondary care. It included adults with T2DM aged between 40 and 65 years stratified into three groups: i) T2DM -HF defined as either: Ejection Fraction (EF) ≤ 40% and NT-proBNP ≥ 200 pg/mL (≥ 600 pg/mL if atrial fibrillation (AF)) or BNP ≥ 100 pg/mL (≥ 125 pg/mL if AF); EF > 40% in the presence of structural cardiac abnormalities; ii) T2DM-CKD (eGFR ≤ 60mL/min using EPI-CKD formula); and T2DM without HF or CKD. We modelled 1-year risk for CV death, all-cause mortality and non-fatal MACE using multivariate weighted Cox regression models clustered by patient. Models were adjusted for age (using penalized splines), sex, age-sex interaction, prior history of hypertension, myocardial infarction, stroke, and peripheral arterial disease. We reported hazard ratios (*versus* T2DM without HF or CKD) with 95% confidence intervals.
Results: We identified 14,986 patients with T2DM without HF or CKD, 1101 with T2DM with HF and 3114 with T2DM with CKD. Patients were in general 55-58 years old, with a slight predominance of the male gender across the groups. One-year event rate for all-cause death was 14% in T2DM-HF, 15% in T2DM-CKD and 5% in TD2 without these conditions. Comparing with T2DM without HF or CKD, hazard ratio for one-year all-cause death was 2.77 (2.26-3.40) for T2DM-HF and 3.09 (2.77-3.45) for T2DM-CKD. CV death risk was 2.59 (1.72-3.91) higher for T2DM-HF and 2.75 (2.19-3.46) for T2DM-CKD. Non-fatal MACE risk was 2.82 (2.34-3.41) higher for T2DM-HF and 1.90 (1.66-2.17) for T2DM-CKD. Regarding MACE, the one-year event rate was 32% in T2DM-HF, 13% in T2DM-CKD but only 6% in T2DM without these comorbidities. T2DM-HF was associated with the highest risks of myocardial infarction (3.25 [2.60-4.06]) and end-stage kidney disease (9.9 [7.3-13.43]).
Conclusions: Young patients with T2DM combined with HF or CKD have an increased risk of early adverse CV and renal events. HF was linked



PO 18 Figure

with highest risk of myocardial infarction and end-stage kidney disease. Early identification and management of HF and CKD is paramount for T2D patients.

PO 20. LEFT BUNDLE BRANCH BLOCK – IS IT POSSIBLE TO PREDICT LEFT VENTRICLE DYSFUNCTION?

João Santos Fonseca, Pedro Silvério António, Sara Couto Pereira, Joana Brito, Beatriz Valente Silva, Pedro Alves da Silva, Ana Beatriz Garcia, Ana Margarida Martins, Catarina Simões de Oliveira, Ana Abrantes, Miguel Azaredo Raposo, Joana Rigueira, Rui Plácido, Cláudio David, Fausto J. Pinto, Ana G. Almeida

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Left bundle branch block (LBBB) might be a cause of left ventricle dysfunction (LVD) even in patients without cardiomyopathy or ischemic heart disease. Predict which patients (pts) with LBBB and normal left ventricle ejection fraction (LVEF) will develop LVD remains challenging.
Objectives: Our aim was to identify echocardiographic and electrocardiographic (ECG) predictors of LVD in pts with LBBB.
Methods: Retrospective, single-centre study of 839 consecutive pts with documentation of *LBBB and LV disynchrony* from our echocardiographic and ECG database from January 2010 to December 2020. Other inclusion criteria were (1)initially preserved LVEF (≥ 50%), (2)absence of documented clinically relevant coronary arterial disease/cardiomyopathy and (3)echocardiographic reassessment of LVEF after a follow up period (FUP) of ≥ 6 months. Baseline echocardiographic, ECG and clinical data were recorded. Statistical analysis was performed using Kaplan-Meier curves for survival, Chi-square and Mann-Whitney tests to look for predictors of LVD.

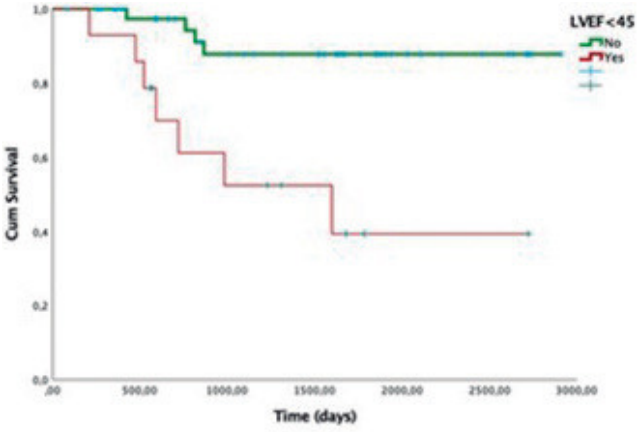


Figure 1: Impact of LVEF<45% on Heart Failure hospitalizations.

Results: After screening, 59 pts were included with a mean age of 70 ± 12 years, 35.6% males, 83.1% hypertensive, 27.1% diabetic, 39% with dyslipidemia and atrial fibrillation in 25.4%. Most of the pts were at sinus rhythm (74.6%), with mean average QRS 151 ± 13.5 msec and 59.3% with typical LBBB pattern. At baseline, the mean LVEF was 59 ± 6%, enddiastolic (TD) and endsystolic (TS) diameter was 52 ± 6 mm and 34 ± 7 mm, respectively; mean TD and TS volume was 106 ± 30 mL and 44 ± 16 mL, respectively. The global longitudinal

strain (GLS) was globally reduced (mean -14.3 ± -3.2%; normal cut-off value ≥ -18%). During FUP (mean 51 ± 25 months), LVEF decreased to < 45% in 23.7% pts and a reduction ≥ 10% from baseline was seen in 35.6% pts. A higher TS (p = 0.013) was associated with LVD with LVEF< 45%. Higher TD (p = 0.048) and TS (p = 0.002) also associated with LVD with LVEF< 50%. GLS and QRS duration didn't associate with LVD during FUP. Pts who developed LVD had higher risk of HF hospitalizations (Log rank 11.4, p < 0,001; Fig.) and death (9 *vs*. 2 pts in LVEF< 45%, p = 0.013).
Conclusions: Our study supports that LBBB might be a cause for LVD even without documented structural heart disease. TD and TS associated LVD in our sample. Although prospective trials with a higher number of pts are warranted, we hypothesized that these group of pts might benefit of early cardioprotective treatment and closer FUP.

Sexta-feira, 22 Abril de 2022 | 10:00-11:00

Sala Jardim de Inverno | Posters (Sessão 1 - Écran 5) - Doença Vascular e Cirurgia Cardíaca

PO 21. POSTSTERNOTOMY MEDIASTINITIS - OUR 10 YEAR EXPERIENCE WITH OMENTUM FLAP SURGERY

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Introduction: The management of postoperative mediastinitis remains challenging. Due to the severity of infection and patient's individual comorbidities, the optimal treatment is highly variable and multiple operations are usually performed. Vacuum assisted therapy combined with systemic antibiotics are used frequently with good results upon any sign of sternal wound infection. However, when deep sternal wound infection or persistent infections are present, more radical surgical options are necessary.
Objectives: Based on the literature, we developed an algorithm for patients with mediastinitis with an emphasis on the treatment with an omentum flap, which was used in early postoperative or in late infections when a large defect was present (Fig.).
Methods: From January 2012 until December 2021, a total of 28 patients (5 female/23 male), 0.4% of our total sternotomy population, were treated according to the departments algorithm with an omentum flap. We retrospectively analyzed preoperative patient´s risk profile, intraoperative data, clinical presentation with laboratory, microbiological and imaging data.
Results: Mean age was 67.3 years (51-82 years). The majority of patients (13 patients, 46%) underwent coronary artery bypass grafting (CABG), 8 patients valve surgeries, 5 combined CABG and valve surgery and 2 cardiac transplants. Median EuroScore 2 was 2.85% (0.55-16.06%) and median STS Score Mortality was 1.47% (0.22-5.56%). Median STS risk for deep sternal wound infection was low with 0.17% (0.07-0.49%). Relevant risk factors for infection included previous diabetes (57%), history of smoking (46%), hospitalization before surgery (36%), obesity (BMI > 32 kg/m², 25%) and chronic obstructive lung disease (18%). Reoperation for mediastinitis was performed an average of 16 days (range 6-44 days) after initial operation. We performed the omentoplasty through a laparotomy, a secondary pectoralis muscle flap was necessary in 8 patients to achieve skin closure. Two patients required titanium plates in order to stabilize the sternum. In-hospital mortality was 21% (6 patients). Late epigastric hernia occurred in three patients. We did not observe early or late omentum flap failures.
Conclusions: In our center, omentum flaps for mediastinitis are used for the severest patient group in a standardized fashion with good clinical outcome.

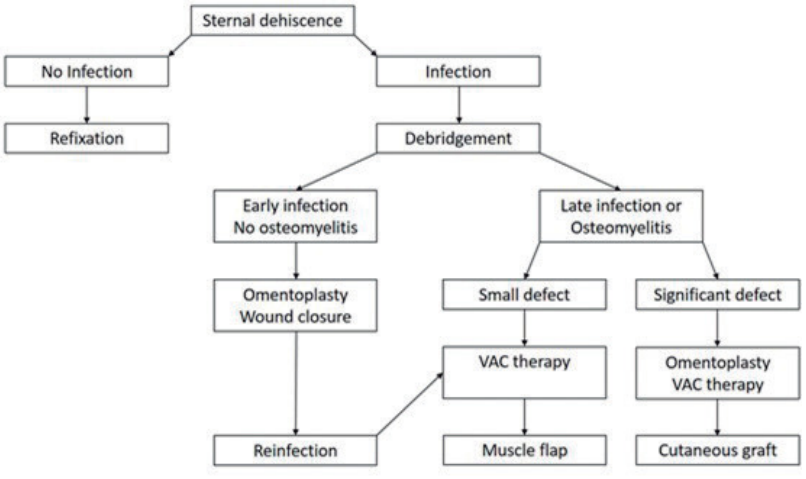

Figure 1. Treatment algorithm for patients with sternal dehiscence

PO 21 Figure

PO 22. QUILTY EFFECT AND ITS UNCERTAIN REPERCUSSION IN HEART TRANSPLATED PATIENTS

Francisco Barbas de Albuquerque, Ana Raquel Carvalho Santos, António Valentim Gonçalves, Rita Ilhão Moreira, Tiago Pereira-da-Silva, Valdemar Gomes, Rui Soares, Lídia de Sousa, Rui Cruz Ferreira

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

Introduction: Endomyocardial biopsy (EBM) remains the gold-standard technique to assess acute cellular rejection (ACR) in heart transplant (HT) patients. Quilty effect (QE) is a nodular lymphoid subendocardial inflammatory infiltrate occasionally seen histologically in EMB. Its clinical significance, regarding ACR and poor analytical, transthoracic echocardiographic (TTE), and right-heart catheterization (RHC) hemodynamic parameters is still not well established.
Objectives: To assess whether presence of QE on EMB was associated with analytical, TTE and RHC hemodynamic parameter values differences, compared to the group without QE on EMB.
Methods: Retrospective analysis of consecutive HT patients submitted to EMB between February 2016 and November 2021, who performed at the same day blood analysis, TTE and RHC. EMB histology reports were peer

Table 1.		Presence of Quilty effect on EMB				
	Parameter	Yes (n=11)		No (n=116)		p value
		Mean	SD	Mean	SD	
Analitic	NT-pro BNP	12260.68	15387.43	2681.24	5336.78	<.001
	BNP	769	1019.96	811.47	989.27	.979
	Troponin I	152.45	295.32	182.46	412.53	.736
	Glomerular Filtration Rate	66.8	24.06	75.78	26.30	.835
Hemodynamic	Cardiac Index	3.14	0.41	3.07	0.71	.062
	Central venous pressure (CVP)	4.82	2.56	6.63	5.27	.065
	Pulmonary capillary wedge pressure (PCWP)	10.27	4.82	12.23	6.44	.280
	Right ventricular end-diastolic pressure	5.36	2.58	6.44	4.20	.170
	Right ventricular end-systolic pressure	32.36	6.56	32.05	9.74	.247
	Systolic Pulmonary artery pressure	32.36	8.213	32.95	9.74	.097
	Diastolic Pulmonary artery pressure	9.27	4.07	12.8	6.32	.181
	Mean pulmonary artery pressure	20.09	3.91	20.83	7.38	.210
	Pulmonary artery pulse pressure	23.09	5.47	19.28	6.67	.714
	Pulmonary artery resistance	1.64	0.54	1.63	0.87	.216
	Systemic vascular resistance	1177.22	454.87	1455.44	447.77	.331
	Pulmonary Artery Pulsatility index	5.92	3.52	4.77	4.05	.863
	PVC/PCWP	0.53	0.23	0.53	0.27	.446
	Cardiac Power Output CPO	1.20	0.28	1.26	0.32	.803
	Mean Arterial Pressure MAP	95.7	8.74	101.24	13.06	.079
Echocardiographic	Left Ventricular Ejection Fraction	57.38	7.21	57.69	10.45	.200
	Tricuspid Annular Plane Systolic Excursion	15.38	1.85	14.11	3.55	.091
	Global Longitudinal Strain	-14.95	4.59	-13.13	2.40	.200
	E/A	1.46	0.58	1.75	0.61	.543
	E/e'	11.43	4.20	9.82	6.75	.917
	Desaceleration time	178.71	19.33	158.74	41.25	.119
	Pulmonary Artery Systolic Pressure	31.33	3.67	32.64	8.36	.089
	Left Atrial Volume	28.00	4.82	27.25	7.57	.390

PO 22 Figure

reviewed for the presence of QE to compare groups. Mean comparison of analytical, TTE and RHC parameter values was performed by independent sample T-Test with *p* value < 0.05 for clinical significance (SPSS®).
Results: A total of 127 EMB were performed during the study period. Of these, 11 (8.6%) had QE on EMB histology and 117 (91.3%) did not have QE. 2 patients had both QE and ACR (defined as ≥ 2R grading on EMB) and 9 had QE without ACR (defined as 0 or 1R grading on EMB). Mean age was 49.5 years, mean left ventricular ejection fraction was 57.7 ± 10.2%, BNP 808 ± 984 pg/mL and NT-pro BNP 4,221 ± 8,418 pg/mL. Analytical, TTE and RHC hemodynamic parameters mean values comparison between groups is illustrated on Table 1. The presence of Quilty effect was not significantly associated with any TTE parameters value between the two studied groups. RHC hemodynamic values also did not proved to be significantly different between groups. NT-proBNP was the only analytical parameter to be significantly increased in QE group.
Conclusions: The role of presence of QE in HT patient clinical status, as well as its repercussion on analytical, TTE and RHC hemodynamic values is still challenging and controversial. This study showed the presence of QE was not associated with differences in analytical, TTE and RHC hemodynamic values between patients with and without QE. Also, only a small percentage of patients had both ACR and QE on EMB. In this study population QE appeared to be a benign situation, not associated with any particular outcome, compared to patients who did not have this finding on EMB.

PO 23. MORTALITY PREDICTORS IN INFECTIVE ENDOCARDITIS PATIENTS SUBMITTED TO SURGERY - WHAT CAN BE IMPROVED?

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

Introduction: Infective endocarditis (IE) is associated with a high morbidity and mortality, frequently requiring surgical treatment in high-risk situations. However, even with surgery, mortality remains high. This study aims to evaluate the mortality predictors of IE patients submitted to surgery.
Methods: This single-centre retrospective study enrolled patients diagnosed with active IE that underwent surgery from June 2013 to October 2018. The primary outcome was all-cause mortality at 1-year.
Results: One-hundred consecutive patients were included, 73% were male, with a median age of 60 years (Table). Seventy-six had native valve endocarditis (45 aortic, 46 mitral, 5 tricuspid and one pulmonary, with 21 patients having multivalvular IE), 20 prosthetic valve IE (13 aortic, 7 mitral, 12 early IE) and 4 cardiac device related IE (3 related to pacemaker and 1 related to CRT). The most frequent microorganism isolated from blood cultures was *Staphylococcus aureus* (36.5%) followed by *Streptococcus* spp. (29.7%). The median EuroSCORE II was 9.37% (IQR 2.41-11.38%). The most common indication for surgery was severe valvular regurgitation (N = 54, with 5 prosthesis dehiscence), large vegetations and embolic events (N = 49), paravalvular complications (N = 40) and shock (N = 26). During a median follow up of 58 (44-71) months, 30 patients died (1 intra-operatory death) and 7 had recurrence of IE. Predictors of death were male sex (HR 2.342; 95%CI 1.117-4.911; p = 0.024), older age (HR 1.053; 95%CI 1.02-1.08; p = 0.002), arterial hypertension (HR 5.844; 95%CI 2.483-13.756; p < 0.001), atrial fibrillation (HR 2.63; 95%CI 1.255-5.510; p = 0.01), diabetes mellitus (HR 2.812; 95%CI 1.324-5.974; p = 0.007), acute kidney injury requiring haemodialysis (HR 4.736; 95%CI 1.784-12.571; p = 0.002), heart failure in NYHA III-IV (HR 3.959; 95%CI 1.61-9.73; p = 0.003) and EuroSCORE II (HR 1.057; 95%CI 1.03-1.08; p < 0.001). Prosthetic valve IE was also associated with a higher mortality (HR 2.622; 95%CI 1.190-5.773; p = 0.017), as was intracranial haemorrhage (HR 15.374; 95%CI 1.851-127.711; p = 0.011) and embolic events (HR 18.330; 95%CI 2.131-157.664).
Conclusions: In our study, the potentially modifiable predictors of mortality were the presence of embolic events, kidney dysfunction and a higher functional class of heart failure at time of the surgery, which reflects the need for a timely diagnosis, early administration of adequate antibiotic therapy and a rapid referral for surgery.

Table 1 - Baseline Characteristics of IE patients submitted to surgery		
Demographics and Medical History		
Age, mean ± SD (years)		60 ± 16
Male sex, n (%)		73 (73%)
Origin, n (%)	Community-acquired	66 (66%)
	Health care-associated	11 (11%)
	Nosocomial	13 (13%)
	Associated with intravenous drug use	10 (10%)
Atrial Fibrilation, n (%)		24 (24%)
HTN, n (%)		44 (44%)
COPD/asthma, n (%)		5 (5%)
CKD, n (%)		10 (10%)
Hemodialysis, n (%)		7 (7%)
Autoimmune disease, n (%)		3 (3%)
Diabetes mellitus, n (%)		20 (20%)
Obesity (BMI=30Kg/m^2), n (%)		14 (14%)
Current/former smoker, n (%)		35 (35%)
Previous stroke, n (%)		14 (14%)
Heart Failure, n (%)		22 (22%)
Coronary Artery Disease, n (%)		13 (13%)
Congenital Heart	Bicuspid Aortic Valve	5 (5%)
Disease, n (%)	Corrected Tetralogy of Fallot	1 (1%)
Cancer, n (%)		13 (13%)
Intravenous drug user, n (%)		10 (10%)
Previous endocarditis, n (%)		3 (3%)
Cardiac Device	Pacemaker	5 (5%)
Implanted, n (%)	CRT	1 (1%)
Clinical Presentation of IE		
NYHA class at	I	11 (11%)
presentation, n (%)	II	39 (39%)
	III	32 (32%)
	IV	18 (18%)
EF at presentation, n	Preserved (>51%)	87 (87%)
(%)	Slightly reduced (31-50%)	12 (12%)
	Reduced (21-30%)	1 (1%)
Type of IE, n (%)	Native valve IE	76 (76%)
	Early Prosthetic Valve IE	12 (12%)
	Late Prosthetic Valve IE	8 (8%)
	Cardiac device related	4 (4%)
Native Valve IE, n (%)	Mitral	46 (47.4%)
	Aortic	45 (46.4%)
	Tricuspid	5 (5.15%)
	Pulmonary	1 (1%)
Multivalvular, n (%)		21 (20.8%)
Prosthetic Valve IE, n	Aortic	13 (65%)
(%)	Mitral	7 (35%)
Cardiac device related	Pacemaker	3 (75%)
IE, n (%)	CRT	1 (25%)

PO 24. COULD CMV VIREMIA HAVE AN IMPACT ON HEART TRANSPLANT PATIENTS' HEMODYNAMICS?

Ana Raquel Carvalho Santos, António Valentim Gonçalves, Tiago Pereira-da-Silva, Rui Soares, Rita Ilhão Moreira, Lídia de Sousa, Francisco Barbas de Albuquerque, José Viegas, Alexandra Castelo, Vera Ferreira, Pedro Brás, João Reis, Tânia Mano, Tiago Mendonça, Rui Cruz Ferreira

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Introduction: Cytomegalovirus (CMV) viremia is associated with an increased risk of cardiac allograft vasculopathy, the major limiting factor for long-term survival after heart transplantation. It induces inflammation, myocyte damage, ischemia and fibrosis, resulting in cardiac dysfunction. These should be easily detectable yet the quest for a sufficiently sensitive, specific, and conclusive marker has been elusive.
Objectives: Compare the differences in transthoracic echocardiography (TTE) and right heart catheterization (RHC) parameters in patients with and without CMV viremia.
Methods: A retrospective analysis of consecutive HT patients submitted to RHC between February 2016 and November 2021, who performed TTE and blood CMV PCR at the same day, was made. An independent t-test was performed to evaluate the association between several TTE and RHC parameters in CMV positive and negative patients. Statistical differences with a p-value < 0.05 were considered significant.
Results: A total of 127 RHC were performed during the study period. The patients mean age was 50 years, 79% (n = 100) were male, mean left ventricular ejection fraction (LVEF) 58 ± 10% and mean BNP 808 ± 984 pg/mL. There were 10% (n = 13) CMV positive patients, with viral loads between 57 and 15,300 UI/mL (mean 1457,4, median 139). Mean values and respective p values of several TTE and RHC parameters between CMV positive and negative patients are depicted in the table. CMV positive patients had lower LVEF (49.90 ± 10.91 *vs.* 58.41 ± 9.91%, p = 0.006) and higher systolic pulmonary arterial pressure (PAP) (40.89 ± 8.65 mmHg *vs.* 67 ± 7.62 mmHg, p < 0.001) by TTE, as well as higher mean PAP (24.92 ± 7.06 mmHg *vs.* 20.33 ± 7.03 mmHg, p = 0.017) and right atrial pressure (2.09 ± 0.71 mmHg *vs.* 1.59 ± 0.85, p = 0.025) by RHC.
Conclusions: Heart Transplant patients with CMV viremia had significantly lower LVEF, higher PAP and higher right atrial pressure than patients without CMV viremia. The hemodynamic imbalance caused by this virus is reinforced by this research.

PO 25. ELECTROCARDIOGRAPHIC ASSESSMENT OF LVH IN AORTIC STENOSIS PATIENTS: HOW WELL DOES IT CORRELATE WITH MYOCARDIAL MASS?

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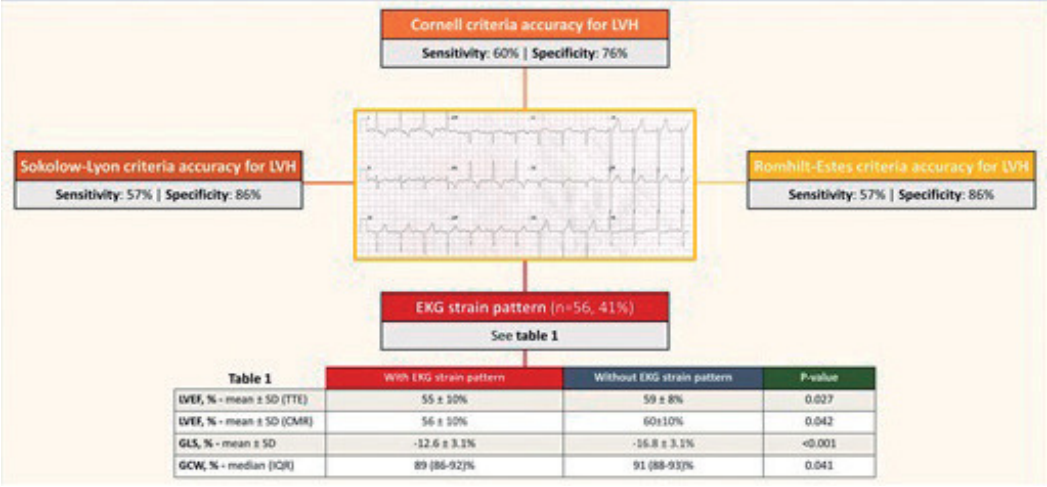
Introduction: Aortic stenosis (AS) is a well-known cause of left ventricle hypertrophy (LVH) due to chronic pressure overload. While imaging techniques remain the gold-standard in determining myocardial mass, electrocardiogram (EKG) may also help in assessing LVH and remodeling. Our goal was to determine the correlation between LVH criteria by EKG, echocardiogram (TTE) and cardiac magnetic resonance (CMR).
Methods: Single-center prospective study enrolling patients with severe symptomatic high-gradient AS undergoing surgical aortic valve replacement with no previous known cardiomyopathy. All patients performed EKG, TTE and CMR prior to surgery. Those with bundle branch block were excluded. LVH was defined by an index left ventricular mass higher than 115 g/m^2 (male) or 95 g/m^2 (female) by TTE or > 85 g/m^2 (male) or 68 g/m^2 (female) by CMR. LVH by EKG was determined by the presence of at least one of the following: positive Cornell (R wave aVL + S wave V3 ≥ 28 mm [male] or ≥ 20 mm [female]) or Sokolow-Lyon (S wave V1 + R wave V5/V6 ≥ 35 mm) criteria; Romhilt-Estes score ≥ 5. Diagnostic accuracy was determined for each criteria. EKG strain pattern (downsloping convex ST segment and/or inverted asymmetrical T wave) and fragmented QRS ([fQRS] - defined as the presence of various RSR´ patterns with different QRS morphologies) were compared with LVH, AS severity and LV function indexes.
Results: A total of 135 patients were included (age 71 ± 8y; 47% male; median transaortic gradient [AVmean] 58 [47-69] mmHg; mean LV ejection fraction [LVEF] by TTE and CMR 58 ± 9% and 60 ± 11%, respectively). Overall, 118 patients (83%) and 60 patients (42%) met LVH criteria by TTE and CMR. EKG sensitivity and specificity regarding LVH (by CMR) were as follows: 57% and 86% (Sokolow-Lyon); 60% and 76% (Cornell); 57% and 86% (Romhilt-Estes). Those with EKG strain pattern (n = 56, 41%) had lower LVEF by TTE and CMR, worse global longitudinal strain and worse myocardial work efficiency (Fig.). No differences were observed among those with (n = 29, 21%) or without fQRS.
Conclusions: In a cohort of severe symptomatic high-gradient AS, EKG criteria had a low sensitivity but moderate-to-high specificity in identifying those with CMR-confirmed LVH. EKG strain pattern may be an adjunctive tool to identify patients with possible advanced LV functional impairment in this setting.

Table 1: CMV infection association with echocardiographic and right heart catheterization parameters using independent T-test analysis

PARAMETERS	CMV positive	CMV negative	p
Echocardiography			
Left ventricular end-diastolic diameter	48.00 ± 7.34	47.54 ± 6.38	0.411
Left ventricular end-systolic diameter	32.27 ± 1.13	30.84 ± 6.91	0.254
Left ventricular ejection fraction	**49.90 ± 10.91**	**58.41 ± 9.91**	**0.006**
Left atrium volume index	27.78 ± 8.63	27.51 ± 7.32	0.146
Interventricular septum wall thicknesses	11.30 ± 1.25	11.28 ± 1.79	0.489
Isovolumetric relaxation time	111.71 ± 20.83	103.72 ± 27.57	0.229
Systolic pulmonary artery pressure	**40.89 ± 8.65**	**31.67 ± 7.62**	**<0.001**
Transmitral E/A ratio	1.97 ± 0.59	1.71 ± 0.61	0.098
E velocity deceleration time	140.86 ± 11.08	162.05 ± 41.43	0.092
Tricuspid annular plane systolic excursion	15.18 ± 3.97	14.09 ± 3.41	0.163
Right heart catheterization			
Cardiac output	5.09 ± 1.23	5.70 ± 1.35	0.061
Systolic pulmonary artery pressure	36.17 ± 9.11	31.65 ± 9.46	0.059
Mean pulmonary artery pressure	**24.92 ± 7.06**	**20.33 ± 7.03**	**0.017**
Systemic vascular resistance index	1590.44 ± 351.27	1411.27 ± 461.93	0.090
Pulmonary artery pulsatility index	3.50 ± 2.88	5.02 ± 4.09	0.107
Right atrial pressure	**2.09 ± 0.71**	**1.59 ± 0.85**	**0.025**
Pulmonary capillary wedge pressure	13.92 ± 6.46	11.85 ± 6.30	0.132

PO 24 Figure



PO 25 Figure

Sexta-feira, 22 Abril de 2022 | 10:00-11:00

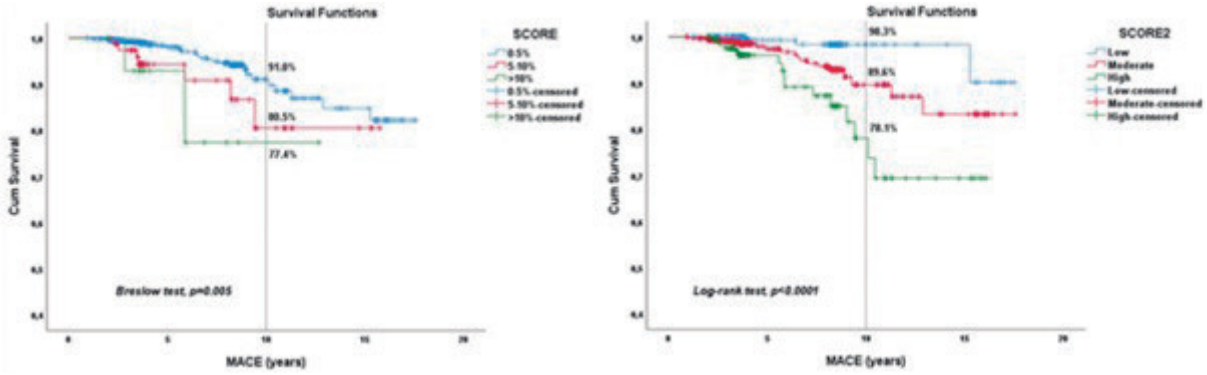
Sala Jardim de Inverno | Posters (Sessão 1 - Écran 6) - DAC e Cuidados Intensivos 1 - Síndromes Coronárias Crónicas

PO 26. COMPARISON BETWEEN THE EUROPEAN SCORE AND THE UPDATED SCORE2 FOR CARDIOVASCULAR OUTCOMES

Margarida Temtem[1], Maria Isabel Mendonça[1], Marco Serrão[1], Marina Santos[1], Débora Sá[1], Carolina Soares[1], Ana Célia Sousa[1], Mariana Rodrigues[1], Sónia Freitas[1], Eva Henriques[1], Sofia Borges[1], Ilídio Ornelas[1], António Drumond[1], Roberto Palma dos Reis[2]

[1]Hospital Dr. Nélio Mendonça. [2]Faculdade de Ciências Médicas de Lisboa/ NOVA Medical School.

Introduction: The European Systematic Coronary Risk Evaluation (SCORE) has predicted a 10-year risk of Cardiovascular Disease (CVD) since 1986. It included only fatal CVD outcomes, underestimating the total CVD burden, especially for younger people. To counteract this issue, a new SCORE was created (SCORE2) to estimate 10-year fatal and non-fatal CVD risk in Europeans without previous CVD or diabetes aged 40-69 years.
Objectives: Establish a comparison between SCORE and SCORE2 in terms of CV outcomes for a moderate-risk population.
Methods: A population of 1,178 individuals without CVD was stratified by three risk categories for SCORE and SCORE2: low, moderate and high risk. Using t-test and Chi-square, we compared the two scores in terms of means and risk categories. Kaplan-Meier estimator evaluated MACE occurrence for each category of the two scores during an extended follow-up (mean of 5.2 ± 3.4 years). MACE discriminative capacity of SCORE and SCORE2 was verified through C-index methodology.
Results: The means of the two scores were significantly different ($p < 0.0001$): 2.1 ± 2.4 for SCORE and 6.0 ± 3.3 for SCORE2. One hundred individuals at the lowest risk category of SCORE moved to the highest category of SCORE2. SCORE2 showed a better discrimination capacity for MACE (C-index 0.678) relatively to SCORE (C-index 0.591), with statistical significance ($p < 0.0001$).
Conclusions: SCORE2 enhanced the identification of individuals at higher risk of developing CVD and better-discriminated MACE occurrence relatively to SCORE.



PO 26 Figure

PO 27. RELATIONSHIP BETWEEN THE BLOOD PRESSURE AND THE LONG-TERM PROGNOSIS IN A COHORT OF CORONARY PATIENTS

M. Raquel Santos[1], Roberto Palma dos Reis[2], Débora Sá[1], Margarida Temtem[1], Ana Célia Sousa[1], Eva Henriques[1], Mariana Rodrigues[1], Sónia Freitas[1], Sofia Borges[1], Ilídio Ornelas[1], António Drumond[1], Maria Isabel Mendonça[1]

[1]Hospital Dr. Nélio Mendonça. [2]Faculdade de Ciências Médicas de Lisboa/ NOVA Medical School.

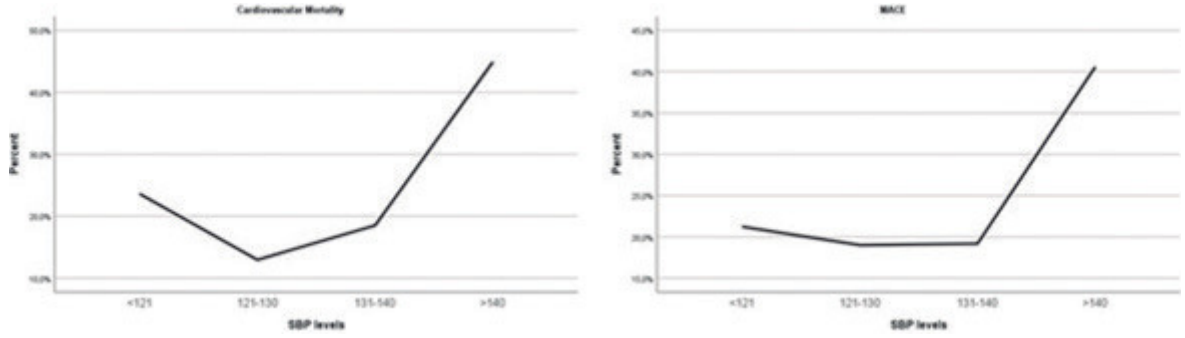
Introduction: Recent studies emphasized strict blood pressure (BP) control for patients at high-risk for cardiovascular (CV) events. Although guidelines recommend a BP target of less than 130/80 mmHg in individuals with stable ischemic heart disease, there are little data about the relationship between BP levels and prognosis in patients with coronary artery disease (CAD).
Objectives: Evaluate the relationship between BP levels and CV mortality in a long-term follow-up of coronary patients.
Methods: 1,723 coronary patients (mean age 53.3 ± 7.9 years, 78.7% male) were prospectively followed-up, mean of 4.9 ± 3.4 years (range 1 to 17 years). This population was stratified according to systolic and diastolic BP into different levels: SBp < 121 mmHg, 121-130 mmHg, 131-140 mmHg and > 140 mmHg and DBp < 71 mmHg, 71-80 mmHg, 81-90 mmHg and > 90 mmHg. The percentage of CV deaths were assigned into each BP level using Chi-squared test. A multivariate analysis with BP levels and other risk factors to CV mortality was performed.
Results: SBP levels < 121 mmHg were associated with a high mortality rate (22%), decreasing as SBP gradually rises up to a threshold of 140 mmHg. From this point, mortality increases abruptly to about 46.0%, demonstrating a "J" shape according to SBP. A similar shape plot was verified for MACE occurrence. Multivariate analysis showed that SBp < 121 and > 140 mmHg were independent risk factors for mortality (p = 0.004 and p = 0.024, respectively). On the other hand, there was no statistically significant relationship between DBP and MACE or mortality.
Conclusions: SBP levels < 121 mmHg and > 140 mmHg, unlike DBP levels, were associated with a worse prognosis and increased mortality. According to this study, coronary patients with elevated BP should be recommended to lower systolic blood pressure to values within the range from 131 mm Hg to 140 mmHg.

PO 28. LIPOPROTEIN(A) AND CARDIOVASCULAR OUTCOMES IN PATIENTS WITH CORONARY ARTERY DISEASE AND IMPAIRED GLUCOSE METABOLISM

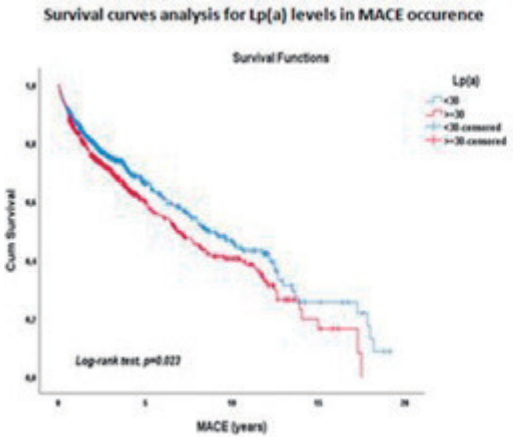
Débora Sá[1], Roberto Palma dos Reis[2], Marina Santos[1], Margarida Temtem[1], Ana Célia Sousa[1], Eva Henriques[1], Mariana Rodrigues[1], Sónia Freitas[1], Sofia Borges[1], Ilídio Ornelas[1], António Drumond[1], Maria Isabel Mendonça[1]

[1]Hospital Dr. Nélio Mendonça. [2]Faculdade de Ciências Médicas de Lisboa/ NOVA Medical School.

Introduction: Lipoprotein(a) [Lp(a)] is an LDL-like molecule composed of a part of apolipoprotein(a) bounding covalently to apolipoprotein B-100. High plasma Lp(a) levels were associated with MACE in stable CAD patients. Recent research shows contradictory results in stable CAD patients with high Lp(a) plasmatic levels and impaired glucose metabolism in MACE occurrence.
Objectives: Investigate whether high Lp(a) levels were associated with MACE in CAD patients with impaired glucose metabolism, at an extended follow-up.
Methods: A prospective cohort of 1,127 CAD patients with impaired glucose metabolism (pre-diabetes and diabetes) was observed during 4.9 ± 3.4 years (range 1 to 17 years). Pre-diabetes was considered when fasting plasma glucose ranged from 5.6 to 6.9 mmol/L, or hemoglobin A1c levels ranging from 5.7 to 6.4%. We consider high Lp(a) when values ≥ 30 mg/dL. Bivariate and multivariate analysis evaluated the risk of Lp(a)≥ 30 mg/dL for MACE occurrence. Kaplan-Meier curves estimated the survival probability for low and high Lp(a) levels.
Results: Of the patients with Lp(a) levels > 30 44.4% presented MACE and 32.0% presented no MACE (p < 0.0001). Cox regression analysis with smoking, hypertension, dyslipidemia, physical inactivity and kidney failure (creatinine clearance < 60 mL/min) showed that high Lp(a) remained in the equation as an independent risk factor for MACE (HR = 1.24; p = 0.031). The Kaplan-Meier showed better survival in the group with lower Lp(a) levels (p = 0.023).



PO 27 Figure



Independent risk factors for MACE occurrence (Cox regression*)

Variables	Hazard ratio (95% CI)	P-value
Physical inactivity	1.322 (1.064 – 1.643)	0.012
Creatinine <60	1.450 (1.074 – 1.958)	0.015
Lp(a)≥30	1.240 (1.020 – 1.507)	0.031

*Forward wald method (SPSS vs 25.0). Smoking, hypertension and dyslipidemia did not remained in the equation. Statistically significant for p<0.05.

PO 28 Figure

Conclusions: Our study demonstrated that high Lp(a) levels were an independent predictor for MACE and for cardiovascular mortality in a CAD population with impaired glucose metabolism. This result suggests that Lp(a) measurement may help further risk stratification for diabetes and pre-diabetes patients suffering CAD. With the recent development of drugs that selectively lower Lp(a) levels, this marker can become a clinical target for reducing CVD risk.

PO 29. MY PATIENT HAS A POSITIVE ISCHEMIA TEST: WILL HE HAVE OBSTRUCTIVE CORONARY ARTERY DISEASE?

Raquel Menezes Fernandes, Hugo Alex Costa, Miguel Espírito Santo, Dina Bento, João Pedro Guedes, Hugo Vinhas, Ilídio Jesus

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

Introduction: Functional non-invasive tests are useful to detect myocardial ischemia in patients with chronic coronary syndrome (CCS). However, their false positive rate is not negligible.
Objectives: To characterize CCS patients referred to coronary angiography (CA) after a positive ischemia test, in whom obstructive coronary artery disease (CAD) is detected.
Methods: We conducted a retrospective study enrolling CCS patients referred to CA in our Cardiology Department from October 2018 to January 2021, after a positive ischemia test. Clinical and complementary diagnostic exams characteristics, and follow-up data were analysed. Obstructive CAD was defined as the presence of at least one stenosis ≥ 70% (> 50% if left main coronary artery (LMCA)). Primary endpoint was the composite of myocardial infarction (MI), all-cause hospitalization and mortality.
Results: During this period, 236 CCS patients were referred to CA, with a median age of 67 years-old and male predominance (76.6%). The prevalence of cardiovascular risk factors was high and 79.5% of patients were in Canadian Cardiovascular Society class II. The majority only performed exercise electrocardiogram (ECG) (62.7%), followed by myocardial perfusion scintigraphy (MPS) (25%) and stress echocardiogram (9.7%). Stress echocardiogram was the ischemia test with higher sensitivity (78.3%), while MPS had the lowest sensitivity (54.2%). 65.7% of patients had obstructive CAD and coronary intervention was performed in 96%. The rate of severe CAD was 47.9% (LMCA – 8.5%, proximal left anterior descendent artery stenosis – 25%; multivessel disease – 38.6%) and 26.3% had at least one chronic total occlusion. Major procedural complications (p.e. MI, stroke and death) occurred in 2.1%. Patients with obstructive CAD were predominantly male (84.5 *vs.* 61.7%; p < 0.001), had a larger prevalence of previous percutaneous coronary intervention (23.2 *vs.* 12.3%; p = 0.045) and a higher pre-test probability (33.91 ± 13.9 *vs.* 27.27 ± 12.5%; p = 0.003). 82.2% had chest pain and 83.7% had preserved left ventricle ejection fraction. Patients that had a clinical and electrically positive exercise ECG had a larger prevalence of obstructive CAD (81.8 *vs.* 56.1%; p = 0.01). After multivariable analysis, only chest pain was an independent predictor of obstructive CAD (odds ratio = 3.17 [1.31-7.62]; p = 0.01). During a median follow-up of 428 days, primary endpoint occurred in 12.1% of patients, with no statistically significant difference depending on the presence of obstructive CAD.
Conclusions: In our study, 65.7% of CCS patients with a positive ischemia test had obstructive CAD (severe in 47.9%). Stress echocardiogram was more sensitive in detecting CAD, and MPS was the least sensitive. However, chest pain was the only independent predictor of obstructive CAD in our population, reinforcing the role of an accurate clinical history in the management of these patients.

PO 30. EXERCISE ELECTROCARDIOGRAM – A DIAGNOSTIC TEST OF THE PAST?

Raquel Menezes Fernandes, Hugo Alex Costa, Miguel Espírito Santo, Dina Bento, João Pedro Guedes, Hugo Vinhas, Ilídio Jesus

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

Introduction: Functional non-invasive tests are useful to detect myocardial ischemia in patients with chronic coronary syndrome (CCS), but exercise electrocardiogram (ECG) has now a secondary role in the diagnosis of obstructive coronary artery disease (CAD).
Objectives: To characterize CCS patients referred to coronary angiography (CA) after a positive exercise ECG, in whom obstructive CAD is detected.
Methods: We performed a retrospective study enrolling CCS patients referred to CA in our Cardiology Department from October 2018 to January 2021, after a positive ischemia test. We then selected those that only performed an exercise ECG as an initial diagnosis test. Clinical characteristics, complementary diagnostic exams and angiographic characteristics were analysed. Obstructive CAD was defined as the presence of at least one stenosis ≥ 70% (> 50% in the case of the left main coronary artery - LMCA).
Results: During this period, 236 CCS patients were referred to CA, with a median age of 67 years-old and male predominance (76.6%). The prevalence of cardiovascular risk factors was high (arterial hypertension-76.3%; dyslipidemia-88.1%; diabetes mellitus-36.4%; smoking habits-46.2%; obesity-18.1%). 15.7% of patients had a previous MI, 79.5% were in CCS class II and 84.4% had preserved left ventricle ejection fraction. One hundred and forty-eight patients (62.7%) only performed exercise ECG, with a sensitivity rate of 68.2%, which was higher than myocardial perfusion scintigraphy (54.2%). Patients with obstructive CAD were predominantly male (84.2 *vs.* 59.6%; p = 0.001), had a larger frequency of chest pain (89.1 *vs.* 75.6%; p = 0.044) and a higher pre-test probability (36.04 ± 13 *vs.* 28.26 ± 13.4%; p = 0.012). Patients with a clinical and electrically positive exercise ECG had a larger prevalence of obstructive CAD (61 *vs.* 30.8%; p = 0.01), most of them with a shorter duration of exercise (5.92 *vs.* 7.5 min; p = 0.095) and ST-segment depression in inferolateral leads (38.5 *vs.* 12.3%; p = 0.471). The rate of severe CAD was 48% (LMCA disease – 9.5%, proximal left anterior descendent artery stenosis – 26.4%, multivessel disease – 37.8%) and

21.6% had at least one chronic total occlusion. Coronary intervention was performed in 96% of patients with obstructive CAD. Major complications occurred in 2.1%. After multivariable analysis, only a clinical and electrically positive exercise ECG was an independent predictor of obstructive CAD (p = 0.016).
Conclusions: In our study, 68.2% of CCS patients with a positive exercise ECG had obstructive CAD. Exercise ECG is an easily accessible and low-cost exam. It still has a role in diagnosing CAD, especially in patients with a simultaneous clinical and electrically positive test.

Sexta-feira, 22 Abril de 2022 | 10:00-11:00

Sala Jardim de Inverno | Posters (Sessão 1 - Écran 7) - Miscelânia - Vários Temas

PO 31. PREDICTING THE LONG-TERM OUTCOME OF PATIENTS ADMITTED WITH ACUTE HEART FAILURE TO THE EMERGENCY DEPARTMENT USING RENAL MARKERS

José Lopes de Almeida, Gustavo Campos, Patrícia Alves, Sofia Martinho, João Rosa, Maria João Ferreira, Lino Gonçalves

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

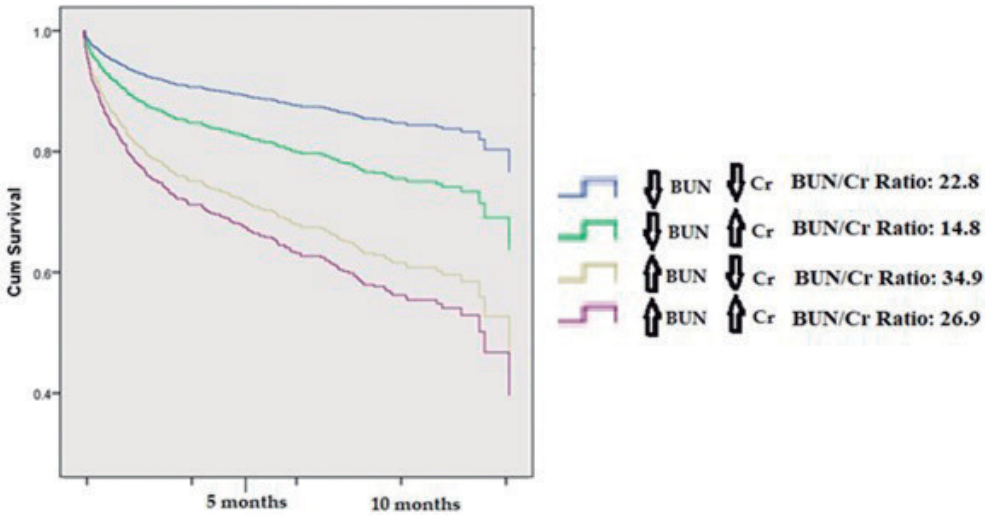
Introduction: Renal dysfunction is one of the most important comorbidities in patients with chronic heart failure (HF) and frequently accentuated in the setting of acute HF (AHF). Serum creatinine and blood urea nitrogen (BUN) have been classically used as markers of renal dysfunction, despite having several limitations. High (BUN)/creatinine ratio has been associated with higher mortality in patients with HF. We aimed to predict the long-term outcome of patients admitted with acute heart failure to the emergency department using renal markers.
Methods: 900 patients admitted to our emergency department diagnosed with AHF were retrospectively analysed. Patients were divided into 4 groups according to BUN and SCr on admission: BUN ≤ 33 mg/dL and SCr ≤ 1.56 mg/dL (group LowBUN/LowCr), n = 544; BUN ≤ 33 mg/dL and SCr > 1.56 mg/dl (group LowBUN/HighCr), n = 25; BUN > 33 mg/dL and SCr ≤ 1.56 mg/dL (group HighBUN/LowCr), n = 131; BUN > 33 mg/dL and SCr > 1.56 mg/dL (group HighBUN/HighCr), n = 200. The primary end-point of this study was the occurrence of all-cause mortality during follow-up.
Results: The median (IQR) BUN level on admission was 28.0 (20) mg/dL, median (IQR) SCr level on admission was 1.15 (0.73) mg/d, mean age was 81 ± 7 years, 50.8% (n = 457) were women and median follow up was 7 months. A total of 41.2% patients were diabetic, 21.7% had at least mild COPD, CAD was present in 28.9% of cases, 44.0% had valvular heart disease and 68.4% patients had atrial fibrillation.
Creatinine, BUN and Cr/BUN ratio predicted survival at 6 months (p < 0.05). Survival was the lowest in the group HighBUN/HighCr and the highest in the group LowBUN/LowCr. As expected, BUN/Cr ratio was the highest in group HighBUN/LowCr and the lowest in group LowBUN/HighCr.
Conclusions: Despite not having the highest BUN/Cr ratio, patients with BUN > 33 mg/dL and SCr > 1.56 mg/dL showed the worst prognosis.

PO 32. HOW MUCH MORE HYPERGLYCEMIC IS MY MYOCARDIAL INFRACTION PATIENT AND WHY DOES IT MATTER?

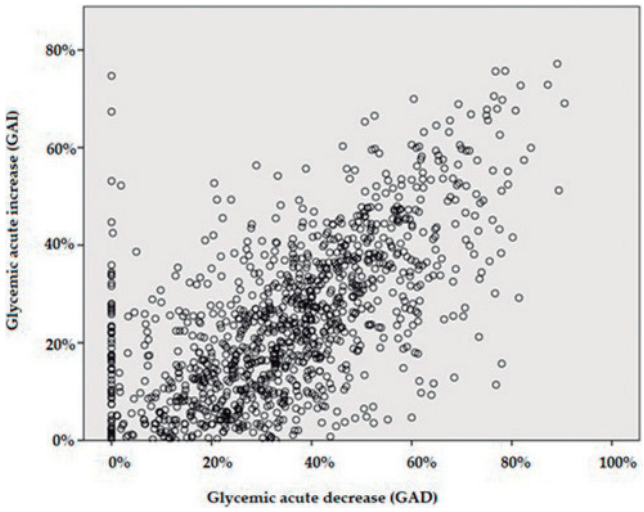
José Lopes de Almeida, Sofia S. Martinho, Gustavo Campos, João Rosa, João Ferreira, Maria João Ferreira, Lino Gonçalves

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

Introduction: Optimal blood glucose concentration target range in myocardial infarction (MI) patients is still a matter of discussion. Both hypoglycemia and hyperglycemia are associated with an increased risk of death and more attention is being given to glycemic variability and how to measure it. We propose two ways of evaluating relative hyperglycemia in MI patients and access its impact on prognosis.
Methods: We retrospectively studied 1117 MI patients admitted to our Coronary Unit for a 10-year period (2004-2014). Admission data and 5-year outcomes were collected. Glycemic acute increase (GAI) was calculated estimating the average 3 months glycaemia (3MG) using admission HbA1c and comparing it with admission glycaemia (AG) using the formula: GAI = ((AG-3MG)/AG)*100. Glycemic acute decrease (GAD) was calculated by comparing admission and discharge glycaemia (DG) using the formula: GAD = ((AG-DG)/AG)*100.
Results: 51.9% patients had STEMI and 48.1% NSETMI. 70.9% were male, average age was 68 years, 36.9% had diabetes,75.4% hypertension, 75.4% dyslipidemia,15% were smokers, 8.4% had previous PCI and 3.5% previous CABG. Average GAI was 24.8% and average GAD was 35.4%. GAI and GAD were both strong predictions of 6 months, 1 year, 3 years and 5 years mortality (p < 0.05). GAI and GAD were moderately correlated (Spearson correlation = 0.63, p < 0.001, Fig.). Patients who died after 5 years of follow-up had a 7.9% higher GAI (31.7 *vs.* 23.8%, p < 0.001) and a 4.4% higher GAD (39.3 *vs.* 34.9%, p < 0.001).



PO 31 Figure



Conclusions: The degree of hyperglycemia relative to the patient baseline correlates with prognosis in patients with MI.

PO 33. SHOULD WE TRUST SCORES TO RULE OUT TRANSESOPHAGIC ECHOCARDIOGRAPHY IN PATIENTS WITH *STAPHYLOCOCCUS AUREUS* BACTERIEMIA?

Ana Beatriz Garcia, Pedro Silvério António, Sara Couto Pereira, Joana Brito, Beatriz Valente Silva, Pedro Alves da Silva, Catarina Oliveira, Ana Margarida Martins, Ana Abrantes, Miguel Azaredo Raposo, João Fonseca, Catarina Gregório, Pedro Carrilho Ferreira, Fausto J. Pinto

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: *Staphylococcus aureus* remains the most frequent pathogen in infectious endocarditis (IE) with high mortality and complication rates, despite widespread prophylaxis, diagnostic and therapeutic procedures. Due to the high frequency of IE and its potential complications, current ESC guidelines recommend routine echocardiographic examination in pts with S. aureus bacteriemia (SAB), with either TTE or TOE. Despite higher sensitivity, TOE is an invasive method, not widely available and thus patient selection is key. Recently, three scores have been proposed to best select pts with SAB who may not need TOE if deemed low risk.

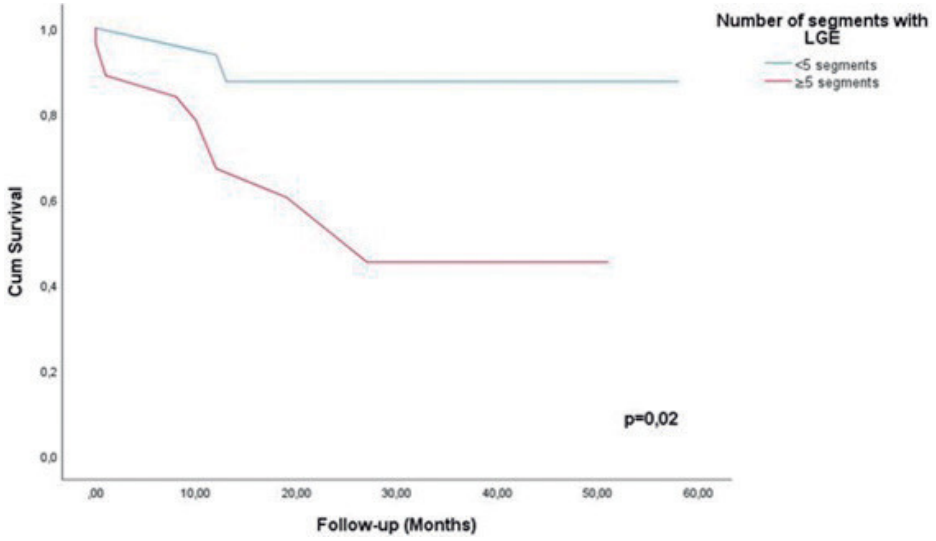
Objectives: To validate the diagnostic accuracy of three predictive scores in a population of pts with SAB.
Methods: Single center observational study, of 79 pts with SAB who performed TOE for EI diagnosis. Clinical and laboratory characteristics were collected at baseline. Three diagnostic scores – POSITIVE, PREDICT and VIRSTA – were calculated for every patient and results were compared using Chi-square and Mann-Whitney tests.
Results: We compared 21 pts with EI *vs.* 53 pts with bacteriemia only. There were no statistical significant differences in demographic (mean age 64 ± 15 years *vs.* 65 ± 16 years, p = 0.876; 66% males *vs.* 79%; p = 0.45), clinical and echocardiographic features. No significant difference in baseline characteristics regarding prosthesis, implantable devices or other risk factors, such as iv drug use. We applied the predictor scores to both groups and saw no statistical differences between them – PREDICT 2.55 ± 1.1 *vs.* 2,92 ± 1.54, p = 0.350; VIRSTA 3.96 ± 2.65 *vs.* 4.55 ± 2.79 p = 0.293; POSITIVE 1.41 ± 2.16 *vs.* 2.00 ± 2.50 p = 0.317). No other variables were predictors of endocarditis, except for bicuspid aortic valve which associated with higher risk (p = 0.044). When analysing outcomes in these two groups we noted a higher rate of complications in pts with IE: cerebral embolic events - 3 stroke and 2 silent embolic event (SEE) in comparison with just 3 events on the other group (1stroke and 2 SEE), p = 0.029 – and need for mechanical ventilation during hospitalization (15 *vs.* 2.1%, p = 0.042).
Conclusions: In our population we did not find these scores able to accurately classify SAB pts as low risk and thus safely exclude TOE from diagnostic approach. Given the high risk of complications associated with IE, clinical evaluation, lab tests and imaging should be integrated to best select the right method for each patient.

PO 34. CARDIAC MAGNETIC RESONANCE IN MYOCARDITIS: BESIDES THE DIAGNOSIS?

Pedro Rocha Carvalho, José Monteiro, Catarina Carvalho, Marta Bernardo, Catarina Ferreira, Inês Silveira, Paulo Fontes, Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de São Pedro.

Introduction: Patients with acute myocarditis (AM) can be at increased risk of adverse cardiac events after the index episode. Beyond its undoubted role in diagnosis, Cardiac Magnetic Resonance (CMR) can also provide additional prognostic information and contribute to the patients risk stratification.
Methods: Retrospective study with patients admitted with the clinical suspicion of myocarditis in our center from February/2018 to September/2021, in whom CMR was performed. A total of 48 patients were included and divided into two groups based on the number of segments with late gadolinium enhancement (LGE). The threshold (> or < than 5 segments)



PO 34 Figure

was determined according to ROC curve analysis. The primary outcome was a composite of all-cause mortality, heart failure and myocarditis recurrence.
Results: We included 48 patients (95.8% males; mean age 37.0 ± 16.1 years old), 93.8% presenting with chest pain and 63.2% presenting with st-segment elevation on electrocardiogram. During hospitalization, 3 patients needed ionotropic support, 7 had supraventricular tachycardia, 9 non-sustained ventricular tachycardia, 1 sustained ventricular tachycardia, 1 needed extracorporeal membrane oxygenation and 9 had heart failure. CMR (performed 6 days (median) after admission) showed LGE in 45 patients (93.8%) and mean left ventricular ejection fraction (LVEF) of 55.5 ± 8.7%. Both groups had similar age (35.0 ± 13.7 *vs.* 38.5 ± 17.6 years, p = 0.45), cardiovascular risk factors, st-segment elevation at admission (61.9 *vs.* 63.0%, p = 0.38), pro-BNP levels at admission [286 (IQR 144-699) mg/dl *vs.* 522 (IQR 222-1253) mg/dl, p = 0.20] and peak C-reactive protein [5.7 (IQR 4-12) *vs.* 5.2 (IQR 2.6-12.5), p = 0.77]. Patients with LGE in ≥ 5 segments (56.3%) had lower LVEF (53.2 ± 9.6 *vs.* 58.2 ± 6.6, p = 0.02), had more non-sustained ventricular tachycardia episodes (29.6 *vs.* 4.8%, p = 0.03), incidence of heart failure during hospitalization (25.9 *vs.* 9.6%, p = 0.02) and higher peak troponin levels [1.54 (IQR 0.64-2.45) *vs.* 0.594 (IQR 0.374-1.07), p = 0.002]. During a median follow-up of 21.5 (IQR 8-35.2) months, 11 patients (22.9%) experienced the primary outcome (6 for heart failure, 4 for AM recurrence, 1 death). The incidence of the primary endpoint increased by 1.20 (95%CI 1.08-1.60) for each segment involved. Patients with ≥ 5 segments had a higher incidence of this outcome (25.7 *vs.* 5.1 per 100 patient/year, log rank p = 0.02) (figure 1). After adjusting for possible cofounders, LGE≥ 5 segments on CMR was an independent predictor of all-cause mortality, heart failure and myocarditis recurrence (HR 7.22, 95%CI 1.33-39.16).
Conclusions: In this study, LGE involving 5 or more segments by LGE was correlated with adverse cardiovascular events among patients with suspected myocarditis. These data suggest that cardiac resonance imaging might add value to currently existing diagnostic tools for risks assessment in AM.

PO 35. IMPLICATIONS OF SEPTAL LATE GADOLINUM ENHANCEMENT IN PATIENTS WITH ACUTE MYOCARDITIS

Gonçalo R. M. Ferreira[1], Luísa Gonçalves[1], Inês Pires[1], João Miguel Santos[1], Joana Correia[1], Vanda Neto[1], João Fiuza[1], João Corrêa[2], Gabriela Venade[1], Bruno Marmelo[1], Miguel Correia[1], Costa Cabral[1]

[1]Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio. [2]Centro Hospitalar Cova da Beira, EPE/Hospital Distrital da Covilhã.

Introduction: Acute myocarditis (AM) is an inflammatory disease of the heart muscle, usually with a benign clinical course. Recent and conflicting data suggest that myocardial septal late gadolinium enhancement (LGE) in cardiac magnetic resonance (CMR) may be associated with a worse prognosis.
Objectives: The aim of the present study was to evaluate the prevalence and prognostic implications of septal LGE in AM.
Methods: Selected all patients admitted in five consecutive years in a Cardiology ward, with AM diagnosis by the Lake-Louise criteria on CMR. Division in two groups: Group A – AM with septal LGE; and Group B - AM without septal LGE. Comparison between the groups in terms of clinical, blood analysis, and cardiac imaging on admission, and significant events on follow-up, like mortality, rehospitalization, and left ventricular ejection fraction (LVEF) by echocardiography. Follow-up of up to 2-years. Groups were compared using the student T-test and Pearson's Chi-Square.
Results: 82 patients were selected, 87.8% male (n = 72) with mean age of 31 [18-74 years]. 26.8% in Group A (n = 22). In terms of follow-up, 90.2% (n = 74) of the patients completed the 2-year clinical follow-up, but only 56% (n = 46) of them had the echocardiography assessments available at two years follow-up. In comparison with Group B, Group A was composed more frequently by women (27.3 *vs.* 6.7%, p = 0.012), presentation with syncope (9.1 *vs.* 0.0%, p = 0.018), and ventricular tachycardia on ECG (9.1 *vs.* 0.0%, p = 0.018), a superior length of stay (8 ± 0.9 *vs.* 6 ± 0.4 days, p = 0.012), no difference on the admission troponin, but a higher troponin peak (31,630 ± 13,259 *vs.* 18,634 ± 2,035 ng/L, p = 0.001), lower serum creatinine (0.79 ± 0.05 *vs.* 0.82 ± 0.01 mg/dL, p = 0.023). There was no difference in the assessment of LVEF by echocardiogram on the acute episode (A: 59.5 ± 1.6 *vs.* 58.3 ± 1.2, p = 0.4), but in the follow-up, Group A had lower LVEF (60.5 ± 1.8 *vs.* 66.5 ± 0.8, p = 0.04). No patient died during the follow-up, and there was no difference in morbidity during the follow-up (dysrhythmias, dilated cardiomyopathy, implantable cardioverted defibrillator/pacemaker, heart transplant). A total of 10 patients were readmitted due to recurrent MC in the two-year follow-up, but without differences between groups.
Conclusions: AM with septal LGE seems to be associated with clinical and analytical features that are already known to be associated with a worse prognosis in AM. It would be important to access the prognosis on a longer follow-up because, although during the 2 years follow-up no clinical adverse event was recorded, septal LGE was associated with a lower LVEF.

Sexta-feira, 22 Abril de 2022 | 10:00-11:00

Sala Jardim de Inverno | Posters (Sessão 1 - Écran 8) - Doença Valvular 1 - Vários

PO 36. TRICUSPID REGURGITATION – PATIENTS CHARACTERISTICS, TREATMENT AND OUTCOMES

Alexandra Castelo, Duarte Cacela, António Fiarresga, Ruben Ramos, Luísa Branco, Ana Galrinho, Pedro Brás, Vera Ferreira, Bárbara Teixeira, Rui Ferreira

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

Introduction: Tricuspid valve has been neglected for a long time, but there is increasing evidence of its importance in patients' morbidity and mortality, with increasing interest on its treatment.
Objectives: To describe a cohort of patients with tricuspid regurgitation, concerning comorbidities, treatment options and clinical outcomes.
Methods: Retrospective analysis of patients (P) with tricuspid regurgitation between 2018 and 2021 in a tertiary center. Baseline characteristics, treatment decisions and outcomes were collected.
Results: 67P were included (73.1% female), with a mean age 76 ± 12 years. P had several associated comorbidities (hypertension 80.6%, coronary artery disease 14.9%, previous stroke 13.4%, atrial fibrillation 88.1%, chronic kidney disease 52.2%, previous bleeding 17.9%). 27P had previous cardiac surgery (34.3% valvular surgery). A device was implanted in 43.3% (90% pacemaker and 10% defibrillator). All P were taking diuretics (100% furosemide, mean dose 56 mg, 35.8% spironolactone, mean dose 27 mg, 11.9% metolazone, mean dose 4 mg) and 76.1% were under oral anticoagulation (45% vitamin K antagonists, 55% direct oral anticoagulants). 65P were in NYHA class 2 or 3, 55P had peripheral edema, 17P had ascites and 25P had previous hospital admissions for heart failure (1-6 admissions). On echocardiography 59.7% had right ventricle dilation, mean TAPSE was 19.5 mm and PASP 44 mmHg. Tricuspid regurgitation was classified into severe in 68.7%, massive in 4.5% and torrential in 26.9%, and was caused by annulus dilation in 65.7%, leaflet restriction in 6% and prolapse in 4.5% and lead induced in 16.4%. Mean Euroscore II was 5.34 ± 4.24%. 7P were accepted for surgery (4P were effectively operated), 4P for clip implantation (3P submitted to the procedure), 8P for TricValve implantation (4P with implantation done), 19P are still being study and 29P were considered for clinical surveillance only (17P with few symptoms, 7P with contraindication for intervention and 5P with frailty). During the follow up 15P (22.4%) died, 3 of them related to heart failure. The majority (12P) died without any tricuspid intervention (5P were accepted for a procedure but died before it could be done), 1P died after surgery (cardiogenic shock) and 2P died after TricValve implantation (1P in the same hospital admission, 1P 4 months later with a septic shock). All the other treated patients had a significant clinical improvement (NYHA

class I or II on follow up, no edema and no ascites), without new heart failure hospital admissions and with diuretic doses reductions.
Conclusions: Tricuspid regurgitation is associated with increased morbidity and mortality when a timely treatment is not achieved. Besides frailty, most of these patients have several comorbidities, which makes the percutaneous interventions an attractive new treatment option.

PO 37. IMPACT OF CONCOMITANT MITRAL AND TRICUSPID REGURGITATION IN PATIENTS WITH SIGNIFICANT CHRONIC AORTIC REGURGITATION

Gualter Santos Silva, Mariana Brandão, Mariana Silva, Pedro Queirós, Diogo Ferreira, Ricardo Fontes-Carvalho, Francisco Sampaio

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

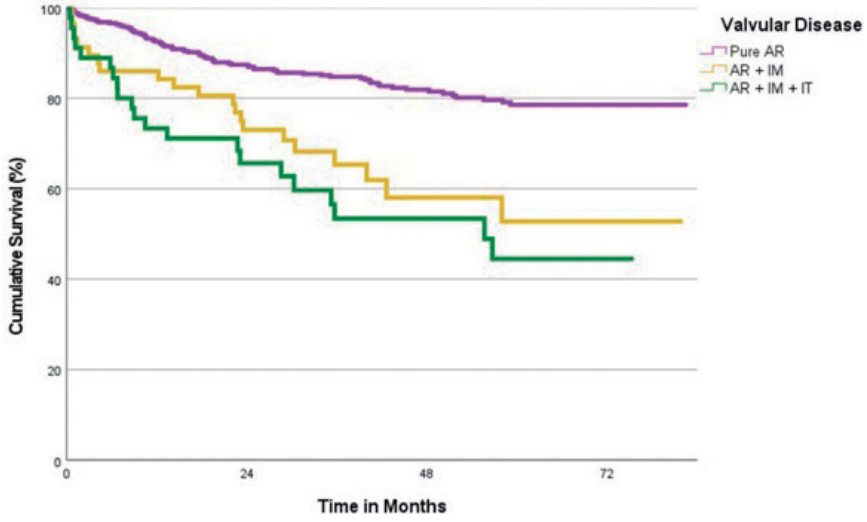
Introduction: Clinical outcomes of patients with significant chronic aortic regurgitation (AR) may be affected by a series of "downstream" pathophysiological cardiac consequences. However, the impact of cardiac consequences of AR beyond those related to the left ventricle (i.e., dilation and systolic dysfunction) are not well established.
Objectives: Our aim was to investigate the prognostic impact of concomitant significant mitral regurgitation (MR) and tricuspid regurgitation (TR) in patients with significant AR.
Methods: Clinical, echocardiographic and outcome data of patients with moderate-severe AR who underwent transthoracic echocardiography between January 2014 and September 2019 were retrospectively analysed. According to echocardiographic characteristics (i.e. significant mitral and/or tricuspid regurgitation) patients were divided into three groups: pure AR, AR + MR and AR + MR + TR. The primary endpoint was all-cause mortality. Exclusion criteria were severe aortic stenosis and previous valve repair or replacement.
Results: Of 571 patients enrolled (median age 73, IQR 62-80 years, 51% male), 469 (82%) had pure AR, 57 (10%) had AR + MR and 45 (8%) had AR + MR + TR. Median follow-up time of 39.5 months (IQR 22.2 to 61.0). At baseline, groups exhibited differences in age (69 ± 14, 75 ± 10 and 77 ± 11 years, respectively), male sex (45%, 37% and 33%), history of smoking (19%, 11% and 9%), atrial fibrillation (22%, 34% and 67%), LV dysfunction (18%, 40% and 44%), LV end-systolic volume (62 ± 37, 83 ± 63 and 69 ± 38 mL) and RV dysfunction (1%, 11% and 16%). At the end of follow-up, cumulative death was significantly higher in AR + MR and AR + MR + TR patients (log rank < 0.001; Fig.). On multivariable analysis (adjusted for age, sex, atrial fibrillation, history of smoking, LV dysfunction, LV end-systolic volume, right ventricle dysfunction and aortic valve replacement), compared with pure AR, AR + MR + TR was independently associated with all-cause mortality (HR: 2.16; 95%CI 1.26 to 3.70; p = 0.005).
Conclusions: Our study showed that concomitant significant valvular damage is not uncommon (18%). As compared with pure AR, AR + MR + TR carry a survival penalty and represents an advanced stage within the AR clinical spectrum. These downstream consequences beyond the left ventricle should be considered to establish the timing of intervention, even in patients with moderate to severe AR, in whom current guidelines do not recommend AVR.

PO 38. CLINICAL AND ECHOCARDIOGRAPHIC PREDICTORS OF WORSENING MITRAL REGURGITATION AFTER PERCUTANEOUS MITRAL VALVE REPAIR

Catarina Simões de Oliveira, Pedro Silvério António, Sara Couto Pereira, Pedro Alves da Silva, Joana Brito, Beatriz Valente Silva, Ana Margarida Martins, Ana Beatriz Garcia, Catarina Gregório, João Santos Fonseca, Miguel Nobre Menezes, Cláudia Jorge, João Silva Marques, Fausto J. Pinto, Pedro Cardoso

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Percutaneous mitral valve repair is an option for patients (pts) with severe mitral regurgitation (MR) that are not good surgical candidates. Since mitral edge-to-edge repair improves MR severity, pts usually report symptomatic and functional improvement. However, there is a trend towards worsening MR overtime after repair.
Objectives: Evaluate predictors of recurrence and worsening MR after percutaneous mitral valve repair in a real-world population.
Methods: Single-center record registry of consecutive pts submitted to percutaneous MR repair with MitraClip from 2013 to October 2021. Demographic, clinical and echo variables were obtained before and after the procedure and during follow up (FUP).
Results: Sixty three procedures were included (mean age 73.5 ± 12 years, 60.3% males). Most pts had secondary grade 3 and 4 MR (38 pts, 60.3%), predominantly with Carpentier type 3b MR (33, 52.4%); 35 pts were in NYHA class III and 14 in class IV. At baseline TTE, mean left ventricular ejection fraction was 40.5 ± 17%, LV end diastolic volume 147 ± 107mL, LV end systolic volume 96 ± 88 mL, mean vena contracta 7.3 ± 1.7 mm, mean regurgitant volume 75 ± 37 mL, mean EROA 0.67 ± 1.3 cm^2, LV global longitudinal strain -10.4 ± -4%, RV 4 chambers (C) strain -15.2 ± -6.5, RV free wall (FW) strain -16.2 ± 7, TAPSE 19.4 ± 10 mm and PSAP 50.5 ± 17.4 mmHg. Procedure success was achieved in 95.2%, with a complication rate of 6.3% (4 pts: procedure failure in 2; 1 vascular complication and 1stroke). During FUP, 19 pts died (8 from cardiovascular causes). Success of the procedure with acute improvement of MR occurred in 59 pts (≥ 2 grades to no regurgitation or mild in 36 pts). After a mean FUP of 13 ± 14.7 months, 32 pts had TTE to evaluate MR: 12 did not worsen MR, 15 worsened MR by 1 point and 5 pts by 2 points. We



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observed significant improvement of NYHA class in the short term (3.0 ± 0.7 *vs.* 2 ± 0.7, p = 0.001). After a mean FUP of 34.6 ± 25.3 months pts maintained symptomatic improvement (2 ± 0.7 *vs.* 1.9 ± 0.5, p = 0.366). Lower baseline RV strain (4C and FW) and TAPSE were predictors of MR worsening to the same grade before the procedure (p = 0.011, p = 0.027, p = 0.005 respectively). We didn't find other TTE or clinical predictors of MR worsening in FUP.
Conclusions: RV function evaluated with strain and TAPSE before MitraClip were the only predictors of worsening MR at long term FUP. However, our data suggest that clinical improvement may be seen, regardless of MR progression after edge-to-edge repair.

PO 39. COVID-19 IMPACT ON REFERRALS, TREATMENT DECISIONS AND TIME ON THE WAITING LIST FOR VALVULAR HEART DISEASE INTERVENTION

Mariana Passos[1], Carolina Pereira Mateus[1], Inês Fialho[1], Joana Lima Lopes[1], João Baltazar Ferreira[1], David Roque[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]

[1]*Hospital Prof. Dr. Fernando da Fonseca, EPE/Hospital Amadora Sintra.*
[2]*Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.*

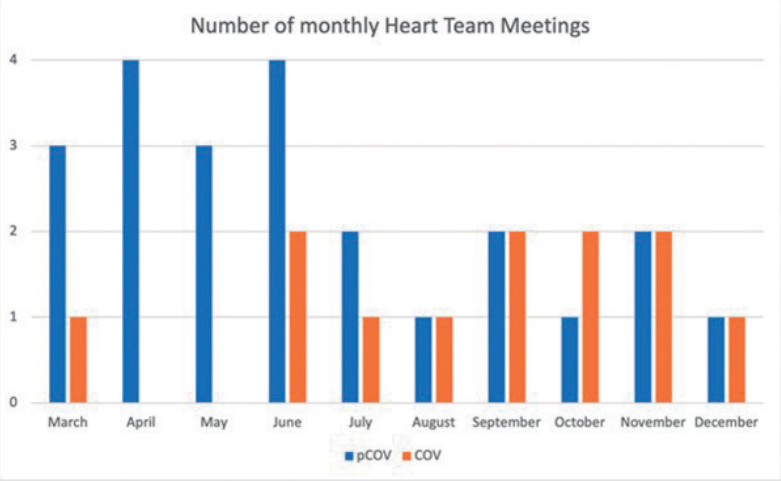
Introduction: While a significant impact of COVID-19 on healthcare is well documented, the impact on the specific context of Heart Team (HT) is unknown. The objective of this study was to evaluate how the pandemic may have impacted HT referrals, treatment decisions, time on the waiting list for valvular heart disease (VHD) intervention and major events in this population.
Methods: Single center prospective registry of patients (pts) with VHD discussed at the HT meeting between March and December 2020 (COVID-19 period - COV) and a control group from the corresponding period in 2018 (pre-COVID, pCOV). Patients were followed for 12 months. We defined major adverse events (MACCE) as a composite of all-cause mortality, stroke, myocardial infarction, hospital readmission due to cardiac causes or worsening heart failure symptoms.
Results: A total of 151 pts were analyzed (49.0% female, median age 77 [IQR 70-83] years). A numerically inferior number of pts were discussed in the COV period (n = 63) as compared with pCOV (n = 88). Between April and May 2020, the HT meetings were suspended (Fig.). There were no significant differences regarding baseline characteristics, except for a higher frequency of aortic valve stenosis and insufficiency in the COV group (p = 0.023 and p = 0.04, respectively). There were no significant differences on the acceptance rate for intervention (pCOV 94.3 *vs.* COV 96.8%, p = NS). The median waiting time (WT) tend to be higher in the COV period (200 [IQR 103-352] *versus* 151.5 [IQR 29-335] days, p = 0,056), with the pre-specified WT determined during the HT meeting not being accomplished in a significantly higher proportion of COV period patients (85.5 *vs.* 69.1%, p = 0.04). The frequency of interventions prioritized as "high" (due in < 15 days) were significantly higher in the pCOV group (23.9 *vs.* 9.5%, p = 0.031); conversely, in the COV group a "normal priority" (due in 45-90 days) was more frequent (69.8 *vs.* 48.9%, p = 0.012). Among patients with "intermediate" priority (due in 15-45 days) there were a significantly higher prevalence of MACCE in the COV group (50 *vs.* 14.3%, p = 0.04).
Conclusions: The impact of the first year of COVID-19 pandemic was two-fold. First, there was a marked reduction in VHD patients referred to the HT meeting, with a coincidentally smaller acceptance rate and increased waiting time for intervention. Second, there was an increase in cardiovascular events among intermediate priority patients. Healthcare agents, and HT doctors in particular, should be aware of these aspects in order to minimize the impact of potential future COVID-19 waves on VHD interventions.

PO 40. IS WILKINS SCORE OVER 9 A DEFINITIVE LIMIT TO FAVORABLE LONG-TERM SUCCESS IN PERCUTANEOUS VALVE COMMISSUROTOMY?

Miguel Martins de Carvalho, Ricardo Alves Pinto, Tânia Proença, João Calvão, Catarina Costa, Ana Filipa Amador, Catarina Marques, André Cabrita, Luís Santos, Cátia Priscila, Ana Pinho, Mariana Paiva, João Carlos Silva, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Percutaneous valve commissurotomy (PMC) is an established treatment in patients with significative mitral stenosis (MS). Although rheumatic MS incidence has decreased in the last century, it remains a prevalent pathology worldwide. The Wilkins score (WS) is a reference in echocardiographic assessment of MS; a score ≤ 8 is considered a predictor of treatment success and score between 9 and 11 is a "gray zone" (WGZ) in which doubts persists regarding PMC success.
Objectives: To evaluate the early and long-term results of PMC in patients with rheumatic MS and to compare long-term events between patients with WS ≤ 8 and patients in WGZ.
Methods: We retrospectively analysed all patients between 1991 and 2008 with significative rheumatic MS undergoing PMC. Data were collected at baseline and during long-term follow-up. MACE was defined as a composite of all-cause mortality, mitral valve re-intervention or cardiovascular hospitalization.
Results: In our cohort, 124 patients were included. Most were female (87%), mean age at the time of repair was 46 ± 11 year-old and mean follow-up was 20 ± 6 years. Before the procedure, 81% had WS ≤ 8 and 19% were in WGZ. Both groups had similar baseline characteristics, namely age at first intervention, NYHA class and follow-up time. All patients had preserved biventricular systolic function, 83% presented PH, mean transvalvular gradient (TVG) and mitral valve area (MVA) were 12.8 mmHg and 1.0 cm², respectively. Most of the procedures were successful (91%) and without



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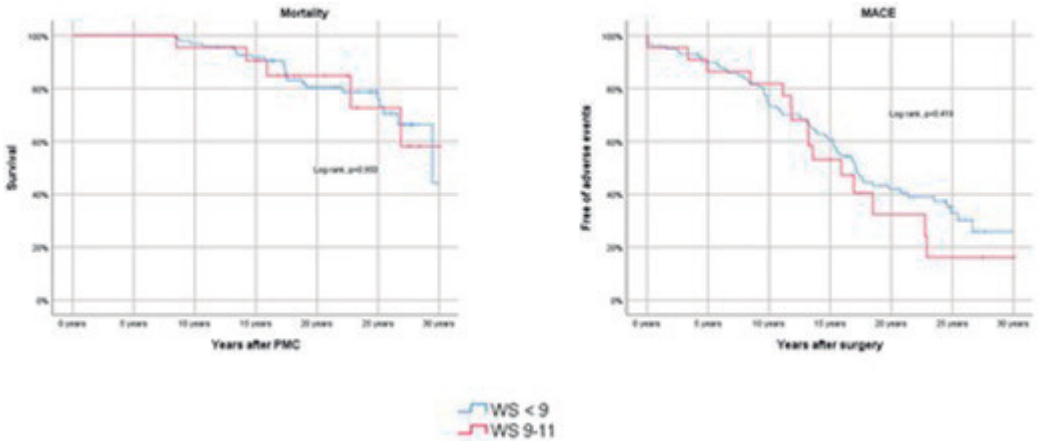

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complications (94%). Mean MVA improvement was similar in both groups [0.9 cm^2 in WS ≤ 8 and 0.8 cm^2 in WGZ, t(102) = 0.173, p = 0.863]; there was also no significative difference in TVG and PASP reduction after PMC. During long-term follow-up, re-intervention and mortality occurred in 40% and 23% in WS ≤ 8 and in 50% and 29% in WGZ, respectively, and none of these differences was statically significant (p = 0.389 and p = 0.544, respectively). Concerning time-to-event analysis, approximately 80% of patients kept uneventful and > 90% alive after 10 years in both groups and no significant difference in MACE events and all-cause mortality between WS ≤ 8 and WGZ was observed (Log Rank, p = 0,419 and p = 0.950, respectively).
Conclusions: PMC was safe and effective in clinically significant rheumatic MS in both WS ≤ 8 and WS 9-11, with similar MVA improvement. After 10 years, approximately 80% of patients maintained MACE-free and > 90% alive in both groups. There was no difference in all-cause mortality and in a composite of all-cause death, mitral valve re-intervention or cardiovascular hospitalization concerning WS groups.

Sexta-feira, 22 Abril de 2022 | 11:00-12:00

Sala Jardim de Inverno | Posters (Sessão 2 - Écran 1) - DAC e Cuidados Intensivos 2 - Tronco comum e Idade

PO 41. MANAGEMENT OF ACUTE LEFT MAIN OCCLUSION IN SURGICAL AND NON-SURGICAL CENTERS: A MULTICENTER STUDY

Mariana S. Brandão[1], Marta Braga[2], João Calvão[2], Andreia Campinas[3], André Alexandre[3], Bruno Brochado[3], João Carlos Silva[2], Gustavo Pires-Morais[1], Pedro Braga[1], Marisa Passos Silva[1], Ricardo Fontes-Carvalho[1]

[1]Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE. [2]Centro Hospitalar Universitário de S. João, EPE. [3]Centro Hospitalar do Porto, EPE/Hospital Geral de Santo António.

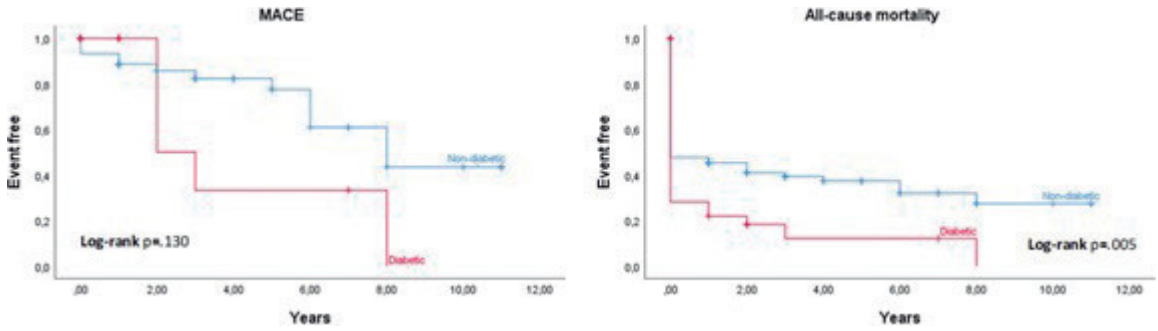
Introduction: Myocardial infarction due to acute left main coronary artery (LM) occlusion (ALMO) is often catastrophic, with frequent need for mechanical circulatory support (MCS) and surgery. We aimed to compare the management of patients (pts) with ALMO in surgical and non-surgical centers.
Methods: Multicenter retrospective study including 2 surgical centers (SC) and 1 non-surgical center (NSC). All patients presenting with unprotected ALMO (Thrombolysis In Myocardial Infarction [TIMI] ≤ 2) between January 2008 and December 2020 were included.
Results: 128 patients (age 63.4 ± 11.4 years, 74.2% male) were included (SC: n = 85, 66.4%; NSC: n = 43, 33.6%). Baseline characteristics were comparable between groups. In SC, more patients presented with total (TIMI 0) ALMO (56.5 *vs.* 25.6%, p < 0.001) and with cardiogenic shock (69.4 *vs.* 41.9%, p = 0.006). Use of MCS was more frequent in SC (75.3 *vs.* 20.9%, p < 0.001), as were device-related complications (p = 0.002). The intraaortic balloon pump was the mainly used device in both groups (n = 66); duration of support was longer in SC (2.3 ± 2.9 *vs.* 0.8 ± 1.5 days, p = 0.026). Concomitant use of > 1 MCS device (n = 14), use of venoarterial extracorporeal membrane oxygenation (n = 19) and Impella (n = 2) were exclusive of SC. Use of vasopressors (80.7 *vs.* 51.2% p < 0.001) and mechanical ventilation (60.0 *vs.* 37.2%, p = 0.024) was more common in SC. Radial access was used less often in SC (12.9 *vs.* 51.2%, p < 0.001). In both groups, pts were mostly treated with PCI (84.3 *vs.* 97.6%, p = 0.059). Thrombectomy was performed more often in SC (38.8 *vs.* 19.0%, p = 0.041), whereas stent implantation in the index procedure was rarer (64.7 *vs.* 86.0%, p = 0.02). Multivessel disease was rarer in SC pts (12.9 *vs.* 46.5%, p < 0.001). More patients in SC underwent coronary artery bypass grafting [CABG] (15.3 *vs.* 2.3%, p = 0.026).In-hospital mortality was comparable (56.5 *vs.* 48.8%, p = 0.528). Need for reintervention in the LM was found solely in NSC patients (9.3 *vs.* 0%, p = 0.019), all previously treated with PCI. During a mean follow-up of 1.6 ± 2.8 years, mortality remained comparable between groups (*Log rank* test, p = 0.572).
Conclusions: Disparities in the access to therapies still pose a challenge to acute cardiovascular care teams. Management in SC was related to more frequent and longer use of MCS and supportive therapies, and of CABG. Despite a higher rate of multivessel disease, CABG was rare in NSC patients. Still, in-hospital and long-term outcomes were comparable between SC and NSC.

PO 42. A MULTICENTER REGISTRY OF ACUTE LEFT MAIN CORONARY ARTERY OCCLUSION: DIABETES MATTERS?

Mariana S. Brandão[1], Marta Braga[2], João Calvão[2], Andreia Campinas[3], André Alexandre[3], Bruno Brochado[3], João Carlos Silva[2], Gustavo Pires-Morais[1], Pedro Braga[1], Marisa Passos Silva[1], Ricardo Fontes-Carvalho[1]

[1]Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE. [2]Centro Hospitalar Universitário de S. João, EPE. [3]Centro Hospitalar do Porto, EPE/Hospital Geral de Santo António.

Introduction: Acute left main coronary artery (LMCA) occlusion is often a catastrophic event. Diabetes may add complexity to this high-risk scenario.
Objectives: To compare outcomes of diabetic (DM) and non-diabetic (NDM) patients presenting with acute LMCA occlusion.
Methods: Multicenter retrospective study including all patients presenting with acute unprotected LMCA occlusion (Thrombolysis In Myocardial Infarction [TIMI] ≤ 2) between January 2008 and December 2020. Patients were divided into 2 groups: DM and NDM. MACE comprised reinfarction, reintervention, hospitalization for heart failure, stroke and cardiovascular mortality.
Results: 128 patients (74.2% male, mean age 63.4 ± 11.4 years) were included, of whom 39 (30.7%) were diabetic. DM patients were older (66.9 *vs.* 61.0



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years, p = 0.010), and more often hypertensive (84.6 *vs.* 54.5%, p = 0.002) and dyslipidemic (74.4 *vs.* 50.0%, p = 0.018). ST-elevation myocardial infarction was the main clinical presentation in both groups (68.4 *vs.* 68.6%, p = 0.984). Symptom to coronary angiography time (4.0 *vs.* 4.5 hours, p = 0.472), occurrence of cardiac arrest (47.4 *vs.* 50.0%, p = 0.939) or cardiogenic shock (66.7 *vs.* 56.8%, p = 0.427) did not differ. Three-vessel disease was more common in DM (38.5 *vs.* 17.0%, p = 0.017); degree of collateral circulation was comparable between groups. Most patients underwent PCI (94.6 *vs.* 86.0%, p = 0.289), and procedural characteristics did not differ significantly, except for lower use of glycoprotein IIb/IIIa inhibitors in DM (12.8 *vs.* 30.2%, p = 0.037). CABG was rare in both groups (5.1 *vs.* 13.6%, p = 0.248). In-hospital (64.1 *vs.* 48.9%, p = 0.163) and 30-day (56.4 *vs.* 43.2%, p = 0.332) mortality were comparable between groups, but 5-year mortality was higher in DM patients (84.6 *vs.* 61.6%, p = 0.016). Among patients surviving the index-event, occurrence of MACE was similar between groups (Log-rank test, p = 0.130). During a mean follow-up of 1.6 ± 2.8 years, all-cause mortality was higher in DM patients (*Log-rank* test, p = 0.005) [Fig.].

Conclusions: In this cohort of patients presenting with acute LMCA occlusion, clinical presentation and method of revascularization did not differ between diabetic and non-diabetic patients. While in-hospital and short-term outcomes were comparable between groups, long-term outcomes were poorer in diabetic patients: all-cause mortality was higher in the DM group, during follow-up. Larger studies are warranted to clarify if the management of diabetic patients in this setting should be tailored.

PO 43. OUTCOMES OF PATIENTS WITH ACUTE UNPROTECTED LEFT MAIN CORONARY OCCLUSION: A MULTICENTRE STUDY

Marta Braga[1], João Calvão[1], João Carlos Silva[1], Mariana Brandão[2], Marisa Passos Silva[2], Gustavo Pires Morais[2], André Alexandre[3], Andreia Campinas[3], Bruno Brochado[3], Filipe Macedo[1]

[1]Centro Hospitalar Universitário de S. João, EPE. [2]Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE. [3]Centro Hospitalar do Porto, EPE/Hospital Geral de Santo António.

Introduction and objectives: Acute myocardial infarction (MI) due to left main coronary artery (LMCA) occlusion is a rare event and limited data are available on morbidity and mortality of these patients. This study sought to evaluate short- and long-term outcomes of patients with acute MI (≤ 12h of symptom onset) due to unprotected LMCA occlusion.

Methods: We performed a retrospective multicentre analysis of 128 consecutive patients presented with ST-segment elevation MI (STEMI) or very high-risk non-ST segment elevation MI from January 2008 to December 2020, whose emergent coronary angiography showed acute unprotected left main coronary artery occlusion/subocclusion (Thrombolysis In Myocardial Infarction – TIMI ≤ 2).

Results: Mean age was 63.3 ± 11.4 years and 74.2% were male. Only 12.5% of patients had previous MI. Chest pain was the most frequent symptom referred, whereas syncope was described in 10.2% of patients. Most patients presented with STEMI and 50.8% had V1-V4 ST elevation on electrocardiography. Emergent coronary angiography showed distal LMCA occlusion in 71 (55.5%) patients, 59 (46.1%) had TIMI 0 and 88 (68.8%) had Rentrop grade 0. Primary percutaneous coronary intervention (PCI) was performed in 110 (85.9%) patients and was successful (remaining stenosis< 30% and TIMI = 3) in 71.8%. Severe left ventricle systolic dysfunction (LVSD) was reported in 32.3% and only 10 patents (7.8%) had moderate to severe mitral valve regurgitation. Only 1 mechanical myocardial complication was described. About 74.2% of patients complicated with cardiogenic shock (CS) at admission or during hospitalization, 52.3% needed mechanical invasive ventilation and 10.9% required haemodialysis. Mechanical circulatory support (MCS) was used in 69 (53.9%) patients, mostly intra-aortic balloon pump. Extracorporeal membrane oxygenation was used in 19 (14.8%) patients. In-hospital mortality was 51.6%. Severe LVSD and CS were independent predictors of in-hospital mortality (odds ratio [OR]: 63.4 [95% confidence interval (CI): 6.0 to 669.7], p = 0.001, and OR 10.5 [95%CI: 1.4 to 77.6], p = 0.021, respectively). After a median follow-up of 32.0 months (P_{25} 12.8, P_{75} 75.0), 38.7% of in-hospital survivors had died and 30 (48.4%) patients experienced major adverse cardiac events, defined as death, acute MI, repeated LM PCI, or heart failure hospitalization.

Conclusions: Acute MI due to unprotected LMCA occlusion is associated with high in-hospital mortality, especially if patients presented with CS and/or severe LVSD. Survivors of index MI have also poor long-term outcomes. This study highlights the need to further trials in this high-risk subgroup to optimize treatment strategy and improve their outcomes.

PO 44. ACUTE MYOCARDIAL INFARCTION IN PATIENTS WITH ACUTE OCCLUSION OF THE LEFT MAIN CORONARY ARTERY – DOES AGE MATTER?

João Calvão[1], Marta Braga[1], Mariana Brandão[2], Andreia Campinas[3], André Alexandre[3], Ana Filipa Amador[1], Catarina Martins da Costa[1], Catarina Amaral Marques[1], André Cabrita[1], Ana Isabel Pinho[1], João Carlos Silva[1], Bruno Brochado[3], Gustavo Pires-Morais[2], Marisa Passos Silva[2], Filipe Macedo[1]

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Introduction: Acute myocardial infarction (AMI) due to acute occlusion of the left main coronary artery (LMCA) is an uncommon event associated with a dismal prognosis. There is limited data regarding management and outcomes in this population. Moreover, elderly patients may be at a particularly high risk of poor outcome.

Objectives: To characterize elderly patients presenting with acute LMCA occlusion and assess their short- and long-term outcomes.

Methods: In this retrospective multicentric study, we identified 11 036 patients with ST-segment elevation myocardial infarction (STEMI) or high-risk non-ST segment elevation myocardial infarction who underwent emergent coronary angiography between January 2008 and December 2020. Among this cohort, we analyzed 128 patients who presented with unprotected LMCA occlusion (Thrombolysis In Myocardial Infarction – TIMI ≤ 2) and divided them in 2 groups according to their age at presentation: G1 (patients ≥ 70 years old) and G2 (< 70 years old).

Results: Of 128 patients with AMI due to LMCA occlusion, 41 patients had ≥ 70 years and 87 patients had < 70 years. The mean age was 76.2 ± 5.5 years in G1 and 57.5 ± 8.0 years in G2. Most patients in both groups were male. At

presentation, the proportion of patients with STEMI (63.4 *vs.* 70.2%, p = 0.44), cardiogenic shock (53.7 *vs.* 64.0%, p = 0.27) and cardiorespiratory arrest (17.1 *vs.* 29.9%, p = 0.12) were similar between groups. Most patients were submitted to primary percutaneous coronary intervention, which was considered successful in 76.3% of G1 patients and 68.0% of G2 patients (p = 0.36). The use of intra-aortic balloon pump was similar in both groups (51.2 *vs.* 51.7%, p = 0.96). VA-ECMO was used in 21.8% of G2 patients. None of the patients from G1 received VA-ECMO support. Overall, in-hospital mortality was high, with no statistically significant differences between groups (46.3 *vs.* 54.0%, p = 0.42). Among patients surviving the index-event, there was however a lower long-term survival among G1 patients (p = 0.002), who had a 5-year all-cause mortality of 76.5% compared to 29.3% in G2 patients (p = 0.002).
Conclusions: A substantial proportion of AMI due to LMCA occlusion occurs in elderly patients. This subgroup has similar in-hospital mortality compared to younger patients, but outcomes among survivors are significantly worse. There is a need of further studies in order to improve the initial and subsequent medical treatment in an attempt to improve the prognosis of these patients.

PO 45. EMERGENT CORONARY ANGIOGRAPHY IN A 90-PLUS POPULATION – OUTCOMES AT 5-YEARS FOLLOW-UP

Ricardo Alves Pinto, Tânia Proença, Miguel Martins Carvalho, Ana Filipa Amador, Catarina Costa, João Calvão, André Cabrita, Catarina Marques, Ana Pinho, Luís Santos, Cátia Priscila, Paula Dias, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Elderly people represents a vulnerable and increasing population presenting with acute coronary syndrome (ACS). Several data suggest the benefit of an early revascularization in ST-elevation (STE)-ACS or non-STE-ACS with positive troponin. However questions persist considering the unavoidable adverse prognosis, patient's functional and cognitive status, comorbidities and preferences.
Objectives: To evaluate a group of very old patients who underwent emergent coronary angiography (CA).
Methods: We retrospectively analyzed a group of very old patients (≥ 90 year-old) who underwent emergent CA from January 2008 to September 2020. Clinical features were collected; survival and MACE were compared with an aged-matched control population with ACS not submitted to emergent CA. MACE was defined as a composite of all-cause death, ischemic stroke, ACS and hospitalization for acute heart failure.
Results: A total of 34 patients were enrolled: 56% female, with mean age 92 ± 2 year-old. As for the cardiovascular risk factors, 88% had hypertension, 49% dyslipidaemia, 12% diabetes and 15% were previous smokers. Concerning other comorbidities, 27% had atrial fibrillation, 21% chronic kidney disease, 12% had cerebrovascular disease and median modified Rankin scale for neurologic disability was 2. Almost all patients had STE-ACS, 68% anterior and 29% inferior, inferolateral or inferoposterior infarction; 3% had infarction of indeterminate location. In CA, 65% had multivessel disease, 14% of them involving left main coronary artery; coronary intervention was performed in 71% of patients (mostly stent implantation), the remaining 29% had no invasive treatment. Concerning to clinical status, median troponin was 131,517 ng/L and median BNP 496 pg/mL; 36% of patients evolved in Killip class III or IV and only 32% of patients had normal left ventricular systolic function. Regarding mortality, 38% of patients died in the index-event *versus* 25% in the aged-matched control group (p = 0.319). During five years of follow-up, there was no significant difference in mortality between the two groups (log rank, p = 0.403) and more than 50% of patients died in two years. Comparing MACE occurrence, both groups were similar (log rank, p = 0,662), with more than 80% having at least one event in five years.
Conclusions: Very old patients submitted to emergent CA had a high percentage of multivessel disease, left ventricular dysfunction and mortality during hospitalization. Compared to an aged-matched control group, they showed no survival or MACE benefit of emergent CA strategy during a five-years follow-up. Although this is a small study, these findings highlight the efforts that should be made to optimize care in this vulnerable population, under-represented in the clinical trials. Special caution should be given to avoid possible unnecessary discomfort in this setting.

Sexta-feira, 22 Abril de 2022 | 11:00-12:00

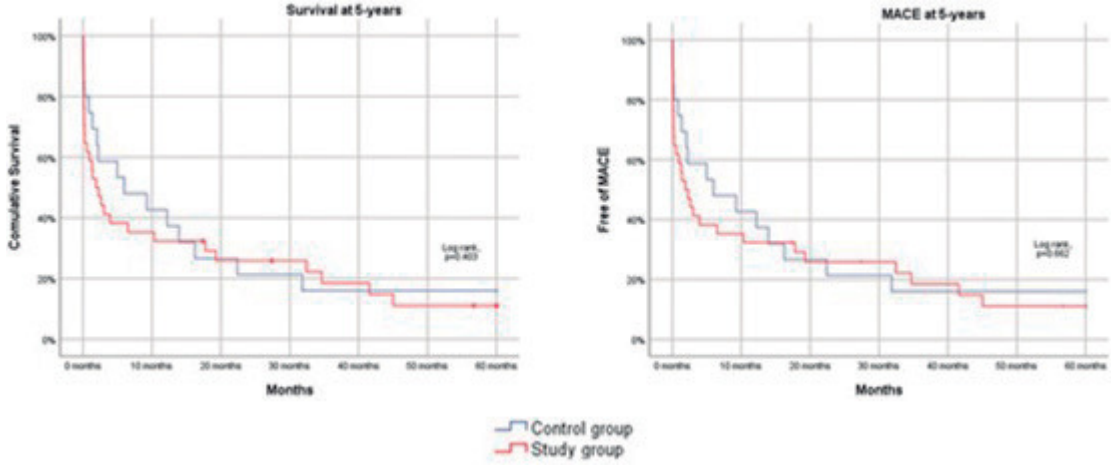
Sala Jardim de Inverno | Posters (Sessão 2 - Écran 2) - Arritmias 2 - Arritmias Ventriculares 1

PO 46. PREDICTORS OF SURVIVAL AND ICD SHOCKS IN NON-ISCHEMIC CARDIOMYOPATHY PATIENTS SUBMITTED TO VENTRICULAR TACHYCARDIA ABLATION

João Santos Fonseca, Pedro Silvério António, Sara Couto Pereira, Joana Brito, Beatriz Valente Silva, Pedro Alves da Silva, Ana Beatriz Garcia, Ana Margarida Martins, Catarina Simões de Oliveira, Miguel Azaredo Raposo, Afonso Nunes Ferreira, Gustavo Silva, Luís Carpinteiro, Nuno Cortez-Dias, Fausto J. Pinto, João de Sousa

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Patients (pts) with non-ischemic cardiomyopathy (NICM) present an increased morbidity and mortality from sustained monomorphic ventricular tachycardia (VT). Implantable cardiac defibrillators effectively



PO 45 Figure

Table 1. Univariate and Multivariate Analysis of Risk Factors Associated With All-cause Mortality

	Univariate analysis		Multivariate analysis	
	HR (95%CI)	P value	HR (95%CI)	P value
NYHA functional class III-IV	1.035 (0.369-2.904)	0.034	-	-
LVEF < 30%	1.8 (0.69 – 5.095)	0.035	-	-
NT-proBNP	1 (0.9-1)	0.041	-	-
CKD*	3.2 (1.16-8.86)	0.006	6.0 (1.5 -23.2)	0.010
Previous VT ablation	2.188 (0.811-5.906)	0.08	-	-
Secondary prevention ICD	2.646 (0.984-7.116)	0.001	-	-

*Estimated glomerular filtration rate δ 60 ml/m2
LVEF : Left ventricle ejection fraction; NYHA: New York Heart Association

PO 46 Figure

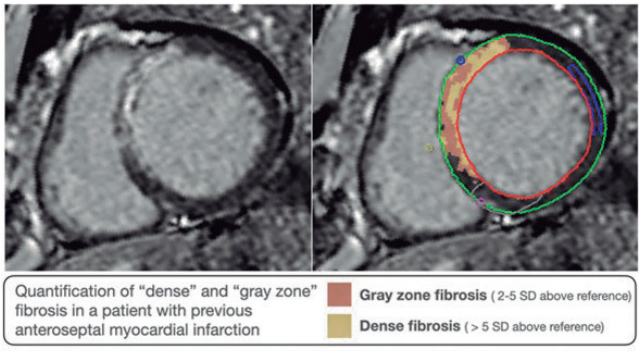
terminate VT, but ablation is usually required to prevent recurrences and appropriate shocks. Although several risk factors have been pointed out, clear prognostic predictors need to be established and addressed.
Objectives: To evaluate risk factors associated with all-cause mortality and ICD shocks in NICM pts submitted to VT ablation.
Methods: Prospective, observational, single-centre study of pts with NICM submitted to VT ablation using high density mapping tools. The primary outcome was all-cause death or VT recurrence terminated with appropriate ICD shock during long-term follow up. Kaplan-Meier analysis was used to estimate the long-term event-free survival. Uni and multivariate Cox regression analyses were used to determine relevant prognostic predictors.
Results: A total of 27 consecutive pts with NICM were referred for a first-ever VT ablation procedure between June 2015 and June 2021 (males: 93%; mean age: 61 ± 12 years). The mean left ventricular ejection fraction (LVEF) was 35 ± 12% and 70% of pts had NYHA class I or II. During a mean follow-up of 29 ± 19 months, VT recurrences requiring ICD shocks occurred in 25.9% of pts. VT ablation success and the risk of ICD shocks were not associated with any of the clinical characteristics. Long-term all-cause mortality was 37%. In univariate analysis, LVEF < 30%, NT-proBNP, NYHA classification III-IV, chronic kidney disease (CKD), ICD for secondary prevention and prior VT ablation (p = 0.08) were associated with reduced survival. On multivariate analysis, CKD was identified as the strongest independent survival predictor (HR 6.9; 95%CI: 1.5-23-2, p = 0.010).
Conclusions: In pts with NIDM, VT ablation may be successful even in pts with advanced heart disease. However, long-term survival will depend mostly on the stage of disease progression and is strongly associated with the clinical markers of end-stage heart failure. Therefore, a timely referral is crucial to derive the best clinical benefit from VT ablation in this population.

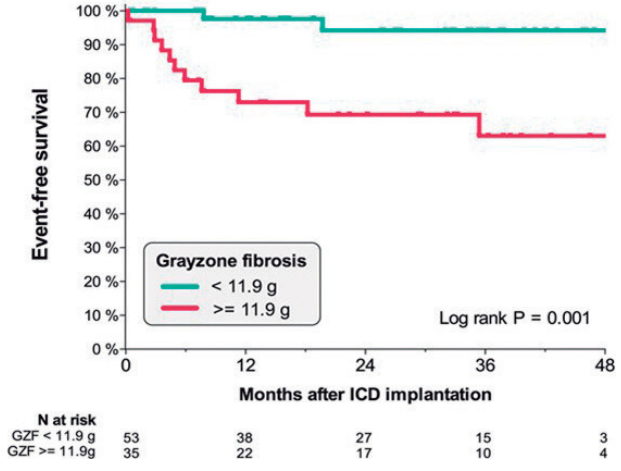
PO 47. THE PERI-INFARCT "GRAY ZONE" OF MYOCARDIAL FIBROSIS IS A BETTER PREDICTOR OF VENTRICULAR ARRHYTHMIAS THAN DENSE CORE FIBROSIS IN PATIENTS WITH PREVIOUS MYOCARDIAL INFARCTION

Pedro M. Lopes, Gonçalo Cunha, Pedro Freitas, Bruno Rocha, João Abecasis, João Carmo, Sara Guerreiro, Pedro Galvão Santos, Francisco M. Costa, Pedro Carmo, Diogo Cavaco, Francisco Morgado, Miguel Mendes, Pedro Adragão, António M. Ferreira

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

Introduction: Current sudden cardiac death (SCD) risk stratification relies heavily on left ventricular ejection fraction (LVEF), but markers to refine risk assessment are needed. Dense core fibrosis (DCF) and peri-infarct "gray zone" of myocardial fibrosis (GZF) on late gadolinium enhancement (LGE) cardiac magnetic resonance (CMR) have been proposed as potential arrhythmogenic substrates. The aim of our study was to determine whether DCF and GZF could predict the occurrence of ventricular arrhythmias in patients with previous myocardial infarction.
Methods: We performed a single centre retrospective study enrolling consecutive patients with previous myocardial infarction undergoing CMR before implantable cardioverter-defibrillator (ICD) implantation. Areas of LGE were subdivided into "core" DCF and "peri-infarct" GZF zones based on signal intensity (> 5 SD, and 2-5 SD above the mean of reference myocardium, respectively). The primary endpoint was a composite of sudden arrhythmic death, appropriate ICD shock, ventricular fibrillation (VF), or sustained ventricular tachycardia (VT) as detected by the device.
Results: A total of 88 patients (median age 61 years [IQR 54-73], 84% male, median LVEF 30% [IQR 23-36%], 14% secondary prevention) were included. During a median follow-up of 23 months [IQR 9-38], 13 patients reached the primary endpoint (10 appropriate ICD shock, 2 sustained VT or VF, and 1 sudden arrhythmic death). Patients who attained the primary endpoint had similar DCF (30.4 g ± 14.7 *vs.* 28.0 g ± 15.3; p = 0.601) but a greater amount of GZF (18.1 g ± 9.6 *vs.* 11.9 g ± 6.7; p = 0.005). On univariate analysis, GZF was associated with the composite endpoint (HR: 1.09 per gram; 95%CI: 1.02-1.15; p = 0.006), whereas DCF was not (HR: 1.01 per gram; 95%CI: 0.98-1.05; p = 0.571). After adjustment for LVEF, GZF remained independently associated with the primary endpoint (adjusted HR: 1.06 per gram; 95%CI: 1.01-1.12; p = 0.035). Decision tree analysis identified 11.9 g of GZF as the best cut-off to predict life-threatening arrhythmic events. The primary endpoint occurred in 11 out of the 35 patients (31.4%) with GZF ≥ 11.9 g, but in only 2 of the 53 patients (3.8%) with GZF < 11.9 g (Fig.).





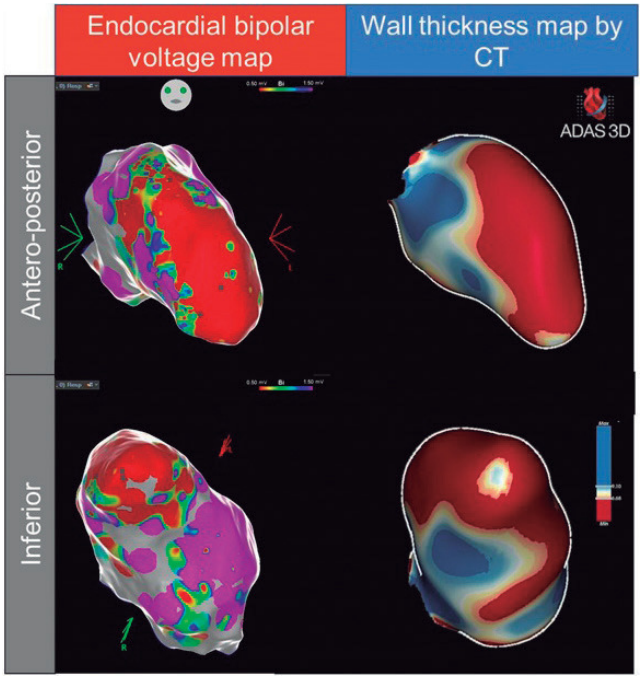
Conclusions: The extent of peri-infarct GZF seems to be a better predictor of ventricular arrhythmias than DCF. This parameter may be useful to identify a subgroup of patients with previous myocardial infarction at increased risk of life-threatening arrhythmic events.

PO 48. CORRELATION BETWEEN LEFT VENTRICLE WALL-THICKNESS BY CT AND ENDOCARDIAL POTENTIALS IN PATIENTS WITH ISCHEMIC CARDIOPATHY- A PILOT STUDY

Gonçalo Lopes da Cunha, Sérgio Maltês, Pedro Freitas, Sara Guerreiro, João Abecasis, Gustavo Rodrigues, João Carmo, Pedro Galvão Santos, Francisco Costa, Pedro Carmo, Diogo Cavaco, Francisco Morgado, Miguel Mendes, António Ferreira, Pedro Adragão

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

Introduction: Scar-related ventricular tachycardia (VT) is frequently the treatment target in patients with ischemic cardiopathy undergoing VT ablation. While cardiac magnetic resonance (CMR) is the gold standard for planning VT ablation, its accuracy is hindered in patients with implanted cardiac defibrillators (ICD) and resynchronization therapy (CRT). Cardiac computed tomography (CT) has emerged as an alternative for ablation planning in these patients. The purpose of this study was to evaluate the relationship between wall thickness (WT) on cardiac CT and intensity of electrical potentials on endocardial eletroanatomic mapping (EAM) in patients with ischemic cardiopathy.



Methods: This was a single centre retrospective study enrolling patients with ischemic cardiopathy referred for endocardial VT ablation that underwent cardiac CT for procedure planning. Patients were excluded if EAM had < 1,000 data points. ADAS 3D® software was used to analyse CT images, automatically segmenting the left ventricle (LV) into the 17 American Heart Association segments and calculating end-diastolic WT for each one. Screenshots of the segmented LV on ADAS were taken in 4 standardized planes (antero-posterior, postero-anterior, superior and inferior) and used to aid in manual segmentation of EAM. The endocardial voltage maps were created using CARTO3® (Biosense Webster). For each patient, EAM was interpreted to create 2 bulls 'eye maps, according to the presence or absence of bipolar potentials < 0.5 (dense scar) or 1.5 mV (low voltage). Only segments that had > 20% extension of low bipolar voltage were considered as altered.
Results: We included a cohort of 5 patients with a median age of 69 (68-71) years, all male with a median LVEF of 35% (28-35)). All but one patient had implanted cardiac device (3 ICD, 1 CRT-D). CT was performed a mean of 1.3 days before the ablation. We analysed 85 segments, 4 of which did not have voltage information. Of the remaining 81, 37 (44%) had dense scar and 45 (53%) had low voltage. There was a good correlation between mean WT and the presence or absence of both dense scar (area under de curve (AUC) 0.808, $p < 0.001$) and low voltage (AUC 0.796, $p < 0.001$) in each LV segment.
Conclusions: WT measured by CT seems to have a strong correlation with dense scar and low voltage in EAM in patients with previous myocardial infarction undergoing VT ablation. This technique may be useful to plan interventions in patients in whom CMR is not feasible.

PO 49. BRUGADA SYNDROME: CHARACTERIZATION OF A PORTUGUESE BRUGADA SYNDROME COHORT

Margarida Martins, Joana Brito, Pedro Silvério António, Sara Couto Pereira, Pedro Alves da Silva, Beatriz Valente Silva, Ana Beatriz Garcia, Catarina Simões de Oliveira, Catarina Gregório, Afonso Nunes Ferreira, Gustavo Lima da Silva, Luís Carpinteiro, Nuno Cortez-Dias, Fausto J. Pinto, João de Sousa

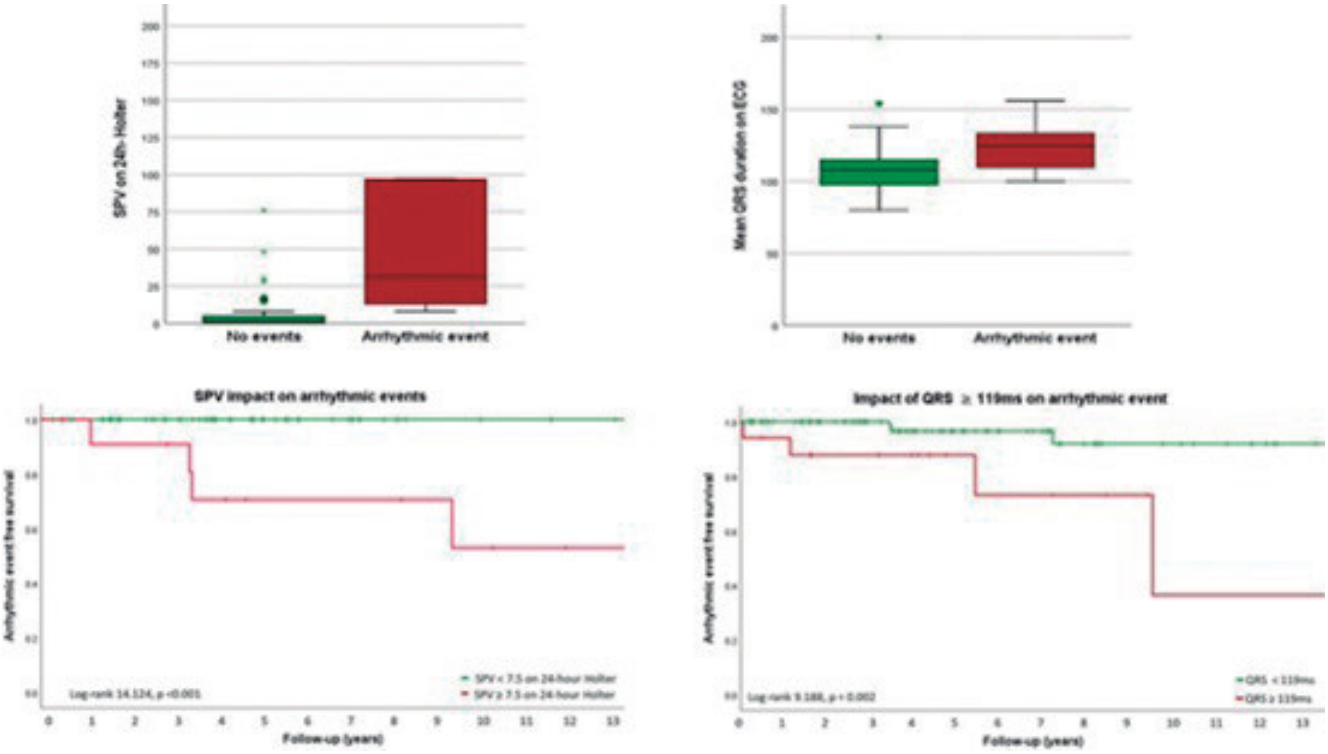
Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Brugada syndrome (BrS) is an inherited cardiac arrhythmic disorder that can lead to sudden cardiac death. Although SCN5A was the first pathogenic associated gene, other potential genes have been described. The relationship between SCN5A, spontaneous type 1 pattern and the predisposition to ventricular arrhythmias is not totally understood.
Objectives: To characterize mutations in a Portuguese cohort with BrS and to explore the genotype-phenotype association in terms of electrocardiographic pattern and arrhythmic risk.
Methods: Prospective single-center study of patients (pts) with BrS. Genetic test included SCN5A direct sequencing from 2003 a broad panel of 120 genes associated with cardiomyopathies and arrhythmic disorders from 2018. Genetic test results were classified according to pathogenicity: mutations of unknown significance (MUS), mutations potentially pathogenic (MPP) and known pathogenic mutations (KPM). Kaplan-Meyer survival analysis was used to explore the association between genetic test results and the risk of arrhythmic events during follow-up.
Results: A total of 94 pts [46 ± 12 years, 67% male, 64.9% with type 1 spontaneous pattern, 35.1% with type 1 induced pattern] were submitted to genetic testing. No relevant mutations were identified in 68 pts (72%) and suspicious or pathogenic mutations were recognized in 26 (28%). The most frequent mutations occurred in SCN5A (N = 20, 76.9%), and included 8 KPM: 4 in exon 23 (3 of them had the same mutation, c.4018G>A), 2 in exon 26 (c.4534C>T), 1 in exon 28 and 1 in exon 16. All MPP in SCN5A occurred either in exon 23 or 28. Considering MUS, 7 different mutations were described in 6 different exons (8, 15, 18, 23, 25 and two in 28). Additionally, in 6 pts (6.4%) presented MUS in other genes: SCN10A (N = 2), ANK2 (N = 2), SFM13A, CAV2 (associated with long QT), CACNA1D and PXDNL. We found no differences in the prevalence of spontaneous type 1 pattern considering gene mutation or mutation pathogenicity. A non-significant trend to higher arrhythmic risk was observed in pts presenting genetic mutations (either KPM, MPP or MUS), Long-Rank: 1.743, $p = 0.187$ (Fig.).
Conclusions: Gene mutations are identified in a minority of BrS pts, mostly at SCN5A gene. No association was noticed between genetic test results and the ECG pattern. However, pts with identified mutation presented a tendency to higher arrhythmic risk. At present time, genetic tests in BrS are only relevant for familial screening, but long-term collection of data is crucial to elucidate the genotype-phenotype relation and arrhythmic risk.

PO 50. QRS DURATION AND FREQUENT PVC: ADDITIONAL FEATURES IN BRUGADA SYNDROME STRATIFICATION

Joana Brito, Pedro Silvério António, Beatriz Valente Silva, Pedro Alves da Silva, Sara Couto Pereira, Gustavo Silva, Afonso Nunes Ferreira, Ana Paixão, Nuno Cortez-Dias, Fausto J. Pinto, João de Sousa

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.



PO 50 Figure

Introduction: Brugada syndrome (BrS) is a channelopathy with high prevalence of malignant arrhythmic events. The risk stratification in patients (pts) with Brugada electrocardiographic (ECG) pattern is of major importance, to prevent sudden cardiac death (SCD). A higher risk is evidenced in spontaneous type 1 pattern when compared with induced type-1 pattern, as so other electrocardiographic features have been explored aiming to detect additional prognostic factors.
Objectives: To evaluate the association of QRS duration and frequent premature ventricular contractions (PVC) with malignant arrhythmic events.
Methods: Prospective single-center study of consecutive pts with BrS, with spontaneous or induced type 1 pattern included from 2003 to 2021. All pts were enrolled in a protocol including annual non-invasive assessment with ECG and 24-hours Holter monitoring. Primary endpoints were defined as SCD or appropriate shocks in the context of ventricular tachycardia or fibrillation (VT/FV) during follow-up. Cox regression and Kaplan-Meier survival analyses were used to determine the association between the baseline ECG and Holter characteristics and the long-term risk of arrhythmic events.
Results: A total of 117 pts was included, 75 (65%) with a spontaneous type 1 pattern and 44 (33%) with an induced type 1 pattern. The mean age was 47 ± 13 years and 38 (32.5%) were male. During a median follow-up of 4.1 ± 0.3 years, the primary endpoint occurred in 8 (6.8%) pts, with sudden cardiac death in 3 (2.6%) and appropriate shocks due to VT/FV in 5 (4.3%). Pts who suffered arrhythmic events had presented at the study inclusion higher QRS duration (124 ± 18 *vs*. 108 ± 16 ms, p = 0.014) and more frequent PVCs on 24-hour Holter (169 ± 297 *vs*. 29 ± 198; p = 0.001). Indeed, the presence of QRS ≥ 119 ms was associated with a 7-fold higher risk (HR: 7.250, 95%CI 1.619-32.461, p = 0.010) and the presence of more than 6 PVC on 24-hour Holter was also associated with a 5-fold higher risk of malignant arrhythmic events (HR 5.376, 95% 1.186-24.260, p = 0.029).
Conclusions: QRS duration and frequent PVC may established themselves as additional risk factors. In our cohort, they were both predictors of arrhythmic events during follow-up and thus can further complement BrS risk stratification.

Sexta-feira, 22 Abril de 2022 | 11:00-12:00

Sala Jardim de Inverno | Posters (Sessão 2 - Écran 3) - Ciência Básica

PO 51. THERAPEUTIC EFFECTS OF NEBULIZATION- BASED DELIVERY OF ANTI-MIR-146A IN EXPERIMENTAL PULMONARY ARTERIAL HYPERTENSION

Joana Santos-Gomes, Pedro Mendes-Ferreira, Rui Adão, Carolina Maia-Rocha, Inês Vasconcelos, Inês Gandra, Pedro Salvador, Adelino Leite-Moreira, Carmen Brás-Silva

Faculdade de Medicina da Universidade do Porto.

Pulmonary arterial hypertension (PAH), is a chronic disorder characterized by excessive pulmonary vascular remodeling, resulting in elevated pulmonary vascular resistance and right ventricle (RV) overload and failure. PAH remains incurable, and new therapeutic approaches are required. The microRNA-146a (miR-146a) promotes vascular smooth muscle cell proliferation and vascular neointimal hyperplasia, both important hallmarks of PAH. This study aimed to investigate the role of miR-146a in the pathophysiology of PAH and in the progression to RV hypertrophy and failure. Male Sprague Dawley rats received a subcutaneous injection of monocrotaline, 60 mg/kg, (MCT group) or vehicle (CTRL group). Fourteen days after the injection, they were treated, by intratracheal nebulization, with an anti-miR-146a (2.5 nmol in 100 μl of sterile water) on three different days: 14, 19, and 23, forming four distinct groups: CTRL-treated; CTRL-untreated, MCT-treated, and MCT-untreated. Twenty-seven days after MCT injection, echocardiographic and invasive hemodynamic evaluations were performed in all animal groups. Compared to MCT-untreated rats, the MCT-treated rats showed decreased

RV hypertrophy, (as measured by the Fulton index), decreased RV end-diastolic diameter/left ventricle end-diastolic diameter (RVEDD/LVEDD) ratio, and decreased RV diastolic pressures. Our findings show that miR-146a pharmacological inhibition by an anti-miR-146a, reduces RV remodeling and improves cardiac function. In this way, miR-146a can represent a promising therapeutic target in PAH.

PO 52. ZNF 259C>G VARIANT RS964184 IS ASSOCIATED WITH CORONARY ARTERY DISEASE AND DYSLIPIDEMIA IN THE YOUNGER POPULATION

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[1]Hospital Dr. Nélio Mendonça. [2]Faculdade de Ciências Médicas de Lisboa/ NOVA Medical School.

Introduction: GWAS demonstrates that BUD13-ZNF259 rs964184 polymorphism was associated with susceptibility to coronary artery disease (CAD). CAD is a dynamic inflammatory disease caused by atherosclerosis, and BUD13-ZNF259 encodes ZPR1 protein that interacts with tyrosine kinase receptors. Recent research has shown that spleen tyrosine kinase (Syk) interact with ZPR1 at the cellular level, increasing inflammatory response and atherogenesis with plaque development in mice.
Objectives: Evaluate the association of BUD13-ZNF259 rs964184 polymorphism with CAD and dyslipidemia (a critical risk factor to CAD).
Methods: A case-control study with 3,160 individuals (1,723 CAD patients with a mean age of 53.3 ± 7.9 years; 78.7% male and 1437 controls, mean age 52.8 ± 7.8; 76.3% male. Participants were stratified into two different age groups (< 45 and > 55 years). BUD13-ZNF259 rs964184 variant was genotyped and analysed using the dominant model (CG+GG) *vs.* CC. Bivariate analysis and multivariate logistic regression were performed in the two age groups to investigate whether BUD13-ZNF259 rs964184 polymorphism was associated with CAD susceptibility and dyslipidemia.
Results: After bivariate analysis, the group < 45 years, the CG+GG genotype of the BUD13-ZNF259 rs964184 showed association with CAD and dyslipidemia, with an OR = 1.46 (p = 0.036) and OR = 1.85 (p = 0.003), respectively. In the > 55 years group, this genetic model was associated with dyslipidemia with an OR = 1.46 (p = 0.020) but not with CAD. After multivariate logistic regression, the CG+GG genotype was an Independent risk factor for CAD susceptibility only in the younger population (OR = 1.60; p = 0.037).

Independent risk factors for CAD in the young population

Variables	Odds ratio (95% CI)	P-value
Smoking status	5.400 (3.536 – 8.244)	<0.0001
Hypertension	3.340 (2.147 – 5.196)	<0.0001
Diabetes	2.821 (1.237 – 6.433)	0.014
CAD family history	2.312 (1.362 – 3.925)	0.002
Physical inactivity	2.061 (1.352 – 3.144)	0.001
ZNF259 (CG+GG)	1.603 (1.029 – 2.498)	0.037
Apolipoprotein B	1.009 (1.005 – 1.014)	<0.0001
Lipoprotein (a)	1.009 (1.002 – 1.016)	0.010

CAD – Coronary artery disease; CI – Confidence interval. CRP did not remain in the equation. Statistically significant for p<0.05.

Conclusions: BUD13-ZNF259 rs964184 polymorphism is a risk factor for dyslipidemia and CAD onset, only in the young population. The interaction of the ZPR1 with Syk at the cellular level seems to be more relevant in young patients. Our results suggest that the BUD13-ZNF259 rs964184 variant may represent a possible prophylactic and therapeutic target in the future, particularly in young CAD patients.

PO 53. IMPACT OF EXERCISE TRAINING AND CARVEDILOL ON CARDIOVASCULAR PARAMETERS IN DOXORUBICIN TREATED RATS

Ana I. Afonso, Â. Amaro-Leal, F. Machado, I. Rocha, V. Geraldes

Faculdade de Medicina da Universidade de Lisboa.

Some conditions like cancer and its treatment, can have a big impact on cardiovascular health. Drugs like doxorubicin (DOX) are highly effective in cancer treatment but accompanied by dose-dependent side effects, including autonomic and cardiovascular toxicity. Some types of adjuvant therapies, particularly non-pharmacological, such as exercise training (ET), and pharmacological, such β-blockers, are usually combined with chemotherapy in order to maintain physiological homeostasis in cancer patients, improving their autonomic and cardiac functions. In our work, we compared the effectiveness of two approaches individually: pharmacological intervention, using carvedilol (CVD), and a non-pharmacological intervention, ET protocol using treadmill training in an animal model of doxorubicin. Female Wistar rats were divided into 4 groups: Doxorubicin (DOX; ip. cumulative dose 16 mg/kg, 1 time/week, for 4 weeks), DOX with ET (DOX+EX; treadmill, 25 cm/seg for 30 min, 5 times/week), DOX with CVD (DOX+CVD; 10 mg/kg, oral, 5 times/week, for 4 weeks) and controls (CTL; NaCl 0.9%, ip.). At the end of the protocol, animals were anaesthetised and blood pressure (BP), electrocardiogram, heart rate (HR) and respiratory frequency (RF) were recorded. Baroreflex gain, BEI, BRS and chemoreflex sensitivity were calculated and HRV were determined. Our results reveal that DOX treatment triggered hypotension: a significant decrease in systolic BP (CTL: 150 ± 5; DOX: 103 ± 10 mmHg) and mean BP (CTL: 129 ± 3; DOX: 90 ± 10 mmHg) as well as in HR (CTL: 379 ± 54; DOX: 288 ± 53 bpm), compared to the CTL group. During DOX treatment, the ET protocol counteracts some of the adverse effects induced by DOX, normalizing the systolic (122 ± 29 mmHg), mean BP (94 ± 20 mmHg) and HR (350 ± 22 bpm). CVD administration during DOX treatment significantly restored HR close to physiological values (369 ± 16 bpm). DOX treatment led to an increase in baroreflex gain compared to the CTL group. CVD treatment, like the ET effect, decreased baroreflex gain compared to the DOX group (DOX: 4.74 ± 2.8; DOX+EX: 0.50 ± 0.07 and DOX+CVD: 0.55 ± 0.06 bpm/mmHg), also restoring BEI, BRS and SDNN to normal values. No significant changes in chemoreflex sensitivity, RF and frequency domain indices were observed. Overall, the present results suggest that, during DOX therapy, ET has an evident beneficial effect on BP values. However, both ET and CVD are good strategies to prevent baroreflex disfunction and maintain normal HR, thus preserving cardiovascular homeostasis.

PO 54. CUMULATIVE DOXORUBICIN DOSAGE IS A TRIGGERING FACTOR FOR COGNITIVE AND PHYSIOLOGICAL DYSFUNCTION?

Filipa Machado, Ângela Amaro-Leal, Ana I. Afonso, Isabel Rocha, Vera Geraldes

Faculdade de Medicina da Universidade de Lisboa.

Cognitive impairment in oncology (also called chemobrain) and anxiety disorders are widely common complications of cancer therapy with doxorubicin (DOX). They dramatically deteriorate patients' quality of life by interfering with the control of different cognitive domains, changing various aspects of memory, emotion and executive function. Despite the large number of studies addressing chemobrain physiological consequences, is not yet known the individual contribution of DOX treatment and cancer by themselves on the observed effects, since these adverse effects may be caused by cancer itself, cancer therapy, or both. Thus, in order to clarify DOX action on behavioral disturbances upon cumulative treatment, in this preliminary study on a healthy animal model, we determined the extension of doxorubicin effects due to various therapeutic doses on cognitive decline, anxiety, locomotor activity and cardiovascular parameters. For that, adult, normal weight, female Wistar rats were DOX-treated for 4 weeks: LDOX (n = 8; low dose, 2 mg/kg/week), IDOX (n = 8; intermediate dose, 4 mg/kg/week), HDOX (n = 8; high dose, 5 mg/kg/week) and control (n = 5; NaCl 0.9% saline solution; 1 ml/Kg/week). Behavioral tests of anxiety,

locomotion, and exploration - open field test (OFT), elevated plus maze (EPM) and cognition performance (Y-maze) were accomplished. At the end of the protocol, animals were anaesthetized and blood pressure (BP), electrocardiogram, heart rate (HR) and respiratory frequency (RF) were recorded. Overall, our results showed that the three DOX dosages induced an anxiety-like behavior and locomotor activity impairments. Moreover, DOX treatment, independent of the dosage, induced hypolocomotion which was accompanied by hypoactivity. In addition, HDOX dosage caused short-term memory (HDOX: 16.7 ± 6.2 *vs.* CTR: 37.9 ± 3.3%). All these behavioral changes were accompanied by a significant change in physiological parameters, such as hypotension (LDOX: 128 ± 4 mmHg; IDOX: 90 ± 10 mmHg; HDOX: 76 ± 12 mmHg *vs.* CTR: 129 ± 3 mmHg) and bradycardia (LDOX: 381 ± 18 bpm; IDOX: 288 ± 22 bpm; HDOX: 296 ± 35 bpm *vs.* CTR: 379 ± 22 bpm). These findings suggest that the DOX effects on behavioral function are different according to the cumulative dosage, with the highest dosage causing the most deleterious effects on the behavioral and physiological parameters evaluated. Although further studies are needed to assess the effect of cancer itself on the etiology of the behavioral impairment, these results support the hypothesis that doxorubicin itself contributes to the etiology of cognitive symptomatology in humans, also named "chemobrain".

PO 55. PULMONARY EMBOLISM – PLATELET INDICES' IN PATIENTS WITH OR WITHOUT RIGHT VENTRICULAR DILATATION

Simão de Almeida Carvalho[1], Lisa Ferraz[2], Pedro Carvalho[2], Diana Carvalho[2], Adriana Pacheco[2], Andreia Fernandes[2], Ana Briosa[2]

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Introduction: Platelets are essential components of the coagulation cascade, with physiopathologic impact on the development of innumerous thromboembolic diseases, such as pulmonary embolism (PE). The platelet index - '*Platelet Distribution Width*' (PDW) – measures platelets' size variation or anisocytosis. Studies have shown an association between an augmented PDW value and platelet activation, but despite of their routine measurement, their use as a gravity indicator for PE is reduced.
Objectives: Measurement of quantifiable differences between platelet indices at diagnostic time in patients with or without right ventricle dilation.
Methods: Single center cross-sectional study comprising 141 patients admitted to the emergency department due to PE with an echocardiographic evaluation at diagnosis time. Statistical analysis of data was performed using Independent-Samples t Test.
Results: The total population (n = 141) was subdivided in two groups – with - 51.1% - and without right ventricle dilation – 48.9%. There weren´t significant differences between the two groups on gender (p = 0.108), history of previous PE (p = 0.542), Chronic Obstructive Pulmonary Disease (p = 0.091) and intra-hospital death (p = 0.056). On comparison, the patients in the subgroup with right ventricle dilation were older (70.1 *vs.* 63.9 years, p < 0.05), had a higher percentage of positive I-troponin (86.8 *vs.* 38.5%; p < 0.05) and BNP at admission (81.6 *vs.* 47.4%; p < 0.05) and were submitted more frequently to fibrinolytic therapy (22.5 *vs.* 1.4%, p < 0.05). Patients with right ventricle dilation had a higher PDW value (16.2 *vs.* 15.2%; p = 0.026) and lower total platelet count (200.7 *vs.* 226.1 × 10^9/L; p = 0.043).
Conclusions: The study suggests that patients with right ventricle dilation have a higher PDW value and lower total platelet count when in comparison with patients without right ventricle dilation. These findings suggest a possible association between platelet indices and imagiologic gravity indicators on PE.

T-Test

Group Statistics

	Right Ventricle Dilatation	N	Mean	Std. Deviation	Std. Error Mean
Platelets (x 10E9/L)	No	69	226,07	80,271	9,664
	Yes	72	200,68	67,105	7,908
PDW (%)	No	69	15,1986	3,03981	,36595
	Yes	72	16,2181	2,24074	,26407

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Platelets (x 10E9/L)	Equal variances assumed	1,586	,210	2,041	139	,043	25,392	12,440	,796	49,987
	Equal variances not assumed			2,033	132,615	,044	25,392	12,487	,692	50,091
PDW (%)	Equal variances assumed	4,243	,041	-2,274	139	,025	-1,01950	,44843	-1,90613	-,13288
	Equal variances not assumed			-2,259	124,837	,026	-1,01950	,45128	-1,91266	-,12635

PO 55 Figure

Sexta-feira, 22 Abril de 2022 | 11:00-12:00

Sala Jardim de Inverno | Posters (Sessão 2 - Écran 4) - Insuficiência Cardíaca 2 - Índices e Factores de Prognóstico

PO 56. DOES BLOOD UREA NITROGEN-TO-CREATININE RATIO PREDICT OUTCOMES IN DECOMPENSATED HEART FAILURE?

João Borges Rosa, Sofia S. Martinho, José Lopes de Almeida, Joana Guimarães, Diogo de Almeida Fernandes, Eric Alberto Monteiro, Gonçalo Ferraz Costa, Gustavo M. Campos, Ana Rita M. Gomes, Patrícia M. Alves, Manuel Oliveira-Santos, Lino Gonçalves

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

Introduction: Renal dysfunction is common in patients with heart failure. The blood urea nitrogen-to-creatinine ratio (BUN/SCr) increase in the setting of a prerenal stressor as hypoperfusion of the kidneys, as a consequence of neurohormonal activation and it has been proposed as a prognostic marker in the acute setting. We aimed to evaluate whether BUN/SCr predicts mortality outcomes in a large contemporaneous real-world Southern European population with decompensated chronic heart failure.
Methods: We retrospectively studied 1,057 patients with chronic heart failure admitted to our emergency department between November 2016 and December 2017 with acute decompensation. Baseline clinical and

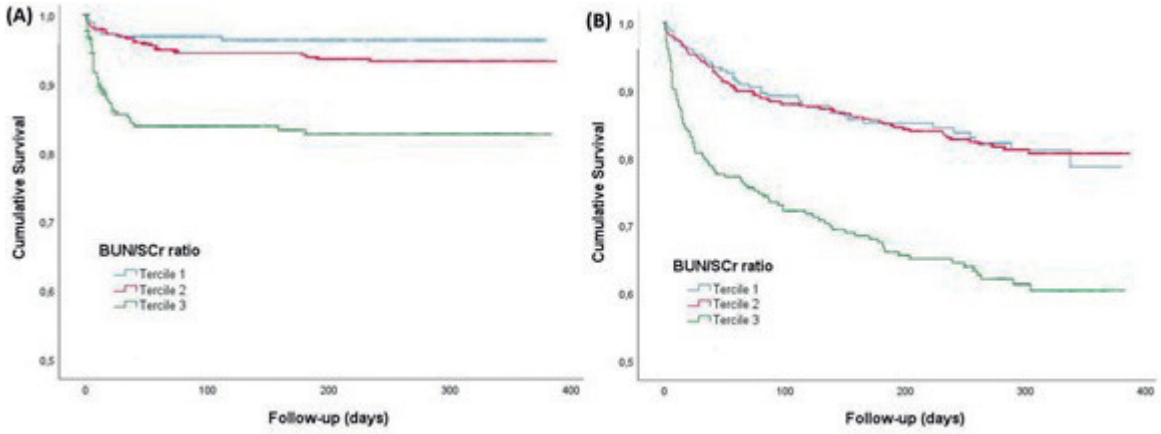


Figure 1. Kaplan-Meier curves for CV (A) and all-cause (B) mortality, according to the BUN/SCr tercile.

PO 56 Figure

analytical data were collected. We excluded patients without BUN or SCr values at admission and those with a glomerular filtration rate (GFR) < 15 mL/min/m² (calculated by the MDRD equation) or on dialysis. The incidence of rehospitalization and cardiovascular (CV) or all-cause death was evaluated through multivariable logistic regression models and by Kaplan-Meyer survival curves.

Results: 1,025 patients were included, median age 80 years (IQR 73-85), 52.4% male (n = 537), mean left ventricle ejection fraction (LVEF) 42.8 ± 12.7%, and mean GFR 57.2 ± 23.9 mL/min/m². Mean BUN/SCr was 24.9 ± 8.2 and mean systolic blood pressure was 139 ± 29 mmHg, both showing negative correlation (r = -0.17, p < 0.001). There was no correlation between BUN/SCr and the length of hospitalization (r = 0.058, p = 0.18). After a median follow-up of 5 months (IQR 3-11 months), cardiovascular mortality and all-cause mortality occurred in 8.0% (n = 82) and 21.6% (n = 221), respectively. Mean BUN/SCr was higher in patients with fatal outcomes both for cardiovascular (31.3 *vs*. 24.3, p < 0.001) and all-cause mortality (28.6 *vs*. 23.8, p < 0.001). BUN/Scr was grouped by terciles: T1 (BUN/SCr < 20.78), T2 (BUN/Scr 20.78-27.15), and T3 (BUN/Scr > 27.15). In the T3 group, the multivariable-adjusted odds ratio (OR) for CV death and all-cause mortality was 5.43 (95%CI 2.20-13.37, p < 0.01) and 2.72 (95%CI 1.66-4.46, p < 0.01), respectively, compared to the T1 group. There were no significant differences between T1 and T2 groups. Kaplan-Meier estimates of CV and all-cause mortality during follow-up according to BUN/SCr tercile are shown in the figure.

Conclusions: BUN/SCr at admission predicts CV and all-cause death in patients with chronic heart failure after an episode of decompensation. We hypothesize that BUN/SCr, as an easy-to-use tool, might help to identify those patients who benefit from tight monitoring both during hospitalization and after discharge.

PO 57. C2HEST SCORE – HEART FAILURE RISK SCORE: PREDICTIVE VALUE FOR ONE-YEAR MORTALITY AND RE-ADMISSION AFTER DISCHARGE

Joana Laranjeira Correia, Inês Pires, João Miguel Santos, Vanda Devesa Neto, Gonçalo Ferreira, José Costa Cabral, António Costa

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

Introduction: The C_2HEST score has been validated for predicting atrial fibrillation in the general population or post-stroke patients. The C_2HEST score is calculated with the following parameters: coronary artery disease or chronic obstructive pulmonary disease [1 point each]; hypertension [1 point]; elderly [age ≥ 75 years, 2 points]; systolic heart failure [2 points]; thyroid disease [hyperthyroidism, 1 point]). The authors aimed to analyse the predictive value of this score for mortality and readmission 12 months after discharge in hospital admissions due to acute heart failure (HF).

Methods: A retrospective study of patients admitted due to acute HF in the cardiology department of a tertiary centre was performed. The C_2HEST score was determined for all patients. Follow-up started after discharge and ended upon 12 months after study entry, hospital re-hospitalization or death. All subjects were divided into two groups: higher (≥ 5 points) and lower (< 4 points) score. Kaplan-Meier survival curves were obtained to compare 12-month mortality and 12-month hospital re-hospitalization between both groups.

Results: 780 patients were included in the study. 50.5% were female and the mean age was 77 ± 10 years old. The mean Ejection Fraction (EF) was 49.3 ± 16.5% and the mean C_2HEST score was 3.14 ± 1.44. The following Kaplan-Meier survival curves were determined for 12 months mortality - χ^2 6,480 (p = 0.011) and 12 months re-hospitalization - χ^2 0.154 (p = 0.695). The C_2HEST score demonstrated to be an independent variable in predicting the one-year mortality after discharge (HR: 1.297, p = 0.003) after adjusting for other prognostic variables such as age, gender, diabetes mellitus, atrial fibrillation, and hypertension.

Conclusions: In this population, the C_2HEST score proved to be a useful multivariable score model for the one-year mortality after discharge. Thus, C_2HEST score can be a tool in daily practice to identify patients who benefit from an earlier reevaluation and therapeutic optimization. However, these results were not achieved for the one-year re-hospitalization.

PO 58. GWTG-HF SCORE VS AHEAD SCORE: WHICH SCORES BETTER?

Mariana da Silva Santos, Margarida Figueiredo, Sofia B. Paula, Hélder Santos, Inês Almeida, Samuel Almeida, Luís Santos, João Tavares, Lurdes Almeida

Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo.

Introduction: The Get With The Guidelines Heart Failure score (GWTG-HF) predicts in-hospital mortality (IHM) in P admitted with AHF. The AHEAD scoring system is a simple tool that estimates short and long-term prognosis of P hospitalized with acute heart failure (AHF). We aimed to validate AHEAD and GWTG-HF scores in a "real world" AHF population as predictors of IHM, post discharge early and late mortality (M) [1-month M (1mM) and 1-year M (1yM)], 1-month readmission (1mRA) and 1-year readmission (1yRA).

Methods: Single-center retrospective study including P admitted AHF between 2010 and 2017. Statistical analysis used chi-square, non-parametric tests, logistic regression analysis and ROC curve analysis.

Results: Among the 300 P admitted with AHF included, mean age was 67.4 ± 12.6 years old, 72.7% were male, 66.9% had hypertension, 41% diabetes and 38% dyslipidaemia. Mean heart rate was 95.5 ± 27.5 bpm, mean systolic blood pressure (SBP) was 131.2 ± 37.0 mmHg, mean urea level at admission was 68.8 ± 40.7 mg/dL, mean sodium level at admission was 137.6 ± 4.7 mmol/L, mean glomerular filtration rate (GFR) was 57.1 ± 23.5 ml/min and 35.3% were

in Killip-Kimball class 4. Mean GWTG-HF was 41.7 ± 9.6 and mean AHEAD was 2.88 ± 1.1. Inotropes' usage was necessary in 32.7% of the P, 11.3% of the P needed non-invasive ventilation, 8% needed invasive ventilation. IHM rate was 5%, 1mM was 8% and 1yM 27%. Logistic regression confirmed that GWTG-HF was predictive of IHM (OR 1.12, p < 0.001, CI 1.05-1.19) and 1mM (OR 1.1, p = 0.001, CI 1.04-1.16) with fair accuracy (area under curve (AUC) 0.774 and p = 0.727, respectively) and 1yM (OR 1.08, p < 0.001, CI 1.04-1.11) with poor accuracy (p = 0.672). On the other hand, AHEAD score was not predictive of IHM (p = 0.063) or 1mM (p = 0.128), but was predictive of 1yM (OR 1.41 p = 0.005, CI 1.11-1.79) with poor accuracy (AUC = 0.604). The authors determined other predictor factors of 1yM (not included on the scores/included in one): lower SBP, higher urea, lower sodium, lower GFR, need of inotropes and KKC 4 (all p < 0.05). At multivariate regression, only inotropes' usage was independently associated with 1yM (p = 0.038, OR 1.9, CI 1.04-3.52).
Conclusions: GWTG-HF score was predictive of IHM and 1mM, with fair accuracy. AHEAD score failed these outcomes. Regarding 1yM, both scores were predictive, but with poor accuracy. When assessing long-term outcomes risk with these scores, other predictor factors should be taken in account.

PO 59. HEMODYNAMIC GAIN INDEX: A NEW PROGNOSTIC MARKER IN HEART FAILURE?

João Borges Rosa, José Lopes de Almeida, Sofia S. Martinho, Joana Guimarães, Diogo de Almeida Fernandes, Eric Alberto Monteiro, Gonçalo Ferraz Costa, Gustavo M. Campos, Ana Rita M. Gomes, James Milner, Manuel Oliveira-Santos, Lino Gonçalves

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

Introduction: Cardiopulmonary exercise testing (CPET) is recommended in patients with heart failure (HF) to optimize exercise prescription and as part of the evaluation for heart transplantation. Hemodynamic gain index (HGI) derived from CPET has been proposed as a new marker of risk stratification in general population cohorts. We aimed to evaluate the prognostic value of HGI in patients with HF.
Methods: We conducted a single-centre study assessing consecutive patients with HF who underwent CPET from 2013 to 2017. HGI was calculated based on heart rate (HR) and systolic blood pressure (SBP): HGI = [(HRpeak × SBPpeak) - (HRrest × SBPrest)]/(HRrest × SBPrest). Classic and recently proposed variables were collected, including peak O2 uptake (pVO2), minute ventilation–CO2 production (VE/VCO2 slope), circulatory power (Cp = pVO2 × peak SBP), and ventilatory power (Vp = peak SBP/(VE/VCO2) slope). The primary outcome was a composite of HF hospitalization, heart transplant, and all-cause mortality.

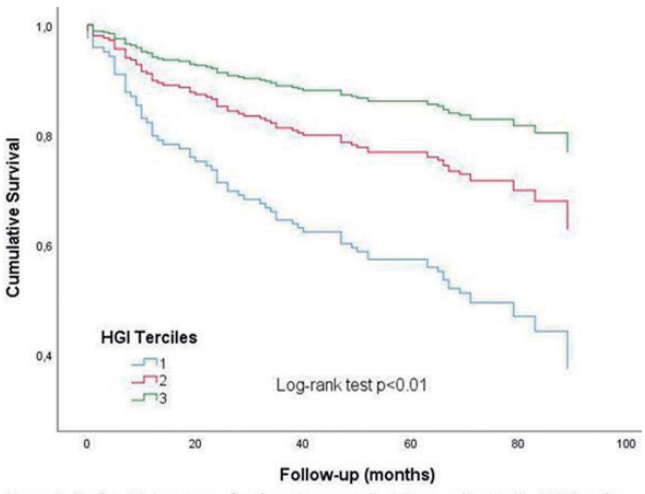


Figure 1. Kaplan-Meier curves for the primary endpoint according to the HGI terciles.

Results: A total of 212 patients (mean age 55.4 ± 10.9, 76.9% male) were included. Most patients had dilated cardiomyopathy (43.9%) followed by ischaemic aetiology (38.7%), with a mean left ventricle ejection fraction of 29 ± 13%. The most used exercise protocol was the modified Naughton (76.6%), followed by the original Naughton (18.7%), and Bruce (4.8%). Mean pVO2 was 16.7 ± 5.9 mL $O2 \cdot kg^{-1} \cdot min^{-1}$ and median VE/VCO2 slope was 37.5 [32.7-44.3]. Mean VP was 3.46 ± 1.31 mmHg while median CP was 1,927 [1,427-2,697] mmHg · min/mL/kg. Mean HGI was 0.90 ± 0.5 bpm/mmHg. Despite weak, there were significant positive correlations between HGI and mean pVO2 (r_s = 0.55, p < 0.01), VP (r = 0.60, p < 0.01), and CP (r_s = 0.68, p < 0.01), but negative correlation between HGI and VE/VCO2 slope (r_s = -0.45, p < 0.01). HGI was grouped by terciles: T1 (< 0.59), T2 (0.59-1.02), and T3 (> 1.02). After a median follow-up of 71 [49-81] months, the primary outcome occurred in 66.0% of patients (rehospitalization, heart transplant, and all-cause death occurred in 56.1%, 25.9%, and 32.5%, respectively). In the T1 group, the multivariable-adjusted odds ratio (OR) for the primary outcome was 3.73 (95%CI 1.97-7.06, p < 0.01) compared to the T3. In the T2 group, the multivariable-adjusted OR for the primary outcome was 0.47 (95%CI 0.27-0.81, p < 0.01) compared to T1. There were no significant differences between T2 and T3 groups. Kaplan-Meier estimates of primary outcome during follow-up according to HGI terciles are shown in the figure.
Conclusions: HGI is inversely associated with the composite of HF hospitalization, heart transplant, and all-cause mortality in patients with heart failure, enhancing the role of CPET in risk stratification.

PO 60. THE HFFI, A NEW FRAILTY INDEX FOR ASSESSING LONG-TERM OUTCOMES IN HEART FAILURE

João Miguel Santos, Vanda Neto, Joana Correia, Inês Pires, Gonçalo Ferreira, Emanuel Correia

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

Introduction: Patients hospitalized due to heart failure (HF) compose a heterogeneous population whose prognosis is difficult to forecast. Frailty is a well-recognized prognostic marker in multiple chronic diseases, including HF; however, frailty evaluation is often subjective and standardized and objective prediction models are lacking. We aimed to evaluate if an objective and simple index – Heart Failure Frailty Index (HFFI)– can predict long-term outcomes in this population.
Methods: A retrospective analysis of 258 patients admitted to a Cardiology ward due to HF was performed. The variables albumin, C-reactive protein levels, age and body mass index (BMI) were selected for frailty assessment. After attributing points for each variable, according to odds ratio on univariate analysis, the HFFI was calculated (range 0-8), resulting from the sum of the points attributed to each variable. Kaplan-Meyer and Cox-regression analysis were performed to evaluate HFFI association with 24-month mortality (24MM) and for the composite endpoint of 24-month rehospitalization or death (24MH).
Results: Mean patient age was 75 (± 11) years; 51% were men. 45.7% had atrial fibrillation, 15.9% had history of acute myocardial infarction, 67.8% had hypertension. Mean LVEF was 47% (± 17). A LVEF< 40% was present in 40% of patients. 24MM was 11.5% and 24 MH was 58%. Patients were considered frail if they had an HFFI ≥ 3. Kaplan-Meier curve analysis revealed a significantly lower median time to 24MM in frail patients, as assessed by HFFI, comparing to non-frail patients (585 ± 33 days *vs.* 697 ± 12 days, mortality rate: 25.4 *vs.* 5.7%, χ^2 = 18.156, p < 0.001). There was also a significantly lower median time to 24MH in frail patients (336 ± 34 days *vs.* 449 ± 24 days, combined endpoint rate: 76.1 *vs.* 50.3%, χ^2 = 10.884, p = 0.001). Cox regression analysis demonstrated that HFFI independently predicts 24MM (HR: 1.364, p = 0.002) and 24MH (HR: 1.106, p = 0.035), even after adjustment for other prognostic markers, such as history of atrial fibrillation, previous myocardial infarction, diabetes and natriuretic peptides plasma level at index event.
Conclusions: HFFI is a simple and objective frailty index correlated with 24MM and 24MH in HF patients, being an independent prognostic marker in this population. Its use may help to identify patients with a high risk of mortality or readmission, in need of specialized care.

Sexta-feira, 22 Abril de 2022 | 11:00-12:00

Sala Jardim de Inverno | Posters (Sessão 2 - Écran 5) - Doença Arterial Pulmonar e Tumores Cardíacos

PO 61. PAPILLARY FIBROELASTOMAS – DIAGNOSTIC CHALLENGES AND CLINICAL AND MORPHOLOGIC FEATURES

Alexandra Castelo, Manuela Silva, António Gonçalves, Luísa Branco, Pedro Coelho, Nuno Banazol, Eugénia Pinto, Vera Ferreira, Pedro Brás, José Fragata, Rui Ferreira

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

Introduction: Papillary fibroelastomas are rare benign primary cardiac tumors that more frequently involve cardiac valves. They are frequently incidentally discovered by echocardiography but may also cause symptoms.
Objectives: The aim of this study was to characterize several features of histologically confirmed fibroelastomas.
Methods: Retrospective analysis of patients with echocardiographic suspicion of fibroelastoma between 2009 and 2020 in a single tertiary center. Echocardiography was compared with histology, and echocardiographic, surgical and pathological information about confirmed fibroelastomas was collected.
Results: 37 patients (P) (54.1% men) with an echocardiographic suspicion and/or histologically confirmed fibroelastoma were included, with a mean age of 58 +- 3 years. Echocardiographic report was analyzed in 34P (91.9%), with 32P (94.1%) reporting a likely fibroelastoma and 2P (5.9%) reporting a non-specified mass. 21P (56.8%) had surgery, with 12P (57.1%) having a surgical suspicion of a fibroelastoma, 2P (9.5%) of a mixoma, 1P (4.8%) of a non-specified mass and 6P (28.6%) with undefined suspicion. Of the 21P who had surgery, 66.7% (14P) had a histologically confirmed fibroelastoma, 1P (4.8%) had a mixoma, and 6P (28.6%) had other diagnoses. From the 14P with histologically confirmed fibroelastoma 64.3% had this suspicion by echocardiography and 35.7% had an echocardiogram reporting a non-specified mass. There was a global concordance between echocardiography and histology in 52.9%. The mean age of confirmed fibroelastoma P was 54 +-5 years, and 50% were men. 7P (50%) were asymptomatic, 2 (14.3%) had a stroke, 2 (14.3%) had syncope, 1 (7.1%) had fatigue, 1 (7.1%) had palpitations and 1P had consciousness alteration. In echocardiography 71.4% had only one mass but 1P had 4 different masses. The tumors had a longer axis between 6 and 25 mm, the majority (57.1%) measuring more than 10 mm. 12P (85.7%) had valvular fibroelastomas, 50% of these in the aortic valve (3 in non-coronary cusp, 1 in right coronary cusp and 2 non-specified) and 50% in the mitral valve (all in sub-valvular apparatus, involving anterior leaflet, tendinous chord or papillary muscle). 1P had a left ventricular fibroelastoma (apical) and 1P had four masses in the left atrium. Macroscopically 4 lesions had a gelatinous consistency, 2 of them were membranous, 2 were elastic, 2 were friable, 1 was villainous and in 3 of them consistency was not described. The majority (57%) was white, 14% was translucent and in the rest the color was not specified. There was no described recurrence after surgery and there were no deaths registered.
Conclusions: In this population there was a reasonable concordance between echocardiography and histology, but in some cases the diagnosis was undefined or wrong. 50% of the patients were asymptomatic and the majority had valvular fibroelastomas, but a few had a different location.

PO 62. CARDIAC MYXOMA EMBOLIC EVENTS: CHARACTERIZATION AND PREDICTORS

André Grazina[1], Bárbara Teixeira[1], Alexandra Castelo[1], Vera Ferreira[1], Pedro Garcia Brás[1], Tânia Branco Mano[1], Ricardo Gil[1], Luísa Moura Branco[1], Ana Galrinho[1], Ana Teresa Timóteo[1], Pedro Rio[1], Eugénia Pinto[2], Pedro Coelho[1], José Fragata[1], 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 de S. José.

	%	n		%	n
Mean age (years old)	63.1 ± 12.9 y/o		Mean dimension - longer axis (mm)	36.8 ± 17.4	
Gender (% of female)	75 %	63	Embolic events	22.6%	19
Sporadic type	100%	84	CNS	19.0%	16
Atrial Fibrillation	9.6%	8	Coronary	1.2%	1
Left atrium	88.1%	74	Peripheric/ limbs	2.4%	2
Right atrium	10.7%	9	Renal	1.2%	1
Right ventricle	1.2%	1			

Table 1. Baseline Characteristics and embolic events distribution (CNS – Central Nervous System)

Predictor	OR	95% CI	p-value
AF rhythm	1.01	0.20 – 5.95	0.91
Longer axis >20mm	0.70	0.17 – 3.01	0.64
Longer axis >40mm	0.90	0.29 – 2.77	0.86
Longer axis >60mm	0.61	0.12 – 3.04	0.54
Presence of calcification	2.00	0.44 – 9.08	0.37
Myxoma mobility	0.94	0.28 – 3.19	0.93
Pediculated insertion	0.74	0.24 – 2.32	0.61
Heterogeneous aspect	0.96	0.30 – 3.06	0.96
Irregular borders (papillary, bosselated)	6.78	2.14 – 21.5	0.001

Table 2. Embolic events predictors. (OR – Odds Ratio; 95% CI – 95% Confidence Interval; AF – Atrial Fibrillation)

PO 62 Figure

Introduction: Myxomas are the most common heart tumors. Although, myxomas are often diagnosed incidentally in asymptomatic patients, they are frequently associated with embolic events, becoming an important cause of morbidity and mortality. Whether some myxomas' characteristics predict more embolic risk is not well established.
Objectives: This analysis aims to describe the clinical and echocardiographic data in a long cohort of patients with cardiac myxomas and to establish potential predictors of embolic events int these patients.
Methods: Between 1990 and 2021, 88 patients were diagnosed with cardiac myxoma. 84 were included in this analysis. Baseline characteristics, echocardiographic findings and embolic events were noted retrospectively. An analysis using SPSS statistics software, version 25.0 was performed to establish possible embolic predictors.
Results: 84 patients (mean age 63.1 ± 12.9 years old, 75% female) with cardiac myxoma (sporadic type in 100%) were analyzed (Table 1). The majority were located in the left atrium (88.1%, n = 74), followed by right atrium (10.7%, n = 9) and right ventricle (1.2%, n = 1). The average dimension (longer axis) was 36.8 ± 17.4 mm. 9.6% of the patients (n = 8) had Atrial Fibrillation (AF) rhythm. 22.6% of the patients (n = 19) experienced embolic events, the majority to the central nervous system (19.0%, n = 6), followed by peripheric/limbs (2.4%, n = 2), renal (1.2%, n = 1) and coronary (1.2%, n = 1). The presence of irregular borders (papillary, bosselated) was the only parameter independently associated with increased risk of embolic events by 6 times (OR 6.78, 95% confidence interval of 2.14-21.51, p-value 0.001). Neither the presence of AF, myxoma dimensions, presence of calcifications, pediculated insertion, myxoma mobility or heterogeneous aspect predicted embolic events with statistical significance (Table 2).
Conclusions: Cardiac myxomas are frequently associated with embolic events (22.6% in our population), posing an important cause of morbidity and mortality in these patients. Besides the presence of irregular borders, the other myxoma's characteristics did not consistently predict the occurrence of embolic events. This data supports the well-recognized fact that all cardiac myxomas have the potential to embolic events, and therefore, should be excised, although those with very irregular borders are at much higher risk of embolization.

PO 63. REDUCING THE RISK IN PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION – FROM GUIDELINES TO PRACTICE

Alexandra Briosa, Barbara Ferreira, Mariana Martinho, João Santos, Filipa Ferreira, Sofia Alegria, Debora Repolho, Sofia Alves, Maria Jose Loureiro, Helder Pereira

Hospital Garcia de Orta, EPE

Pulmonary arterial hypertension (PAH) is a progressive and fatal disease. Current guidelines recommend the use of risk stratification model encompassing a range of parameters, allowing patients (pts) to be categorized as low risk (LR), intermediate risk (IR) and high-risk (HR) score. Treatment strategy with pulmonary vasodilator therapy (PVT) in based is risk stratification in order to achieve or maintain LR status
Aim: Determine if pts achieve LR status after PVT initiation based in the actual guidelines and to define its long-term impact.
Methods: We analyzed all pts with PAH submitted to PVT in our center. Risk was assessed at baseline and at FUP (6-12 months after PVT) using COMPERA registry parameters. Survival and clinical worsening-free survival were assessed in each risk group.
Results: 84 pts with PAH, mostly females (71.4%), with a mean age of 47±18y. The majority had congenital heart disease (n=27), 16 pts idiopathic PAH (iPAH), 14 PAH associated with connective tissue disease (CTD), 11 associated with HIV, 6 portal hypertension, 5 heritable PAH, 2 PVOD, 2 mixed disease and 1 drug-associated. At admission, most pts were in WHO class ≥ 3, had a mean 6-minute walking test (6MWT) of 389±120m, median NT-proBNP value of 904 pg/mL, mean cardiac index (CI) of 2,3±0,6 ml/m^2 and mean PAPm of 52±14 mmHg. Most pts were in the IR and HR group (51,3% and 43%). 75% started combination therapy: double therapy in 43% (mainly with sildenafil and bosentan) and triple therapy in 32%. Parenteral prostanoids (PP) were initiated upfront in 26 pts (18 in triple upfront combination therapy).
After 6-12 months, there was a significant improvement in 6MWT (387 vs 422m, p= 0.008), SVO2 (65 vs 70%, p=0.002) and CI (2,15 vs 2,66 l/min/m^2 p< 0.001), as well as a significant reduction in functional class (p< 0.001), PVR (12 vs 8WU, p<0.001), PAPm (50 vs 44 mmHg, p=0.018) and RAP (8 vs 7 mmHg, p=0.036).Most pts were in the LR group (n=30, 48%), but there was 25 pts (40%) in IR and 7 (8,3%) in HR group. 76,1% lowered at least 1 risk group, 28,8% maintained same risk and 5,1% increased risk group. Pts who improved risk were younger (44 vs 53, p=0,04), male sex (83,3 vs 58.1%, p=0,05), and were more frequent in iPAH vs CTD-PAH (82 vs 58,3%). No difference found in the number of vasodilators used (2,11 vs 1,97). All pts that reduced from HR to LR group (20,3%) were on combination PVT including PP.
In a median FUP time of 4 years, 35 pts had ≥1 hospitalization, 29 died and 3 had transplantation. As expected, pts with LR on admission, had more event-free time (Log rank: 10,3, p=0.006). The presence of ≥1 LR criteria after 6-months was also related with increase survival (Log rank: 6,5, p=0.011).
Conclusions: Our study confirms and supports the importance of risk stratification, showing a clear benefit of maintaining pts in the LR possible. Importantly, after initiation PVT as recommended by the guidelines, there is still a high percentage of pts that remain in IR category.

PO 64. DIASTOLIC DISFUNCTION IN PRECAPILLARY PULMONARY HYPERTENSION - LOOKING LEFT TO SEE RIGHT

Sara Couto Pereira, Pedro Silvério António, Pedro Alves da Silva, Joana Brito, Beatriz Valente Silva, Beatriz Garcia, Tatiana Guimarães, Nuno Lousada, Susana Martins, Ana G. Almeida, Fausto J. Pinto, Rui Plácido

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

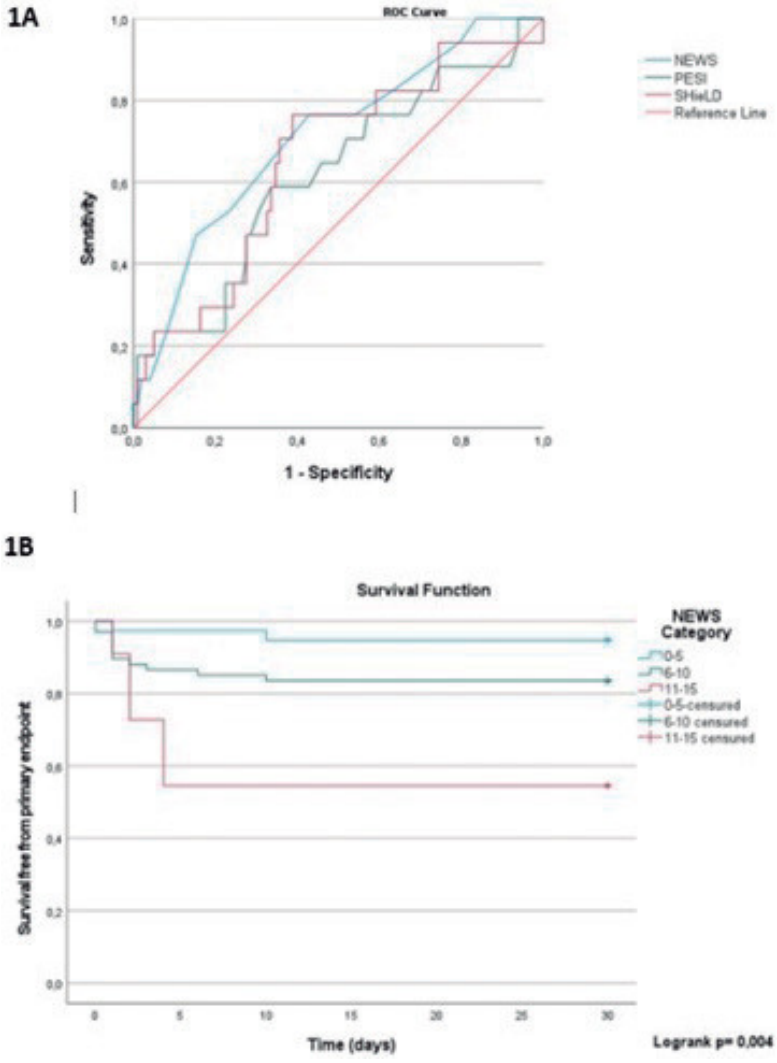
Introduction: Diastolic disfunction is an important marker of prognosis when it comes to left heart disease. However, its role on right heart disease, namely in patients with sole precapillary pulmonary hypertension (PPH) is yet to be acknowledged. We aimed to recognize importance of parameters of diastolic dysfunction on prognosis in a population of patients (pts) with PPH, either with pulmonary arterial hypertension (PAH) or chronic thromboembolic pulmonary hypertension (CTEPH).
Methods: Single centre retrospective study, including pts with PAH and CTEPH. Clinical, laboratory and echocardiographic data were collected at beginning and at latest follow-up.
Results: 108 pts with precapillary hypertension were gathered - divided between PAH (49.1%) and CTEPH (50.9%) – mean age 63.1 ± 23 years, 61% were females. In respect to echo at baseline, mean E/e' showed a positive association with events (p = 0.027, AUC 0.773 [0.578-0.967], p = 0.27) in pts with PAH. Regarding the total population, both mean left atrial volume (p = 0.036) and septal e' (p = 0.031) were associated with events. In fact, a tendency to lower events on follow-up was observed with a septal E/e' below 7. (AUC 0.733 (0.569-0.898), p = 0.014). Septal e' correlated with an increased VD-AD gradient during the follow-up (p = 0.33, r 0.553) and mean E/e' correlated with NTproBNP (p = 0.008, r = 0.426). When analysing echo at latest follow-up, we saw a positive association of tissular velocities and mean E/e' with disease severity - a worse functional class associated with higher mean E/e' (p = 0.016) and lower septal e' (p = 0.002) and RA-RV gradient correlated with mean E/e (p = 0.039), septal e' (p = 0.22) and lateral e' (p = 0.032). Moreover, the grade of diastolic dysfunction observed during follow-up was associated with events (7% without diastolic dysfunction, 22.7% dysfunction type 1 and 45.5% diastolic dysfunction type 2, p = 0.028) and mortality (p = 0.018). Interestingly, this relationship of diastolic dysfunction with events, was seen not only because of PSAP severity on echocardiogram but also with other measures of diastolic dysfunction as noted previously.
Conclusions: Markers of diastolic disfunction and its grade correlate with events during follow-up, and its early quantification may guide clinical and therapeutical management. Although not statistically significant, a mean E/e' cut-off of 7.5 seemed to better predict events at follow-up, and larger studies should try to test this hypothesis.

PO 65. WHAT ARE THE NEWS IN PULMONARY EMBOLISM RISK STRATIFICATION?

João Grade Santos, Rita Calé, Mariana Martinho, Bárbara Ferreira, Diogo Cunha, Alexandra Briosa, Bruno Gonçalves de Sousa, João Leote, Catarina Pestana Santos, Daniela Cruz, Patrícia Araújo, João Santos, Tiago Judas, Filipa Ferreira, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: The patients with Pulmonary Thromboembolism (PE) stratified as intermediate-high risk with the European Society of Cardiology classification represent an heterogenous population, with the majority having a benign outcome however some evolving in clinical deterioration. Several risk scores have been developed to try and refine the population most at risk but they are deemed sub-optimal.
Objectives: Our aim was to assess the capacity of the National Early Warning Score (NEWS) in predicting a composite end-point of 30-days cardiovascular mortality, rescue thombolysis and/or haemodynamic instability, in a population of intermediate-high risk PE, as compared with other risk evaluation scores as the PESI and SHIeLD scores.
Methods: We performed a retrospective analysis between 2014 and 2019 of all patients admitted for intermediate-high risk PE, in a single expert centre. The patients who underwent fibrinolysis as per clinician discretion (without haemodynamically instability or clinical evidence of clinical deterioration) were excluded. Medical records were analysed for clinical data and outcomes. The predictive accuracy of all scores were assessed using the area under curve (AUC) of receiver operating characteristics (ROC) curve. The association between NEWS and composite end-point at 30-days was analyzed using a Cox regression model.
Results: Of the 1132 patients assessed and admitted with PE, 116 patients fulfilled all inclusion criteria and none of the exclusion criteria and were analysed. The mean age was 69 ± 16 years at time of diagnosis with a female preponderance (62.9%). Most patients were treated with anticoagulation (97.4%), 68% with low molecular weight heparin and the remaining with unfractionated heparin. The average NEWS score was 7 ± 3, the average PESI score was 110 ± 34 and the average SHIeLD score was 14 ± 13. A primary composite end-point occurred in 18 patients (15.5%). The NEWS score showed the greatest predictive power for the occurrence of an event (OR 1.35; 95%CI 1.11-1.64, p = 0.003) compared with the SHIeLD score (OR 1.0; 95%CI 1.00-1.07, p = 0.035) and the PESI score (OR 1.02; 95%CI 1.00-1.03, p = 0.03); it also showed a greatest discriminative capacity with the ROC curve analysis (Fig. 1A) demonstrating an AUC of 0.70, *vs.* 0.65 and 0.62 respectively. The survival analysis demonstrated a Hazard Ratio of 1.29 (95%CI 1.10-1.52; p = 0.002) signifying a 29% increased risk of an event per each NEWS class increase, with the Kaplan Meier curves widening significantly in the different terciles of the score (Fig. 1B).
Conclusions: In PE patients with intermediate-high risk the NEWS score demonstrated a greater predictive power and discriminative capacity than other commonly used risk scores. The NEWS score may help to identify patients in this risk category who might benefit from a reperfusion strategy, but larger studies are needed to confirm this hypothesis.



Sexta-feira, 22 Abril de 2022 | 11:00-12:00

Sala Jardim de Inverno | Posters (Sessão 2 - Écran 6) - DAC e Cuidados Intensivos 3 - SCAsST

PO 66. CABG VS PCI FOR DIABETIC PATIENTS WITH NON-ST ELEVATION ACS: IN-HOSPITAL OUTCOMES

Carolina Saleiro[1], Joana M. Ribeiro[2], Diana de Campos[1], João Lopes[1], Ana R. M. Gomes[1], José P. Sousa[1], Alexandrina Siserman[1], Carolina Lourenço[1], Lino Gonçalves[1], em Nome dos Investigadores do Registo Nacional de Síndromes Coronárias Agudas[3]

[1]Centro Hospitalar e Universitário de Coimbra, EPE/Hospital Geral.
[2]Centro Hospitalar de Entre Douro e Vouga, EPE/Hospital de S. Sebastião.
[3]CNCDC – Centro Nacional de Coleção de Dados em Cardiologia.

Introduction: The role of coronary artery bypass-graft (CABG) *versus* percutaneous coronary intervention (PCI) in diabetes mellitus (DM) patients is well stablished for patients with multivessel chronic coronary artery disease. However, in the context of non-ST elevation acute coronary syndrome (NST-ACS), few data are available comparing both strategies.
Objectives: To assess the prognostic impact of CABG *vs.* PCI in DM patients presenting with NST-ACS on intrahospital outcomes.
Methods: 32,027 ACS patients included in the Portuguese Registry of Acute Coronary Syndromes (2010-2021) were retrospectively assessed. Clinical, laboratorial, and echocardiographic data were evaluated. Diabetic patients presenting with non-ST elevation ACS were screened (n = 6,368). After excluding patients with previous CABG, significant valvular disease, single vessel disease, medically treated only, 1,799 patients were included. Two groups were created based on the revascularization strategy: Group A – CABG (n = 535) and group B – PCI (n = 1,264). The primary endpoint was in-hospital mortality. In-hospital complications were also analysed and compared between groups to better understand the course of hospitalization in both revascularization strategies.
Results: Patients treated with CABG were more likely to be male (73.6 *vs.* 67.3%, p < 0.05) and younger (68 ± 10 *vs.* 69 ± 10 years old, p < 0.05). Also, previous MI (21.6 *vs.* 27.6%, p < 0.05) or PCI (14.9 *vs.* 24.3%, p < 0.001) were less prevalent in CABG group while peripheral artery disease was more prevalent (12.6 *vs.* 9.3%, p < 0.05). Groups were comparable regarding CV risk factors and other past medical history. Also, echocardiographic, and laboratorial data did not differ between groups. The need for IABP, mechanical invasive or non-invasive ventilation, temporary pacemaker or ventricular assistance was similar in both groups. Patients admitted in KK IV class were more likely to receive PCI (0.4 *vs.* 1.8%, p < 0.05), while patients with mechanical complications were more likely to be treated with CABG. Reinfarction was more frequent in the PCI group. In-hospital complications are detailed in table 1. Twenty-one patients died during hospitalization. In-hospital mortality was 1.2% and it did not differ with the revascularization strategy (1.1 *vs.* 1.2%, p = 0.91).
Conclusions: For diabetic patients with NST-ACS and multivessel disease, CABG and PCI have comparable in-hospital mortality.

PO 67. CABG VS PCI FOR DIABETIC PATIENTS WITH NON-ST ELEVATION ACS: ONE-YEAR OUTCOMES

Carolina Saleiro[1], Joana M. Ribeiro[2], Diana de Campos[1], João Lopes[1], Ana Rita M. Gomes[1], José P. Sousa[1], Alexandrina Siserman[1], Carolina Lourenço[1], Lino Gonçalves[1], em Nome dos Investigadores do Registo Nacional de Síndromes Coronárias Agudas[3]

[1]Centro Hospitalar e Universitário de Coimbra, EPE/Hospital Geral.
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[3]CNCDC – Centro Nacional de Coleção de Dados em Cardiologia.

Introduction: The role of coronary artery bypass-graft (CABG) *versus* percutaneous coronary intervention (PCI) in diabetes mellitus (DM) patients is well established for patients with multivessel chronic coronary artery disease. In the context of non-ST elevation acute coronary syndrome (NST-ACS), few data are available comparing both strategies.
Objectives: To assess the prognostic impact of CABG *vs.* PCI in DM patients presenting with NST-ACS.
Methods: 32027 ACS patients included in the Portuguese Registry of Acute Coronary Syndromes (2010-2021) were retrospectively assessed. Clinical, laboratorial, and echocardiographic data were evaluated. Diabetic patients presenting with NST-ACS were screened (n = 6 368). After excluding patients with previous CABG, significant valvular disease, single vessel disease, medically treated only, and those without long-term follow-up, 761 patients were included. Two groups were created based on the revascularization strategy: Group A – CABG (n = 248) and group B – PCI (n = 513). The primary endpoint was a composite outcome of one-year mortality or hospitalization for cardiovascular (CV) causes; one-year mortality was assessed separately as a secondary endpoint.
Results: The groups were similar regarding gender, CV risk factors, heart failure (HF) diagnosis or previous MI, and left ventricular (LV) systolic function, but patients treated with CABG were younger (67 ± 9 *vs.* 69 ± 11 years old, p < 0.05). There were no differences in intra-hospital complications. During the 1-year follow-up, the composite endpoint of death or re-hospitalization occurred in 162 patients and CV death occurred in 45 patients. Kaplan-Meyer curves showed that patients in the CABG group had a lower survival free of events (ie. CV hospitalization or death) - 69.9 *vs.* 81.6%, Log Rank p = 0.001 (Fig. 1). The 1-year survival rates in both groups were similar (93.9 *vs.* 93.4%, Log Rank p = 0.741– Fig. 2). After adjustment for age, chronic kidney disease, chronic obstructive pulmonary disease, previous myocardial infarction, HF and LV ejection fraction, PCI almost halved the composite endpoint – HR 0.49 (95%CI 0.35-0.68) when compared to CABG, while all the other variables in the regression model remained significant predictors of the composite endpoint.

	CABG (n=535)	PCI (n=1264)	P
Heart failure, n (%)	108 (20.3%)	207 (16.7%)	0.07
Cardiogenic shock, n (%)	4 (0.8%)	29 (2.3%)	0.02
Mechanical complication, n (%)	3 (0.6%)	0 (0%)	0.03
Cardiac arrest, n (%)	11 (2.1%)	14 (1.1%)	0.12
Stroke, n (%)	4 (0.8%)	11 (0.9%)	1.00
Major bleeding, n (%)	6 (1.1%)	18 (1.4%)	0.59
Re-infarction, n (%)	1 (0.2%)	15 (1.2%)	0.05

Table 1- Intra-hospital complications.

PO 66 Figure

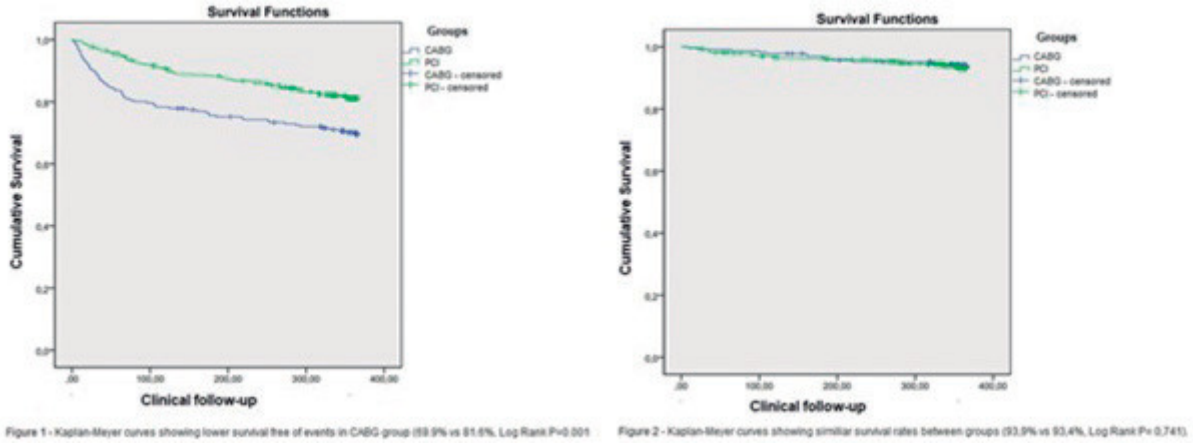


Figure 1 - Kaplan-Meyer curves showing lower survival free of events in CABG group (69.9% vs 81.6%, Log Rank P=0.001

Figure 2 - Kaplan-Meyer curves showing similiar survival rates between groups (93.9% vs 93.4%, Log Rank P= 0.741).

PO 67 Figure

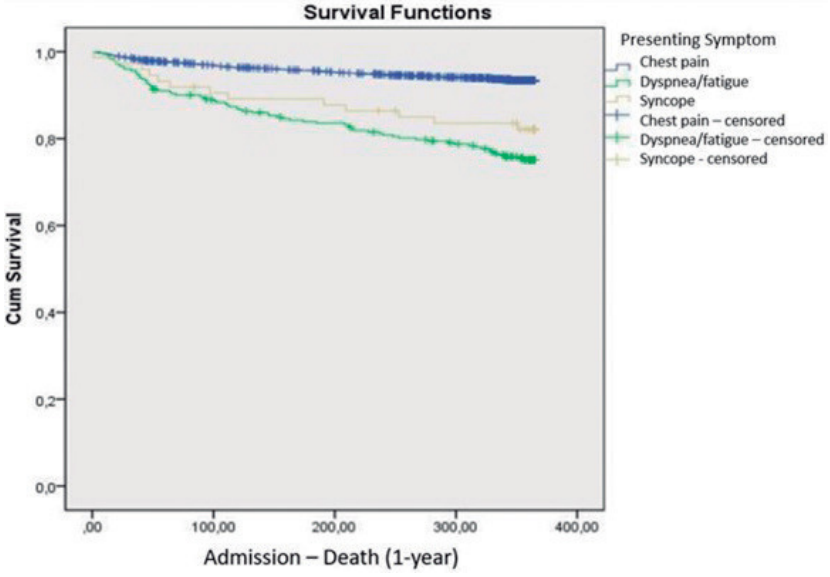
Conclusions: PCI was superior to CABG for diabetic patients presenting with NST-ACS and multivessel CAD in preventing a composite endpoint of one-year death or hospitalization. No differences were observed for one-year mortality.

PO 68. SYMPTOMS AT NSTEMI PRESENTATION: DO PATIENT'S COMPLAINTS PREDICT THE OUTCOME?

Paulo Medeiros, Cátia Oliveira, Carla Pires, Rui Flores, Fernando Mané, Rodrigo Silva, Inês Conde, António Gaspar, Pedro Azevedo, Juliana Martins, em Nome dos Investigadores do Registo Nacional de Síndromes Coronárias Agudas

CNCDC - Centro Nacional de Coleção de Dados em Cardiologia.

Introduction: The most common clinical presentation of non-ST-segment elevation myocardial infarction (NSTEMI) is angina pectoris. However, some groups of patients such as elderly, women and patients with diabetes or chronic renal disease,may have atypical symptoms, like isolated dyspnea or syncope.
Objectives: The aim of this study was to identify the outcomes of NSTEMI patients with different types of presenting symptoms and to verify if these presentations were independent predictors of the studied outcomes.
Methods: We studied patients > 18 year-old admitted with NSTEMI between October 2010 and September 2019. Data was collected from a national multicentric registry. From an initial pool of 13,739 patients, a total of 4726 were included (the main exclusion criterion was lack of follow-up registry). The patients were divided into 3 groups according to the main presentation symptom: group 1 – chest pain; group 2 – dyspnea/fatigue; group 3 – syncope. The primary endpoint was 1-year death from any cause.
Results: The most common presentation sympton was chest pain (91.3%; n = 4313), followed by dyspnea/fatigue (7%; n = 332) and syncope (1.7%; n = 81). Seventy-one percent (n = 3352) of patients were male and 29.1% (n = 1374) female. Mean age was 68 ± 13 years. Patients presenting with dyspnea/fatigue were older (75 ± 11 *vs.* 68 ± 13 [group 1] *vs.* 74 ± 13 [group 3], p < 0.001), more commonly women (41.9 *vs.* 29.1% [group 1] *vs.* 37% [group 3], p < 0.001), with hypertension (89.5 *vs.* 74.8% [group 1] *vs.* 75% [group 3], p < 0.001), diabetes mellitus (54.6 *vs.* 33.7% [group 1] *vs.* 38.3% [group 3], p < 0.001), chronic kidney disease (18.1 *vs.* 6.8% [group 1] *vs.* 11.5% [group 3], p < 0.001, and chronic obstructive pulmonary disease [COPD] (15.5 *vs.* 5.9% [group 1] *vs.* 10.3% [group 3], p < 0.001). They also had worse Killip class at admission (KK> 1 80 *vs.* 9.9% [group 1] *vs.* 23.5% [group 3], p < 0.001). One-year survival rate was lowest patients presenting with dyspnea/fatigue (75.7 *vs.* 93.5% [group 1] *vs.* 92.1 [group 3], p < 0.001) and 1-year free from cardiovascular rehospitalization was also lowest in this group (75.6 *vs.* 85% [group 1] *vs.* 83.3% [group 3], p < 0.001). However, after multivariate analysis, the different presenting symptoms were not significant



PO 68 Figure

independent predictors of the primary endpoint; identified independent predictors included age (HR 3.37, 95%CI 2.111 to 3.815, p < 0.001), COPD (HR 2.508, 95%CI 1.584 to 3.969, p < 0.001), LVEF < 50% (HR 2.350, 95%CI 1.642 to 3.365, p < 0.001), and major bleeding (HR 4.66, 95%CI 2.118 to 10.254, p < 0.001).
Conclusions: This study reveals that patients with dyspnea/fatigue at presentation have an overall worse prognosis than those who present with chest pain or syncope. The former patients were more commonly women, older and had more comorbidities; also, they presented with worse Killip class. However, symptoms themselves were not independent predictors of 1-year mortality.

PO 69. BLEEDING RISK IN PATIENTS WITH NSTEMI: P2Y12 INHIBITORS PRESCRIPTION PATTERNS FROM 2019 TO 2021

Diogo Santos da Cunha, Gonçalo J. Morgado, Mariana Martinho, Bárbara Ferreira, João Grade Santos, Alexandra Briosa, Ana Rita Pereira, Rita Calé, Cristina Martins, Hélder Pereira

Hospital Garcia de Orta, EPE.

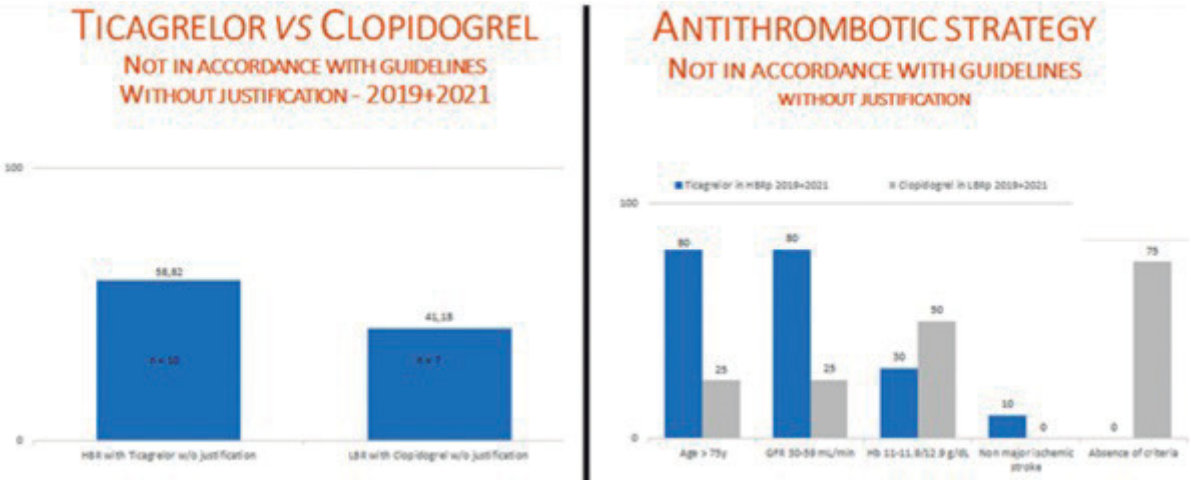
In the *"2020 Acute Coronary Syndromes (ACS) in Patients Presenting without Persistent ST-Segment Elevation Guidelines"* the European Society of Cardiology presented the *Academic Research Consortium for High Bleeding Risk (ARC-HBR) criteria in order to help clinicians* choose between antithrombotic strategies (*clopidogrel* for HBR patients or *ticagrelor* for non-HBR patients, in addition to aspirin). Regarding this fact, we conducted a retrospective study to analyze prescription patterns regarding P2Y12 inhibitors and its accordance to the criteria. We analyzed the ARC-HBR criteria and the antithrombotic strategy chosen at time of discharge for patients with NSTEMI-ACS undergoing PCI in the first six months of 2019 (n_{2019} = 67) and in the same period of 2021 (n_{2021} = 67), after excluding patients with indication for anticoagulation. Among the total of 134 patients, 46 (34.33%) had HBR; among these, 13 (28.26%) received ticagrelor despite guidelines' indications, but no significant difference was identified between the two semesters. On the contrary, 88 patients (65.67%) had low bleeding risk (LBR), 11.36% of which received clopidogrel (10 patients), contradicting the recommendations, again with no difference between 2019 and 2021. The identified reasons not to follow the guidelines were 1) high ischemic risk – either by complex coronary anatomy or infarction under aspirin plus clopidogrel -, regarding ticagrelor in HBR patients; 2) poor adhesion to treatment and 3) low patient income, regarding clopidogrel in LBR patients. Within the group with no identifiable reasons in 2019 and 2021, there were also more HBR patients receiving ticagrelor than LBR patients receiving clopidogrel, which was seen likewise in the semesters separately. Besides, we noted that among the criteria, GRF (80%), age (80%), and hemoglobin (Hb) level (30%) were frequently not regarded by the clinician as justifiable criteria for a less potent therapy. We concluded that 1) clinicians were more permissive when the possibility of giving a high potency P2Y12i was at stake; 2) the pattern of P2Y12i prescription was similar in 2019 and 2021; 3) apart from *Age, GFR, Hb level*, all other criteria seem to be subjectively well identified by professionals, which means the "clinical sense" of hemorrhagic risk was already somewhat accurate; 4) it seems consistent that, whether professionals use their clinical sense or the criteria, a few clinical features *(Age, GFR, Hb level)* are consistently less considered.

PO 70. UTILITY OF THE AGE SHOCK INDEX IN PATIENTS WITH AN ACUTE CORONARY SYNDROME

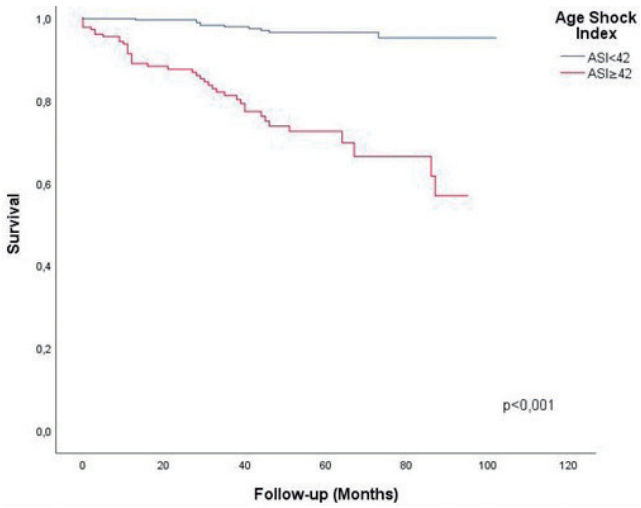
Pedro Rocha Carvalho, José Monteiro, Catarina Carvalho, Marta Bernardo, Paulo Fontes, Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de São Pedro.

Introduction: The Shock Index (SI), defined as the ratio of heart rate (HR) to systolic blood pressure (SBP), represents a bedside reflection of the integrated response from the cardiovascular and autonomic systems. It is determined by the heart rate and systolic blood pressure ratio and has been reported to help us predict adverse prognosis in patients with acute coronary syndromes (ACS). However, the prognostic value of the Age Shock Index (ASI), product of the SI multiplied with age, is yet to be determined in ACS patients.
Methods: Retrospective study of patients with ACS periodically included in our center registry between October/2012 and September/2018. Patients were categorized into two groups based on their initial ASI. Optimal shock index cutoff was determined according to ROC curve analysis. Baseline characteristics, management and outcomes were compared between the two groups. The primary outcome was cardiovascular death.
Results: A total of 578 patients were selected, with a mean age of 66.9 ± 13.1 years, 75.2% were male, 42.6% had a ST-elevation myocardial infarction. Based on ROC analysis the optimal ASI cutoff was 42 and, therefore, 69.6% had an ASI < 42 and 30.4% had an ASI ≥ 42. The former group was older (mean age of 74.4 ± 10.0 *vs.* 62.5 ± 12.5 years, p < 0.001), had more comorbidities: arterial hypertension (75.6 *vs.* 58.0%, p = 0.001), diabetes *mellitus* (36.4 *vs.* 27.9%, p = 0.04), peripheral artery disease (2.2 *vs.* 6.3%, p = 0.02), had higher Killip class at admission and worse left ventricular ejection fraction on discharge (45.5 ± 12.2 *vs.* 51.3 ± 10.6, p < 0.001). During a median follow-up of 42 months (IQR: 27-59), 52 patients (9%) died from cardiovascular causes. In a multivariate regression analysis, after adjusting for all the possible confounders, ASI≥ 42 was an independent predictor of cardiovascular death (HR 4.35, 95%CI: 1.87-10.09, p < 0.001).



PO 69 Figure



Conclusions: ASI can identify patients at high risk of cardiovascular death in ACS patients and, combined with its simple use, makes it a practical tool for early risk stratification in these patients.

Sexta-feira, 22 Abril de 2022 | 11:00-12:00

Sala Jardim de Inverno | Posters (Sessão 2 - Écran 7) - Enfermagem e Técnicos

PO 71. THE NURSE-FAMILY INTERACTION OF THE CRITICALLY ILL PERSON IN A CARDIAC INTENSIVE CARE UNIT

Ana Rita Pires Olo Machado[1], Cristina Maria Inocência Imaginário[2], Maria Cristina Quintas Antunes[2]

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

Introduction: Family members of the critically ill person (CIP) often present with symptoms of anxiety, depression, and post-traumatic stress disorder. This set of long-term changes has been called Post Intensive Care Family Syndrome. Supporting CIP's family minimizes the impact of critical illness on them and prepares them for decision-making and the CIP's need for care.
Methods: To understand the nurses's perception about the practices of positive interaction with CIP family members, at a Cardiac Intensive Care Unit (CICU) of a Hospital Center in northern Portugal, a quantitative, descriptive-correlational, cross-sectional study was carried out. The target population was the 27 nurses working in the unit. The inclusion criteria defined was: working in the CICU during the study. The exclusion criteria was: not completing the entire questionnaire. Twenty-six nurses participated in the study. The data collection instrument was a questionnaire consisting of two parts: i) characterization of the work environment; ii) the Relational Practices of Nurses with the Family at Intensive Care Unit (RPNFICU) – Importance and Frequency Scales. These scales contain 15 items which can be put into 3 dimensions: Welcoming and Information Practices (WIP); Integration Practices in Technical Procedures and Decision-Making Processes (IPTPDMP); and Visit Management Practices (VMP).
Results: On RPNFICU – Importance scale, the practice with the highest percentage of responses as "Totally important" was *"Make yourself available to clarify doubts for family members"* (65.4%; n = 17). On the other hand, the practice *"Allowing shared decision-making with the client's family regarding procedures"* was considered "Not at all important" by (3.8%; n = 1) of the participants. On RPNFICU – Frequency scale, the practice *"Make yourself available to clarify doubts for family members"* was the one that the participants considered implementing "Always" in greater numbers (61.5%; n = 16) and the practice *"Promoting the presence of family members, with the client, during non-invasive procedures (hygiene care, alternating positions, changing clothes)"*, the one more participants reported "Never" to implement (26.9%; n = 7). The WIP and the VMP stood out positively. Lower importance and frequency values were assigned to IPTPDMP.
Conclusions: Participants demonstrated a positive attitude towards the importance of the RPNFICU, however the frequency with which they implement them is moderate.

PO 72. FUNCTIONAL CAPACITY ASSESSMENT OF ISCHEMIC PATIENTS AFTER ACUTE EVENT USING THE 6MWT

Bruno Miguel Delgado, Ana Seixas, Fátima Rodrigues, Fernanda Pereira, Ivo Lopes

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

Introduction: An acute ischemic event causes a functional deterioration even in previously autonomous patients. The determination of functional capacity is relevant to determine health indicators for rehabilitation nursing care, allowing at the same time to determine the patient's functional status throughout their health-disease cycle. The six-minute walking test (6MWT) is widely used in studies involving cardiac patients, however, reference values for ischemic population after immediate clinical stabilization are not known.
Objectives: Determine the functional level of ischemic patients, by gender, after clinical stabilization using the 6MWT.
Methods: Using the 6MWT, the functional capacity of ischemic patients was evaluated at discharge, after clinical stabilization. Patients with acute coronary syndrome with and without ST-segment elevation were included, as well as patients elective for percutaneous coronary intervention. All patients were accompanied by the rehabilitation nursing team. The 6MWT was performed based on the 2016 ATS guidelines and the expected value of the distance covered was determined based on the Enright equation. The sample was divided by gender, taking into account their widely known differences in functional capacity. The profile of cardiovascular risk factors (CRF) was also evaluated.
Results and conclusions: A total of 189 patients were studied (145 male), with a mean age of 58.1 years (men) and 56.6 (women). About 34% of men and 31% of women were admitted with STEMI, with a mean CVRF of 3.2 in men and 3.9 in women. The most prevalent CVRF in females is dyslipidemia and sedentary lifestyle, while in males it is dyslipidemia. A statistically significant difference ($p < 0.00$ in both genders) was found between the value of the 6MWT performed (425.6 meters – males; 340 meters females) compared to the value estimated by the equation (559.9 males; 531.3 female gender). There is a very significant difference between the expected value and the value actually covered in the walking test. It may be pertinent to define reference values for this typology of patients, so that their functional capacity can be properly measured.

PO 73. EGSYS SCORE – A USEFUL PRACTICE TOOL FOR THE PREDICTION OF REFLEX SYNCOPE?

Helena da Fonseca, Catarina de Oliveira, Rita Contins, Sérgio Laranjo, Ana Lousinha, Pedro Silva e Cunha, Mário Oliveira

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

Introduction: Syncope is a frequent clinical event in the general population. Although fear of consequences of cardiac syncope (CS) is real in clinical practice, syncope of non-cardiac etiology (NCS) is much more common and may be lead to injuries and quality-of-life impairment. The EGSYS (Evaluation of Guidelines in SYncope Study) score uses simple variables to predict which patients may have CS or NCS. The EGSYS score is a value

asserted, not only in the diagnosis of syncope etiology, but also in the risk stratification of patients.
Objectives: determine whether the ECGSYS score has accuracy and clinical applicability for identifying patients with reflex syncope (RS).
Methods: retrospective study of all patients undergoing head-up tilt testing (HUT) in our department during the last 12 months due to recurrent syncope. The EGSYS score was calculated, and its sensitivity and specificity determined for the prediction of RS in patients with a score < 3 and ≥ 3.
Results: We performed 184 HUTs. The patients' age was 57.0 ± 15.0 years, with 115 (62.5%) females. The HUT was positive in 84 (45.7%) cases, confirming RS. The EGSYS score was ≥ 3 in 48 (26.1%) patients (average score 3.63) and < 3 in 125 (67.9%) patients (average score 0). CS was confirmed in only 15 (8.2%) patients. An ECGSYS score < 3.0 had a sensitivity of 41% (95%CI), a specificity of 53% (95%CI), and positive and negative predictive values of 25% (95%CI) and 70% (95%CI), respectively, for the prediction of RS.
Conclusions: The EGSYS score is a simple diagnostic tool derived from clinical history findings. In NCS it has a limited usefulness, nonetheless its specificity and negative predictive values may be useful in selecting patients to undergo HUT.

PO 74. EXERCISE TRAINING IN CARDIAC REHABILITATION AND CHANGES IN SELF-REPORTED HEALTH RELATED QUALITY OF LIFE

Ângela Maria Pereira, Sofia Bento, Melanie Lameiras, Carla Hilaire[2], Jorge Dias, Luísa Bento, Susana Almeida

Hospital Garcia de Orta, EPE. [2]Escola Superior de Saúde Egas Moniz.

Introduction: Nowadays evaluating the impact of medical care strategies requires not only physiological parameters assessment, but also requires measurements on patients' quality of life. Health related quality of life represents the patient's own evaluation of the impact of a disease on his/her physical function and well-being. Quality of life outcomes of CR however, have attracted less attention. In this study, the aim was to assess the effects of exercise-based CR in changes in self-reported health related quality of life (HRQoL).
Methods: one hundred and twenty patients with coronary heart disease, 52.9 ± 8.5 years old, concluded a three months CRP with 28.5 ± 15 sessions the aerobic and strength exercise, 3-d.wk-1. The HRQoL was assessed with the MacNew and short form-36 (SF-36) questionnaires. All subjects signed an informed consent.
Results: In HRQoL we found clinically significant increases for all SF-36 dimensions in some domains of SF-36: physical function (69.6 ± 20.1; 85.2 ± 17.8), role physical (68.0 ± 23.1; 83.1 ± 20.6) vitality (56.3 ± 23.3; 67.8 ± 19.5), role emotional (68.3 ± 26.2; 84.3 ± 22.1) and mental health (65.9 ± 23.3; 78.2 ± 19.3) ($p < 0.001$). In MacNew questionnaire we saw significant improvements ($p < 0.05$) in all domains.
Conclusions: These findings indicate an improvement in HRQoL over time among cardiac patients attending the rehabilitation programme, particularly in the domains of physical role and physical function, vitality, and emotional, physical and social well-being, which are a major contribution for maintaining an active life.

PO 75. IMPACT OF A SYNCOPE EDUCATIONAL PREVENTION PROGRAM: A FIRST-YEAR EXPERIENCE

Helena da Fonseca, Rita Contins, Catarina de Oliveira, Sérgio Laranjo, Ana Lousinha, Pedro Silva e Cunha, Mário Oliveira

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

Introduction: Reflex syncope (RS) is a common clinical condition with major impact on patients' quality of life (QOL). The primary treatment is still based on a non-pharmacological approach that includes education measures, lifestyle modification and reassurance, regarding the benign nature of the condition. Intervening to control prodromal symptoms and prevent RS may promote a better QOL of these patients.
Objectives: The aim of this preventive program is to improve QOL in patients (P) with recurrent RS by education, reinforcing syncope prevention measures (Class I ESC Guidelines 2018).
Methods: We applied a specific questionnaire on the Impact of Syncope on Quality of Life (ISQL) to all P referred to our department to perform head-up tilt testing (HUT) from May 2020 to December 2021. After a positive HUT, P received an educational and training program with general measures to avoid syncope recurrence. Three, six and twelve months after HUT, through teleconsultation, a new ISQL application was completed and educational measures sessions repeated. The protocol was in accordance with the Declaration of Helsinki and approved by the local ethics committee.
Results: We studied 163 P (63.8% women, average age of 56.3 years). The maintained adherence to the educational preventive measures was 67%, but significantly higher in the younger group (≤ 40 years old) with the hypotensive phenotype. Syncope recurrence was noticed in 21% (n = 34), with a mean recurrence of 1.5 episodes/year, of which 7% (n = 11) visited the emergency department. The average ISQL at admission on Syncope Unit was 44.9 ± 12.1, and after the program (last follow-up/discharge) was 54.9 ± 6.4 ($p < 0.05$). ISQL showed an increase of 6.3%, justified by complying avoidance triggers such as "being in warm or hot environments" (severity in admission of 6.35 *vs.* discharge 15.87) and "standing up for long periods of time (> 5 min)" (severity in admission 6.35 *vs.* discharge 26.98), which shows the importance of understanding and apply the syncope preventive measures.
Conclusions: A systematic educational program for P with recurrent RS may have potential benefits as a complement in the treatment, with significant improvement in ISQL index.

Sexta-feira, 22 Abril de 2022 | 11:00-12:00

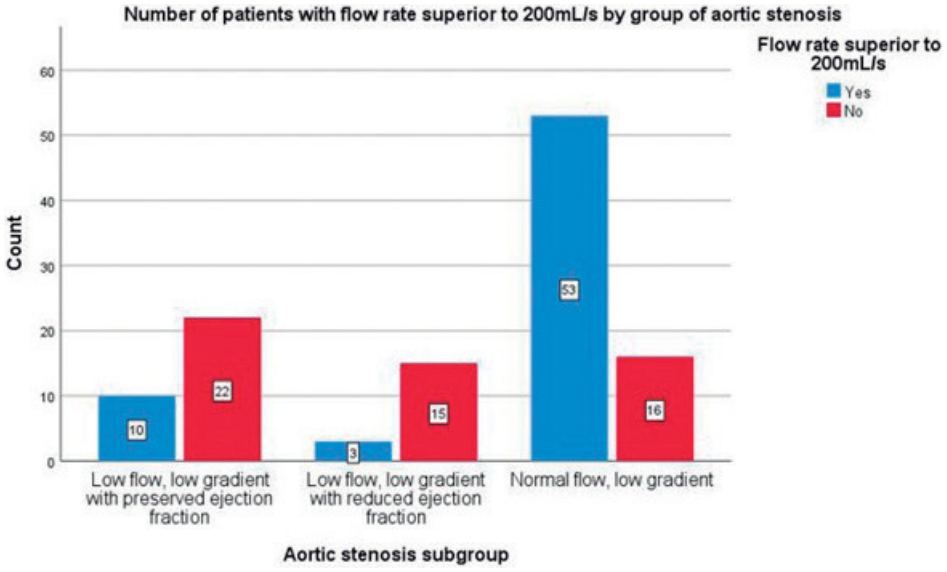
Sala Jardim de Inverno | Posters (Sessão 2 - Écran 8) - Doença Valvular 2 - Foco no Ecocardiograma na Válvula Aórtica

PO 76. IS FLOW BETTER IN ML/M2 OR ML/S - A PRACTICAL REFLECTION ON AORTIC STENOSIS

Francisco Dias Cláudio[1], Mariana Santos[2], Pedro Custódio[3], Bárbara Ferreira[4], Marco Quadrado[4], Ângela Manuel[4], Ana Rita Francisco[4], Bruno Neves[4], Inês Cruz[4], Ana Rita Almeida[4], Paula Fazendas[4], Isabel João[4], Hélder Pereira[4]

[1]Hospital do Espírito Santo, EPE, Évora. [2]Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo. [3]Hospital de Vila Franca de Xira, EPE. [4]Hospital Garcia de Orta, EPE.

Introduction: Severe aortic stenosis is characterized for a high mean gradient (> 40 mmHg) and an aortic valve area (AVA) ≤ 1 cm2. There is a population of patients with discordant findings. These patients present with a lower mean gradient (< 40 mmHg) and area (AVA ≤ 1 cm^2). This states are explained by a low flow (indexed SV ≤ 35 ml/m^2). Some studies demonstrated that a flow rate (determined by dividing SV by ejection time) inferior to 200 mL/s is also associated with poor prognosis. Can this be an alternative in stratifying patients with an AVA ≤ 1 cm^2?
Objectives: This paper aims to compare flow assessment by the conventional way with flow calculated in ml/s in patients with AVA ≤ 1 cm^2.
Methods: We present a retrospective study from all consecutive patients to whom an echocardiogram was performed in our hospital during the years 2017 and 2018 which meet the criteria for low gradient aortic stenosis. Comorbidities were analysed for each subgroup as well as echocardiographic variables to properly characterize aortic stenosis.
Results: A total of 118 patients met the criteria for severe aortic stenosis with a valvular area ≤ 1 cm^2. This population was made up of 18 patients with severe aortic stenosis low flow, low gradient with depressed ejection fraction and 32 patients with preserved ejection fraction. The other 68 patients represented patients with a normal flow, low gradient aortic



PO 76 Figure

stenosis. There is a strong correlation between the variable SVi and Flow Rate (r = 0,796, p < 0,001). A linear regression shows that the flow rate equivalent to a SVi of 35 mL/m² in our sample is 203 mL/s, near the value of other studies. 10 (31.3%) patients with severe aortic stenosis low flow, low gradient with preserved ejection fraction, 3 (16.7%) patients with severe aortic stenosis low flow, low gradient with depressed ejection fraction and 53 (77.9%) patients with normal flow, low gradient aortic stenosis would have a flow superior to 200 mL/s.

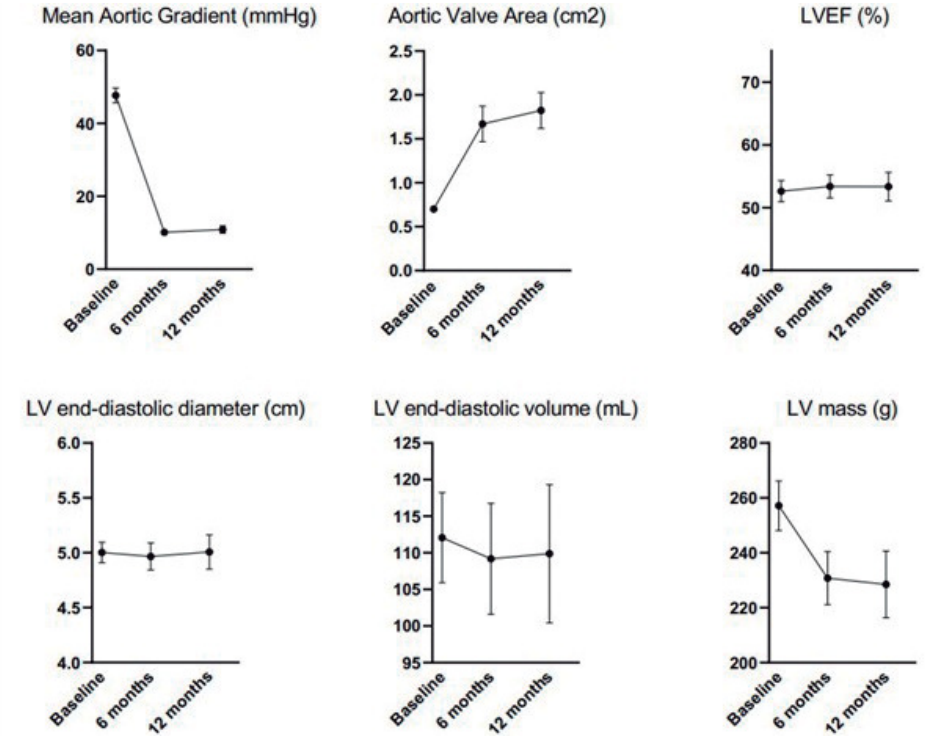
Conclusions: The use of flow rate systematically would downgrade the severity of valvular lesions with possible need for intervention. However, in certain dubious cases its application may identify a subpopulation with need for further study and probable treatment, such as the patients with normal flow, low gradient aortic stenosis. Further studies of this subgroup of patients are warranted to reach any final conclusions.

PO 77. LEFT VENTRICULAR REVERSE REMODELING AFTER TAVR FOR AORTIC STENOSIS

Fábio Sousa Nunes, Rafael Teixeira, Pedro Gonçalves Teixeira, Pedro Ribeiro Queirós, Mariana Ribeiro Silva, Gualter Santos Silva, Diogo Santos Ferreira, Mariana Brandão, Cláudio Espada Guerreiro, 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 extent of Left Ventricular (LV) reverse remodeling after transcatheter aortic valve replacement (TAVR) for aortic stenosis (AS) reflects the unloading of the LV after the outflow tract obstruction has been resolved.



PO 77 Figure

We aim to assess the extent of LV reverse remodeling after TAVR for severe AS, particularly the time needed for such reverse remodeling to fully develop.
Methods: We selected 134 patients who underwent TAVR at our institution for severe AS between 2007 and 2020 and had preprocedural and postprocedural echocardiograms performed at our institution. Mean values of echocardiographic parameters were predicted based on the LOESS regression. Demographic and clinical data were collected from the electronic health records.
Results: Patients had a mean age of 80 ± 7 years and 55% were male. More than 69% of patients presented with NYHA IV at the procedure. Data regarding echocardiographic variables of interest are presented as mean (95% confidence interval) and are reproduced in the accompanying graphic. Mean Aortic Gradient (mmHg): preprocedural 47.7 (45.7-49.7), at 6 months after TAVR: 10.14 (9.3-10.9) and at 12 months after TAVR: 10.9 (9.9-11.9). Aortic Valve Area (cm^2): preprocedural: 0.70 (0.67-0.73), 6 months: 1.67 (1.47-1.87), 12 months: 1.82 (1.62-2.02). LV mass (g): preprocedural 257.1 (248.1-266.2), 6 months (230.8-221.1), 12 months 228.5 (216.4-240.6). LV ejection fraction (%): preprocedural 52.6 (50.9-54.3), 6 months: 53.4 (51.5-55.2), 12 months 53.3 (51.1-55.6). LV end-diastolic diameter (cm): preprocedural 5.0 (4.9-5.1), 6 months 4.9 (4.8-5.1), 12 months 5.0 (4.9-5.2). LV end-diastolic volume (mL): preprocedural 112.1 (105.9-118.2), 6 months 109.2 (101.6-116.8) and 12 months 109.9 (100.4-119.3). The chief LV alteration after TAVR was on LV mass with the greatest change at the first evaluation and little change thereafter.
Conclusions: This work presents data on the reverse LV remodeling after TAVR for AS. In our sample, reverse remodeling occurred precociously and changed little thereafter.

PO 78. FLOW RATE IN SEVERE AORTIC STENOSIS – A GOOD PROGNOSTIC MARKER FOR PERCUTANEOUS VALVE IMPLANTATION?

Isabel Fernandes[1], Diogo Santos Ferreira[2], Silvia Diaz[1], Cláudio Guerreiro[2], Mariana Brandão[2], Mariana Ribeiro Silva[2], Gualter Silva[2], Pedro Ribeiro Queirós[2], Eulália Pereira[2], Gustavo Pires de Morais[2], Bruno Melica[2], Lino Santos[2], Alberto Rodrigues[2], Pedro Braga[2], Ricardo Fontes-Carvalho[2]

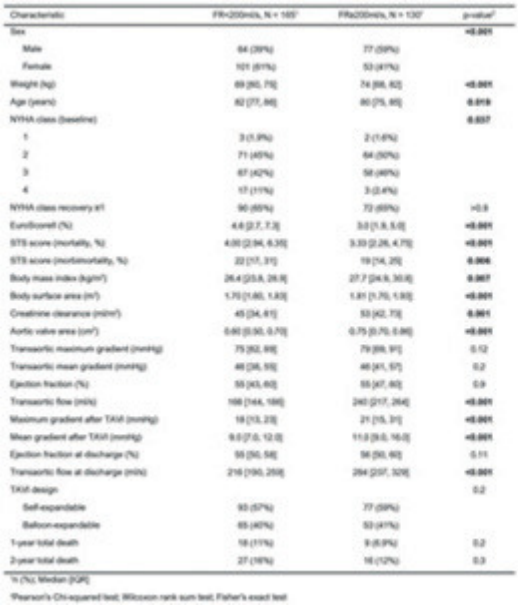
[1]Faculdade de Medicina da Universidade do Porto. [2]Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE.

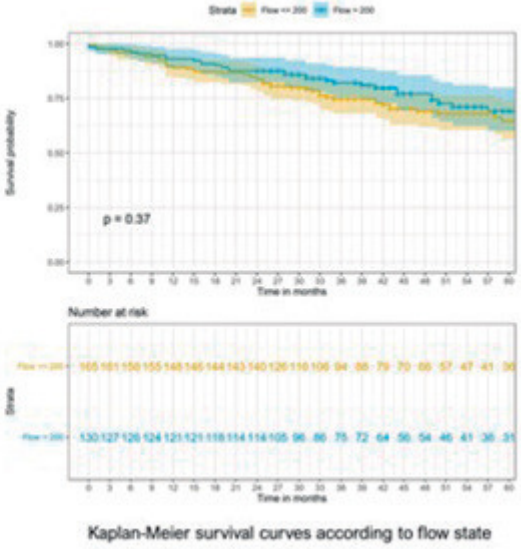
Introduction: The true severity assessment of aortic stenosis (AS) is not infrequently challenging, especially when it is paradoxical in its nature and low-flow states originate low-gradient evaluations. Several markers have been suggested to identify potential causes for discordant values between aortic valve area and mean pressure gradients, including stroke volume index and transaortic flow rate (FR). The latter has been recently proposed as a new prognostic marker for mortality, being low FR associated with worse outcomes, including after aortic valve intervention.
Methods: A single-centre retrospective database of all consecutive Transcatheter Aortic Valve Implantation (TAVI) procedures performed between June 2011 and December 2019 was analyzed. The primary outcome was defined as time to death or last follow-up after the intervention, through Kaplan-Meier survival analysis. Other outcomes were assessed, namely patients' clinical, echocardiographic and analytical characteristics at baseline and during follow-up and its association between FR state, using Pearson's Chi-squared test, Wilcoxon rank sum test and Fisher's exact test, as appropriate. A low FR state was defined as ≤ 200 ml/s in the primary analysis. A $p < 0.05$ was considered statistically significant.
Results: A total of 295 cases had complete echocardiographic data available and were considered in this study (Fig.). There was a higher predominance of female gender among low-FR patients (61% *versus* 41%, p = 0.001), who were older (82- *versus* 80-years-old, p = 0.019), and had a lower body mass index (26.4 *versus* 27.7 kg/m^2, p = 0.007). A low FR state was associated with a statistically significant higher surgical risk estimated through EuroSCORE II, STS mortality and morbimortality. Estimated creatinine clearance was also lower in this subset (45 *versus* 53 ml/m^2 using Cockcroft-Gault Formula, p = 0.001), as well as aortic valve area (0.60 *versus* 0.75 cm^2, $p < 0.001$). However, Kaplan-Meier curves over 5-years did not confirm a statistically significant difference in prognosis after TAVI (p = 0.37). Multiple secondary analysis, using different cut-offs for low-FR state (200-250 ml/ms) also confirmed the same conclusions.
Conclusions: Despite exhibiting pre-intervention characteristics generally associated with worse prognosis after valvular treatment, a low-FR state was not associated with inferior survival outcomes with TAVI in the present analysis. However, these represent exploratory deductions from cases performed in a single-centre.

PO 79. LEFT VENTRICULAR REVERSE REMODELING IN POST OPERATIVE AORTIC STENOSIS PATIENTS: PREVALENCE AND PREDICTOR(S)

Rita Reis Santos[1], João Abecasis[1], Sérgio Maltês[1], Pedro M. Lopes[1], Gustavo Sá Mendes[1], Daniel A. Gomes[1], Sara Guerreiro[1], Pedro Freitas[1], António Ferreira[1], Regina Ribeiras[1], Maria João Andrade[1], Nuno Cardim[2], Victor Gil[3], Miguel Mendes[1], José Pedro Neves[1]

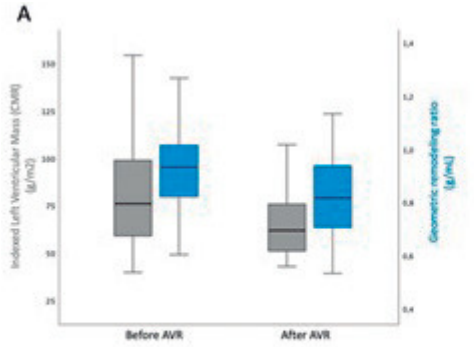
[1]Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz. [2]Faculdade de Ciências Médicas de Lisboa/NOVA Medical School. [3]Hospital da Luz Lisboa.





Kaplan-Meier survival curves according to flow state

PO 78 Figure



B

	RR	No-RR	p-value
Age (years)	72 (68-76)	76 (70–79)	p=0.045
Preoperative AVAi (cm2/m2)	0,40 ± 0,08	0,50 ± 0,09	p<0,001
AVM (mmHg)	61.5 ± 15	48.1 ± 11.9	p=0,001

Figure 1 – A: Box Plot showing Indexed Left ventricular mass and Geometric remodeling ratio before and after surgical aortic valve replacement (AVR). B: Comparative analyses between patients with and without reverse remodeling (RR); AVAi - indexed aortic valve area; AVM – transaortic mean gradient.

PO 79 Figure

Introduction: In patients with severe aortic stenosis (AS), left ventricular (LV) remodeling is believed to be a compensatory adaptive process which should reverse after aortic valve intervention. However, this is not always the rule and remodeling persistence may negatively impact post-procedural outcomes and survival.
Objectives: To assess the prevalence and predictors of morphological LV reverse remodeling in severe symptomatic AS patients after surgical aortic valve replacement (AVR).
Methods: We prospectively studied 75 patients (72y [68-77y], 45% male) with severe symptomatic AS - mean gradient (AVM): 61 ± 17 mmHg; mean indexed aortic valve area (AVAi) 0.41 ± 0.10 cm^2/m^2 with no previous history of ischemic cardiomyopathy, all with high gradient, 4 with low-flow, 81% with hypertension, 27% with type 2 diabetes mellitus and 35% patients with stage 3 chronic kidney disease: median MDR creat clearance: 70.4 mL/min [40-102]. All patients performed pre-operative cardiac magnetic resonance (CMR) at a mean period of 3.4 months (0-17 months) before AVR and at the 3-6th months after AVR, for LV reverse remodeling assessment. It was defined as at least the occurrence of one of the following: > 15% reduction in LVEDVi; > 15% reduction in LVMi by CMR; > 10% reduction in geometric remodeling ratio. Clinical, AV severity data, preoperative functional LV and tissue characterization data were analyzed at multivariate regression to predict the occurrence of LV reverse remodeling.
Results: Overall, at pre-operative CMR: mean LV indexed mass (LVMi): 82 ± 28.9g/m^2; mean end-diastolic LV indexed volume (LVEDVi): 87.4 ± 26.6 mL/m^2; mean geometric remodeling (LV mass/end-diastolic volume): 0.92 ± 0.2 g/mL. After AVR, at echocardiographic evaluation, no patient had prosthetic obstruction or prosthetic patient mismatch: median LV-Ao gradient 12 mmHg [9.1-14 mmHg]; 5 of them had mild paravalvular regurgitation. LV reverse remodeling occurred in 65 patients (88%) (Fig. 1A) and these were younger, had significantly smaller preoperative AVAi and higher valvular gradients (Fig. 1B). At multivariate analysis, only preoperative AVAi remained an independent predictor (odds ratio 0.85, 95%CI 0.735-0.984, p = 0.029).
Conclusions: In this prospective cohort of patients LV reverse remodeling after surgical AVR was highly frequent, occurring in almost nine out of every ten patients.

PO 80. SHOULD CONTRACTILE RESERVE BE A DECISIVE FACTOR ON SEVERE AORTIC VALVE INTERVENTION?

Catarina Gregório, Sara Couto Pereira, Joana Rigueira, Pedro Silvério António, Joana Brito, Beatriz Valente Silva, Pedro Alves da Silva, Ana Beatriz Garcia, Ana Margarida Martins, Catarina Simões de Oliveira, Susana Gonçalves, Daniel Caldeira, Rui Plácido, Fausto J. Pinto, Ana G. Almeida

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

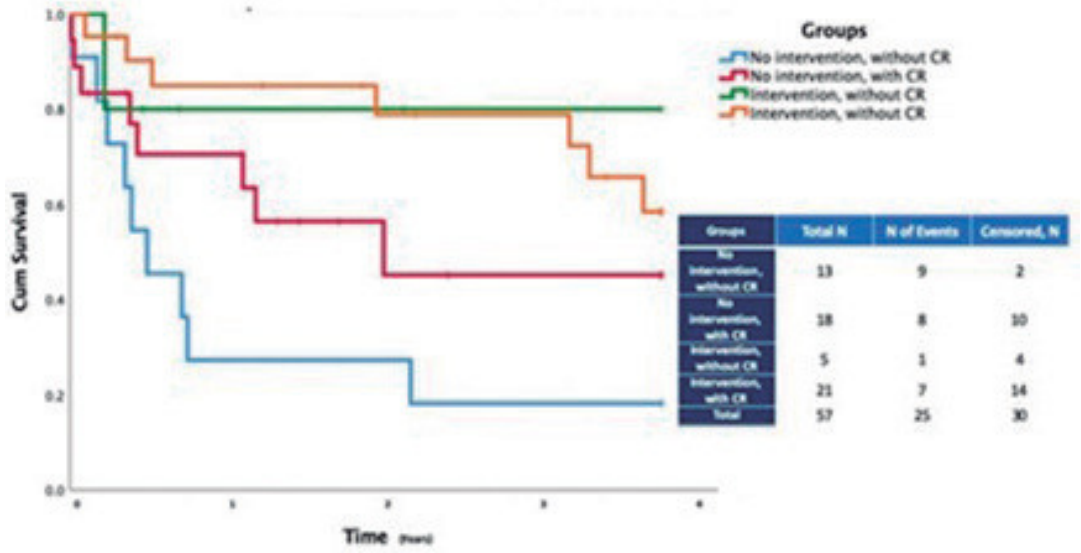


Figure 1: Impact of contractile reserve on aortic valve intervention.

PO 80 Figure

Introduction: Stress echocardiography (SE) is a key exam for the assessment of the real severity of aortic stenosis (AS) in patients (pts) with left ventricular dysfunction. The presence of contractile reserve (CR) allows the diagnosis of severe AS in low-flow low-gradient (LFLG) pts and may play a role in the decision for aortic valvular intervention (AVI).
Objectives: To evaluate the prognostic value of CR in pts submitted to VI, either surgical (SAVR) or percutaneous (TAVI).
Methods: Retrospective, single-center study of consecutive pts with moderate to severe LFLG AS (mean transvalvular gradient < 40 mmHg, LVEF < 50%, indexed stroke volume (SVi) ≤ 35 mL/m^2 and an aortic valve area (AVA) ≤ 1 cm^2) submitted to SE. Epidemiologic, clinical and echocardiographic data were recorded. Pts were stratified by the presence CR (increase in SVi ≥ 20% during SE) and AVI after SE. All-cause mortality and HF hospitalizations during a pre-determined follow up period (FUP) of 3 years were recorded. Survival analysis was performed using Kaplan-Meier curves.
Results: Between January 2014 and June 2021, 57 pts were submitted to SE (exercise in 22 (38.6%) and dobutamine in 35 (61.4%) pts). 40 (70.2%) pts were males, with a mean age of 75.6 ± 8.5 years. At baseline, 48 (84.2%) pts had hypertension, 42 (73.7%) had dyslipidemia, 28 (49.1%) were diabetic and 28 (49.1%) had coronary arterial disease (CAD). Most of the pts were at NYHA functional class II (34, 59.6%). At SE, CR was present in 39 (68.4%) pts. AVI was performed in 26 (41.3%) pts, 21 of which had CR on SE. Valvular intervention was SAVR for 12 pts and TAVI for 14 pts. During a mean FUP of 3 years, 9 pts in the AVI group and 21 pts in non-AVI group died, respectively. In pts submitted to AVI, survival was independent of the presence of CR (p = 0.916). On another hand, in patients not submitted to AVI the presence of CR was associated with worse prognosis, although not statistically significant (p = 0.122).
Conclusions: In this small single-center study we observed that CR assessment by SE shouldn't define the indication for valvular intervention in patients with severe AS, for it didn't correlate with survival. Larger studies are necessary to confirm these results.

Sexta-feira, 22 Abril de 2022 | 14:30-16:00

Sala Jardim de Inverno | Sessão Especial - Prémio Melhor Poster Eletrónico

PO 241. PREDICTORS OF CARDIOTOXICITY IN PATIENTS WITH BREAST CANCER: A PROSPECTIVE STUDY

Beatriz Valente Silva[1], Andreia Magalhães[1], Miguel Nobre Menezes[1], Nuno Cortez-Dias[1], Paula Costa[1], Mariana Saraiva[2], Fausto J. Pinto[1], Manuela Fiúza[1]

[1]*Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.* [2]*Hospital Distrital de Santarém, EPE.*

Introduction: Cardiotoxicity (CTX) is a well-established side effect of several antineoplastic drugs. Ejection fraction (EF) is not a good predictor of CTX because it does not detect early myocardial changes. Left ventricular global longitudinal strain (GLS) and biomarkers – both classical (troponin and NTproBNP) and emerging (such as galectin) – have been proposed, but its application remains ill-defined. This study aimed to evaluate predictors of CTX in patients (pts) with breast cancer submitted to chemotherapy (QT) or radiotherapy (RT).
Methods: Prospective single centre study of consecutive female pts with breast cancer and normal EF (≥ 55%) who underwent QT and/or RT. Pts were submitted to a clinical, laboratory and echocardiographic evaluation in baseline and at 1,3,6,9,12 and 24 months of follow-up and in 2021. Pts were included between 2012 and 2017. CTX was defined as a reduction of ≥ 10% in the setting of an EF < 55% (1st endpoint) or as a reduced EF alone (2nd endpoint). MannWhitney and receiver operator curve were used for statistical analysis.
Results: A total of 134 female pts were included (mean age 52 ± 12 years; 27% hypertension, 17% smoking and 15% dyslipidemia). Mean follow-up was 7 ± 2 years. Cancer therapy included anthracycline (84%), cyclophosphamide (94%), paclitaxel (57%), docetaxel (34%) and trastuzumab (34%). The 1st and 2nd endpoints occurred in 5% and 9% of pts, respectively. The reduction of GLS in the 1st month was a predictor of decreased EF (OR 10, 95%CI 1.1-90, p = 0.04). The cutoff value of -19% for GLS showed the best sensibility-specificity ratio. An abnormal GLS (< -19%) at 1st month predicts the long-term reduction in EF (p = 0.014). GLS evaluated at 6 and 9 months was significantly lower in pts who achieved the 1st endpoint (p = 0.011) and predicted CTX (p = 0.048, OR: 1.57; and p = 0.025, OR: 0.19, respectively). NTproBNP at 1st and 6 th months were significantly higher in pts who achieved 1st endpoint (86 *vs.* 323 and 80 *vs.* 328 pg/ml; p = 0.001). Troponin at 1, 3, 6 and 9 months was significantly higher in pts with both 1st and 2nd endpoints (p < 0.001). Pts with reduced EF at follow-up had higher galectin levels at baseline and 1st month (p = 0.043).
Conclusions: GLS abnormalities as early as the 1st month after QT were predictive of CTX. Troponin, NTproBNP and Galectin were also significantly higher, from an early stage, in patients who developed CTX. Our study supports the use of deformation imaging and biomarkers for the early detection of CTX.

PO 242. SHANGHAI SCORING SYSTEM FOR RISK STRATIFICATION IN A PORTUGUESE SAMPLE OF BRUGADA SYNDROME PATIENTS

Ana Filipa Cardoso, Geraldo Dias, Tâmara Pereira, Mariana Tinoco, Sílvia Ribeiro, Lucy Calvo, Marina Fernandes, Víctor Sanfins, António Lourenço

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Introduction: Risk stratification is a major challenge in Brugada Syndrome (BS). The Shanghai Brugada Scoring System (SBSS) was proposed as a diagnostic and risk stratification tool for these patients (pts). Our aim was to evaluate the predictive power of SBSS for risk stratification in our population.
Methods: Single-center retrospective study of BS pts and SCN5A mutation carriers identified thorough family screening. The SBSS was calculated and pts divided in 3 groups: group 1 if ≤ 3 points; group 2 if 3.5 to 4.5 points; group 3 if ≥ 5 points. Primary endpoint (EP) was a composite of syncope of probable arrhythmic origin, ventricular tachycardia/ventricular fibrillation (VT/VF) and sudden cardiac death (SCD) during the follow-up.
Results: We included 166 (86%) BS pts and 28 (14%) SCN5A pathogenic mutation carriers (59% males, mean age 51 ± 15 years). At diagnosis, 63 (38%) BS pts had a spontaneous type 1 pattern, including 3 (2%) during febrile illness and the remaining 103 (62%) had drug-induced type 1 pattern. They presented with arrhythmic syncope in 29 (17%) cases; nocturnal agonal respiration in 6 (4%) and aborted SCD in 5 (3%). A family history of BS was present in 113 (58%) pts and of sudden cardiac death in 30 (16%) pts. Genetic testing was done in 149 (77%) pts: 21 pts had a pathogenic and 47 a likely pathogenic SCN5A mutation. Programmed ventricular stimulation was performed in 64 (33%) pts and VT/VF was induced in 17 pts. A cardioverter defibrillator was implanted in 45 (23%) pts. After application of the SBSS, 40 (21%) pts were categorized as group 1, 95 (49%) pts as group 2 and 59 (30%) pts as group 3. During a median follow-up of 27 months (IQR 16-38), 7 patients experienced the primary EP (1 arrhythmic syncope, 6 VT/VF). The incidence rate was of 1.52 events per 100 person-years. Of the pts with the primary EP, 4 had a previous aborted SCD and 3 had a previous syncope of suspected arrhythmic origin. The incidence of the primary EP was higher in group 3 (3.49 *vs.* 0 *vs.* 0 events per 100 person-years; log rank = 0.001). The frequency of primary EP rate increased as the SBSS increased (HR: 2.46 per 1-point increase; 95%CI 1.42 to 4.26; p = 0.002). If data was limited to patients without previous SCD, the score lost its predictive power (HR: 2.51 per 1-point increase; 95%CI: 0.98 to 6.46; p = 0.056).

Conclusions: In our population, SBSS was a valuable tool for risk stratification and a cutoff of ≥ 5 points identified pts with the highest risk of events.

PO 243. IS NON-VITAMIN K ORAL ANTICOAGULANTS SAFE IN ADULT CONGENITAL HEART DISEASE

Miguel Martins de Carvalho, Tânia Proença, Ricardo Alves Pinto, Catarina Costa, Filipa Amador, João Calvão, Catarina Marques, André Cabrita, Cristina Cruz, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Adult with Congenital Heart Disease (CHD) are an increasing population with known high risk for thromboembolic events. Validation scores as CHA2DS2-VASC and HAS-BLED are uncertainty and, differently from patients with acquired heart disease, data is scarce about the use of non-vitamin K oral anticoagulants (NOAC) in this population. Although apparently safe its use remain off-label and more studies are warranted.
Objectives: To evaluate all patients requiring anticoagulation on-NOAC followed in an Adult CHD (ACHD) outpatients clinic and observe its safety and efficacy in thromboembolic prevention during a median follow-up of 60 months.
Results: In our population of 65 patients on NOAC with a mean age of 52 year-old, 66% were female. Most frequent CHD were atrial septal defect (22%) and Tetralogy of Fallot (TOF, 22%), followed by atrioventricular septal defect (16%). Regarding cardiovascular risk factors, 37% had hypertension, 23% had dyslipidemia, 9% had diabetes, 8% were smokers or previous smokers and 23% had obesity. Most patients had normal systolic function; 20% and 12% had respectively systemic and subpulmonic systolic dysfunction. About 63% of patients were in sinus rhythm, 35% in atrial fibrillation or flutter (AF/AFL) and 2% had pace rhythm. About 40% of patients had a CHA2DS2-VASC score ≥ 2 and a median HAS-BLED of 0. The main reason for anticoagulation was AF/AFL in 94% of patients; the remaining had an ischemic stroke (3%), intra-cardiac thrombus (2%) or a deep venous thrombosis (2%). About 69% of patients were medicated with beta blocker, 6% with amiodarone and 5% with another anti-arrhythmic drug. Concerning to NOACs 43% were medicated with apixaban, 29% with rivaroxaban, 22% with edoxaban and 6% with dabigatran. During the median follow-up of 60 months, only 5% had ischaemic complications; 2 patients had an ischemic stroke and 1 an acute myocardial infarct while on rivaroxaban-therapy. No statistically difference was found among the different NOACs (p = 0.55). There were no haemorrhagic complications and one patient died during the follow-up.
Conclusions: Of our population on-NOAC, most had ASD and TOF, and the main reason for anticoagulation was AF/AFL. Most patients were on apixaban. Only 5% of patients developed complications, with no statistically difference between drugs. NOACs seems safe and effective in adult with CHD.

PO 244. PREDICTORS OF PACEMAKER DEPENDENCY AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT

João Pedro Reis, Tiago Mendonça, Alexandra Castelo, Inês Rodrigues, António Fiarresga, Rúben Ramos, Mário Oliveira, Duarte Cacela, Rui Ferreira

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

Introduction: Conduction disturbances after transcatheter aortic valve replacement (TAVR) are common with a variable risk of long-term pacemaker dependency (PD), being influenced by patient- and procedure-specific factors. As pacemaker (PM) implantation is associated with potential complications, our aim was to assess predictors of PD requirement after TAVR.
Methods: Retrospective analysis of consecutive patients (P) who underwent TAVR with a self-expanding valve from 2009 to 2020 at our institution. All P had pre-procedural clinical evaluation, cardiac computed tomographic angiography, transthoracic echocardiography and electrocardiography performed. Cumulative percentage of ventricular pacing (%Vp) was determined from stored PM data. P with a PM implanted previous to TAVR were excluded. PM implantation post-TAVR was defined as a device implant performed during hospital stay in the context of TAVR or during the first month after discharge. PD was defined as a%Vp > 80% at one-year follow-up. Multivariate analysis fvor the prediction of PD was done using Cox regression.
Results: A total of 474 P (57% male, age 81.7 ± 6.5 years, left ventricular ejection fraction 51.5 ± 14.6%) were analysed. Mean follow-up was 18.7 months. Mean baseline gradient was 51.7 mmHg with a mean aortic valve area of 0.71 cm^2. One hundred and four P (21.9%) required PM implantation after TAVR, with a mean%Vp of 65.3 ± 43.4%, presenting PD in 60% of the cases at one-year follow-up. A glomerular filtration rate > 60 ml/min (OR 0.87, 95%CI 0.74-0.96, p = 0.021) and mean aortic annulus perimeter (OR 0.89, 95%CI 0.80-0.98, p = 0.029) were independent predictors of a PD < 5%. Arterial hypertension (OR 7.00, 95%CI 1.31-37.40, p = 0.023), baseline right bundle branch block (OR 10.2, 95%CI 1.21-18.45, p = 0.033), and the EUROSCORE II (OR 1.05, 95%CI 1.01-1.10, p = 0.044) were predictors of PD > 80%. Baseline left bundle branch block, implantation depth and aortic valve calcium score were not predictors of PD.
Conclusions: Predictors of PD after TAVR may influence PM implantation, as well as device selection and programming. P with a higher aortic annulus perimeter and preserved kidney function may undergo a more expectant management, as PD rates are low after 1 year follow-up.

PO 245. THE VALUE OF ADMISSION NT-PROBNP IN PROGNOSIS OF PATIENTS HOSPITALIZED WITH COVID-19 AND WITHOUT HISTORY OF HEART FAILURE

Rui Antunes Coelho, Jéni Quintal, Ana Rita Piteira, Joana Silvério Simões, Ricardo Pereira, David Noivo, Ana Reis, António Inácio, José Maria Farinha, Ana Fátima Esteves, António Pinheiro Cumena Candjondjo, Joana Silva Ferreira, Pedro Campos Amador, Rui Caria

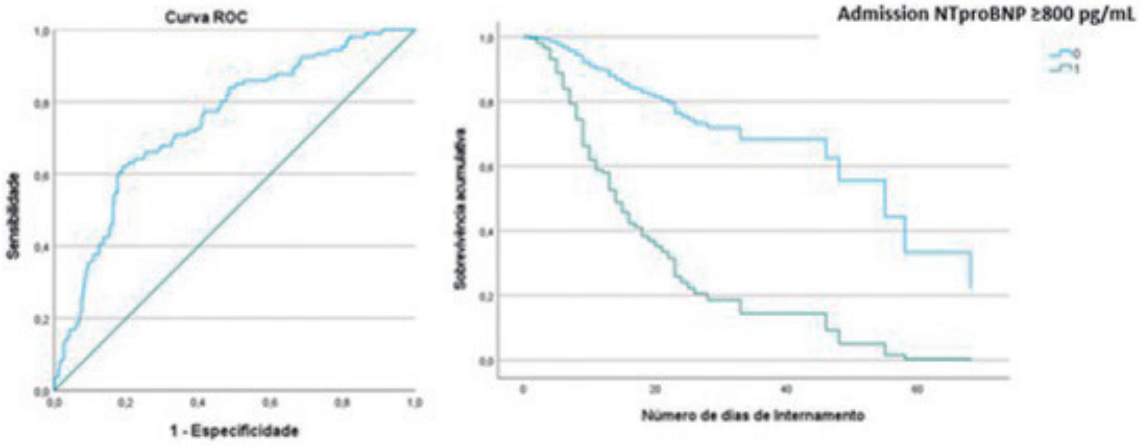
Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo.

Introduction: Coronavirus disease 2019 (COVID-19) has been associated with significant morbidity, including cardiovascular involvement. Elevation of N-terminal pro-B-type natriuretic peptide (NT-proBNP) was associated with worse prognosis in patients hospitalized with COVID-19. However, the relationship between admission NT-proBNP and prognosis of patients without previous history of heart failure is less established.
Objectives: Evaluate if NTproBNP has a good discriminative power to predict in-hospital mortality in patients without previous history of heart failure hospitalized with COVID-19.
Methods: We performed a retrospective analysis of 819 consecutive patients with COVID-19 admitted in our institution, in the third wave of the pandemic. We excluded patients without previous history of heart failure (n = 130) and patients in which it was not dosed NT-proBNP (n = 253). Receiver operator characteristics (ROC) curve and area under the curve (AUC) were obtained to determine the discriminative power of NT-proBNP as predictor of in-hospital mortality. Optimal cut-point value was obtained (Youden index) and patients were divided according to this value. Comparison between patients with and without NT-proBNP superior than the optimal cut-point was performed and in-hospital survival analysis was executed using a Cox Regression analysis (Fig.).
Results: Optimal cut-point value of NT-proBNP for predicting in-hospital mortality in patients admitted with COVID-19 and without history of heart failure was 800.0 pg/mL (AUC 0.744, p < 0.001, 95%CI 0.691-0.798). The group of patients with NT-proBNP ≥ 800 pg/mL (n = 153; 31%) had a 5-fold increased risk of in-hospital mortality (HR 5.08; 95%CI 3.34-7.73; p < 0.001).
Conclusions: In the group of patients admitted in our institution with COVID-19 and without history of heart failure in the third wave of the pandemic, an admission NT-proBNP ≥ 800 pg/mL was an independent predictor of in-hospital mortality. A careful preventive strategy is needed for these patients.

Patient characteristics	All (n = 436)	NT-proBNP <800 pg/mL (n = 283)	NT-proBNP ≥800 pg/mL (n = 153)	p-value
Age in years, mean ± DP	70 ± 15	64 ± 13	71 ± 10	<0,001
Male gender, n (%)	246 (56,4)	189 (66,8)	57 (37,3)	0,010
In-hospital mortality, n (%)	106 (24,3)	36 (12,7)	70 (45,8)	<0,001
1-month mortality	8 (2,2)	3 (1,2)	5 (4,5)	0,040
6-months mortality	9 (2,5)	6 (6,7)	3 (2,8)	0,795
Days in hospital, median (IQR)	8 (5-14)	10 (6-15)	8 (4-12)	0,077
Admission in ICU, n (%)	44 (10,1)	42 (14,9)	2 (1,3)	<0,001
Hypertension, n (%)	264 (60,6)	185 (56,7)	79 (71,8)	0,005
Diabetes mellitus, n (%)	132 (30,3)	92 (28,3)	79 (71,8)	0.112
Smoking, n (%)	40 (9,2)	38 (11,7)	2 (1,8)	0,002
Obesity, n (%)	85 (19,5)	70 (21,5)	15 (13,6)	0,073
Atrial fibrillation, n (%)	30 (6,9)	14 (4,3)	16 (14,5)	<0,001
Valvular heart disease, n (%)	5 (2,3)	2 (1,2)	3 (6,7)	0,033
Ischemic heart disease, n (%)	24 (5,5)	12 (3,7)	12 (10,9)	0,004
Chronic renal disease, n (%)	23 (5,3)	11 (3,4)	12 (10,9)	0,033
Pulmonary chronic obstructive disease, n (%)	26 (6,0)	16 (4,9)	10 (9,1)	0,109

Tabela 1 - Patients with and without NT-proBNP elevation

Figure 1 – Admission NTproBNP value and in-hospital mortality in patients with COVID-19



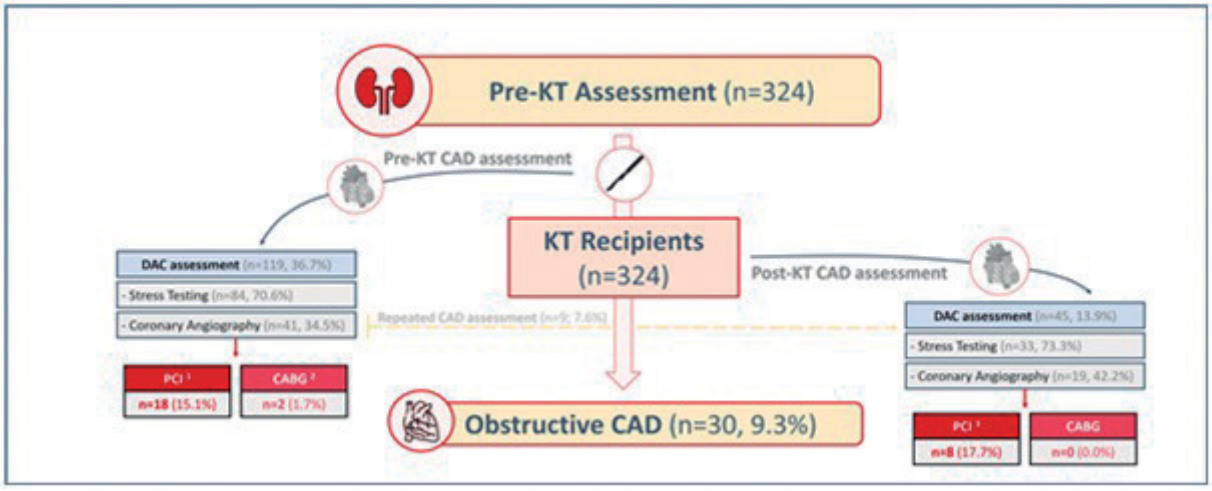
PO 245 Figure

PO 246.CAD IN KIDNEY TRANSPLANT RECIPIENTS: A REAL-WORLD ASSESSMENT PRE-ISCHEMIA-CKD

Bruno Rocha, Rita Amador, Sérgio Maltês, Gonçalo J. l Cunha, Catarina Mateus, Carlos Aguiar, André Weigert, Miguel Mendes

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

Introduction: The ISCHEMIA-CKD trial has shown that an initial invasive strategy, as compared to conservative treatment, did not reduce the risk of death and non-fatal myocardial infarction, nor did it improve quality-of-life in patients with advanced chronic kidney disease (CKD) and coronary artery disease (CAD) with moderate-to-severe ischemia. Similar findings were reported in patients with CKD enlisted for kidney transplantation (KT). We aimed to evaluate screening and treatment CAD strategies in patients who ultimately underwent KT at our center.
Methods: This is a single-center study of consecutive patients who received a KT from 2015 to 2020. Obstructive CAD was defined whenever one of the following criteria was met: lesion with a stenosis > 70% (or > 50%, if left main disease) or CAD requiring revascularization, as per the Heart Team discussion. CAD evaluation refers to non-invasive or invasive coronary angiography and/or stress testing, irrespective of clinical scenario.
Results: A total of 324 patients underwent KT [mean age 55 ± 12 years; 65.1% male; CKD most often due to hypertensive or diabetic nephropathy and polycystic kidney disease – 41.8%; median time from renal replacement therapy (RRT) to KT – 60 (40-88) months]. A flow-chart summarizing CAD diagnosis over time is depicted in the Figure 1. Overall, 119 (36.7%) patients had CAD evaluation prior to KT, of whom 21 underwent myocardial revascularization – 8, 12 and 1 patients with acute coronary syndrome (ACS), chronic coronary syndrome (CCS) and silent ischaemia, respectively. At a median time of 46 (25-66) months after KT, 36 (11.1%) more patients had CAD evaluation, of whom 8 underwent percutaneous myocardial revascularization – 6 and 2 for ACS and CCS, respectively. Those with obstructive CAD were older (64 *vs.* 54 years-old; p < 0.001), with a higher burden of cardiovascular (CV) risk factors (p < 0.001) and more likely to have had a CV death (9.5 *vs.* 1.0%; p = 0.025) or CV hospitalization (38.1 *vs.* 13.4%; p = 0.007). CAD status (revascularized *vs.* non-revascularized)



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was not associated with improved major outcomes at follow-up. We found no strong predictors of CAD requiring revascularization post-KT, including time from RRT to KT. There were no patients with refractory angina, left main disease or reduced left ventricular ejection fraction (< 40%) in need of myocardial revascularization over follow-up.
Conclusions: Obstructive CAD was uncommon in our cohort of patients who received a KT, most of whom with asymptomatic or mildly (monthly angina) symptomatic CCS or non-fatal ACS. These findings, together with the most recent evidence, may argue against routine CAD screening in all patients being enlisted for KT. Notwithstanding, randomized evidence is eagerly awaited to further guide treatment decisions in the post-ISCHEMIA-CKD era.

Sábado, 23 Abril de 2022 | 09:00-10:00

Sala Jardim de Inverno | Posters (Sessão 3 - Écran 1) - Cardiopatias Congénitas no Adulto

PO 81. NOAC IN ADULT CONGENITAL HEART DISEASE PATIENTS: A SINGLE-CENTER EXPERIENCE

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

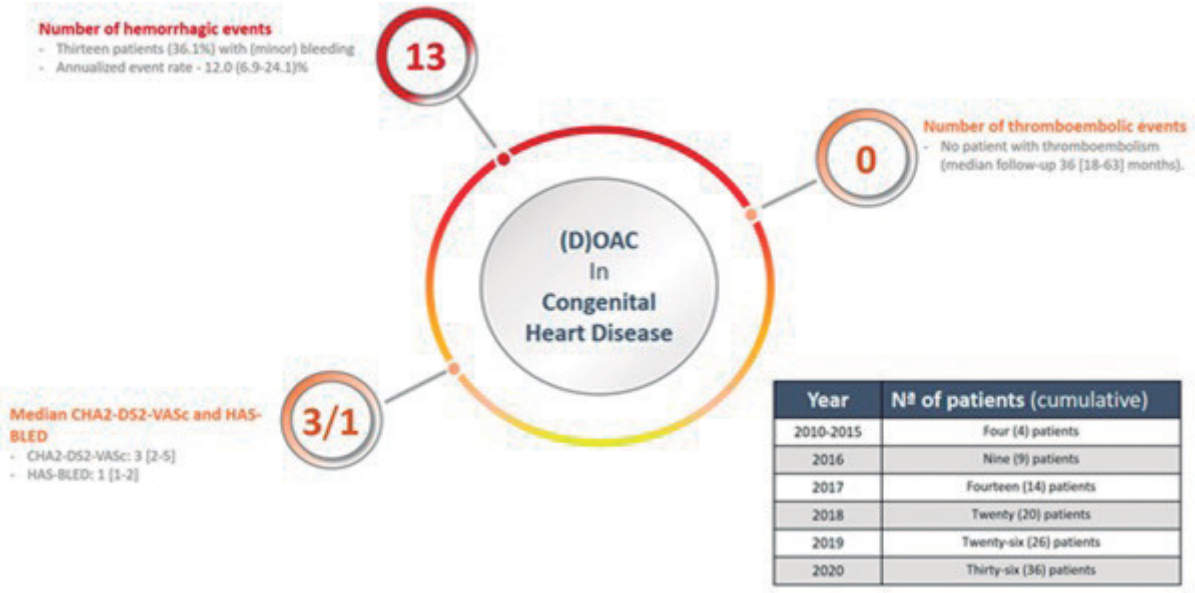
Introduction: Adult Congenital Heart Disease (ACHD) patients at increased risk for thromboembolic events are often treated with oral anticoagulation. While vitamin-K antagonists have been the agent of choice for decades, the use of non-vitamin K oral antagonists (NOAC) is increasing. We aimed to assess the safety and effectiveness of NOAC in ACHD patients at our centre.
Methods: This is a single-centre study enrolling all patients with ACHD treated with a NOAC from inception to November 2021. Data was collected using a standardized questionnaire applied to all patients by means of a telephone visit, in parallel with a detailed retrospective chart review. The endpoints of interest included thromboembolic and haemorrhagic events, defined as per the standardized International Society on Thrombosis and Haemostasis (ISTH) scale.
Results: Overall, 36 ACHD patients were enrolled [mean age 53 ± 15 years; female sex – 66.7%; previous stroke – 33.3%; median HAS-BLED and CHA_2DS_2-VASc score – 1 (1-2) and 3 (2-5), respectively], predominantly with moderate or complex congenital defects (52.7%), of whom 14, 8, 8 and 4 were treated with rivaroxaban, apixaban, edoxaban and dabigatran, respectively. Two-thirds had their first NOAC prescription in the latest 3 years (Fig.). The most common indication for anticoagulation was atrial fibrillation or flutter (77.8%). Over a median time of 36 (18-63) months on NOAC treatment, there were no patients with thromboembolic events, whilst 13 (36.1%) had a haemorrhagic event – annualized event rate of 12.0 (6.9-24.1%). All bleeding events were minor, most often self-limited gingival haemorrhage or epistaxis (n = 7) or menorrhagia (n = 3). Nasal cautery was needed to treat recurrent epistaxis in 3 patients, whilst 3 other required oral iron supplementation. The strongest predictor of any haemorrhage was a prior cardiovascular hospitalization (HR 3.88; p = 0.027).
Conclusions: The use of NOAC in ACHD patients has been increasing in our centre, with encouraging results. The present findings suggest that NOAC are safe and may be effective for thromboembolic event prevention in heterogeneous forms of ACHD.

PO 82. OPTIMIZING ADULT CONGENITAL HEART DISEASE CARE: EXPERIENCE OF AN ORGANIZED PROGRAM IN A REMOTE NON SPECIALIST CENTER

Fabiana Silva Duarte, André Viveiros Monteiro, Emília Santos, M. Inês Barradas, Luís Oliveira, Cátia Serena, António Fontes, Carina Machado, Raquel Dourado, Nuno Pelicano, Miguel Pacheco, Anabela Tavares, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: The prevalence and long-term survival of patients with adult congenital heart disease (ACHD) is increasing due to advances in medical, surgical and percutaneous interventions. Recent European recommendations suggested stratification of patient care in three levels in which some patients can be followed in non-specialist centers.
Objectives: To assess the experience of an ACHD program in a non-specialist center at an ultra-peripheral region. We analysed the allocated resources, complexity of congenital defects, baseline clinical features and clinical outcomes during the follow-up period.
Methods: Retrospective analysis of consecutive patients with CHD between February 2007 and December 2021, with a median follow-up period of 62 months (IQR 33.5-116.5).
Results: 97 patients were identified, 56.7% female and with a median age of 28 years (IQR 23-36). Patients were referred from paediatric cardiology



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(69.1%), general cardiology (14.4%) and general practitioner (9.3%). Mean age at the time of referral was of 20 ± 12 years. There were more patients with moderate (48.5%) or mild congenital disease (35.1%) *vs.* severe defects (13.4%). The two main diagnosis in mild category were repaired atrial septal defects (23.5%) and bicuspid aortic valve (29.4%); in the moderate category, Fallot tetralogy (21.3%) and coarctation of the aorta (21.3%); and in the severe category transposition of the great arteries and pulmonary atresia (both representing 46.2%). No gender-related differences were demonstrated (p = 0.71). A neonatal diagnosis was made in 40.2% and 22 patients (22.7%) were diagnosed at adulthood. A neurodevelopmental disorder was diagnosed in 16 patients, half with Down's syndrome. Fifty-two patients (53.6%) underwent at least one surgical procedure, of which 88.5% during childhood and additional percutaneous intervention was required in 7 patients. During follow-up, 4.1% of patients were at NYHA class III/IV, 10.3% had arrhythmic events and 7.2% were hospitalized for heart failure decompensation. Pregnancy occurred in 17 patients and 2% had a cardiac complication. Three patients had an infective endocarditis (2 with severe defects, p 0.049; r = 0.2). Only 1 patient died of a non cardiac cause.

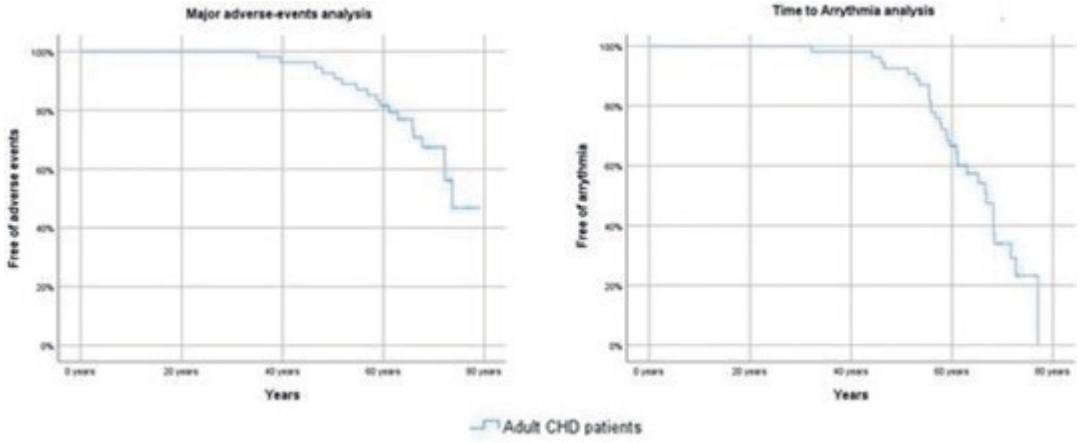
Conclusions: An organized follow-up of ACDH patients in a non-specialist center is possible for most types of mild and moderate congenital defects with a low rates of adverse outcomes. The increasing number of ACHD patients should encourage more peripheric centers to create ACHD programs in close relation with specialist centers.

PO 83. OLD AGE IN ADULT CONGENITAL HEART DISEASE: A CONTEMPORARY REALITY

Tânia Proença, Miguel Martins Carvalho, Ricardo Alves Pinto, Filipa Amador, Catarina Costa, João Calvão, Catarina Marques, André Cabrita, Cátia Priscila, Ana Pinho, Luís Santos, Maria Cristina Cruz, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Congenital Heart Disease (CHD) affects under 1% of newborns and albeit once associated with bad prognosis, nowadays a remarkable increase in their survival was reached. Lifelong surveillance is essential, bringing new challenges as patients getting older.
Objectives: To observe a group of old patients followed in an Adult CHD (ACHD) outpatients clinic, access their comorbidities, cardiac interventions, complications and clinical outcomes.
Methods: We retrospectively analysed a group of old-patients (> 60 year-old) evaluated during the past year in an ACHD outpatient clinic. Clinical



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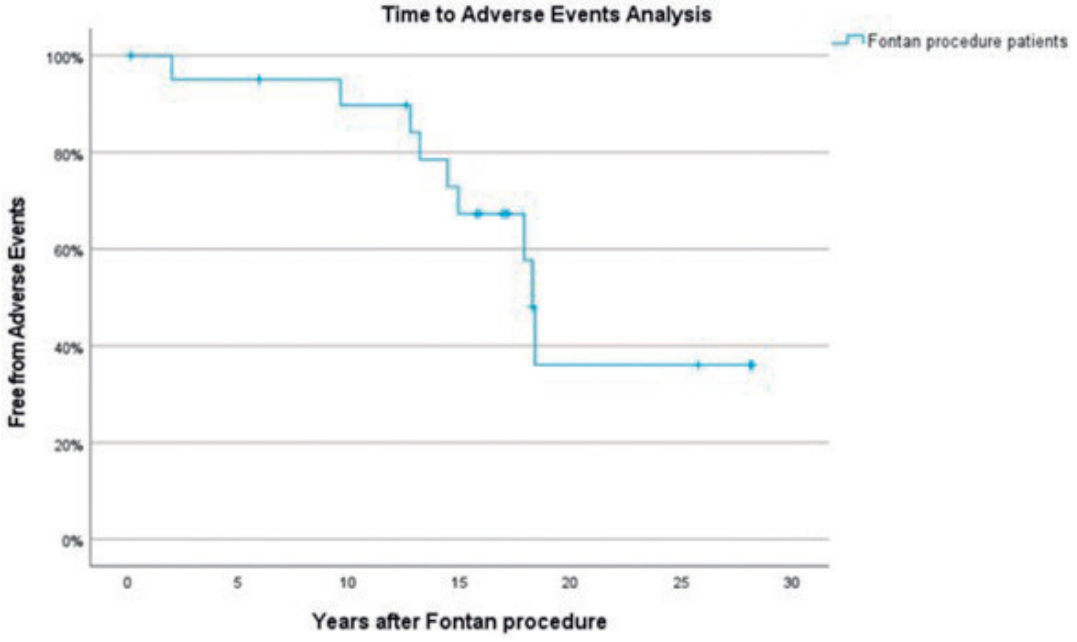
features were collected and time-to-event statistics were analyzed. Major adverse event (AE) was defined as a composite of all-cause death, cardiac re-intervention, ischemic stroke (IS) and acute coronary syndrome (ACS).
Results: A total of 54 patients were included, 69% female with a median age of 68 (61-82) year-old. Most frequent diagnosis were atrial septal defect (ASD, 39%), Tetralogy of Fallot (13%), Ebstein anomaly (11%), and atrioventricular (AV) septal defect (11%). The majority of patients (77%) were submitted to intervention, with a median age of 35 years; 29% had a second intervention during lifetime, about 23 years after first intervention. Concerning clinical data, almost all patients were in NYHA class I or II, only 4% had oxygen saturation under 90%, 26% had pulmonary hypertension and 13% chronic kidney disease. Regarding cardiac function, most had normal systolic function (systemic and subpulmonic ventricular dysfunction was present in 7% of patients). The most frequent dysfunctional valve was subpulmonic AV valve, with 20% presenting moderate to severe regurgitation. During follow-up, 41% remained in sinus rhythm, most with normal AV conduction. 59% of patients developed atrial flutter or fibrillation (AF/AFL), 15% implanted definitive pacemaker and none ICD or CRT was implanted. In time-to-arrhythmia analysis more than 95% and 60% kept outcome-free at 40 and 60 year-old, respectively, but all patients developed arrythmia before complete 80 years. During follow-up, 6% had IS and 2% ACS; time-to-AE analysis showed that 80% were event-free at 60 year-old and even at 80 years almost 50% of patients had no AE. Regarding gender and demographic features, there were no differences comparing patients living in urban *versus* rural neighbourhoods and female *versus* male (Log Rank, p = 0.205 and p = 0.156). Concerning female patients, 19% had a successful pregnancy.
Conclusions: In a cohort of ACHD older than 60 years, the most frequent diagnosis was ASD; most of them had normal systolic function and non-significative valvular disfunction. Most patients remained free of events until 40 years and a significant portion of patients had no AE during lifetime. AF/AFL were the most frequent complication, generally emerged after 40 years and was always present at 80 year-old.

PO 84. LONG-TERM OUTCOME IN FONTAN PROCEDURE PATIENTS: THE DESTINATION THERAPY OR A BRIDGE TO TRANSPLANT?

Miguel Martins de Carvalho, Ricardo Alves Pinto, Tânia Proença, Catarina Costa, Filipa Amador, João Calvão, Catarina Marques, André Cabrita, Maria Cristina Cruz, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

The Fontan procedure (FP) is considered a palliative surgical technique used for complex congenital heart disease (CHD) patients not suitable for biventricular repair. Currently, these patients' life expectation is extended but they experience high morbidity and mortality risks and their long-term management is challenging. Our aim was to evaluate the morbidity of these patients after a long-term follow-up.We collected a retrospective cohort of patients palliated with FP, that were followed in an adult CHD outpatient clinic born between 1980 and 2001. Clinical and echocardiographic data were collected. A time to adverse event analyses was performed. A total of 26 patients were enrolled, with a median follow-up of 17 years. The median age was 24 (IQR 22-30) year-old, 35% were female. As for the cardiovascular risk factors, none had hypertension or dyslipidaemia, 3.9% had diabetes and 11.5% were smokers or previous smokers. Only 3.9% of patients had chronic kidney disease. Of note, the mean BNP was of 19.4 pg/mL. The main anatomic abnormalities that lead to the FP were single ventricle (53.8%), followed by pulmonary atresia (23.1%), double outlet right ventricle (11.5%), ventricular septal defect (3.9%) and Ebstein anomaly (7.7%). The majority of patients were previously submitted to a shunt (42.3% with a Blalock-Thomas-Taussig and 19.3% with an atrial septostomy); the most prevalent surgical technique was the cavopulmonary connection (69.2% extracardiac, 15.4% intracardiac), followed by the atriopulmonary anastomosis (11.5%). The systemic ventricle was morphologically left in 84.6%. A fenestration or a residual shunt persisted in 30.8%. The mean basal oxygen saturation was of 95%, with 3.9% of patients being cyanotic. The majority of patients were asymptomatic (69.2%), with a normal ventricular function in those with a systemic left-ventricle (91.7% of patients), and a moderately impaired in those with a systemic right-ventricle (50% of patients); more than moderate AV valve regurgitation was present in 7.7%. Pulmonary hypertension was observed in 7.7%. Atrial arrythmias were present in 11.5%. Liver disease affected 50% of patients (1 patient with an hepatocarcinoma) and protein-losing enteropathy was present in 7.7%. One patient was submitted to a re-FP, due to a Fontan circulation obstruction; another patient was submitted to a heart transplant. Regarding the time-to-adverse-events analyses, more than 65% of patients were event-free during the first 15 years of FP. However, after 20 years of FP more than 60% of patients presented with an adverse event. Survival in FP patients has improved and most of them live without significant morbidity for several years. However, after 20 years of the FP, the majority of patients experience adverse events and even death. Heart transplant is a possible solution for these patients and should start to be considered when adverse events arise.



PO 84 Figure

PO 85. ANOMALOUS AORTIC ORIGIN OF THE RIGHT CORONARY ARTERY: SINGLE CENTRE EXPERIENCE

Sara Ranchordás, Paulo Veiga Oliveira, Márcio Madeira, Marta Marques, José Pedro Neves, Miguel Abecasis

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

Introduction: Anomalous aortic origin of the coronary artery (AAOCA) from the opposite sinus is a rare congenital coronary anomaly, which may involve the left or right coronary artery (RCA). Prevalence ranges from 0.1 to 1% in different series. Clinical presentation can vary from asymptomatic to sudden cardiac death. The main objective of this study was to evaluate our centre´s experience of surgery in patients with anomalous aortic origin of the RCA (AAORCA).
Methods: All patients who underwent surgery for AAORCA from January 2016 to may 2021 were included. All cases were AAORCA from the left coronary sinus. A total of 7 patients (5 male, 2 female) were submitted to surgery by the same surgeon. No concomitant procedures were performed. Surgical technique consisted of median sternotomy, establishment of conventional cardiopulmonary bypass and aortic cross clamping with cardioplegic arrest. Transverse aortotomy was made to gain access to the anomalous intramural portion of the right coronary artery. A probe was placed inside the intramural course of the RCA and the intra-aortic roof of the artery was sharply opened throughout the intramural pathway from the origin in left coronary sinus to take-off in right coronary sinus. Edges were tacked down with fine sutures. There was one case with intramural course behind the right-to-left commissure. The commissure was therefore detached and resuspended.
Results: Mean age was 42 years old. All patients were symptomatic: 2 presented with cardiac arrest, 4 with effort angina, and 1 with easy fatigue/effort related dyspnoea. All had an AAORCA with intramural course, a slit like ostium in 2 patients, both of which presented with cardiac arrest during exercise. Mean CPB time was 41.9 (± 7.5; 35-54) minutes and mean aortic cross-clamping time was 28.4 (± 5.9; 22-38) minutes. There were no postoperative complications nor in-hospital mortality, ICU stay was < 48h, and all were discharged home within 7 days after surgery (3-7 days). After a mean follow time of 2.5 years, all patients were alive. One patient had a pacemaker implanted 2 months after surgery due to 2nd grade AV block (Mobitz II), which was not present immediately after surgery. There were no other events during follow up.
Conclusions: ARCA is a rare but potentially fatal condition. Slit like ostium is a particularly high risk characteristic. Unroofing is a simple, safe and effective procedure for ARCA.

Sábado, 23 Abril de 2022 | 09:00-10:00

Sala Jardim de Inverno | Posters (Sessão 3 - Écran 2) - Arritmias 3 - Vários

PO 86. HIS BUNDLE AND LEFT BUNDLE BRANCH PACING: INITIAL EXPERIENCE

Carolina Saleiro[1], Pedro A. Sousa[1], Catarina Nogueira[2], Lídia Mota[2], Cláudia Almeida[1], Gisela Bragança[1], Francisco Paisana[2]

[1]*Centro Hospitalar e Universitário de Coimbra, EPE/Hospital Geral.*
[2]*Unidade Local de Saúde de Castelo Branco, EPE/Hospital Amato Lusitano.*

Introduction: Right ventricular apical pacing is associated to electric and mechanical desynchrony. Recently, there has been increasing interest in pacing methods that provides physiological stimulation directly activating the conduction system, such as, His bundle pacing (HBP) or left bundle branch pacing (LBBP).
Objectives: To evaluate procedure characteristics, safety, and feasibility of HBP and LBBP.
Methods: Prospective, single-center study evaluating patients that had attempted HBP or LBBP from 07/2020 to 11/2021. Procedure details and pacing parameters were collected.
Results: During the inclusion period, 50 procedures of physiologic pacing were attempted in 46 patients. Acute procedural success was achieved in 96% of the

ACUTE PACING PARAMETERS			
	His bundle pacing (n=24)	**Left bundle branch pacing (n=24)**	**P**
Pacing parameters			
Sensing amplitude, mV	4.1 [3,3-6.6]	7.7 [5.6 – 10.3]	0.002
Pacing threshold, V @ ms	0.9 [0.60-1.68] @ 1	0.73 [0.43-0.95] @ 0.4	0.077#
Pacing impedance, Ω	475 [380-589]	741 [675-855]	<0.001
Paced QRS duration, ms	118 ± 21	129 ± 15	0.048
DISCHARGE PACING PARAMETERS			
	His bundle pacing (n=24)	**Left bundle branch pacing (n=24)**	**P**
Pacing parameters			
Sensing amplitude, mV	4.8 [3.4-9.0]	14.7 [9.2-20]	0.001
Pacing threshold, V @ ms	0.60 [0.25-1.0] @ 1	0.3 [0.25-0.50] @ 0.4	0.023#
Pacing impedance, Ω	390 [323 – 432]	627 [523-646]	<0.001
Paced QRS duration, ms	122 ± 18	122 ± 14	0.946

Table 1- Pacing parameters at implantation and before discharge for His Bundle Pacing and Left Bundle Branch Pacing. # Refers to difference in Voltage.

PO 86 Figure

cases (48/50 procedures [92.3% success for HBP and 100% success for LBBP]). Effective HBP was achieved in 24 procedures (8 selective HBP and 16 non-selective HBP) and effective LBBP in 24. Need for reintervention during the enrolment period (either due to displacement or unsatisfactory threshold rise) occurred in 4 (8.3%) cases at a median time of 2.5 [1.3-3.8] months. Median procedure duration was 93 [74-123] minutes and median fluoroscopy time was 6:09 [3:27-11:07] minutes - no difference between HBP or LBBP (p = 0.36; p = 0.15; respectively). Discharge thresholds were significantly lower in LBBP than in HBP while R wave amplitude was significantly higher in patients receiving LBBP, both at implantation and before discharge. No difference for paced QRS after HBP or LBBP were seen before discharge. Pacing parameters and comparisons between groups are shown in the table. There was no acute adverse event observed. In the subgroup of patients with intraventricular conduction delay (QRS ≥ 120 ms, n = 12), there was a reduction in the QRS duration after pacing (138 ± 16 to 128 ± 20 ms).
Conclusions: This study demonstrates the feasibility and safety of the physiologic pacing.

PO 87. PULMONARY VEIN ISOLATION PLUS CAVOTRICUSPID ISTMUS ABLATION SHOWS NO BENEFIT IN ARRYTHMIA RECURRENCE

Sofia Jacinto, Pedro Silva Cunha, Guilherme Portugal, Bruno Valente, Madalena Coutinho Cruz, Ana Lousinha, Pedro Brás, Ana Sofia Delgado, Manuel Brás, Margarida Paulo, Cátia Guerra, Paulo Osório, Ana Rita Teixeira, Bárbara Teixeira, Mário Martins Oliveira

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

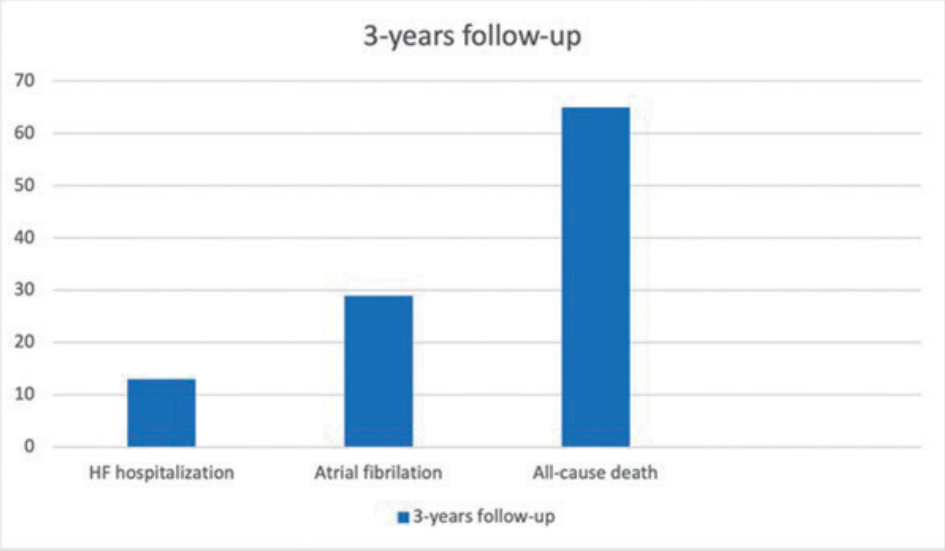
Introduction: Pulmonary vein isolation (PVI) is the mainstay of catheter ablation (CA) for atrial fibrillation (AF). Strategies have been proposed to improve the success rate of CA, such as prophylactic cavotricuspid isthmus (CTI) ablation. Despite some studies providing no, or limited, incremental benefit of CTI ablation in patients with AF, it is still frequently performed worldwide.
Objectives: The aim of this study is to examine whether CTI ablation, combined with PVI, is associated with improvement in recurrence of AF, compared with PVI alone in AF patients with or without atrial flutter (AFL).
Methods: We conducted a retrospective analysis of CA for AF performed at a tertiary center between September 2004 and December 2020. The procedures were divided in two groups: "PVI alone" and "PVI plus CTI ablation". Demographic, clinical, and procedure related data was retrieved. Atrial fibrillation recurrence rate at one year was analyzed for both groups and compared using logistic regression.
Results: A total of 453 procedures were analyzed: PVI alone (n = 378; 83.4%) and PVI with CTI ablation (n = 75; 16.6%). All patients who performed PVI had AF. In the PVI alone group, 12.9% of the patients also had AFL and in the PVI plus CTI ablation, 45.8% had AFL. Mean age was 57.3 ± 12.1 years, with 63.6% male patients. At one year, AF recurrence rate was higher in the combined PVI with CTI ablation group (30.4%; n = 21), compared with the PVI alone group (28.4%; n = 97), with no statistical difference between the two groups (Odds Ratio [OD] 1.10; 95% confidence interval [CI] 0.62-1.94; p = 0.73). In the subgroup analysis, there were no differences between both groups in patients with AF without AFL (OR: 1.9; 95%CI: 0.39-9.36; p = 0.43), and in patients with AF and AFL (OR: 10.0; 95%CI: 0.9-110.3; p = 0.06).
Conclusions: In AF patients, irrespective of the presence of typical AFL, additional CTI ablation, compared with PVI alone, was not associated with improvement in recurrence of AF.

PO 88. USEFULNESS OF THE PHYSIOLOGICAL VDD PACEMAKER IN VELDERLY PATIENTS WITH NORMAL SINUS RHYTHM

Sofia S. Martinho, Maria João Telo, José Paulo Almeida, Natália António, Luís Elvas, Lino Gonçalves

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

Introduction: In frail elderly patients or when atrioventricular block (AVB) is paroxysmal, and pacing anticipated to be infrequent, single chamber pacing (VVI or VDD) may be considered as it carries a lower complication rate compared with DDD devices. For sinus rhythm patients, the single lead VDD, by preserving atrial sensing, is a more physiological mode than VVI devices, with comparable time procedure and complication rates. However, there are few data assessing the performance of VDD pacemakers in elderly patients, with AVB and sinus rhythm. We want to evaluate the 3-years performance of VDD pacemakers (PM) in frailty elder patients with AVB.
Methods: We conducted a retrospective, observational study of 200 elderly (≥ 75 years) patients with AVB and normal sinus rhythm who consecutively implanted VDD PM between 2016 and 2018. Baseline clinical characteristics were analyzed, and a 3-years follow-up was performed: atrial undersensing, atrial fibrillation (AF), heart failure (HF) hospitalization, cardiovascular (CV) and non-CV death.
Results: Mean age was 84 ± 5 years and 55% were female. The study population presented several comorbidities: 74% had atrial hypertension, 49% dyslipidemia, 35% chronic kidney disease and 28% diabetes. After 3-years follow-up most of the patients (90%; n = 162) were still programmed



PO 88 Figure

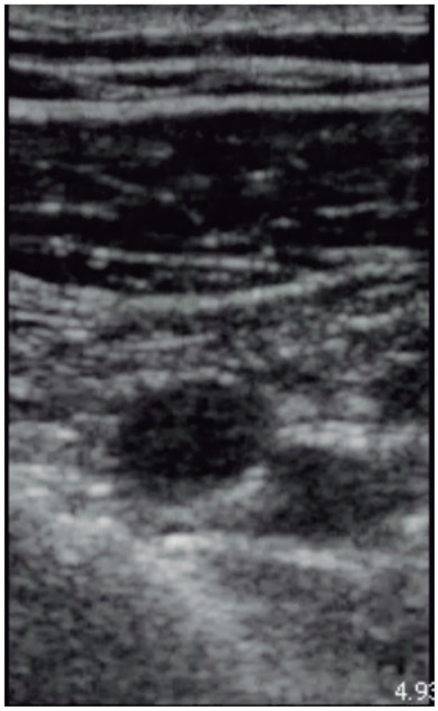
in their original mode with good atrial sensing. Due to permanent AF, 4% (n = 8) patients had been switched to VVIR mode and 5.5% (n = 11) due to P-wave undersensig. 0 ne-third (n = 65) died during follow-up, 89% (n = 58) due to non-CV causes. Low amplitude P-wave (< 0.5 mV) at baseline had a numerical, non-statistically significant association with atrial undersensig and AF at 3-years (p = 0.14 and p = 0.77, respectively). Atrial undersensing during follow-up didn't relate with all-cause death and HF hospitalization (p = 0.58 and p = 0.64, respectively), vbut was associated with atrial fibrillation (12.7 *vs.* 31.6%, p = 0.038).
Conclusions: A significantly larger number of VDD-paced elderly patients maintain their original mode program with good atrial sensing. Moreover, atrial undersensing did not influence mortality or HF hospitalization rate. These results reinforce the benefit of VDD use among frail and elderly patients.

PO 89. ACESSO VENOSO AXILAR PARA IMPLANTAÇÃO DE DISPOSITIVOS DE PACING – EXPERIÊNCIA DE UM CENTRO

Francisco Moscoso Costa, Diogo Cavaco, Sílvia Nunes, Pedro Galvão Santos, Pedro Carmo, Leonor Parreira, Pedro Adragão

Hospital da Luz Lisboa.

Introdução: A cateterização venosa é fundamental para a implantação de elétrodos de estimulação cardíaca. Frequentemente são utilizadas a veia cefálica, que apresenta limitações pelo seu calibre e tortuosidade não facilitando a progressão e implantação de múltiplos elétrodos, e a veia subclávia cuja cateterização está associada ao risco de pneumotórax e por isso desaconselhada pelas últimas orientações da ESC. A cateterização da veia axilar surge como uma alternativa. Neste trabalho descrevemos a experiência de um centro na cateterização seletiva da veia axilar para implantação de elétrodos de estimulação cardíaca.



Métodos e resultados: incluíram-se 103 doentes consecutivos (77 ± 12 anos), admitidos para implantação de *pacemaker* ou desfibrilhador, de 25 de fevereiro de 2020 até 07 de dezembro de 2021. Foram implantados 86 sistemas de *pacing* (71 *pacemaker* dupla câmara, 13 câmara única, 2 CRT-P) e 17 desfibrilhadores (14 CRT-D e 3 convencionais) perfazendo um total de 206 elétrodos implantados. O acesso axilar foi guiado por eco para auxiliar a punção transcutânea sob anestesia local com lidocaína 1%. Foram visualizadas a artéria e veia axilar e verificada a distância à pleura, que foi utilizada como marco de segurança (Fig.). A punção foi então realizada observando a progressão da agulha na imagem do ecógrafo. Nos primeiros 10 casos, não foi possível obter acesso axilar em 3 doentes, sendo utilizada veia cefálica num dos casos e subclávia nos outros 2 casos. Para todos os restantes casos (100 doentes), foi possível obter acesso axilar e implantar os elétrodos sem complicações imediatas. Não registamos nenhum caso de pneumotórax, observamos 2 hematomas da loca em doentes sob hipocoagulação oral, um com necessidade de drenagem. Não se observou nenhum caso de infeção do dispositivo.
Conclusões: Nesta serie de doentes consecutivos submetidos à implantação de dispositivos de *pacemaker*, desfibrilhador e ressincronização, o acesso axilar guiado por eco mostrou ser reprodutível e estar associado a um reduzido número de complicações sendo uma alternativa atrativa à abordagem da subclávia.

PO 90. IMPACT OF THE COVID-19 LOCKDOWN IN EMERGENT PACEMAKER IMPLANTATIONS

Diogo de Almeida Fernandes[1], Rúben Cadete[2], Joana Guimarães[1], Eric Monteiro[1], Gonçalo Costa[1], Natália António[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.

Introduction: COVID-19 was first considered a pandemic on the 11th of March of 2020 by the World Health Organization. Its impact comprised not only the direct consequences of the disease but a decrease in the follow-up and interventions of patients with cardiovascular (CV) disease. In Portugal and the World, the consequences of this complex paradigm shift on emergent pacemaker implantation rates during and after this pandemic is largely unknown.
Objectives: We sought to analyse the impact of COVID-19 pandemic on emergent pacemaker implantation rate and patient profile in a tertiary hospital during the first Portuguese lockdown and subsequent post-lockdown period.
Methods: We retrospectively reviewed the clinical profile of patients who had pacemakers implanted in our hospital in an urgent/emergent setting from March 18, 2020 to May 17, 2020 (lockdown) and May 19 to July 17, 2020 (post-lockdown). This data was then directly compared to the homologous periods from the year before (H1 and H2, respectively).
Results: A total of 180 patients submitted to emergent pacemaker implantation were included. The cohort was comprised of 29 patients who had a pacemaker implanted during lockdown, 60 post-lockdown, 38 in H1 (+31 *vs.* lockdown) and 53 in H2. Average age and gender proportion were similar for all groups. When comparing lockdown and post-lockdown periods, the number of cases significantly increased in the second period (+106.9%) and there was a tendency for a higher number of temporary pacemaker use (3.4 *vs.* 16.7%; p = 0.076). Patients admitted during lockdown were 7.57 times more likely to present with hypotension/shock (odds ratio (OR) 7.57; p = 0.013). Regarding lockdown and its homologous 2019 period, there was a decrease in the number of patients admitted (-23.7%). Again, there was a higher tendency for hypotension on presentation during lockdown (p = 0.054). In comparison to its homologous 2019 period, post-lockdown saw a slight increase in the number of patients (+13.2%) and more patients presented with bradycardia (16.7 *vs.* 3.8%; p = 0.026). Also of note, no patients were admitted to the emergency department during lockdown for anomalies detected on ambulatory tests (Holter, electrocardiogram or implanted loop recorder).
Conclusions: During lockdown, clinical presentation was generally more severe, with a greater number of patients presenting with hypotension/shock. In addition, there appears to be a lockdown effect on emergent bradyarrhtmias admissions in the post-lockdown period with a profound impact: higher admission rates and more severe presentations including a higher need of temporary pacemaker. Patients with symptoms suggestive of bradyarrhythmias should be advised to present promptly regardless of the pandemic.

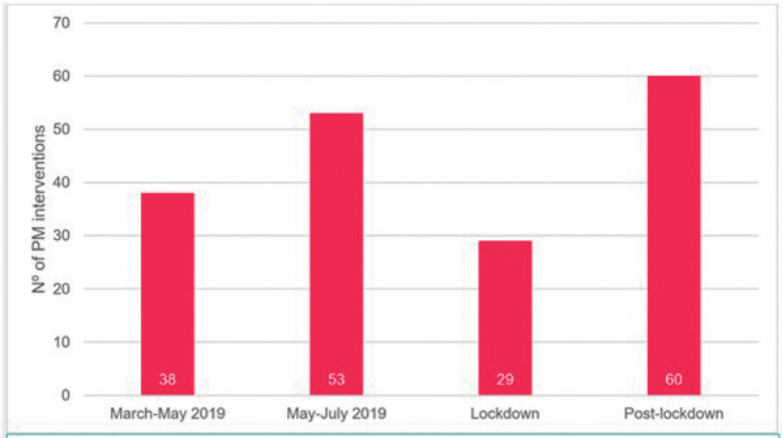


Figure 1. Number of pacemaker interventions in the four studied time periods

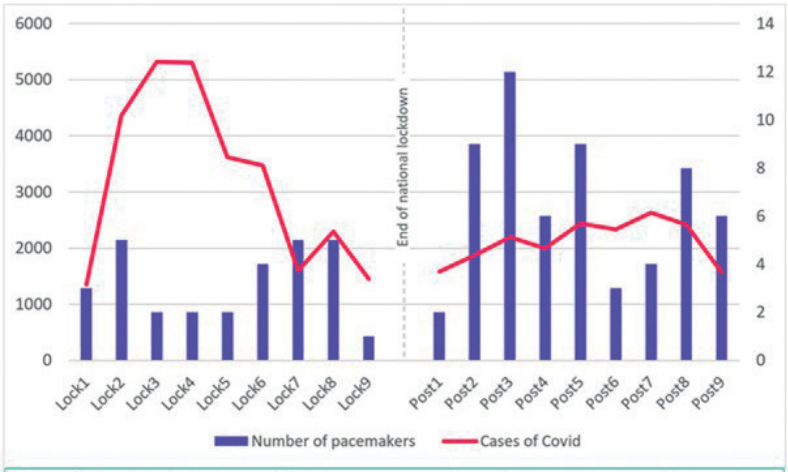


Figure 2. Number of pacemaker interventions per week in our Center and number of new SARS-CoV2 cases per week in Portugal, during the lockdown and post-lockdown periods

PO 90 Figure

Sábado, 23 Abril de 2022 | 09:00-10:00

Sala Jardim de Inverno | Posters (Sessão 3 - Écran 3) - Arritmias 4 - Vários

PO 91. APPLICATION OF SYNCOPE GUIDELINES IN A CENTER WITH A TRAUMA-FOCUSED TRIAGE

Paulo Medeiros, Cátia Oliveira, Carla Pires, Rui Flores, Fernando Mané, Rodrigo Silva, Inês Conde, Carina Arantes, Sónia Magalhães, Adília Rebelo, Sérgia Rocha

Hospital de Braga, EPE.

Introduction: Syncope is a common issue in the emergency department (ED), and many hospitals lack a dedicated syncope unit to observe and evaluate these patients. When attending the ED, patients with syncope or presyncope may be initially referred to medical or surgical (trauma) areas, according to the overall presentation.
Objectives: To understand the differences in the approach and diagnostic workup of syncope and presyncope patients referred to medical *vs.* surgical (trauma) areas.
Methods: Single-center descriptive analysis and comparison of patients that implanted a permanent pacemaker (PM) in 2019 and had at least 1 visit to the ED in the previous year (not including the one that may have triggered the PM implantation). From an initial pool of 398 patients, 88 (22%) were included in the analyzed sample. Patients were divided in two groups: group 1 – medical area; group 2 – surgical area. Clinical history red flags included syncope preceded by palpitations or chest pain, syncope while standing/sitting or syncope without prodromes. Physical examination red flags included hypotension, bradycardia and presence of systolic murmur.
Results: Sixty-six percent (n = 58) of pts were included in group 1 and 34% (n = 30) in group 2. The groups were similar in terms of gender distribution and presence of comorbidities (hypertension, diabetes mellitus, dyslipidemia, smoking and chronic kidney disease). Median observation time in the ED was 5.5 hours (min 0.5 hours, max 24 hours). Thirty-three percent (n = 19) of patients referred to the medical area had at least 1 clinical history red flag *vs.* 57% (n = 17) of those referred to the surgical area, and this different was statically significant (χ^2 (1, N = 88) = 4.67, p = 0.031). The proportion of physical examination red flags was similar between the 2 groups. However, 86% (n = 50) of group 1 patients performed an ECG *vs.* 41% (n = 9) of group 2, with statistical significance (χ^2 (1, N = 88) = 28.27, p < 0.001). Additionally, 34% (n = 20) of group 1 patients were referred to observation by a cardiologist in the ED *vs.* 11% (n = 3) of group 2 pts (χ^2 (1, N = 88) = 6.36, p = 0.012). Finally, 45% (n = 26) of group 1 patients had a scheduled cardiology appointment by discharge, while only 11% of group 2 patients did, with statistical significance (χ^2 (1, N = 88) = 10.85, p = 0.001).
Conclusions: Our results reveal an important issue in syncope and presyncope patients triage at the ED. Considering that all the patients ended up implanting a permanent PM, the proportion of these that were observed by a cardiologist at the ED or were referred to a future appointment was

remarkably low. Also, the approach of patients referred to the surgical area may have been more focused on the trauma itself than on the triggering event, which may explain the low percentage of requested ECGs. Although none of the triage areas had ideal results, surgical area observation was associated with a worse diagnostic workup and referral of syncope patients.

PO 92. LONG-TERM PROGNOSIS IN PATIENTS WITH ATRIOVENTRICULAR BLOCK IN ACUTE CORONARY SYNDROME

Hélder Santos, Sofia B. Paula, Mariana Santos, Inês Almeida, Samuel Almeida, Lurdes Almeida

Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo.

Introduction: The presence of atrioventricular block (AVB) in the setting of an acute coronary syndrome (ACS) can be just an in-hospital complication, without any implication in the long-term prognosis of these patients.
Objectives: Evaluate the long-term impact and prognosis of AVB in ACS patients.
Methods: This is a multicenter retrospective study, based on the Portuguese Registry of ACS between 1/10/2010-3/05/2020. Patients were divided into two groups: A – patients without AVB, and B – patients that presented AVB. Were excluded patients without a previous cardiovascular history or clinical data regarding AVB occurrence. Logistic regression was performed to assess predictors of long-term mortality in patients that had AVB during the ACS.
Results: From 32,157 patients, 23,834 was included, 23,178 in group A (97.4%) and 656 in group B (2.6%). Both groups were similar regarding initial symptons until first medical contact, smoker status, arterial hypertension, diabetes mellitus, peripheral artery disease and chronic kidney disease. Group A had higher body mass index (27.4 ± 4.4 *vs.* 26.9 ± 4.6, p = 0.005), dislipidaemia (59.6 *vs.* 51.4%, p < 0.001), coronary artery disease (18.9 *vs.* 13.0, p < 0.001), heart rate (78 ± 19 *vs.* 65 ± 25, p < 0.001), systolic blood pressure (139 ± 29 *vs.* 119 ± 32, p < 0.001) and left ventricular ejection fraction (LVEF) > 50% (60.1 *vs.* 51.7%, p < 0.001). On the other hand, group B was elderly (66 ± 13 *vs.* 71 ± 13, p < 0.001), female (27.4 *vs.* 32.4%, p < 0.001), previous stroke (6.9 *vs.* 10.9%, p < 0.001), neoplasia (4.9 *vs.* 6.8%, p = 0.031), ST-segment elevation myocardial infarction (46.2 *vs.* 75.4%, p < 0.001), syncope as major symptom (1.3 *vs.* 10.0%, p < 0.001), Killip-Kimball class > I (15.4 *vs.* 31.6%, p < 0.001), multivessel disease (52.1 *vs.* 61.4%, p < 0.001) and major adverse cardiac events (p < 0.001). However, just 8755 had a follow-up at one-year, 8127 in the group A and 628 in the group B. AVB during the ACS was not a predictor of mortality at one year follow-up (p = 0.122). Nonetheless, logistic regression revealed that age > 75 years old (*odds ratio* (OR) 2.44, p < 0.001, confidence interval (CI) 1.87-3.18), chronic kidney disease (OR 1.86, p = 0.002, CI 1.25-2.78), neoplasia (OR 1.80, p = 0.010, CI 1.15-2.81), STEMI (OR 1.58, p = 0.002, CI 1.18-2.11), heart rate at admission > 100 (OR 1.53, p = 0.009, CI 1.11-2.09), Killip-Kimball class > I (OR 1.50, p = 0.009, CI 1.11-2.04), right bundle branch block at admission (OR 1.70, p = 0.004, CI 1.18-2.46), multivessel disease (OR 1.43, p = 0.009, CI 1.09-1.87), left ventricular ejection fraction < 50% (OR 1.86, p < 0.001, CI 1.40-2.49) and cardiogenic shock during the hospitalization for ACS (OR 1.96, p = 0.012, CI 1.16-3.33) were predictors of mortality in patients that presented AVB during the ACS.
Conclusions: AVB during the ACS was not a predictor of long-term mortality.

PO 93. LOWER RATE LIMIT IN CARDIAC RESYNCHRONIZATION THERAPY-DEFIBRILLATORS: IS LOWER BETTER?

M. Inês Barradas, Fabiana Duarte, Luís Resendes de Oliveira, Cátia Serena, António Xavier Fontes, André Viveiros Monteiro, Carina Machado, Raquel Dourado, Emília Santos, Nuno Pelicano, Miguel Pacheco, Anabela Tavares, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: There is few data about programmed lower rate limit (LRL) in real world heart failure (HF) patients with cardiac resynchronization therapy-defibrillators (CRT-Ds) and its influence in clinical outcomes. Heart rate score (HRS) is the percentage of all atrial-paced and sensed events in the single tallest 10 beats/min device histogram bin and may indicate impaired heart rate variability.
Objectives: We hypothesized that higher LRL programming is associated with worse clinical outcomes as arrhythmic events and HF decompensations in chronic HF patients with CRT-Ds.
Methods: LRL was evaluated and HRS was calculated from remote monitoring in 126 HF patients with CRT-D. Primary outcome was defined as HF hospitalizations and related admissions to the emergency department and secondary outcome as number of device therapies, sustained ventricular tachycardia (VT) and ventricular fibrillation (VF).
Results: Mean age was 69.03 ± 10.39 years, 81 (64.3%) were males and mean follow-up was 53.72 ± 46.13 months. Mean left ventricular ejection fraction was 30.31 ± 8.33% and 29 (23.0%) were in NYHA III-IV. HF aetiology was idiopathic in 39 (43.3%), ischemic in 32 (25.4%) and alcoholic cardiomyopathy in 8 (6.3%). Thirty-seven (29.4%) patients had atrial fibrillation and 33 (26.2%) coronary disease. LRL ranged from to 40 to 80 bpm and mean LRL was 52.64 ± 9.64 and mean HRS 49.60 ± 23.17%. Programmed LRL was higher in women (p = 0.014), patients with atrial fibrillation (AF) (p = 0.012) and coronary disease (p = 0.015). Higher LRL correlated with HF hospitalizations and related admissions to the emergency department (ED) (r = 0.541, p = 0.001), VT or VF episodes (r = 0.337, p = 0.005) and CRT-D number of therapies (r = 0.342, p = 0.004) and higher HRS (r = 0.547, p<0,05)
Conclusions: Higher LRL programming was associated with higher HRS, HF decompensations with hospitalization or admission to the emergency department, VT or VF episodes and CRT-D therapies in a real world population. More studies are required but lower LRL may be preferred in HF patients.

PO 94. THE APPLICABILITY OF FAINT SCORE IN SYNCOPE STUDY AND PREDICTION OF PACEMAKER IMPLANTATION

Gonçalo R. M Ferreira, Luísa Gonçalves, Inês Pires, João Miguel Santos, Joana Correia, Vanda Neto, João Fiuza, João Corrêa, Gabriela Venade, Bruno Marmelo, Miguel Correia, Júlio Gil Pereira, Luís Santos, António Costa, Costa Cabral

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

Introduction: Unexplained syncope is a challenging working diagnosis. Implantable loop recorder (ILR) is useful when syncope is rare, and the FAINT score is a risk stratification tool used to predict adverse cardiac events at 30 days in patients who are admitted with syncope in the emergency department.
objective: To evaluate the applicability of the FAINT score in patients with a syncope working diagnosis and its capacity of identifying those with a higher risk of pacemaker (PM) implantation.
Methods: Selected all patients with an implanted ILR for syncope working diagnosis during 5 consecutive years, in a cardiology department. Patients were selected for ILR implantation after syncope and hospital admission (cardiology ward or emergency department). The FAINT score was calculated (F – history of heart failure, 1 point; A – history of arrhythmia, 1 point; I – abnormal initial electrocardiogram, 1 point; N – elevated natriuretic peptides, 2 points; T – elevated troponin, 1 point). The risk was stratified by FAINT score: high risk ≥ 1 and lower risk = 0. Patients were split into two groups: High-risk FAINT patients (HF) and Low-risk FAINT patients (LF) and were compared, using Pearson's Chi-Square test, Fisher's Exact Test, logistic regression, and odds-ratio chances. Follow-up for up to four years. The primary endpoint was defined as the need for PM implantation during follow-up. Adverse events like ILR complication or death were assessed.
Results: 55 patients were included in the final analysis. 50.9% females (n = 28). Mean age of 59.18 [18-86 years]. HF group in 41.8% (n = 23) and LF group in 58.2% (n = 32). Medium FAINT score of 0.8 [0-5 points]. PM implantation in 27.3% (n = 15) during follow-up. Medium follow-up of 979 [0-1,701 days]. 5.5% (n = 3) of ILR complications. 7.3% of mortality during follow-up. Compared to the LF group, patients in the HF group more frequently had PM implantation (45 *vs.* 18.8%, p = 0.04). Although only 4 patients died during the follow-up, there was a significant difference between groups, as all of the patients who died were in the HF group

(p = 0.03). For each point in the FAINT score, the risk of PM implantation increases 2.09 times (p < 0.01). The odds ratio of PM implantation in the high-risk patient is 3.54 higher (p = 0.04) than that of the low-risk patients.
Conclusions: Although the FAINT score is currently used to evaluate the short-term risk of adverse cardiac events after syncope, in our study, it proved to be a useful tool for stratifying the risk of PM implantation on the long-term follow-up.

PO 95. SAFETY OF SAME-DAY VS NEXT-DAY DISCHARGE AFTER CIED: A SINGLE-CENTER EXPERIENCE

Pedro Silvério António, Sara Couto Pereira, Joana Brito, Pedro Alves da Silva, Beatriz Valente Silva, Catarina Oliveira, Miguel Raposo, Catarina Gregório, Ana Bernardes, Afonso Nunes-Ferreira, Andreia Magalhães, Luís Carpinteiro, Helena Cristina, Fausto J. Pinto, João de Sousa, Pedro Marques

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Despite the increasing number of cardiac implantable electronic devices (CIED) implanted worldwide there is no guideline recommending mandatory overnight hospital stay.
Objectives: To evaluate the safety of Same Day Discharge (SDD) after CIED implantation.
Methods: Retrospective single-center observational study of consecutive patients (pts) admitted in the cardiology department since 2018 for permanent pacemaker (PPMK) or implantable cardioverter defibrillators (ICDs) implantation. Pacemaker-dependent pts and pts with early complications (moderate or severe hematomas pneumothorax, pericardial effusion/cardiac tamponade) were excluded from this study. Safety endpoints were pneumothorax, lead dislodgement, cardiac perforation, pocket hematoma, pocket/device infection and death.
Results: Sixty-nine pts (75 ± 12 yrs, 37.7% female) included in the SDD group were compared to 259 pts (76 ± 11 yrs, 32.4% female) in the next-day discharge (NDD) group. The analysis included 287 PPMK (60 in SDD *vs.* 227 in NDD) and 41 ICD (9 in SDD *vs.* 31 in NDD) patients. Baseline patient profile were similar between the two groups: chronic kidney disease (SDD 13 *vs.* NDD 8%), oral anticoagulation (SDD 39 *vs.* NDD 51%) and venous access (SDD 73 *vs.* NDD 75%); except for atrial fibrillation that was more frequent in the NDD group (54 *vs.* 38%, p = 0.02). Time of fluoroscopy and time of implantation were similar between the two groups. A very low rate of complications was observed in both groups: in 4.3% of pts in SDD group and in 5.1% of pts in NDD group, without statistical significance between the two groups (p = 0.43). Early complications (< 30 days) occurred in 1 (1.4%) pt in the SDD group (haematoma) and in 9 (3.4%) pts in the NDD group (4 haematoma, 3 pocket infection and 2 lead dislodgment), without statistical significance (p = 0.85). After a mean follow-up of 22.5 ± 13 months, late complications (> 30 days) in both groups were similar (p = 0.21) – SDD group had 2 (2.9%) pts with lead dislodgment, which needed surgical revision; NDD group had 3 (1.2%) pts (1 lead endocarditis and 2 lead dislodgment) which need surgical revision.
Conclusions: In our center, SDD for CIED is safe and effective compared to NDD. This can represent a significant cost reduction. Larger prospective trials are needed to further evaluate this issue.

Sábado, 23 Abril de 2022 | 09:00-10:00

Sala Jardim de Inverno | Posters (Sessão 3 - Écran 4) - Insuficiência Cardíaca 3 - Terapêutica Farmacológica

PO 96. LEVOSIMENDAN IN OUTPATIENTS WITH ADVANCED HEART FAILURE: SINGLE-CENTER EXPERIENCE OF 200 INTERMITENT PERFUSIONS

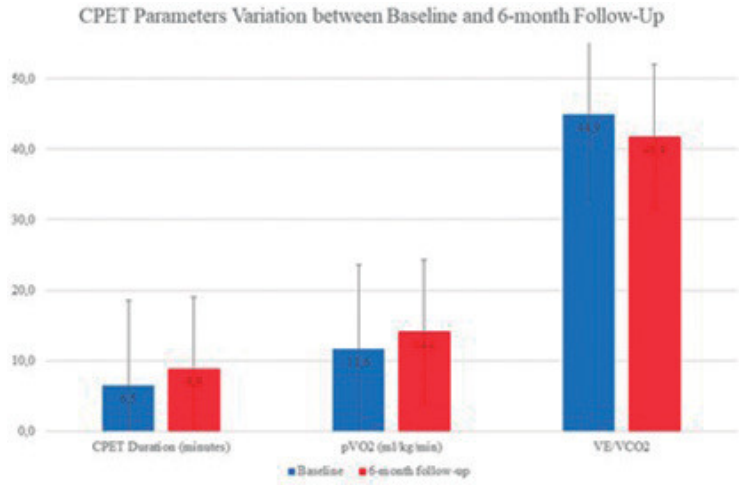
António Valentim Gonçalves, João Reis, Rita Ilhão Moreira, Tiago Pereira-da-Silva, Rui Soares, Ana Teresa Timóteo, Delmira Pombo, Tiago Carvalho, Catarina Correia, Cláudia Santos, Rui Cruz Ferreira

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

Introduction: Patients with advanced heart failure (AdHF) have a high rate of morbidity and mortality. The use of a 6-hour intermittent outpatient Levosimendan infusion has been proven to give symptomatic relief and lower the rate of HF episodes, allowing patients to be treated without having to be hospitalized. Our aim was to evaluate the safety and efficacy of ambulatory Levosimendan administration in an AdHF population.
Methods: Single center prospective experience of consecutive AdHF referred for intermittent intravenous outpatient administration of Levosimendan, between January 2018 and March 2021. Levosimendan was administered every 2 weeks by a 6-hour intravenous infusion (0.2 ug/kg/min) for 12 weeks (6 cycles) in an ambulatory administration setting with non-invasive monitoring of vital signs. Patients in the active Heart Transplant list continued treatment until a donor was available or a significant clinical improvement made the treatment unnecessary. Patients were deemed eligible if they met all of the following criteria: age> 18 years, LVEF ≤ 35%, NYHA functional class ≥ III and at least one HF hospitalization in the previous 6 months or severe impairment of exercise capacity (peak oxygen consumption (pVO2) ≤ 12 mL/Kg/min). Baseline and follow-up evaluation including clinical assessment, laboratory evaluation, transthoracic echocardiography and cardiopulmonary exercise test (CPET) were collected at baseline and 6 months thereafter (3 months after finishing treatment). The data were compared using the Wilcoxon signed-rank test.
Results: A total of 24 patients (60.8 years, 83% male, mean left ventricular ejection fraction (LVEF) of 24%), with a mean of 1.7 HF hospitalizations in

Complications after CIED					
	Same-day discharge		Next-day discharge		
	n	%	n	%	
1st 24 hours					
Life-thretening arrhytmias (ventricular tachycardia)	0	0	1	0.4	p=NS
First 30 days					
Haematoma	1	1.4	4	1.5	p=NS
Pocket infection	0	0	3	1.2	
Lead dyslodgment	0	0	2	0.8	
Late complications (>30 days)					
Haematoma	0	0	0	0	p=NS
Pocket infection	0	0	0	0	
Lead endocarditis	0	0	1	0.4	
Lead dyslodgment	2	2.9	2	0.8	

PO 95 Figure



PO 96 Figure

the previous 6 months, were included. During the three-year period, 200 treatments were performed with no serious adverse events reported. At 6-month follow-up there was a significant reduction in HF hospitalizations (1.7 ± 0.9 to 0.4 ± 0.7, p < 0.001), NYHA Class IV patients (52% to 13%, p = 0.025) and NTproBNP (8,813 ± 6,101 to 5,005 ± 4,886 pg/mL, p = 0.038). A significant improvement was also noted in pVO2 (12 ± 3 to 14 ± 5 ml/kg/min, p = 0.043) and LVEF (24 ± 6% to 29.7 ± 9%, p = 0.008).
Conclusions: 6- Hour Levosimendan administration in an outpatient setting to AdHF patients is a safe procedure and was associated with a reduction in HF hospitalizations and NT-proBNP levels, as well as an improvement in functional capacity and LVEF during follow-up.

PO 97. SACUBITRIL-VALSARTAN: THE EARLIER, THE BETTER?

Ana Filipa Cardoso, Mariana Tinoco, Geraldo Dias, Bebiana Faria, Tâmara Pereira, Marina Fernandes, Filipa Almeida, António Lourenço

Hospital da Senhora da Oliveira, EPE - Guimarães.

Introduction: Sacubitril/valsartan (S/V) is recommended in ambulatory patients (pts) with heart failure with reduced ejection fraction (HFrEF) who remain symptomatic despite optimal treatment. Our aim was to study the impact of timing of initiation of S/V on cardiovascular (CV) outcomes of a HFrEF population.
Methods: Single centre retrospective study that included all HFrEF pts followed at the HF Clinic of the Cardiology Department with at least 1 year of follow-up. Pts diagnosed ≥ 4 years and those not treated with S/V were excluded. Pts were divided into 2 groups: group 1 (G1) if S/V was initiated in the first 6 months from HFrEF diagnosis and group 2 (G2) if S/V initiation occurred more than 6 months from diagnosis.
The primary endpoint was a composite of admission for decompensated HF and CV death during the follow-up.
Results: Of a total of 158 pts, 59 were included (81% males; mean age 63 ± 13 years). Dilated cardiomyopathy (35;59%) and ischemic cardiomyopathy (24;41%) were the most frequent aetiologies. Median time from diagnosis to first HF Clinic visit was 2 (IQR 1-12) months. The majority of pts was on NYHA II functional class (36; 61%) and 41 (69%) had a previous HF admission. Nine (15%) pts were angiotensin-converting enzyme inhibitors or angiotensin-receptor blockers naïve. Twenty-two (37%) pts initiated S/V in the first 6 months from HFrEF diagnosis (G1). Their comorbidity profile and baseline echocardiographic parameters were similar to G2 pts. Median time from HFrEF diagnosis to S/V initiation was 1 month (IQR 0-6) in G1 and 32 months (IQR 17-57) in G2. Both groups had achieved similar median target doses of S/V (p = 0.574), beta-blocker (p = 0.123) and mineralocorticoid therapy (p = 0.159). Median doses of diuretic were lower in G1 (0 mg IQR 0-25 *vs.* 40 mg IQR 0-80, p = 0.008). A revaluation echocardiogram after optimal medical therapy showed a significative higher increase in left ventricle ejection fraction (LVEF) on G1 compared to G2 (25 ± 1% to 41 ± 3 *vs.* 27 ± 1% to 33 ± 2%, p = 0.039). During a median follow-up of 23 months (IQR 9-30) there were 5 hospitalizations for HF, 3 CV deaths and 1 non-CV death. Pts in G1 had a significantly lower incidence of the primary endpoint (0 *vs.* 16 events per 100 person-year; log-rank p = 0.010).
Conclusions: Pts who started S/V in the first 6 months from HFrEF diagnosis had a higher increase in LVEF, less HF hospitalizations and CV deaths. These findings suggest a better overall prognosis in earlier initiation of S/V after HFrEF diagnosis.

PO 98. PREDICTORS OF SACUBITRIL-VALSARTAN TARGET DOSE ACHIEVEMENT IN A REAL-WORLD POPULATION

Mariana Tinoco, Ana Filipa Cardoso, Geraldo Dias, Tâmara Pereira, Bebiana Faria, Filipa Almeida, Sérgio Leite, António Lourenço

Hospital da Senhora da Oliveira, EPE - Guimarães.

Introduction: PARADIGM-HF demonstrated superiority of Sacubitril-Valsartan (SV) over enalapril in patients with heart failure with reduced ejection fraction (HFrEF). However, achievement of target doses (TD) used on clinical trials can be difficult in real world practice.
Objectives: This study assesses the ability to achieve TD and its predictors in a real-world population.
Methods: Retrospective study of patients with HFrEF under SV therapy observed at an HF clinic between Jan 2018 and Jun 2020, with a follow up period until Oct 2021.
Results: A total of 90 patients were included: 80% (72) male, 65 ± 12 years, mostly with dilated cardiomyopathy (46,7%, 42) and ischemic cardiomyopathy (42,2%; 38). On the evaluation before starting SV, mean LVEF was 26.35 ± 7.32%, 50% were in class III-IV; 89% were on ACEI/ARB, 92% on beta-blocker and 92% on MRA; 43.3% had an ICD and 31.1% a CRT-D; Up-titration to TD was achieved in 52 (57.8%) patients. A higher systolic blood pressure (p = 0.008), higher eGFR (p = 0.049), lower NT-PBNP (p = 0.025), higher body mass index (BMI) (p = 0.026) and a higher previous dose of ACEI/ARB (p = 0.013) were associated with achieving TD. On multivariate analyses, BMI was found to be the only independent predictor of achieving TD (p = 0.031). Symptomatic hypotension (66%; 25) was the main impediment to attaining TD, followed by renal deterioration (24%; 9), hyperkalaemia (5%; 2) and itch (5%; 2). Dose reduction was needed in 12.2% (11), being symptomatic hypotension (8, 73%) and hyperkalaemia (3, 27%) the most common reasons. SV discontinuation occurred in 7 (7.8%) patients due to symptomatic hypotension (43%; 3), economic insufficiency (29%; 2), worsening renal function (14%; 1) and itch (14%; 1). Patient assigned to TD, were more often able to reduce dose (p = 0.022) and suspend (p = 0.002) furosemide and more often had an increase in serum creatinine (1.08 *vs.* 1.37 mg/dl; p = 0.014), without leading to hospitalizations or higher risk for hyperkalaemia. Achieve TD was associated with lower major adverse CV events (p = 0.037), lower deaths for

CV causes (p = 0.026), lower hospitalizations for HF (p = 0.033) and lower need of inotropic support (p = 0.047).
Conclusions: Achievement of TD was possible in the majority of the cohort being BMI its strongest predictor. Reduction in diuretic use and dose was possible in a large percentage of the population. Achieve TD had a greater impact on HFrEF prognosis.

PO 99. MAXIMUM DOSE SACUBITRIL/VALSARTAN IN THE ELDERLY PEOPLE WITH HEART FAILURE AND REDUCED EJECTION FRACTION

Eric Alberto Monteiro[1], José Barbosa[2], Joana Guimarães[1], Diogo Fernandes[1], Gonçalo Costa[1], Rita Gomes[1], João Rosa[1], Gustavo Campos[1], Sofia Martinho[1], Carolina Saleiro[1], José Almeida[1], Diana Campos[1], João Gameiro[1], André Azul[1], José Sousa[1], Cátia Ferreira[1], Susana Costa[1], Rui Baptista[1], Fátima Franco[1], Marta Madeira[1], Lino Gonçalves[1]

[1]Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra. [2]MEDCIDS, FMUP — Department of Community Medicine, Information and Decision in Health, University of Porto, Faculty of Medicine.

Introduction: In the current ESC Guidelines, sacubitril/valsartan (SV) is recommended as a replacement for angiotensin-converting-enzyme inhibitors to reduce the risk of heart failure (HF) hospitalization and death. Nevertheless, HF elderly patients are underrepresented in SV HF trials. The aim of this study was to assess the effects of maximum dose SV (97/103 mg twice daily) regarding its efficacy and safety in the elderly patients.
Methods: Retrospective analysis of 91 patients aged ≥ 65 with heart failure and reduced ejection fraction (HFrEF) on maximum dose SV. Serum creatinine and potassium levels as well as systolic blood pressure (SBP) were evaluated at baseline and at 6 months follow-up to assess safety. NYHA class, NT-proBNP and left ventricular ejection fraction (LVEF) were evaluated at baseline and at 6 months follow-up to assess efficacy. Wilcoxon's Signed Rank test was used to test for statistically significant differences.
Results: The median age was 70 [interquartile range (IQR) 67-76] and 82.4% were males. Ischaemic aetiology represented 46.6% of the cases. Regarding comorbidities, 44.4% had atrial fibrillation and 42.2% had diabetes. Beta-blockers and mineralocorticoid receptor antagonists were being used in 97.7 and 93% of the patients, respectively. At baseline, median serum creatinine was 1.13 mg/dL (IQR 0.90-1.49), median serum potassium was 4.4 mg/dL (IQR 4.1-4.9) and median SBP was 124 mmHg (IQR 117-136). Median baseline NYHA class was 2 (IQR 2-3), median NT-proBNP level was 855 mg/dL (IQR 493-2256) and median LVEF was 29% (IQR 23-35). At 6 months follow-up, there was a significant improvement in NYHA class [median 2 (IQR 1-2) *vs.* 2 (IQR 2-3); p < 0.001] and LVEF [median 38% (IQR 30-50) *vs.* 29% (IQR 23-35); p = 0.001] as well as a significant reduction in NT-proBNP levels [median 705 mg/dL (IQR 278-1,836) *vs.* 855 mg/dL (IQR 493-2,256); p = 0.017]. Regarding the safety parameters, no significant differences were observed in serum creatinine levels [median 1.29 mg/dL (IQR 0.96-1.75) *vs.* 1.13 mg/dL (IQR 0.90-1.49); p = 0.144]. There was a statistically significant rise in serum potassium levels [median 4.5 mg/dL (IQR 4.2-4.9) *vs.* 4.4 mg/dL (IQR 4.1-4.9); p = 0.020], but the magnitude of the rise wasn´t clinically concerning. Systolic arterial pressure was significantly reduced [median 113 mmHg (IQR 99-127) *vs.* 124 mmHg (IQR 117-136); p = 0.001], but the final systolic arterial pressure was above the safety margin.
Conclusions: In this senior cohort of HFrEF patients treated with target dose of SV, there was a significant impact on NYHA class, NT-proBNP levels and LVEF. No significant differences were observed in serum creatinine levels. Despite verification of a significant increase in serum potassium and a significant decrease in SBP, these changes weren´t strong enough to raise safety issues. We thereby conclude that SV on maximum dose is safe and effective in the elderly.

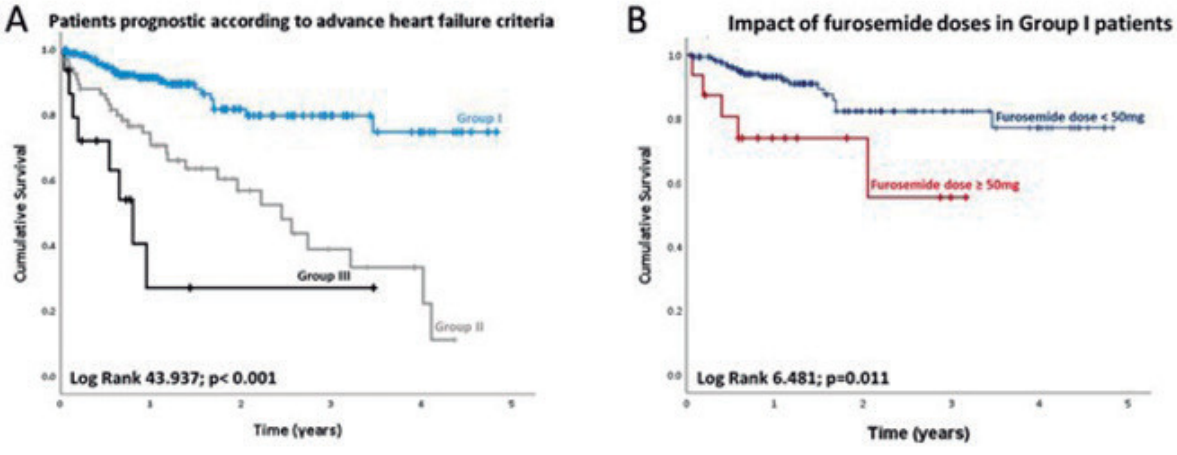
PO 100. THE NEED FOR DIURETIC THERAPY IN SPITE OF HEART FAILURE WITH REDUCED EJECTION FRACTION FOUNDATIONAL THERAPY: A NEW MARKER OF ADVERSE PROGNOSIS?

Margarida Martins, João Ribeiro Agostinho, Pedro Silvério António, Sara Couto Pereira, Joana Brito, Pedro Alves da Silva, Beatriz Valente Silva, Ana Beatriz Garcia, Catarina Simões de Oliveira, Rafael Santos, Joana Rigueira, Doroteia Silva, Nuno Lousada, Fausto J. Pinto, Dulce Brito

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: The definition of Advanced Heart Failure (AHF) presented in the new heart failure (HF) ESC guidelines (GL) doesn't include the diuretic

	Total	Group I	Group II	Group III	P
Number of patients, *n (%)*	278	193 (69.4%)	69 (24.8%)	16 (5.8%)	
Creatinine, *mg/dL (mean+SD)*	1.41 ± 0.84	1.3±0.84	1.52±0.74	2.23±1	<0.001
NT-proBNP, *pg/mL (mean+SD)*	3385 ± 8701	1645±7243	5578±8028	13618±15673	<0.001
LVEF, *%*	36±11	40 ± 11	26 ± 8	27 ± 11	<0.001
Patients with an HF event, *n (%)*	61 (21.9)	23 (11.9)	30 (43.5)	8 (50)	<0.001
Death, *n (%)*	33 (11.9)	153 (6.7)	16 (23.2)	4 (25)	<0.001
Patients with HF admission, *n (%)*	40 (14.4)	10 (5.2)	22 (31.9)	8 (50)	<0.001
Furosemide equivalent dose, *median*	20mg	0mg	40mg	50mg	<0.001
4 classes of foundational therapy, *n (%)*	128 (46)	92 (47.7%)	30 (43.5%)	6 (37.5%)	0.651



PO 100 Figure

dose criterion. This criterion was only used in the AHA 2013 HF GL, where a dose equivalent to > 160 mg of furosemide was suggested as a marker of risk. However, this criterion was proposed prior to the establishment of HFrEF foundational therapy that includes 3 pharmacological classes with diuretic properties.
Objectives: To evaluate whether diuretic doses may be used as a marker of AHF and to establish a diuretic dose cut-off to stratify HFrEF patients (pts).
Methods: Consecutive pts with chronic HFrEF followed in a tertiary hospital multidisciplinary HF program were included. These pts were divided into 3 groups according to HF severity after therapy optimization: pts that fulfilled criteria for AHF (NYHA class: III-IV; > 1 HF decompensation requiring hospital visit/year; NTproBNP persistently > 3,000 pg/mL; LVEF ≤ 30%) – Group III; pts mainly in NYHA class II that fulfilled all the other AHF criteria – Group II; all other pts – Group I. The median dose of diuretic used in Groups II and III pts (AHF pts) was calculated and its impact on HF related events (worsening heart failure, with or without hospitalizations, or death) on Group I (pts supposedly without AHF) was evaluated by Cox regression and Kaplan-Meyer analysis.
Results: 278 pts were included (mean age: 66 ± 14 years; female: 29.5%). The mean follow-up was 1.4 ± 1.14 years. The most frequent HF etiologies were ischemic heart disease (45.7%) and dilated cardiomyopathy (41.7%). Sixteen (5.8%) pts were included in Group III, 69 (24.8%) in Group II, and 193 (69.4%) in Group I - Table 1.During follow-up, 33 (11.9%) pts died and 61 (21.9%) had a HF event. As expected, HF events were more common in Groups II and III (Fig. 1A). The prescribed median diuretic dose (expressed as furosemide equivalent dose) was 0 mg in Group I, 40 mg in Group II and 50 mg in Group III (p < 0.001).In Group I, 52 (26.9%) pts required at least 40 mg of furosemide and 18 (6.3%) pts at least 50 mg of furosemide. In those pts that needed more than 50 mg of furosemide 10 (62.5%) pts had an HF event during follow-up (HR 3.4; 95%CI 1.2-9.2; p = 0.017) (Fig. 1B).
Conclusions: In this cohort, diuretic doses were a useful marker of AHF. Persistent need of a dose of furosemide ≥ 50 mg may be used to stratify HFrEF pts with uncovered AHF and should prompt a thorough AHF investigation.

Sábado, 23 Abril de 2022 | 09:00-10:00

Sala Jardim de Inverno | Posters (Sessão 3 - Écran 5) - Risco Cardiovascular 1 - Lípidos e Hipertensão Arterial

PO 101. FAMILIAL HYPERCHOLESTEROLEMIA IN ACUTE CORONARY SYNDROME PATIENTS: UNDERDIAGNOSIS IN FEMALE AND IN YOUNG PATIENTS

Pedro Garcia Brás, Guilherme Portugal, Ana Teresa Timóteo, Alexandra Castelo, Vera Ferreira, Rita Teixeira, Sofia Jacinto, Bárbara Teixeira, José Viegas, André Grazina, Rui Cruz Ferreira

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

Introduction: Familial hypercholesterolemia (FH) is often underdiagnosed, particularly in female patients (P), even during hospital admission for acute coronary syndromes (ACS). The aim of this study was to apply the Dutch Lipid Clinic Network (DLCN) Criteria in P admitted for ACS and evaluate gender and age differences.
Methods: Prospective registry of P with ACS admitted to a tertiary center from 2005 to 2019. Data including family history and laboratory tests was analysed for the application of the DLCN criteria and results were stratified according to ACS subtype, gender and age groups (20-39, 40-59, 60-79 and ≥ 80 years [y]). P were followed up for 30 days for hospitalization, recurring ACS and mortality.
Results: 3,811 P were evaluated, mean age 63 ± 13 years, 28% female and mean LDL cholesterol of 125 ± 43 mg/dL. The admission diagnosis was unstable angina (UA) in 5%, non-ST-segment elevation myocardial infarction (NSTEMI) in 27% and ST-segment elevation MI (STEMI) in 68%. Applying the DLCN criteria, 3089 P (81%) had a score of < 3 (unlikely FH), 675P (17.7%) a score of 3 to 5 (possible FH), 41P (1.1%) a score of 6 to 8 (probable FH) and 1P (0.03%) a score of > 8 (definite FH). Stratifying according to ACS type: among UA, 31P (16%) had possible FH and 4P (2.1%) had probable FH. Among NSTEMI, 145P (14.2%) had possible FH, 9P (0.9%) probable FH and 1P (0.03%) definite FH. Finally, among STEMI P, 497P (19.1%) had possible FH and 28P (1.1%) probable FH. Regarding female P, 158P (14.7%) had possible FH and 16P (1.5%) probable FH. Among male P, 517P (18.9%) had possible FH and 25P (0.9%) probable FH (p = 0.016 for interaction). According to age groups, among P aged 20-39 y (136P), 61P (44.9%) had possible FH and 6P (4.4%) had probable FH. Concerning P aged 40-59 y (1766P), 575P (32.6%) had possible FH, 31 P (1.8%) probable FH and 1P (0.1%) definite FH. With regard to P aged 60-80 y (2122P), 80P (3.8%) had possible FH and 4P (0.2%) probable FH. Among P aged ≥ 80 y (1837P), only 9P (0.5%) had possible FH and no P had probable FH. In a 30-day follow-up, there was a hospitalization rate of 3.5% (134P) and recurring ACS in 1.7% (65P), while the all-cause mortality was 2% (78P) and cardiovascular (CV) death was 1.3% (49P). Female P had a significantly lower hospitalization rate (1.8 *vs.* 3.2%, p = 0.003) as well as fewer recurring ACS (0.6 *vs.* 1.7%, p = 0.001). There was no significant gender difference regarding all-cause mortality (female 1.7 *vs.* 1.5%, p = 0.552) or CV death (0.8 *vs.* 1.1%, p = 0.323). The DLCN criteria score was significantly correlated with admission for recurring ACS (OR 1.19 [95%CI 1.04-1.36], p = 0.04).
Conclusions: Application of the DLCN criteria in female P admitted for ACS revealed 158P (14.7%) with possible FH and 16P (1.5%) with probable FH. Regarding younger ACS P (20-39y), 44.9% had criteria for possible FH and 4.4% for probable FH, prompting us to do not overlook these P subgroups in daily practice and routinely assess the likelihood of FH.

PO 102. LDL-CHOLESTEROL LEVELS AFTER ACUTE CORONARY SYNDROME: 24-MONTHS VARIATIONS AND IMPACT ON OUTCOMES

Dias de Frias[1], Cristine Schmidt[2], Mauro Moreira[3], Preza Fernandes[1], Sandra Magalhães[4], Mário Santos[4], Severo Torres[1]

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Introduction: Patients with acute coronary syndrome (ACS) are at very high risk of recurrent cardiovascular (CV) events. Despite the evidence supporting an immediate and intensive lowering of LDL-cholesterol (LDL-C), most of the real-world studies are focus on short-term outcomes.
Objectives: To assess LDL-C levels during the first 24 months post-ACS.
Methods: Single-center, retrospective observational study that included all consecutive post-ACS patients enrolled in a phase 2 cardiac rehabilitation (CR) program in 2017. For this study, patients were divided into two groups according to ESC 2016 guidelines on dyslipidemia. Group 1 (n = 111): patients with LDL-C < 70 mg/dl levels at 3 months post-ACS, and group 2 (n = 87): patients with LDL-C> 70 mg/dl.
Results: Of the 198 patients studied, 82% were male, with a mean age 60.3 ± 10.7 years old and baseline mean LDLv-C 98.6 ± 34.6 mg/dl. The two groups were comparable in comorbidities, ACS presentation, revascularization strategy, LDL-C medication, and CR adherence. Group 1 had lower LDL-C baseline values (89.3 ± 31.8 mg/dl *vs.* 112.9 ± 33.6 mg/dl, p < 0.001) and higher reduction of LDL-C at 3 months (-37.8 ± 33.7 *vs.* -22.5 ± 46.7 mg/dl, p = 0.009). At 12 months, although mean LDL-C in group 1 increased 10.1 mg/dl (95%CI: 1.8 to 13.6 *vs.* 3 months levels), the mean LDL-C remained in optimal values (61.8 ± 19 mg/dl). Conversely, group 2 trended to an LDL reduction of 5.3 mg/dl (95%CI: 2.2 to -13.2, p = 0.158), but the mean LDL-C continued high (85.8 ± 32.6 mg/dl), with 69% of patients still above the LDL threshold of 70 mg/dL *vs.* 30% in group 1. At 24 months, both groups showing similar suboptimal LDL-C levels (71 ± 25.6 *vs.* 73.7 ± 26.6 mg/dl, p = 0.523).

Conclusions: The proportion of post-ACS patients with uncontrolled LDL-C levels is significant and increase over time. Demographic and clinical profile do not explain differences in LDL control. Further studies are needed to understand the causes and implement effective strategies in this high-risk subgroup of patients.

PO 103. HIGH SALT INTAKE IS A RISK FACTOR FOR KIDNEY FAILURE/MICROALBUMINURIA IN HYPERTENSIVE PATIENTS

Ana Célia Sousa[1], Maria Isabel Mendonça[1], Carolina Barros[1], Helena Luís[1], Mariana Gomes[1], Carolina Morna[1], Diogo André[1], Eva Henriques[1], Mariana Rodrigues[1], Sónia Freitas[1], Sofia Borges[1], Marco Ferreira[1], Ilídio Ornelas[1], Roberto Palma dos Reis[2]

[1]Hospital Dr. Nélio Mendonça. [2]Faculdade de Ciências Médicas de Lisboa/ NOVA Medical School.

Introduction: Arterial hypertension (AHT) is one of the main causes of kidney failure (KF), and their coexistence increases the risk of cardiovascular disease. Several studies have associated the excessive salt intake and a higher risk of developing kidney failure, although with unclear results.
Objectives: Evaluate the association between high salt intake and the development of Kidney Failure/Microalbuminuria in patients with AHT.
Methods: A sample of 860 hypertensive patients (mean age of 51.4 ± 8.0 years; 53.3% male) was subject to blood collection for biochemical tests and to 24-hour urinary sodium excretion measurement (related to salt intake). Two groups were constituted: 116 with Kidney Failure/Microalbuminuria (KF/Microalb) and 744 controls. Urinary sodium excretion values were distributed into quartiles and compared between the individuals with and without KF/Microalb. Several factors associated with the development of KF/Microalb were evaluated, namely age, gender, diabetes, control of AHT (controlled or not) and salt intake. Finally, a logistic regression analysis was performed to evaluate which risk factors were independently and significantly associated with KF/Microalb.
Results: High salt intake (4th quartile) is associated with the onset of KF/Microalb (OR = 2.048; 95%CI: 1.356-3.092; p = 0.001) in hypertensive individuals. After multivariate analysis, diabetes (OR = 2.713; 95%CI: 1.751-4.204; p < 0.0001) and high salt intake (OR = 1.685; 95%CI: 1.096-2.591; p = 0.017) were independently and significantly associated with KF/Microalb in our population. Controlled AHT appeared as a protective variable with an OR of 0.438 (95%CI: 0.290-0.660; p < 0.0001).

Independent risk factors for Kidney Failure/Microalbuminuria

Variables	OR (95% CI)	p-value
Diabetes	2.713 (1.751-4.204)	<0.0001
Salt intake (> 4th quartile)	1.685 (1.096-2.591)	0.017
Controlled AHT	0.438 (0.290-0.660)	<0.0001

Age and gender did not remain in the equation;
OR – Odds ratio; CI – Confidence interval. Statistically significant for p<0.05.

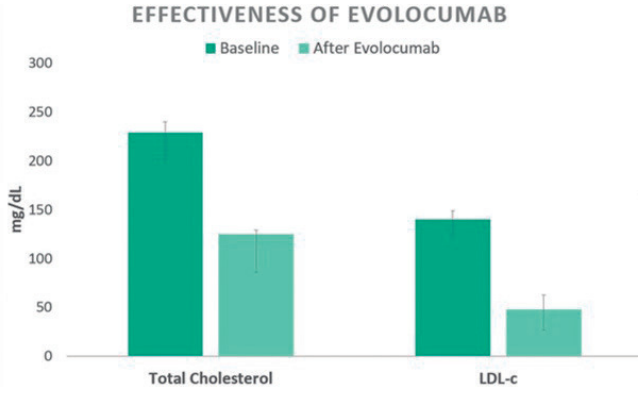
Conclusions: High salt intake is significantly and independently associated with increased risk of KF/Microalb in hypertensive individuals. Lowering salt intake is an important strategy to be instituted in hypertensive patients, in order to delay the evolution to Kidney Failure.

PO 104. REAL-WORLD ASSESSMENT OF IPCSK9 TREATMENT ADHERENCE, EFFECTIVENESS, AND TOLERABILITY: A PRELIMINARY ANALYSIS

Rita R. Amador, Sérgio Maltês, Catarina Oliveira, Ana Rita Bello, Ana Micro, Fátima Falcão, Bruno M. l Rocha, Jorge Ferreira, Miguel Mendes

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

Introduction: High levels of low-density lipoprotein cholesterol (LDL-c) represent a major cardiovascular (CV) risk factor. Evolocumab, a recently approved PCSK9 inhibitor, is an important therapy in patients with high or very high CV risk who do not reach target LDL-c levels despite optimal therapy or who are intolerant to statins. Our goal was to assess real-world early data regarding evolocumab prescription, adherence, tolerability, and effectiveness.
Methods: Single-centre study enrolling consecutive patients prescribed evolocumab. An effectiveness analysis was conducted in patients with cholesterol levels obtained before and one year after PCSK9 inhibitor initiation. Patients undergoing LDL-c apheresis (n = 2) were excluded from the effectiveness analysis. Safety data was obtained through active pharmacovigilance in patients under evolocumab for = 3 months. Adherence to treatment (AT) was assessed using the Medication Possession Ratio (MPR). Those with an MPR = 0.80 were considered adherent to therapy.
Results: A total of 34 patients were referred for evolocumab (mean age 64 ± 9 years; 62% male; 85% with very high and 15% with high CV risk according to the ESC guidelines, 68% with confirmed familial forms of dyslipidaemia). The main prescription reason was inability to achieve an LDL-c < 55 mg/dL in very-high risk or < 70 mg/dL in high-risk patients despite optimal therapy (19 patients, 56%) followed by statin intolerance (15 patients, 44%). Patients who were not intolerant had been prescribed a high-intensity statin and ezetimibe. Four patients had yet to start treatment at the present time. After 12-months of evolocumab, median LDL-c was significantly lower (140 [125-149] *vs.* 48 [27-63] mg/dL, Wilcoxon signed-rank test p = 0.005) as were total cholesterol levels (229 [202-240] *vs.* 125 [86-129] mg/dL, Wilcoxon signed-rank test p = 0.008). During follow-up, 90% of patients had an LDL-c reduction equal to or higher than 50% (mean LDL-c reduction 65 ± 15%) at 12-months and 60% were able to meet the LDL-c target level. Ten patients (44%) had a suspected adverse drug reaction (ADR)-nine with mild ADRs and one with a severe ADR (anaphylaxis). The most frequent ADRs were arthralgia (n = 4), lumbar pain (n = 3) and myalgia (n = 3). AT was evaluated in 21 patients - mean MPR was 0.95 ± 0.11; 19 patients (91%) with an MPR = 0.80. Two patients discontinued evolocumab due to ADRs.



Conclusions: In our real-world early experience regarding evolocumab, drug effectiveness was high and led to significant LDL and total cholesterol reductions. Evolocumab was associated with a high therapy adherence and severe ADR and drug discontinuation were rare.

PO 105. DOES IT MAKE SENSE TO USE QUESTIONNAIRES TO ASSESS THE VVVCARDIOVASCULAR RISK OF HYPERTENSIVE PATIENTS?

Adriana Rei Pacheco[1], Pedro Carvalho[2], Lisa Marques[2], Diana Carvalho[2], Simão Carvalho[2], Mesquita Bastos[2], Ana Briosa[2]

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Introduction: Obstructive Sleep Apnea (OSA), sedentary lifestyle and cognitive impairment are related to arterial hypertension.
Methods: For 3 months, patients undergoing Arterial Blood Pressure Monitoring (ABPM) were submitted to 3 questionnaires: International Physical Activity Questionnaire (iPAQ), STOP-Bang and Montreal Cognitive Assessment (MoCA), relating to the assessment of, respectively, level of physical activity, risk of OSA and cognitive impairment. 80 patients were included. Exclusion criteria: < 18 years, pregnancy, secondary hypertension, illiteracy and

Correlations	Pearson Correlation	Significance**
	MOCA	
Age	-0.420	0.001
SBPdip	0.342	0.01
Exercise	0.415	0.01
	OSA	
Obesity	0.227	0.05
Exercise	-0.254	0.05
	Associated factors*	
Resistant hypertension	0.256	0.05

Table 1: Pearson correlation with significance in relation to MOCA variable, OSA and associated factors

*high risk of OSA, sedentary lifestyle and lower MOCA score

**p value <0.05

PO 105 Figure

diagnosed OSA. 45 were men (56.3%), mean age 63 ± 14 years, body mass index (BMI) 27.6 ± 4 kg/m². 24-hour ABPM: systolic blood pressure 127.2 mmHg, diastolic blood pressure 75.3 mmHg, systolic blood pressure dipping (SBPd) 10.2 mmHg. MOCA score: 22.3 ± 4.9 points. SAOS score: low risk 16 patients (20.1%), high risk 62 patients (79.9%). Exercise score: 48 active (60%), 10 moderate (12.5%), 9 sedentary. BMI: 24 normal weight (30%), 35 overweight (43.8%), 21 obesity (26.3%). In t-Student analysis, the age of the population with normal MoCA score *vs.* low score was significantly different, respectively, 60.2 ± 12 *vs.* 68.1 ± 15, $p < 0.05$. In cross tabs analysis for non-parametric variables comparing OSA high *vs.* low risk, exercise was significantly lower on high-risk group (t Student 4.5, $p < 0.05$). The other variables with significance observed were those included in the score (age, BMI, neck perimeter).

Results: The table shows Pearson correlation with significance in relation to MoCA score: age (ρ -0.420, $p < 0.001$), SBPdip (ρ 0.342, $p < 0.01$), exercise (ρ 0.415, $p < 0.01$); and Pearson correlation with significance in relation to OSA risk: obesity (ρ 0.227, $p < 0.05$), exercise (ρ -0.254, $p < 0.05$). The presence of these features (high risk of OSA, lower score in MoCA and lower physical activity) simultaneously is associated with a higher prevalence of resistant hypertension (ρ 0.256, $p < 0.05$).

Conclusions: Cognitive impairment is associated with arterial hypertension, on top of age and other risk factors. Systolic blood pressure dipping, a physiological answer, seems to be associated with a better score on MoCA. Exercise seems to benefit mental cognitive status and is associated with a lower OSA risk. Resistant hypertension seems to be associated with worse performance in all of the tests. Approaching the risk factors described may improve prognosis. With the results of this study, the authors decided to implement these surveys in the daily practice of the service.

Sábado, 23 Abril de 2022 | 09:00-10:00

Sala Jardim de Inverno | Posters (Sessão 3 - Écran 6) - DAC e Cuidados Intensivos 4 - Vários

PO 106. PHYSICAL EXERCISE ACTIVITY TRENDS IN ACUTE MYOCARDIAL INFARCTION PATIENTS - WHERE DO WE STAND?

Catarina Amaral Marques[1], André Cabrita[1], Paulo Maia Araújo[1], Tânia Proença[1], Ricardo Alves Pinto[1], Miguel Martins de Carvalho[1], Catarina Martins da Costa[1], Ana Filipa Amador[1], João Calvão[1], Ana Isabel Pinho[1], Cátia Oliveira[1], Luís Daniel Santos[1], Cristina Cruz[1], Filipe Macedo[1]

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Introduction: The benefits of regular physical exercise in high-risk cardiovascular (CV) patients (pts) are widely described. Despite that, sedentarism is a major public health problem and a recognized main cardiovascular risk factor (CVRF).

Methods: In this 6-month prospective study of patients (pts) admitted in a tertiary hospital due to type-1 Acute Myocardial Infarction (AMI), 196 pts were consecutively enrolled between May and October 2021. Data was based on a pts well-structured interview within 48h after admission and review of medical records. Physical activity before admission was assessed using the "Godin-Shephard Leisure-Time Physical Activity Questionnaire". The obtained total weekly leisure activity score (LAS) allowed us to categorize pts as active (A; ≥ 24), moderately active (MA; 14-23) or insufficiently active (IA; < 14) and, therefore, to describe the status of physical activity level in AMI pts.

Results: 79% of pts were male and mean age was 62 years. 97% of all pts presented at least 1 cardiovascular risk factor (CVRF). 65% of all pts were IA, 22% were MA and only 13% were A. Our study showed no differences in exercise level distribution between genders ($p = 0.1$) or age ($p = 0.4$). Significant differences were found in exercise activity regarding some sociodemographic aspects, namely: 1) pts with higher levels of education showed higher levels of physical activity (28%/23%/9%/7% of higher education/3rd cycle/2nd cycle/1stcycle pts were, respectively, active pts; $p = 0.009$), and 2) differences according to marital status (11% of married and none of widowed pts were A *vs.* 33% of single and 26% of divorced pts; $p = 0.04$). Considering pts medical history, no differences were found in level of exercise activity in pts with prior established cardiovascular (CV) disease (65% of pts without previous CV disease were IA *vs.* 64% of pts with previous CV; $p = 0.9$). Regarding AMI outcomes, pts with a worse Killip (K) class presented significantly less exercise activity before admission (14% of pts with K ≥ 2 were MA or A *vs.* 42% of pts with K < 2; $p = 0.009$), as well as more frequent AMI-complications (20% of pts with AMI-complications were MA or A *vs.* 41% of pts without complications; $p = 0.04$).

Conclusions: Considering that nearly half of pts had a prior history of CV disease and approximately all of them presented CVRF, it would be expected that regular physical activity was being performed in this high-risk population. However, our data showed an alarming reality, as these pts were not practicing it as recommended. It is also worth noting the association between pre-admission lower physical activity levels and worse AMI outcomes. The message that stands out of our study is the urgent need to educate our population and, mainly, high-risk CV pts about the importance of maintaining a regular exercise activity routine.

PO 107. DO PATIENTS WITH CARDIOVASCULAR RISK FACTORS REALIZE WHAT IS AT RISK?

André Cabrita, Catarina Amaral Marques, Paulo Maia Araújo, Sofia Torres, Miguel Martins de Carvalho, Ricardo Alves Pinto, Tânia Proença, Catarina Martins da Costa, João Calvão, Ana Filipa Amador, Luís Daniel Santos, Ana Isabel Pinho, Cátia Oliveira, Mariana Vasconcelos, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Cardiovascular risk factors (CVRF) in acute myocardial infarction (AMI) are widely described in literature and disclosed to

general population at school and media campaigns, nonetheless they are underrecognized by patients and often mistreated.
Objectives: To determine patients' perception of their own CVRF and symptoms of AMI.
Methods: We developed a 7-month prospective study, between May and November 2021, including all patients admitted in the Cardiology Department of our institution due to type-1 AMI. All patients' clinical history and health literacy were assessed by a structured questionnaire, within the first 48h of hospital admission.
Results: A total of 194 patients were included in our cohort. Almost all patients (97.4%) presented CVRF, with dyslipidemia as the most prevalent (68.6%). Despite the extremely high prevalence of CVRF, only 103 (53.1%) patients recognized they had CVRF and merely 57 (29.5%) suspected they were suffering initial symptoms of AMI. Only 104 (53.6%) patients activated the emergency medical system. A total of 29 (24.4%) patients drove to the hospital while suffering AMI. Although 117 (60.3%) patients assured knowledge of AMI symptoms, 173 (89.2%) described wrong symptoms of AMI.
Conclusions: In this study, almost half of patients who suffered AMI were not conscious of the risk of the disease. Also, when suffering initial symptoms of AMI, a great proportion did not know how to seek medical assistance adequately. For these reasons, it is mandatory to improve health literacy in our population in order to raise awareness of CVRF, AMI symptoms and how to seek medical assistance adequately.

PO 108. CORONARY RESTENOSIS: SEVENTEEN YEARS SUMMARIZED…

Carla Marques Pires[1], Carlos Galvão Braga[1], Rui Teles[2], Hélder Pereira[3], Rui Ferreira[4], Marco Costa[5], Pedro Canas da Silva[6], Filipe Seixo[7], Pedro Braga[8], Pedro Costa Ferreira[9], Francisco Pereira Machado[10], Luís Bernardes[11], João Costa[12], Eduardo Infante de Oliveira[13], em Nome dos Investigadores do Registo Nacional de Cardiologia de Intervenção[14]

[1]Hospital de Braga, EPE. [2]Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz. [3]Hospital Garcia de Orta, EPE. [4]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [5]Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra. [6]Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria. [7]Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo. [8]Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE. [9]Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio. [10]Hospital da Luz Lisboa. [11]Hospital CUF Tejo. [12]Hospital de Braga. [13]APIC. [14]Sociedade Portuguesa de Cardiologia.

Introduction: Recurrence of symptoms after percutaneous coronary intervention (PCI) could be explained by disease progression, incomplete revascularization, or procedure failure, including coronary restenosis.
Objectives: To characterize the population with coronary restenosis in Portugal and the use of intravascular ultrasound (IVUS) in this population.
Methods: A multicentric retrospective observational study was performed. In this study we characterize the population with repeated PCI due to coronary restenosis in the last 17 years (2002-2018) in Portugal. We also evaluate the tendency, over the years, of repeated PCI due to coronary restenosis and of usage of IVUS as adjuvant tool to diagnose and treat this procedure failure. Lastly, a multivariate analysis was performed to assess if the use of IVUS had impact on follow-up primary endpoint (death/myocardial infarction).
Results This study analyzed 6,494 patients (mean age: 65 years; 79% male gender) with repeated PCI due to coronary restenosis. These patients had a high prevalence of cardiovascular risk factors (75% had arterial hypertension, 69% dyslipidemia, 43% smoking habits and 37% mellitus diabetes) and 9% had chronic kidney disease. Regarding echocardiographic data, to highlight that 15% had an ejection fraction lower than 50%. Additionally, most patients (65%) had multivessel disease, however just 36% underwent complete revascularization. Considering clinical presentation, in 45% of analyzed patients the PCI due to coronary restenosis was performed during acute coronary syndrome (ACS). The present study revealed a progressive increased of PCI due to coronary restenosis in the last 17 years ($p < 0,001$). During this period, there was not a statistically significant increase of use of IVUS as adjuvant tool. IVUS was used, preferentially, in older patients ($p = 0.01$), with higher prevalence of ejection fraction lower than 30% ($p = 0,002$) and less frequently during ACS ($p < 0,001$). Lastly, the use of IVUS in study subjects had no impact on follow-up primary endpoint in multivariate analysis.
Conclusions: This study suggests that PCI due to coronary restenosis has been significantly increasing in the last 17 years. Despite current guidelines, this study did not reveal an increase usage of IVUS neither an improvement of clinical outcomes with this adjuvant tool.

PO 109. DELAY BETWEEN SYMPTOMS ONSET AND SEEKING MEDICAL CARE – DOES INITIAL RHYTHM PLAYS A ROLE?

Sofia B. Paula, Mariana Santos, Hélder Santos, Inês Almeida, Samuel Almeida, Lurdes Almeida

Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo.

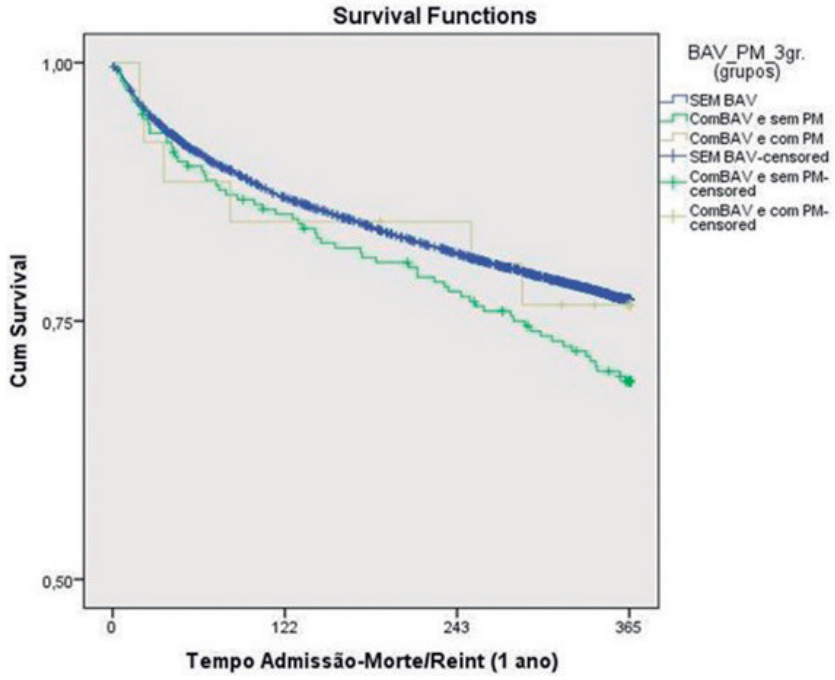
Introduction: Acute coronary syndromes (ACS) and atrial fibrillation (AF) are frequent causes of admissions in a Cardiology Department.
Objectives: Evaluate if the presence of AF or other rhythms had an influence between the onset of symptoms and seeking medical care.
Methods: Multicenter retrospective study, based on the Portuguese Registry of ACS between 1/10/2010-8/01/2019. Patients (P) were divided into three groups (G): GA – P in sinus rhythm; GB – P in AF and GC - other rhythms. P without a previous cardiovascular history or clinical data were excluded. Chi-square test, t-Student test and Mann-Whitney U test were used to compare categorical and continuous variables.
Results: 15,927 P were included, 14,637 in GA (91.9%), 1,049 in GB (6.6%) and 241 in GC (1.5%). Both G were similar regarding dyslipidemia, time between the onset of symptoms and first medical contact, symptoms and admission and between the first medical contact and admission, multivessel disease and culprit lesion in ST-segment elevation myocardial infarction (STEMI). GA exhibited higher rates of STEMI (42.6 *vs.* 33.6 *vs.* 50.6%, $p < 0.001$), systolic blood pressure (sBP) (140 ± 29 *vs.* 135 ± 30 *vs.* 122 ± 34, $p < 0.001$), smoking (31.0 *vs.* 8.7 *vs.* 20.2%, $p < 0.001$) and percutaneous coronary intervention (PCI) (67.8 *vs.* 50.4 *vs.* 67.6%, $p < 0.001$). GC had more P with previous history of neoplasia (4.3 *vs.* 6.4 *vs.* 9.2%, $p < 0.001$) and Killip-Kimball classification > I (12.7 *vs.* 30.5 *vs.* 32.0%, $p < 0.001$). GB was older (65 ± 13 *vs.* 75 ± 10 *vs.* 73 ± 13, $p < 0.001$), more frequently admitted at the emergency room (53.8 *vs.* 62.6 *vs.* 61.3%, $p < 0.001$), higher rates of arterial hypertension (67.1 *vs.* 83.2 *vs.* 79.2%, $p < 0.001$), diabetes mellitus (30.4 *vs.* 36.0 *vs.* 36.9%, $p < 0.001$), stroke (6.7 *vs.* 14.9 *vs.* 11.7%, $p < 0.001$), peripheral artery disease (4.8 *vs.* 8.9 *vs.* 4.6%, $p < 0.001$), chronic kidney disease (4.7 *vs.* 10.5 *vs.* 10.4%, $p < 0.001$), dementia (1.5 *vs.* 4.2 *vs.* 3.1%, $p < 0.001$), heart rate (77 ± 18 *vs.* 91 ± 29 *vs.* 68 ± 30, $p < 0.001$) and left ventricular ejection fraction < 50% (35.3 *vs.* 51.1 *vs.* 43.1%, $p < 0.001$). Regarding *de novo* heart failure (13.0 *vs.* 29.7 *vs.* 26.6%, $p < 0.001$), sustained ventricular tachycardia (1.5 *vs.* 3.1 *vs.* 3.7%, $p < 0.001$), cardiac arrest (2.8 *vs.* 4.9 *vs.* 7.1%, $p < 0.001$), stroke (0.6 *vs.* 1.7 *vs.* 0.4%, $p < 0.001$) and death (2.7 *vs.* 9.0 *vs.* 10.4%, $p < 0.001$) all were higher in GB and GC.
Conclusions: Rhythm at admission did not influence the timing between symptoms onset and seek of medical care but it was associated with worse prognosis and complications.

PO 110. SHOULD WE STAY OR SHOULD WE GO: ASSESSMENT OF THE NEED FOR THE IMPLANTATION OF A DEFINITE PACEMAKER IN A POPULATION OF ACUTE CORONARY SYNDROME THAT EVOLVED IN ADVANCED ATRIOVENTRICULAR BLOCK

João Grade Santos, Ana Catarina Gomes, Bárbara Ferreira, Mariana Martinho, Alexandra Briosa, Ana Rita Pereira, Ana Marques, Gonçalo Morgado, Rita Calé, Cristina Martins, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: The incidence of advanced atrioventricular block (AVB) secondary to acute coronary syndrome (ACS) has been decreasing in the era



PO 110 Figure

of percutaneous revascularization and in most cases is transitory and does not require pacemaker (PM) implantation.
Objectives: Our aim was to assess the characteristics of patients with AVB as a consequence of the ACS and compare those with and without PM implantation, in what regards in-hospital and at 1 year outcomes.
Methods: We performed a retrospective analysis of all patients admitted with AVB secondary to ACS in Portugal between October of 2010 and August of 2021 with data from the Real World Portuguese Registry on Acute Coronary Syndromes (ProACS). Medical records were analysed for demographic, procedural data and outcomes.
Results: Sex hundred and seventy one (671) patients with AVB secondary to ACS were admitted, which corresponded to 2.2% of the total cohort. The mean age was 70 ± 13 with a male preponderance (66%). The ACS was categorized as ST elevation Myocardial Infarction (STEMI) in 76.4%, non- STEMI (NSTEMI) in 22.1%, and unstable angina (UA) in 1.5%. Of the patients admitted with AVB, 8.6% implanted a permanent PM. There was no clinically relevant differences in both groups in what regards to medical priors or medication. Regarding the location of the infarction, an Anterior STEMI was the diagnosis of admission in 36.8% (*vs.* 14.5%; OR 3.45, 95%CI 1.31-9.06, p < 0.05) of patients that implanted a PM, and the left descending artery was more frequently the culprit artery, and an Inferior STEMI was the diagnosis of 63.2% (*vs.* 83.7%; OR 0.31, 95%CI 0.12-0.82, p < 0.05) of patients and a right coronary artery was more frequently the culprit artery. The presence of cardiovascular shock and in-hospital death was significantly more frequent in the group that did not implant a PM (OR 0.40; 95%CI 0.17-0.95, p < 0.05 and OR 0.33; CI 0.12-0.92, p < 0.05 respectively) and the implantation of PM was a negative predictor of in-hospital death (OR 0.28; 95%CI 0.08-0.93, p < 0.05). The follow up at 1 year was performed in two hundred and sixty three (263) patients, 10.6% with an implanted PM. The survival analysis demonstrated increased mortality and a combined end-point of death and readmissions in the population of AVB that did not implant PM compared with a population who did not present with AVB (p < 0.05) with the Kaplan Meier curves widening significantly (Fig.). This difference was not observed compared with an AVB population that implanted PM.
Conclusions: In patients with AVB secondary to ACS, the implantation of a PM might have been withheld in more severe patients, accounting for the increased mortality observed, and this population has worse outcomes at 1 year, leaving open to the hypothesis if either due to a more severe clinical status or the recurrence of AVB.

Sábado, 23 Abril de 2022 | 09:00-10:00

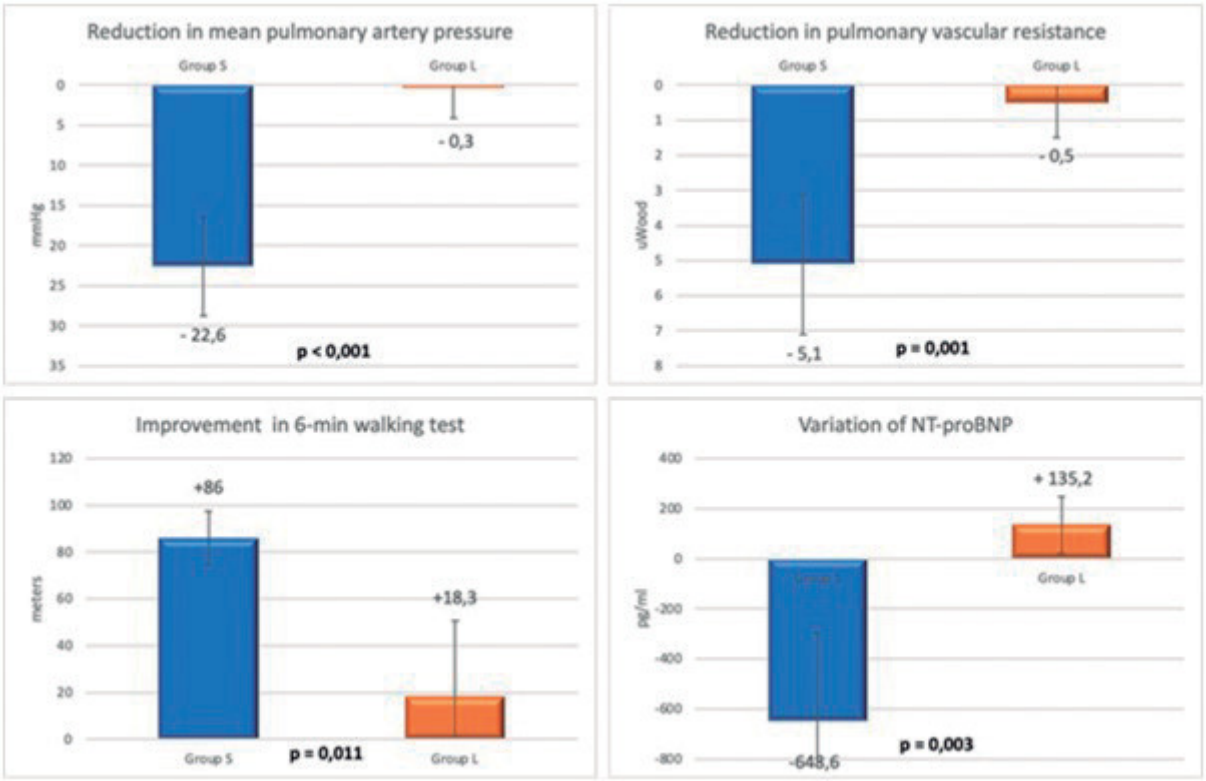
Sala Jardim de Inverno | Posters (Sessão 3 - Écran 7) - Intervenção Coronária e Estrutural 1 - Vários

PO 111. BALLOON PULMONARY ANGIOPLASTY IN CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION: WHO BENEFITS THE MOST?

Rita Calé, Filipa Ferreira, Ana Rita Pereira, Sofia Alegria, Mariana Martinho, Débora Repolho, Pedro Santos, Sílvia Vitorino, Maria José Loureiro, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Balloon pulmonary angioplasty (BPA) is an alternative therapy in patients (pts) with inoperable chronic thromboembolic pulmonary hypertension (CTEPH) or residual/recurrent pulmonary hypertension (PH) after surgery. It is unclear who are the best candidates for this technique.
Methods: Prospective single-centre study that included all CTEPH pts submitted to BPA from 2017 to 2020. Efficacy and safety of BPA were compared in two groups: those with severe hemodynamics meaning mean pulmonary artery pressure (mPAP) above 40 mmHg before the first session of BPA (Group S; 5 patients; 34 procedures) and a group with less severe hemodynamics (Group L; 6 patients, 31 procedures). Clinical assessment including WHO functional class, plasma biomarkers, 6-minute walking test (6MWT) and right heart catheterization were performed at baseline and 6-months after the last BPA session.
Results: Pts in group S were more severe at the baseline: 100% under pulmonary vasodilator therapy with a median of 3 drugs *vs.* 83.3% under a median of 1 drug (p = 0.061); 80% on long-term oxygen therapy *vs.* 0 (p = 0.015) and more severe WHO functional class (I/II/III/IV: 0/1/4/0 *vs.* 0/6/0/0, p = 0.015). There was a slight increase in the number of BPA sessions per pt (6.8 ± 0.8 *vs.* 5.2 ± 1.5, p = 0.056) and in the number of treated segments in group S (11.6 ± 2.2 *vs.* 10.0 ± 1.0, p = 0.085). The



PO 111 Figure

magnitude of clinical benefit of BPA is significantly higher in group S with more decrease in mPAP, pulmonary vascular resistance and NT-proBNP and more improvement in 6MWT (Figure 1). However, there was no significant difference in WHO functional class at follow-up between groups (I/II/III/IV: 4/1/0/0 in group S *vs.* 6/0/0/0 in group L, p = 0.455). Minor complications occurred in 25%, and lung injury in 3.1% of the procedures, with no differences between groups. No pts required mechanical ventilation or extracorporeal membrane oxygenation, and there were no procedural deaths. With a mean follow-up of 36 ± 12 months, there was one non-cardiovascular death in group L.

Conclusions: The magnitude of clinical benefit of BPA is significantly higher in more severe pts, without further complications. However, functional class improve in both groups, suggesting that in pts with less severely impaired hemodynamics, the efficacy of BPA should probably not be measured in terms of hemodynamics at rest, but rather by exercise parameters such as cardiopulmonary exercise testing or even exercise right heart catheterization.

PO 112. RESIDUAL SYNTAX SCORE IN TAVR PATIENTS

Pedro Custódio[1], Sérgio Madeira[2], Rui Teles[2], Manuel Almeida[2], Miguel Mendes[2]

[1]Hospital de Vila Franca de Xira, EPE. [2]Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Prior to transcatheter aortic valve replacement (TAVR), studies reported the inaccuracy to clinically predict the presence and severity of coronary artery disease (CAD) in severe aortic stenosis(SAS) based on symptoms. In the TAVR era, especially for patients with high surgical risk, bypassing the opportunity to do a simultaneous percutaneous intervention in the presence of CAD seems more acceptable than to lose the opportunity to perform a single surgery in patients awaiting surgical valve correction. Recent reports have advocated the feasibility of coronary angiography (CA) after TAVR. Despite this, patients proposed to TAVR routinely perform a CA prior to the procedure.

Objectives: To assess the impact of Residual SYNTAX score (RSs) in 2-year mortality of patients undergoing TAVR.

Methods: Single center retrospective study from a prospectively collected institutional registry (VCROSS). Patients that underwent TAVR between January 2009 and December 2018-517. Patients who underwent pre TAVR CA in the context of acute coronary syndrome or at other institution were excluded (n = 138). Obstructive CAD was defined as stenosis > 50% in a major epicardial vessels (> 2.5 mm) and SYNTAX score (Ss) was calculated according to recommended guidelines RSs was calculated by subtracting the points of the treated lesions from the initial Ss. We defined a cut-off point for RSS I < 7 as a reasonable revascularization. Univariate analysis was performed to assess: - 1) differences between patients with or without CAD and between those with significant CAD who have or have not undergone PCI; - 2) variables associated with 2-year mortality. Binary logistic regression was performed to identify independent predictors of 2-year mortality, accounting the differences and variables present in point 1) and 2).

Results: A total of 379 patients were included, 54.8% male with an average age of 83.1 YO (SD - 6.3), mean Ss was 8.02 and mean RSs was 6.22. 55 patients (14.5%) presented with normal coronary arteries, 120 (31.6%) with non-obstructive CAD and 204 (53.8%) with obstructive CAD. Out of the latter, 110(29%) underwent PCI, based on the amenability to intervention. Statistically significant differences were found between obstructive CAD *vs.* non-obstructive patients in terms of gender, previous history of percutaneous coronary interventions (PCI) and coronary artery bypass grafting (CABG). In the subgroup population with obstructive CAD, no statistically significant differences were found in the PCI *vs.* non-PCI group, apart from previous history of ICP and CABG. Diabetes mellitus, previous history of PCI and ejection fraction < 50% had a negative impact in the 2-year survival of the studied population. The RSs showed no statistically significant impact in this outcome, neither showed having a RSs < 7 (Table).

Conclusions: Neither the RSs nor having RSs< 7 in patients referred to TAVR showed an impact the 2 year mortality.

	B	SE	Wald	df	Sig.
Previous ICP	1,371	,636	4,643	1	,031
Previous CABG	-1,391	,727	3,661	1	,056
Diabetes Mellitus	1,101	,427	6,648	1	,010
Diseased Coronaries Left Untreated	-,289	,346	,696	1	,404
Residual Syntax Score	,004	,035	,014	1	,906
Ejection Fraction < 50%	,460	,433	1,128	1	,028
Gender	,129	,432	,089	1	,765
Pre-TAVI ICP	-1,308	,730	3,210	1	,073
Residual Syntax Score >7	1,120	,677	2,739	1	,098

PO 112 Figure

PO 113. SMALL-BORE ASPIRATION THROMBECTOMY VERSUS CATHETER-DIRECTED THROMBOLYSIS IN INTERMEDIATE-HIGH RISK ACUTE PULMONARY EMBOLISM

Mariana Martinho, Rita Calé, Ana Rita Pereira, Filipa Ferreira, Sofia Alegria, Gonçalo Morgado, Cristina Martins, Melanie Ferreira, Ana Gomes, Tiago Judas, Filipe Gonzalez, Corinna Lohmann, Débora Repolho, Pedro Santos, Ernesto Pereira, Maria José Loureiro, Hélder Pereira

Hospital Garcia de Orta, EPE

Introduction: Systemic fibrinolysis failed to prove benefit in intermediate-high risk pulmonary embolism (IHRPE), mainly due to major bleeding complications. As 10% of IHRPE patients (pts) have a higher clinical risk and evolve with haemodynamic (HD) deterioration, percutaneous therapies are emerging as potential treatment options for these pts. Two possible strategies are catheter-directed thrombolysis (CDT) and mechanical thrombectomy (MT), but there is a lack of level I evidence for the safety and effectiveness for both of these interventions in IHRPE pts.
Purpose: This study aims to compare the efficacy and safety of 2 catheter-directed therapies in IHRPE.
Methods: Retrospective single-centre study of consecutive IHRPE pts since 2018 treated with percutaneous therapies. CDT was delivered by a 5Fr Cragg-McNamara device (1 mg/h of alteplase) and MT was performed with the Indigo MT system (Penumbra 8Fr). Exclusion criteria were HD instability at admission and the use of other reperfusion devices. Clinical success at 48h was defined as survival to hospital discharge and 1 of the following: HD stabilization; oxygenation improvement; decrease in pulmonary hypertension, right heart strain, or both. MACE during follow-up (FUP) was defined as a composite endpoint of cardiovascular mortality, PE recurrence, chronic thromboembolic pulmonary hypertension and heart failure hospitalization. Safety endpoint was defined as major bleeding (BARC^{3}3).
Results: Of a total of 25 pts, 60% (15pts) were submitted to MT and 40% (10pts) to CDT. The groups had a similar mean age (68.6±15.6 vs 62.7±16.4, p=0.381), Charlson Comorbidity Index (4.2±1.9 vs 2.9±2.0 points, p=0.121) and PESI score (103.2±40.6 vs 119.8±46.2, p=0.410). 80% submitted to CDT received 20mg of alteplase, 1pt 10mg unilaterally and 1pt 50mg due to HD deterioration after the procedure. MT was associated with increased fluoroscopy time (43.0±19.1 vs 10.1±6.2 min, p<0.001) and procedure time (115±63 vs 45±18 min, p=0.009). Clinical success at 48h was similar (80% in MT vs 90% in CDT; p=0.626). Table 1 shows clinical outcomes regarding each method. Severe adverse events related with the technique happened in 2pts in MT (1 death during the procedure, 1 macroembolization during device progression) and 1pt in CDT group evolved with HD deterioration. Haemoglobin fall was significantly higher in MT group (1.8±1.3 vs 0.7±0.8 g/dL, p=0.018), but BARC^{3}3 and transfusion rates did not differ. In-hospital mortality was 8% (only 2 pts in the MT group, p=0.229). Mean FUP was 229±147days, with MT group having significantly higher MACE (40% vs 0%, p=0.051).
Conclusions: Despite the similar clinical efficacy at short-term for MT and CDT, relevant adverse events related to the procedure seemed higher in MT group. Larger studies are needed to compare the safety of these techniques. CDT was also less time consuming for catheterization laboratories.

Outcomes	Global	MT group	CDT group	p-value
Clinical Success at 48 hours (n,%)	**21 (84%)**	**12 (80%)**	**9 (90%)**	**0.626**
Shock index (mean±SD)	0.77±0.16	0.82±0.18	0.70±0.12	0.065
Aminergic support (n,%)	4 (16.0%)	1 (6.7%)	1 (10%)	1.000
PaO2/FiO2 (median; Q25-Q75)	296.4 (219.0-371.4)	287.1 (228.8-380.4)	303.0 (191.0-338.0)	0.680
Adverse events at 48h				
BARC≥3 hemorrhage (n,%)	2(9.1%)	2(14.3%)	0 (0.0%)	0.515
Procedure related events (n,%)	3(12.0%)	2(13.3%)	1(10.0%)	0.802
In-hospital mortality (n,%)	2 (8.0%)	2 (13.3%)	0 (0.0%)	0.500
MACE at follow-up (n,%)	**6 (24.0%)**	**6 (40.0%)**	**0 (0.0%)**	**0.051**

PO 113 Figure

PO 114. RADIATION IN THE CATH LAB: ARE PATIENTS REALLY SAFE?

Hugo Alex Costa, Teresa Faria da Mota, Raquel Fernandes, Miguel Espirito Santo, Hugo Palmeiro, Jimmy Martins, Daniela Carvalho, João Bispo, João Guedes, Hugo Vinhas, Ilídio Jesus

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

Introduction: Fluoroscopically guided interventional procedures have established new standarts in the clinical management of many diseases, and

interventional cardiology has benefit with the advent of technology. Despite the benefits, the treatment of more complex coronary artery disease (CAD) may entail longer procedural times which translate to higher radiation exposure.
Objectives: Population characterization. To determine the radiation doses of patients who underwent PCI of complex CAD and set the diagnostic reference level (DRL) for this procedure in our Cath Lab, helping us to improve safe radiation practices.
Methods: Retrospective study between 2019/2020, composed of n = 289 patients that were submitted to complex PCI. DRLs were assessed as the round value of the 75th percentile (3rd quartile) of the distribution of the median dose values (air kerma-area product (KAP) and cumulative air kerma at the patient entrance reference point ($K_{a,r}$)), and effective dose (ED) defined as ED = 0.18 × KAP.
Results: A total of 297 patients were identified, with a mean age of 67.50 ± 11.26 years, 61.6% were female and 18.9% had obesity. 84.2% had multivessel disease, chronic total occlusions (CTO) in 59.6% and left main coronary artery disease (LMCA) in 40.4% of patients. Radial artery was the prefered access in 85.2% of cases. Total median percutaneous coronary Intervention (PCI) time was 119 mins with 34.6 mins of fluoroscopy time (FT) and 228.5 ml of contrast volume (CV) used. The median $K_{a,r}$ was 2,064 mGy, KAP 112.15 Gy.Cm^2 and ED 20.68 mSv. A significant higher median PCI times, CV and radiation doses was seen in CTO patients. DRLs were access, with $K_{a,r}$ 3,219 mGy and KAP 173.24 Gy.Cm^2.

Table 1: Radiation Doses and Respective Times and Contrast Volumes During Complex Percutaneous Coronary Intervention

	Total	CTO	LMCA	DRL (3rd quartile)
		Median values		
PCI time (mins)	119	125	105	-
Fluoroscopy time (mins)	34,60	34,45	35	-
Air Kerma (mGy)	2064	2090	2055	3219
KAP (Gy.Cm^2)	112,15	120,74	100,89	173,24
Effective dose (mSv)	20,68	21,76	18,82	-
Contrast volume (ml)	228,50	249	217	-

CTO – Chronic Total Occlusion; DRL – Diagnostic Reference Level; KAP – Kerma Area Product; LMCA – Left Main Coronary Artery; PCI – Percutaneous Coronary Intervention.

Conclusions: Local DRL for complex PCI was obtained, with $K_{a,r}$ 3,219 mGy and KAP 173.24 Gy.Cm^2. We report a higher local DRLs compared to European registers, although data are scarce in complex PCI. These results are important to adapt radiation strategies that allow us to reduce exposure to patients and operators.

PO 115. CONTRAST-INDUCED NEPHROPATHY FOLLOWING PCI: CAN WE CALCULATE A SAFE CONTRAST VOLUME?

Hugo Alex Costa, Miguel Espirito Santo, Teresa Faria da Mota, Raquel Fernandes, Mónica Silva, Daniela Carvalho, João Bispo, João Guedes, Hugo Palmeiro, Hugo Vinhas, Ilídio Jesus

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

Introduction: Acute kidney injury (AKI) due to contrast induced nephropathy (CIN) is a common complication after percutaneous coronary intervention (PCI) in patients with acute coronary syndrome (ACS), and is associated with prolonged hospitalizations and elevated cardio and renovascular morbidity. Scientific evidence demonstrates that the mean volume of contrast (VolC) and ratio with creatinine clearance (CrCl) (VolC/CrCl) are independent predictors of CIN, but the accepted optimal value remains controversial.
Objectives: Population characterization. To evaluate whether the calculation of VolC using the VolC/ClCr ratio < 3.7 used in our Cath lab during PCI of ACS allows preventing the development of AKI by CIN, and whether the development of early *vs.* late AKI influences outcomes.
Methods: Retrospective study between 2017/2020, composed of n = 378 patients who suffered ACS. Descriptve analysis was carried out regarding the demographic and clinical characteristics of the patients. Chi-Square test was used for categorical variables and the T-Student test for numerical variables, with a significance level of 95%.
Results: A total of 378 patients were identified, with a mean age of 64.5 ± 11.2 years, 78.6% were male. 60.1% had hypertension, 48.4% dyslipidemia, 24.3% diabetes, 2.6% chronic renal failure (CRF) and 1.6% heart failure. Of these, 12.7% developed AKI (< 24h in 1.9 *vs.* ≥ 24h in 10.8%). Independent prognostic factors for development of AKI were smokers (AKI ≥ 24h 7 (4.8%) *vs.* AKI < 24h 2 (1.4%), p = 0.001), diabetes (AKI ≥ 24h 17 (19%) *vs.* AKI < 24h 2 (2.2%), p = 0.007), CRF (AKI ≥ 24h 6 (60%) *vs.* AKI < 24h 1 (10%), p = 0.001), CrCl (AKI ≥ 24h 65.8 ± 27.1, p = 0.001), ratio VolC/CrCl (AKI ≥ 24h 3.3 ± 2.5, p = 0.001) and LVEF (AKI ≥ 24h 51.4 ± 9.7, p = 0.001). Mortality affected 4.2% of the patients, and was more frequent in AKI subjects (AKI ≥ 24h 7 (70%) *vs.* AKI< 24h 1 (10%), p = 0.001). Using a ratio < 3.7 allowed to prevent AK< 24h but not AKI ≥ 24h (AKI < 24h ratio< 3.7 = 3 (1%) *vs.* ratio ≥ 3.7 = 9 (4.1%), p = 0.001) (AKI ≥ 24 ratio< 3.7 = 30 (25%) *vs.* ratio ≥ 3.7 = 11 (9.7%), p = 0.001). A ratio < 2.0 allowed to prevent both early and late AKI (AKI< 24h ratio< 2.0 = 0 (0%) *vs.* ratio≥ 2.0 = 7 (4.5%), p = 0.001) (AKI ≥ 24 ratio< 2.0 = 11 (5.6%) *vs.* ratio ≥ 2.0 = 30 (19.1%), p = 0.001).
Conclusions: In patients submitted to ACS PCI, the development of AKI increases mortality, especial if AKI emerge after 24h. We report a more suitable ratio VolC/ClCr < 2.0, that allow us to calculate a safe VolC that will help to prevent both early and late AKI in selected patients with ACS.

Sábado, 23 Abril de 2022 | 09:00-10:00

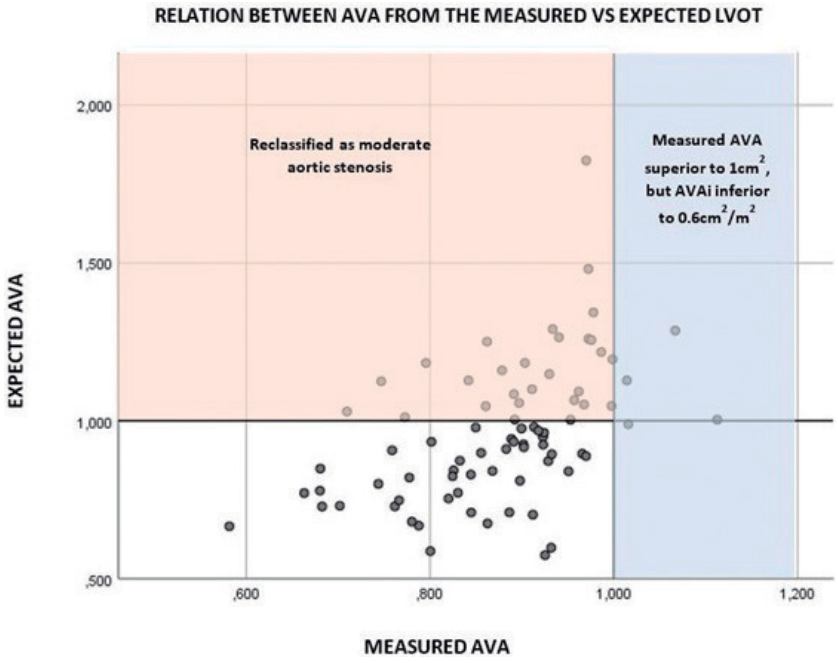
Sala Jardim de Inverno | Posters (Sessão 3 - Écran 8) - Doença Valvular 3 - Válvula Aórtica

PO 116. NORMAL FLOW, LOW GRADIENT AORTIC STENOSIS - IS LVOT THE DETERMINANT?

Francisco Dias Cláudio[1], Mariana Santos[2], Pedro Custódio[3], Bârbara Ferreira[4], Marco Quadrado[4], Ângela Manuel[4], Ana Rita Francisco[4], Bruno Neves[4], Inês Cruz[4], Ana Rita Almeida[4], Paula Fazendas[4], Isabel João[4], Hélder Pereira[4]

[1]Hospital do Espirito Santo, EPE, Évora. [2]Centro Hospitalar Barreiro/ Montijo, EPE/Hospital do Montijo. [3]Hospital de Vila Franca de Xira, EPE. [4]Hospital Garcia de Orta, EPE.

Introduction: Severe aortic stenosis is characterized for a high mean gradient (> 40 mmHg) and an aortic valve area (AVA) ≤ 1 cm^2. These patients present with a lower mean gradient (< 40 mmHg) and area (AVA ≤ 1 cm^2). However, the treatment strategies focus on the population with a reduced indexed stroke volume (≤ 35 mL/m^2). There is less clarity concerning those with a normal stroke volume. An important determinant of the area and stroke volume is the LVOT diameter, which may have a significant impact in the classification of the severity. There is some literature supporting an expected diameter according to the body surface area.
Objectives: This paper aims to analyse the population with normal flow, low gradient aortic stenosis, as well as compare the impact of the expected LVOT diameter in the classification of patients.
Methods: We present a retrospective study from all consecutive patients to whom an echocardiogram was performed in our hospital during the years 2017 and 2018 which meet the criteria for low gradient aortic stenosis. Comorbidities were analysed as well as echocardiographic variables to properly characterize aortic stenosis.



PO 116 Figure

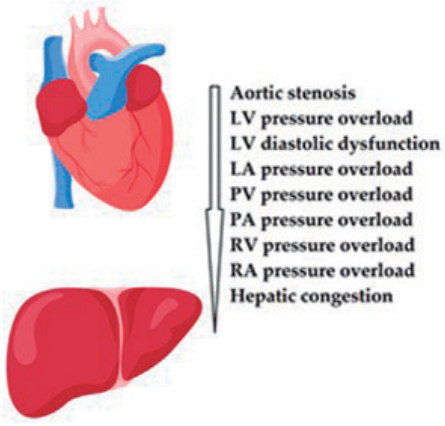
Results: A total of 79 patients met the criteria for normal flow, low gradient aortic stenosis with a valvular area ≤ 1 cm^2. Mean age was 79.5 ± 8.6 years-old and 38% was male. The mean LVOT diameter was 2.11 ± 0.18 cm which correlated to a mean AVA of 0.88 ± 0.10 cm^2. Should the LVOT diameter align with the expected diameter according to the formula [(5,7 × BSA +12,1)/10], the mean LVOT diameter would be 2.18 ± 0.11 cm, which correlated to a mean AVA of 0.96 ± 0.22 cm^2. This represents a statistically significant difference in the value, with the expected diameter being 0.075 cm higher than the measured (p = 0.002), which translates in a statistically significant higher AVA (+0.085, p < 0,001). With the above data, 31 (38.8%) patients would have been reclassified as moderate aortic stenosis, according to the recalculated AVA alone. Taking into account the indexed AVA, only 22 (27.8%) patients would be reclassified. 8 other patients (10.1%) would have been reclassified as low flow, low gradient aortic stenosis as the recalculated stroke volume would be lower than 35 mL/m^2.
Conclusions: This paper reminded us of the importance of an appropriately measured LVOT diameter, and the potential impact in reclassification of valvular heart disease. This is more important when the classification may alter our conduct. Other imaging techniques, such as transoesophageal echocardiogram or CT scan, may obviate the squared error of the LVOT measurement as well as account for the geometry of the LVOT, especially in dubious cases.

PO 117. AORTIC STENOSIS - THE LUNG IS OFTEN OVERLOADED, BUT WHAT ABOUT THE LIVER?

José Lopes de Almeida, João Rosa, Gustavo Santos, João Ferreira, Valdirene Gonçalves, Maria Ferreira, Sofia Martinho, Lino Gonçalves

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

Introduction: Degenerative aortic stenosis (AS) is the most common acquired valvular heart disease in Western countries with a prevalence of up to 5% of individuals aged > 80 years. Congestive hepatopathy describes the manifestations of chronic, passive congestion of the liver in the setting of heart failure or other cardiac defects that result in elevation of the central venous pressure. While the association and implications of pulmonary hypertension (PH) in AS are well established, little is known about the prognostic value of systemic congestion and its consequences, namely congestive hepatopathy. We aimed to clarify the prognostic value of congestive hepatopathy in patients with AS.
Methods: We retrospectively evaluated patients diagnosed with severe AS for the first time at our echocardiography laboratory. Patients with known liver disease or alcohol use were excluded from the study. Patients were considered as having congestive hepatopathy if they had abnormal values of liver function tests previously described as being associated with chronic heart failure (gamma-glutamyl transpeptidase (GGT) > 40U/L, alkaline phosphatase (ALP) > 150 U/L or Total Bilirrubin (BrB) > 1.2 mg/dL). Primary outcome was defined by the occurrence of all-cause mortality during follow-up.
Results: A total of 333 patients were included in the analysis, with a median follow-up time of 50 months. 66% of the patients underwent surgical aortic valve replacement (SAVR) alone, 6.5% underwent SAVR combined with aortic root replacement, 19.5% underwent SARV combined with coronary artery bypass graft (CABG) and 7% underwent transcutaneous aortic valve replacement (TAVR). Primary endpoint occurred in 104 patients. Patients with hepatopathy (n = 104) were more frequently males (69 *vs.* 48%, p < 0.001), had higher creatinine values (1.52 *vs.* 1.15 mg/dl, p = 0.006) and higher pulmonary systolic pressure values (41.6 *vs.* 33.1 mmHg, p = 0.002). Survival was lower at 1 year (p = 0.003), 3 years (p = 0.013) and 5 years (p = 0.046).



Conclusions: In patients with a first diagnosis of severe AS, abnormal liver function tests (GGT, ALT, BrB) are associated with PH and worse long term prognosis.

PO 118. AORTIC VALVE CALCIUM SCORE AND PERI-PROTHESIS LEAKS AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION: IS THERE A HINT?

Ana Filipa Amador, Catarina Martins da Costa,, João Calvão, Ricardo Alves Pinto, Miguel Martins Carvalho, Tânia Proença, Catarina Amaral Marques, André Cabrita, Pedro Grilo Diogo, Carlos Xavier Resende, Cátia Oliveira, Ana Isabel Pinho, Luís Daniel Santos, Carla Margarida Sousa, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Aortic valvular calcium score (AVCS) measured by tomography scans is useful in the evaluation of aortic stenosis (AS) severity in patients for whom echocardiography is not conclusive. For high-risk patients with symptomatic severe AS, transcatheter aortic valve implantation (TAVI) is an established procedure of treatment. The burden of aortic valve calcification has been associated with some TAVI related complications. Peri-prothesis leaks (PPL) are an important complication that may compromise TAVI net results.
Objectives: To access if there is an association between aortic valve calcium score and moderate to severe (mod-sev) peri-prothesis leaks immediately and 6 months after TAVI.
Methods: We performed a single-center, retrospective cohort study including patients who underwent TAVI with a preoperative standardized TS with AVCS available. Clinical and echocardiographic data were collected previously to TAVI (pre-TAVI) and at 6 months follow up (6M-FUP).
Results: A total of 187 patients were included, with 54% female and a mean age of 79.4 ± 9.0 years old. Most patients had tricuspid aortic valve (95.7%). Regarding prosthesis type, 73.3% had new generation prosthesis and the main valve used was the CoreValve Evolut Pro (33.7%). 38.5% patients underwent balloon valve pre-dilation before implantation. The mean AVCS was 2,851 ± 1,524 AU (Agaston Units). Comparing AVCS with the presence or absence of moderate to severe peri-prothesis leaks, no statistically significant difference was found immediately (no *vs.* mod-sev leak, AS: 2,758 ± 2,308 *vs.* 3,621 ± 1,376, p = 0.13) and 6 months after the procedure (no *vs.* mod-sev leak, AS: 2,892 ± 2,366 *vs.* 3,621 ± 1,424, p = 0.15). Considering earlier (Portico, CoreValve Evolut R) *vs.* newer valves (CoreValve Evolut Pro; Edward Sapiens 3; Accurate Neo), there was no statistically significant difference relating AVCS and PPL; however, in patients who had newer valves there was a trend to higher AVCS and moderate to severe leaks, both on the immediate (no *vs.* mod-sev leak, AS: 2,777 ± 2,507 *vs.* 3,601 ± 1,385, p = 0.07) and at 6 months (no *vs.* mod-sev leak, AS: 2,782 ± 2,506 *vs.* 3,984 ± 1,138, p = 0.06). No statistically significant difference was found when comparing pre-ballooning dilatation.
Conclusions: Aortic calcium measured by Agatston score did not show an association with new moderate to severe peri-valvular leaks after TAVI. Nevertheless, it seems to be a trend for higher AS and moderate to severe peri-prothesis leaks when newer valves are implanted.

PO 119. TAVI – MULTIDIMENSIONAL EARLY BENEFITS ON ELDERLY PATIENTS

Ana Beatriz Garcia, Nelson Cunha, Sara Couto Pereira, Pedro Silvério António, Pedro Alves da Silva, Joana Brito, Beatriz Valente Silva, Ana Margarida Martins, Catarina Simões de Oliveira, Ana Abrantes, João Fonseca, Catarina Gregório, Inês Ricardo, Fausto J. Pinto, Ana Abreu

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

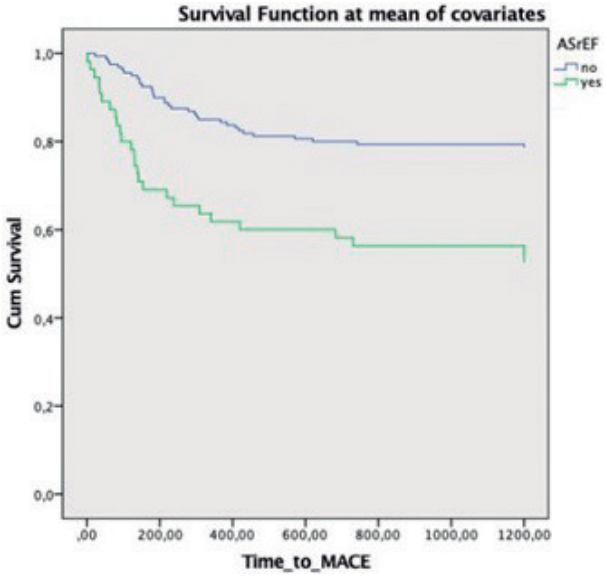
Introduction: Aortic stenosis is the most common valvular heart disease in Europe and in symptomatic patients, when untreated presents a high rate of morbidity and mortality. Its prevalence is estimated to grow even more, given the aging of the population. Transcatheter aortic valve implantation (TAVI) emerged as a safe and efficient procedure in patients with high or prohibitive surgical risk or in older patients, who are much often frailty, with impaired cognitive function and have poor quality of life.
Objectives: To assess the acute benefits (in 1 moth) of TAVI on cognitive function, anxiety and depression and independence in activities of daily living.
Methods: Single center prospective study of patients submitted to TAVi between April 2021 and September 2021. Patients were evaluated at baseline (before TAVI) and one month after the procedure. To assess cognitive function, anxiety and depression and independence in activities of daily living we used the Mini Mental State Examination (MMSE), Hospital Anxiety and Depression Scale (HADS); Katz Index of Independence in Activities of Daily Living; and Lawton-Brody Instrumental Activities of Daily Living Scale, respectively. Paired sample t-test and Wilcoxon test were used to statistical analysis.
Results: We included 20 patients, with a mean age of 85 ± 5.86 years, 40% (8) male. 19 patients undergone TAVI due severe native aortic stenosis and 1 due to bioprosthetic aortic valve dysfunction. The vascular access site was transfemoral in 19 patients and transapical in 1 patient. The median MMSE results were higher 1 month after TAVI (21.3 *vs.* 23.5, p = 0.012), essentially due to a better results in the temporal orientation and evocation domains (p = 0.011 and p = 0.022, respectively). Patients experienced lower levels of anxiety and depression after TAVI, mean score 5.4 *vs.* 3.9 (p = NS) and 7 *vs.* 4.25 (p = 0.002) respectively for anxiety and depression, as assessed by HADS scale. No statistical difference was observed on the results of basal and post TAVI evaluation of Katz and Lawton-Brody scales.
Conclusions: In an elderly population, TAVI appears to have an early and beneficial effect (in 1 moth) on cognitive function and depression, but no benefits were observed on independence in activities of daily living.

PO 120. PREVALENCE, MANAGEMENT, AND PROGNOSIS OF PATIENTS WITH SEVERE AORTIC STENOSIS AND REDUCED EJECTION FRACTION

Inês Fialho, Carolina Pereira Mateus, Mariana Passos, Joana Lima Lopes, João Baltazar Ferreira, David Roque, Márcio Madeira, Daniel Faria, João Bicho Augusto, Miguel Santos, Sérgio Bravo Baptista, Pedro Farto e Abreu, Carlos Morais, José Neves

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

Introduction: Reduced left ventricular ejection fraction (LVEF) is a known undesirable consequence of pressure overload in the natural history of aortic stenosis (AS).
Objectives: To evaluate the management and prognosis of patients with severe AS according to LVEF.



Methods: Prospective registry of consecutive patients discussed in the Heart Team meeting of a single center between January 2018 and June 2021. Patients with severe AS were included. For each patient demographics, blood tests results, echocardiogram, treatment decision, and MACEs (a composite of death, heart failure hospitalization, non-fatal acute myocardial infarction

and non-fatal stroke) until aortic valve replacement (AVR, surgical or transcatheter) were recorded (median follow-up time 187 days [IQR 59-352].
Results: 235 patients were included, 48.1% males (n = 113), mean age of 76.7 ± 10.7 years. LVEF was reduced (< 50%) in 25.1% (n = 59). Patients with reduced EF (ASrEF) presented higher EuroSCORE II levels (median 5.28% [interquartile range 3.27-9.02] *vs.* 2.8% [1.8-4.7], p < 0.001) compared with AS with preserved EF (ASpEF). The Heart Team decided for AVR in 90.0% (n = 53) of ASrEF and 96.0% (n = 169) of ASpEF patients. Transcatheter AVR was the most common intervention in ASrEF (52.5%, n = 31) and surgical AVR the most frequent in ASpEF (54.0%, n = 95). Conservative management was decided for 10% (n = 6) of ASrEF and 4% (n = 7) of ASpEF patients. ASrEF patients waited less time for AVR [71 (26-230) *vs.* 187 (81-352) days, p = 0.003]. While waiting for AVR, the ASrEF group presented significantly more MACE (Mantel-cox log rank p = 0.035, Fig.). The early post-operative mortality (first 7 days after surgery) was not different between groups (0 *vs.* 0.6%, p = 0.893). Sixty three percent of ASrEF patients improved LVEF after AVR.
Conclusions: ASrEF patients present less time to MACE and more cardiovascular events while they wait for AVR. After AVR, most ASrEF patients improves LVEF without an increase in early post-operative mortality. These data suggest that this vulnerable subgroup of AS patients benefit from AVR and as such should be prioritized in the AVR (surgical or transcatheter) waiting lists.

Sábado, 23 Abril de 2022 | 17:00-18:00

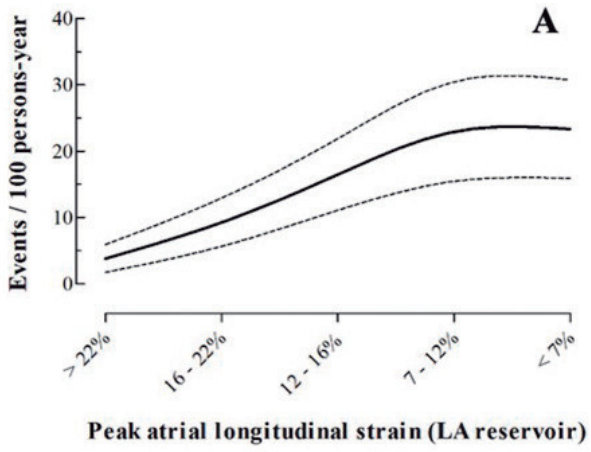
Sala Jardim de Inverno | Posters (Sessão 4 - Écran 1) - Imagem 2 - Ecocardiografia 1

PO 121. PROGNOSTIC SIGNIFICANCE OF PEAK ATRIAL LONGITUDINAL STRAIN IN PATIENTS WITH FUNCTIONAL MITRAL REGURGITATION

Daniel A. Gomes, Pedro M. Lopes, Pedro Freitas, Francisco Albuquerque, Eduarda Horta, Carla Reis, Sara Guerreiro, João Abecasis, Marisa Trabulo, António M. Ferreira, Jorge Ferreira, Regina Ribeiras, Miguel Mendes, Maria João Andrade

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

Introduction: Chronic mitral regurgitation has been shown to promote left atrial (LA) dysfunction and remodeling. However, the significance of LA dysfunction in this setting has not been fully investigated. The aim of our study was to assess the prognostic impact of peak atrial longitudinal strain (PALS), a surrogate of LA function, in a cohort of patients with left ventricular systolic dysfunction and functional mitral regurgitation (FMR).
Methods: Patients with at least mild FMR and reduced left ventricular ejection fraction (LVEF < 50%) under optimized medical therapy who underwent transthoracic echocardiography between 2010 and 2018 were retrospectively identified at a single-centre. FMR grading was undertaken according to the new 2021 European Society of Cardiology (ESC) guidelines for the management of valvular heart disease. PALS was assessed by 2D speckle tracking in apical 4-chamber view (as per European Association of Cardiovascular Imaging current recommendations). Cox proportional hazards regression was applied for univariable and multivariable analysis to investigate the association between clinical and echocardiographic parameters, namely PALS, and all-cause mortality.
Results: A total of 307 patients (median age 70 years, 77% male) were included. Median LVEF was 35% (IQR: 27-40%) and median mitral regurgitant volume was 25 mL (IQR: 14-34 mL). According to the new ESC 2021 valvular guidelines, 32 patients had severe FMR (10%). During a median follow-up of 3.5 years (IQR 1.4-6.6), 148 patients died. Median PALS was 14% (IQR 8-20%). The unadjusted mortality incidence per 100 persons-years increased with progressively lower values of PALS (figure 1A). On ROC curve analysis, the best PALS cut-off value associated with mortality was < 15%. Kaplan-Meier survival curves according to FMR severity and PALS > or < 15% are depicted in figure 1B. PALS remained independently associated with all-cause mortality on multivariable analysis (adjusted hazard ratio [aHR]: 0.94; 95%CI: 0.90-0.98; p = 0.004) even after adjustment for several (n = 14) clinical and echocardiographic confounders.



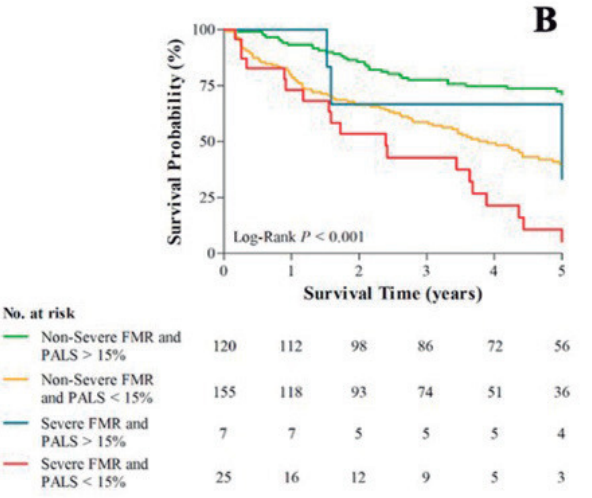


Figure 1

Conclusions: In a cohort of patients with reduced LVEF and functional mitral regurgitation, peak atrial longitudinal strain was associated with all-cause mortality.

PO 122. IDENTIFICATION OF HIGH-RISK PATIENTS WITH NON-ST SEGMENT ELEVATION ACUTE CORONARY SYNDROMES USING STRAIN ANALYSIS

Diana Decampos, João Lopes, Carolina Saleiro, José Pedro Sousa, Ana Rita M. Gomes, Rogério Teixeira, Ana Botelho, Lino Gonçalves

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

Introduction: Patients with acute coronary occlusion may lack typical signs of myocardial infarction in the electrocardiogram. Our aim was to evaluate

global longitudinal strain (GLS) in patients with left anterior descending coronary artery (LAD) significant stenosis (> 90%).
Methods: In a retrospective study, consecutive patients admitted for an non-ST-elevation acute coronary syndrome (NSTE-ACS) were categorized into two groups: (1) those with LAD > 90% stenosis and (2) those without. Those in group 2 had either significant or non-significant coronary artery disease in other territories. Two-dimensional speckle tracking was performed using a semi-automatic algorithm (EchoPac, GE Healthcare). Longitudinal strain curves were generated in an 18-segment model. The association between GLS as predictor of an acute LAD lesion was assessed by linear regression models. Receiver operating characteristic (ROC) curves were used to analyze the ability of GLS to predict significant LAD stenosis.
Results: A total of106 patients aged 57 ± 12 years and 78.2% male were enrolled. A significant LAD stenosis was present in 31.8% of the patients. About half (45.3%) had previous history of CAD and only 17% had previous heart failure. Patients had a mean left ventricular ejection fraction of 49.4 ± 9.8% and an average LV-GLS of -16 ± 4%. LV-GLS was significantly lower in patients with an acute lesion of the LAD (-14.8 ± 3.7 *vs.* -16.7 ± 4%, p = 0.035). A LV-GLS > -15.1% yielded an area under the curve (AUC) of 0.64 (95%CI 0.53 to 0.74) for predicting LAD lesion > 90%. Both GLS-2C and apical GLS were independent predictors of obstructive LAD lesion by multivariate logistic regression. ROC analysis demonstrated that a GLS-2C > -17% exhibited a good ability to identify patients with significant LAD lesion (AUC 0.67, 95% 0.56-0.77, sensitivity of 78% and a specificity of 52%). An apical GLS > -12.5% yielded a sensitivity of 50% and a specificity of 98% for predicting a significant LAD stenosis (AUC of 0.75, 95%CI 0.64 to 0.84). These associations were independent of the site of LAD occlusion.
Conclusions: In NSTE-ACS patients, GLS analysis detected LAD lesion > 90%. Patients with GLS-2C > 17% and apical GLS > -12.5% have a high probability of having an obstructive LAD lesion. This study warrants further research exploring LV-GLS as a tool in the early risk assessment in patients with an ACS.

PO 123. QUANTITATIVE LONGITUDINAL PEAK SYSTOLIC STRAIN IN THE DETECTION OF LEFT VENTRICULAR WALL MOTION ABNORMALITIES: AN ANALYSIS OF OUR DAILY ECHOCARDIOGRAPHIC PRACTICE

Diana Decampos, Carolina Saleiro, Ana Botelho, Rogério Teixeira, Ana Rita M. Gomes, João Lopes, Lino Gonçalves

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

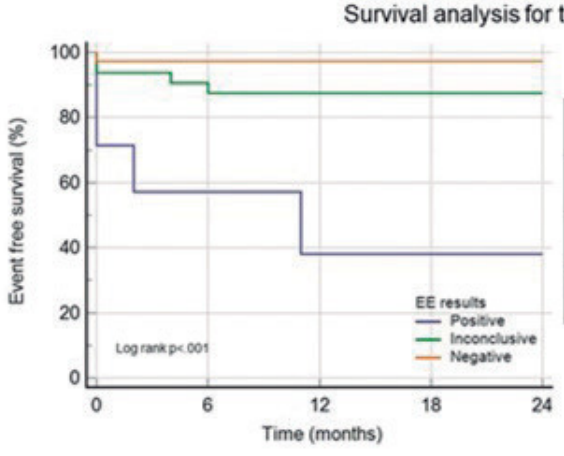
Introduction: Regional wall motion abnormalities (RWMA) of the left ventricle (LV) are an important indicator of disease. Two-dimensional speckle-tracking echocardiography (2D-STE), which is less operator-dependent, has been proposed for this purpose. We aimed to assess if RMWA were correlated with segmental longitudinal peak systolic strain (LPSS) values in patients with coronary artery disease.
Methods: A total of 106 consecutive patients (78.2% male) aged 57 ± 12 years clinically evaluated for an non-ST segment elevation acute coronary syndrome were studied. RWMA were assessed by trained personnel and wall motion score index (WMSI) was calculated. Segmental LPSS values were categorized has normal/mildly (≥ -12.6%), moderately (-8.1 and -12.5%) and severely (≤ -8.0%) reduced. Global longitudinal strain (GLS) was averaged from three standard longitudinal views. Linear regression analysis was used to estimate the relation between WMSI and average GLS. Pearson correlations were used to estimate the correlation between qualitative assessment of RMWA and segmental LPSS.
Results: A total of 1,216 segments were successfully tracked (average LPSS -15.71 ± 4.03%). WMSI showed a significant correlation with GLS with a coefficient of determination of 0.49 and a beta coefficient of 0.704 (p = 0.000). On naked eye evaluation, of 1,309 segments, 80.2%, 14.3%, and 5.5% segments were diagnosed as normal, hypokinesis, and akinesis, respectively. On strain analysis, of the 1216 tracked segments, 77.2% had normal/mildly, 13.5% had moderately and 9.3% had severely reduced strain values. Level of agreement between segmental motion classification and segmental LPSS values was moderate to strong in basal (r = 0.24-0.55, p < 0.05), mid (r = 0.39-0.66, p < 0.01) and apical levels (r = 0.45-0.64, p < 0.01).
Conclusions: Qualitative assessment of RWMA had significant moderate-to-strong correlation with LPSS, suggesting that segmental LPSS values may help to differentiate between normal and abnormal left ventricular segments at basal, mid and apical levels. Segmental LPSS assessment can be a useful tool for training residents.

PO 124. PROGNOSTIC VALUE OF EXERCISE STRESS ECHOCARDIOGRAPHY IN PATIENTS WITH KNOWN CORONARY ARTERY DISEASE

Ana Filipa Cardoso, Mário Rui Lourenço, Geraldo Dias, Tâmara Pereira, Mariana Tinoco, Marina Fernandes, Olga Azevedo, António Lourenço

Hospital da Senhora da Oliveira, EPE - Guimarães.

Introduction: Exercise stress echocardiography (EE) is a useful method for diagnosis and risk stratification in patients (pts) with suspected coronary artery disease (CAD). Pts with known CAD carry a high risk of events. Our aim was to assess the utility of ESE in predicting outcomes in this population.
Methods: Single center retrospective study of consecutive patients with known CAD who performed an ESE between 2018 and 2019. The primary endpoint was a composite of admission for acute coronary syndrome



	Unadjusted HR	95%CI	Log rank p
Exercise time (min)	0.77	0.61-0.98	.036
METs achieved	0.73	0.55-0.95	.020
Untreated significant coronary lesion(s)	5.10	1.35-19.24	<.016

PO 124 Figure

(ACS), coronary revascularization and cardiovascular death during the follow-up.
Results: A total of 76 pts were included (mean age 59 ± 9 years; 87% male). Fifty-nine pts (78%) had history of ACS, 51 (67%) pts of percutaneous coronary intervention (PCI) and 14 (18%) pts of coronary artery bypass graft. The majority of pts had 2 or more vessel disease (42 pts; 55%). The main reason for performing EE was new onset of chest pain (38 pts; 50%) followed by functional assessment of coronary stenoses after incomplete revascularization (29 pts; 38%). The majority of pts had a preserved left ventricular ejection fraction (67; 88%). The exam was performed under beta-blocker effect in 35 (46%) pts. The results of EE were positive for myocardial ischemia in 7 (9%) pts, negative in 37 (49%) pts and inconclusive in 32 (42%) pts. Mean exercise time was 8 ± 3 minutes and mean METS achieved were 9.4 ± 2.6. ST-segment depression fulfilling electrocardiographic criteria for ischemia occurred in 17 (22%) pts. Eleven (14%) pts complained of chest pain during the exam. During a median follow up of 22 months (IQR 15-26), the primary endpoint occurred in 9 pts (admission for ACS in 5 pts; revascularization for chronic coronary syndrome in 4 pts). No cardiovascular death occurred. The positive predictive value of EE was 57.1% and the negative predictive value (NPV) was 97.3%. In a survival analysis, the predictors of the primary endpoint were lower exercise time, lower METs achieved, untreated moderate coronary lesions and a positive EE (table 1). After adjustment in a multivariate analysis, a positive EE was an independent predictor of the primary endpoint (HR 4.6, 95%CI: 1.1-16.7, p = 0.044).
Conclusions: In our study population, EE had a high NPV in pts with known CAD. A positive EE was an independent predictor of future cardiovascular events.

PO 125. MITRAL REGURGITATION ON LOW-FLOW LOW-GRADIENT SEVERE AORTIC STENOSIS AND PRESERVED EJECTION FRACTION

João Baltazar Ferreira, Mariana Passos, Joana Lima Lopes, Carolina Pereira Mateus, Inês Fialho, Marco Beringuilho, António Freitas, Carlos Morais

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

Introduction: According to current guidelines, given a patient whose echocardiographic aortic stenosis evaluation is low-gradient (aortic valve maximum velocity < 4 m/s and/or aortic valve mean gradient < 40 mmHg), low-flow (stroke volume (SV) < 35 mL/min/m^2), with estimated aortic valve area (AVA) < 1 cm^2 and preserved left ventricle function (ejection fraction (EF) ≥ 50%), an integrated approach for assessment of aortic stenosis severity is proposed. We aimed to investigate whether mitral regurgitation can play a role in those cases, possibly being responsible for low antegrade systolic flow.
Methods: Retrospective analysis of 121 consecutive transthoracic echocardiograms (TTEs) of patient with severe aortic stenosis, with AVA < 1.0 cm^2 as assessed by continuity equation. Patients with low ejection fraction (< 50%) were excluded. A total of 84 patients were included (females 53.6%, mean age 79.1 ± 10 years). Antegrade stroke volume was assessed by Doppler at the left ventricle outflow tract (LVOT). Then, comparisons were made for the prevalence of more than mild mitral regurgitation among patients with both low-gradient and low-flow and the other patients.
Results: 15 patients had both low-gradient, low-flow and preserved ejection fraction. There was a significant association regarding the presence of more than mild mitral regurgitation among those patients (p = 0.028, OR = 4.7, 95%CI 1.1-20.1). In those patients, it was also observed a higher prevalence of atrial fibrillation (p = 0.03, OR = 6.9, 95%CI 1.74-27.1), lower longitudinal systolic function of right ventricle as measured by TAPSE (16.6 *vs.* 21.5 mm, p = 0.028), and a tendency towards higher left atrial volume (113 *vs.* 87 mL, p = 0.06).
Conclusions: Given the findings that the prevalence of more than mild mitral regurgitation is higher in patients with severe aortic stenosis as assessed by AVA with both low-gradient, low-flow and preserved ejection fraction, these results suggests that the presence of more than mild mitral regurgitation should be considered on the approach of aortic stenosis classification of these patients.

Sábado, 23 Abril de 2022 | 17:00-18:00

Sala Jardim de Inverno | Posters (Sessão 4 - Écran 2) - Doenças do Miocárdio e Pericárdio 1

PO 126. RELATIVE APICAL LONGITUDINAL STRAIN – A POWERFUL TOOL TO PREDICT LONG-TERM OUTCOMES IN TRANSTHYRETIN AMYLOID CARDIOMYOPATHY PATIENTS

Tâmara Pereira, Geraldo Dias, Ana Filipa Cardoso, Mariana Tinoco, Olga Azevedo, Francisco Ferreira, António Lourenço

Hospital da Senhora da Oliveira, EPE - Guimarães.

Introduction: Cardiac amyloidosis (CA) is frequently misdiagnosed as sarcomeric hypertrophic cardiomyopathy or other causes of left ventricular (LV) hypertrophy. The apical sparing pattern of LV global longitudinal strain (GLS) is frequently associated with CA and increased relative apical longitudinal strain (RALS) has been associated with worse outcomes in CA. We aimed to assess the prognostic role of RALS on long-term outcomes in wild-type transthyretin amyloid cardiomyopathy (ATTR-CM) patients.
Methods: This is a retrospective single-center study including all patients with the diagnosis of wild-type ATTR-CM between January 2014 and May 2021. A diagnosis of ATTR-CM was defined according to AHA criteria. The primary endpoint was hospitalization due to heart failure (HF). Echocardiographic data were compared between patients reaching and not reaching the primary endpoint. GLS was obtained by 2D-speckle tracking echocardiography and RALS was calculated according to the formula: Average longitudinal strain in the apical LV segments/Sum of the average longitudinal strain in the basal and mid LV segments.
Results: 60 patients with ATTR-CM were included (mean age 86 ± 5 years, 68.3% males, 56,7% atrial fibrillation, baseline LV ejection fraction (LVEF) 53% ± 14). Mean follow-up was 30 ± 23 months. The primary endpoint occurred in 30 patients (50%). The mean time to the first HF admission was 20 months. Patients reaching the primary endpoint had lower LVEF (47% ± 13 *vs.* 59% ± 12, p < 0.001), worse GLS (-9,2% ± 2,7 *vs.* 13,9% ± 3,4, p < 0.001) and higher RALS (1,7 ± 0,7 *vs.* 1,0 ± 0,1, p < 0.001) and LVEF/GLS ratio (5.5 ± 1.5 *vs.* 4.4 ± 1.2, p = 0.035). Kaplan-Meier curves showed that HF hospitalization-free survival was lower in patients with reduced LVEF (34 ± 5 *vs.* 66 ± 7 months, p = 0.006), GLS< -12% (28 ± 4 *vs.* 55 ± 10 months, p = 0.040) and increased RALS (25 ± 4 *vs.* 66 ± 9 months, p = 0.003). In Cox regression analysis, reduced LVEF and increased RALS remained independent predictors of the primary endpoint (HR 2.5, 95%CI 1,1-6,0, p = 0.045; HR 6,5 95%CI 1.8-24.1, p = 0.005, respectively).
Conclusions: Reduced LVEF and increased RALS were independent predictors of the occurrence of hospitalization due to HF. This study highlights the prognostic importance of the apical sparing pattern and RALS as an indirect measure of amyloid myocardial infiltration.

PO 127. CHRONOTROPIC INCOMPETENCE AND ITS RELATION TO EXERCISE CAPACITY IN HYPERTROPHIC CARDIOMYOPATHY

Isabel Gonçalves Machado Cardoso, Pedro Brás, Sílvia Aguiar Rosa, Pedro Rio, José Miguel Viegas, André Grazina, Alexandra Castelo, Bárbara Teixeira, Sofia Silva, Mafalda Selas, Filipa Silva, Rui Cruz Ferreira

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

Introduction: Compromised functional capacity is common in hypertrophic cardiomyopathy (HCM) patients (pts). Chronotropic incompetence is one of the proposed mechanisms underlying decreased functional capacity.
Objectives: To study the prevalence of chronotropic incompetence and its relation to exercise capacity in pts with HCM.

CPET data	
pVO2, ml/kg/min	21.01 (6.08)
% of max predicted VO2	87 (21.7)
VE/VCO2 slope	29 (5.3)
Time to AT, min	6 (6.0)
VO2 in AT, ml/Kg/min	14.27 (3.5)
Optimal point of ventilation	24 (4.48)
RER	1.03 (0.09)
Time of exercise, min	12.4 (4.3)

PO 127 Figure

Methods: Cardiopulmonary exercise testing was performed in 73 pts with HCM prospectively seen at an outpatient cardiomyopathy clinic. Pts with left ventricular ejection fraction < 50% were excluded. Chronotropic incompetence was defined has the inability to achieve 80% or more of the predicted maximal heart rate response.
Results: Of 73 pts with HCM (mean age 57 ± 14 years, 41 males), 41 pts (57%) were in New York Heart Association (NYHA) functional class I, 26 (36%) in class II and 6 (7.5%) in class III. Obstructive HCM was present in 49 (69%). Chronotropic incompetence was present in 55% of pts. Treatment with β-blockers (p = 0.019), female gender (p = 0.035) and average mitral annulus ratio of peak early mitral inflow velocity (E) to early diastolic mitral annular velocity (e') (E/e' ratio) (p = 0.008) were related to chronotropic incompetence. No association was found between the presence of left ventricular outflow tract obstruction (LVOTO) and chronotropic incompetence. Regarding cardiopulmonary exercise test parameters (Table), pts with chronotropic incompetence had lower peak oxygen consumption (peak VO2) (18.4 ± 5.3 *vs*. 23.8 ± 6.7, p < 0.0001).
Conclusions: Diminished heart rate response to exercise is common in HCM pts and it relates to impaired functional capacity.

PO 128. COMPARISON OF LEFT VENTRICULAR STRAIN OBTAIN BY CARDIAC MAGNETIC RESONANCE 3D FEATURE TRACKING AND 3D SPECKLE TRACKING ECHOCARDIOGRAPHY, IN HYPERTROPHIC CARDIOMYOPATHY

Isabel Gonçalves Machado Cardoso[1], Pedro Brás[1], Sílvia Aguiar Rosa[1], Luísa Moura Branco[1], Ana Galrinho[1], Boban Thomas[2], Ricardo Pereira[2], Gonçalo Branco[2], António Fiarresga[1], Rui Cruz Ferreira[1]

[1]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [2]Hospital da Cruz Vermelha.

Introduction: The heterogeneous left ventricular (LV) hypertrophy and interstitial fibrosis that characterizes hypertrophic cardiomyopathy (HCM) leads to variability in regional and global systolic deformation parameters. Cardiac magnetic resonance (CMR) feature tracking (FT) with steady-state free precession (SSFP) is considered analogous to echocardiographic speckle tracking (EST), although less widely used.
Objectives: To evaluate LV strain parameters in HCM patients (pts) by CMRFT and their relation with strain measures obtained by 3D speckle tracking echocardiography (3DSTE).
Methods: Sixty-seven HCM pts prospectively seen, underwent both 3D CMRFT and 3DSTE studies, with measures of global longitudinal, circumferential and radial systolic strains (GLS, GCS, GRS). Pts with LV ejection fraction < 50% were excluded. Strain measures were compared using one-way repeated analysis of variance (ANOVA). A linear regression analysis was used to assess the correlation of variation of strain between the two modalities.
Results: The table shows the clinical characteristics of the study participants and imaging findings. The mean GLS values assessed by 3DEST was significantly higher than by CMRFT (p = 0.035). The average GRS was highest in 3DEST (p = 0.005). There was a significant correlation between GRS obtained by 3DSTE and CMRFT (r2 = 0.1). No significant difference in average GCS assessed by the two methods was found (p = 0.22), although a correlation between both couldn't be demonstrated.
Conclusions: Although no significant difference was found between GCS values obtained by 3DSTE and CMRFT, no correlation was found between the two. A significant correlation between GRS obtained by the two methods was found (r2 = 0.1). Our study suggests that global strain values obtained by CMRFT and 3DEST cannot be used interchangeably in patients with HCM. However further larger studies are needed to clarify these findings.

PO 129. CORONARY FLOW VELOCITY RESERVE IN HYPERTROPHIC CARDIOMYOPATHY: RELATION WITH NONUNIFORM MYOCARDIAL HYPERTROPHY

Isabel Gonçalves Machado Cardoso[1], Pedro Brás[1], Sílvia Aguiar Rosa[1], Luísa Moura Branco[1], Ana Galrinho[1], António Fiarresga[1], Luís Rocha Lopes[2], Mafalda Selas[1], Filipa Silva[1], Miguel Mota Carmo[1], Rui Cruz Ferreira[1]

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Introduction: Reduction in coronary flow velocity reserve (CFVR) is a recognised feature in patients with hypertrophic cardiomyopathy (HCM). We investigated the hypothesis of differing CFVR of coronary arteries perfusing ventricular segments with nonuniform myocardial hypertrophy, by assessing the relative CFVR.
Objectives: To evaluate the impact of maximal wall thickness (MWT) in CFVR of the left anterior descendent artery (LAD), posterior descending artery (PD) and relative CFVR.

CPET data	
pVO2, ml/kg/min	21.01 (6.08)
% of max predicted VO2	87 (21.7)
VE/VCO2 slope	29 (5.3)
Time to AT, min	6 (6.0)
VO2 in AT, ml/Kg/min	14.27 (3.5)
Optimal point of ventilation	24 (4.48)
RER	1.03 (0.09)
Time of exercise, min	12.4 (4.3)

PO 128 Figure

	n=67
Clinical Characteristics	
Male gender, n (%)	41 (61)
Age (years), mean (SD)	57 (14)
Hypertension, n (%)	34 (51)
Diabetes, n (%)	10 (15)
Dyslipidaemia, n (%)	28 (42)
Current smoker, n (%)	9 (13)
Nonobstructive HCM, n (%)	46 (69)
NYHA I, n (%)	38 (57)
NYHA II-III, n (%)	29 (43)
Angina, n (%)	23 (34)
CFVR data	
Mean LAD CFVR (SD)	1,8 (0.53)
Mean PD CFVR (SD)	1,7 (0.55)
Mean relative CFR LAD/PD (SD)	1,11 (0.34)
Echocardiographic findings	
Maximal wall thickness (MWT) (SD)	20.4 (4.1)

PO 129 Figure

Methods: Sixty-seven HCM pts, prospectively seen at the outpatient cardiomyopathy clinic underwent transthoracic echocardiogram with assessment of CFVR of the LAD and of the PD by pulsed-wave Doppler, in basal conditions and during hyperaemia. Relative CFVR was calculated as the ratio between absolute CFVR of the LAD and absolute CFVR of the PD (LAD CFVR/PD CFVR). MWT was determined in parasternal short axis views. CFVR was analysed according to the location of MWT. The relationship between these variables and CFVR was determined using Mann-Whitney U test analysis.
Results: The table shows the clinical and echocardiographic data of the study participants. The mean relative CFVR was 1.11 (0.34). In the segments with MWT supplied by the LAD the mean relative CFVR was 1.8 (0.53). In the segments with MWT supplied by the PD the mean relative CFVR was 1.7 (0.55). 75% of pts with segments with MWT in dependence of the PD had relative CFVR > 1 and 32% with MWT supplied by the LAD had CFVR < 1. There was a significant correlation between relative CFVR and the location of MWT segments ($p = 0.01$). In the segments with MWT supplied by the PD the CFVR of the PD is substantially lower than the CFVR of the LAD, accordingly relative CFVR was higher in pts with MWT in segments in dependence of the PD artery ($p = 0.01$).
Conclusions: Regional distribution of hypertrophy results in regional impairment of coronary flow. CFVR was predominantly diminished in the artery supplying the MWT segments.

PO 130. SIGNALLING AMYLOIDOSIS DIAGNOSIS WITH RED FLAGS

Catarina Gregório, Sara Couto Pereira, Pedro Silvério António, Joana Brito, Beatriz Valente Silva, Pedro Alves da Silva, Ana Beatriz Garcia, Ana Margarida Martins, Catarina Simões de Oliveira, João Santos Fonseca, Miguel Azaredo Raposo, Ana Abrantes, Fausto J. Pinto, Dulce Brito

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Cardiac amyloidosis (CA) is an increasingly recognized aetiology of heart failure, resulting from deposition of different types of amyloid fibrils in cardiac tissue. It manifests as a restrictive cardiomyopathy leading to progressive heart failure associated with reduced survival. Recently, red flags for CA diagnosis as well as a diagnostic score have been stated in a consensus issued by the European Society of Cardiology.
Objectives: We aimed to assess the sensitivity of different red flags and of a diagnostic score in a real-world population.
Methods: Single-center retrospective study undertook in a tertiary hospital with patients diagnosed with CA. Demographic, clinical, laboratory, ECG, 2D echocardiography and DPD scintigraphy data were collected at baseline in all pts. These data encompassed several ESC guidelines red flags (except for CMR) and allowed the calculation of ESC Consensus' score (left ventricle wall thickness > 12 mm plus one other red flag criteria). Statistical analysis was conducted using descriptive statistic in IBM SPSS 26®.
Results: We gathered a population of 84 pts, 24 with wild type transthyretin CA (wtATTR-CA), 18 with light-chain CA (AL-CA) and 42 with hereditary transthyretin CA (hATTR-CA). Mean age was 69.4 ± 11 years and 66% pts were male. We analysed the prevalence of clinical, electrocardiographic, laboratorial and echocardiographic red flags in our population: 35.7% had hypotension, 15.4% presented with low voltage QRS in ECG, 5.3% had pseudo-infarct ECG pattern and 3.6% presented with AV conduction delay. Regarding laboratorial characteristics, 4.2% had NTproBNP levels above 3,000 ug/mL and 8.2% presented with persistent high levels of troponin above 70 pg/L. On echocardiogram evaluation, 5.5% had pericardial effusion, 6.5% displayed apical sparing on longitudinal strain analysis, and 92.3% showed granular sparkling pattern – the red flag with the highest sensitivity (Table). Consensus score was calculated for each one of the patients and a positive value (defined by the presence of left ventricular wall thickness > 12 mm and at least one other red flag) showed a sensitivity of 88.1%.

Cardiac amyloidosis red-flags	Sensitivity
Hypotension or normotensive if previously hypertensive	35,7%
Pericardial effusion	5.5%
NTproBNP >3000ug/mL	4.2%
Troponin>70ug/L	70pg/L
Reduced longitudinal strain with apical sparing	6,5%
Granular sparkling pattern	92.3%
Decreased ECG voltage to mass ratio	15,4%
Pseudo Q waves on ECG	41,8%
AV conduction disease	3.6%

Table 1: Sensitivity of the different red-flags in cardiac amyloidosis.

Conclusions: In a real-world population with CA, a screening tool as proposed by the ESC Consensus, showed a good sensitivity for the diagnosis. Given the increasing awareness of this disease, the application of this score and the recognition of red flags is of the most importance for diagnosis and for an adequate therapeutic management.

Sábado, 23 Abril de 2022 | 17:00-18:00

Sala Jardim de Inverno | Posters (Sessão 4 - Écran 3) - Exercício e Reabilitação Cardíaca 1 - Foco nos Programas de Reabilitação

PO 131. OUTCOMES OF PATIENTS ENROLLED IN A PHASE 2 CARDIAC REHABILITATION PROGRAM ACCORDING TO ACUTE CORONARY SYNDROME

Dias de Frias[1], Mauro Moreira[2], Cristine Schmidt[3], Preza Fernandes[1], Sandra Magalhães[4], Mário Santos[4], Severo Torres[1]

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Introduction: Cardiac rehabilitation (CR) is a class 1 recommendation in the management of patients with acute coronary syndrome (ACS), namely ST-elevation myocardial infarction (STEMI) and non-ST acute coronary syndrome (NST-ACS). Reported mortality and recurrent cardiovascular (CV) events are still unacceptably high in these patients.
Objectives: To assess CV outcomes of patients enrolled in a CR program and its association with ACS presentation.
Methods: Single-center, retrospective observational study that included all consecutive post-ACS patients enrolled in a phase 2 CR program in 2017. Group 1 were patients with STEMI; group 2 were patients with NST-ACS. Major adverse cardiovascular events (MACE) were defined as a composite of death, non-fatal ACS, non-fatal stroke, and unplanned revascularization.
Results: Of the 202 ACS patients who attended the CR program in 2017, 4 were excluded due to missing data. Of the 198 patients analyzed (age 60.3 ± 10.7 years, 82% male), 101 patients had a STEMI and 97 NST-ACS. STEMI patients were significantly younger (57 ± 9.5 *vs.* 63 ± 10, p < 0.001), with fewer CV risk factors (diabetes 16 *vs.* 32%, p = 0.008; hypertension 51 *vs.* 72%, p = 0.002; obesity 17 *vs.* 31%, p = 0.020; dyslipidemia 54 *vs.* 77%, p < 0.001), except for active smoking (53 *vs.* 29%, p = 0.001), and were less likely to have previous history of coronary artery disease (9 *vs.* 31%, p < 0.001). During the 3-month CR program, both groups achieved significant reduction in body mass index, LDL-Cholesterol, functional capacity, and smoking cessation rates. At 3-, 12-, and 24-months evaluation, both groups showed no differences in risk factor management, nor differences in lipid-lowering therapy, namely percentage of high-intensity statin and ezetimibe use. STEMI patients were treated more frequently with ticagrelor (86 *vs.* 67%, p = 0.001) at baseline. MACE occurrence was significantly lower in STEMI patients (11 *vs.* 28%, p = 0.003), driven mainly by recurrent ACS (4 *vs.* 15%, p = 0.006).
Conclusions: In our study, NST-ACS patients had significantly higher CV disease burden and worse outcomes at 24-month follow-up. Despite the heightened CV risk in this group, secondary prevention treatment intensity was similar in both groups.

PO 132. CARDIAC REHABILITATION AFTER ELECTIVE HEART SURGERY: A VALVULAR SURGERY FOCUSED COMPARISON TO CORONARY ARTERY BYPASS GRAFTING

Geraldo Dias[1], Sandra Magalhães[2], Mário Santos[2], Ana Barreira[2], Preza Fernades[2], Severo Torres[2]

[1]Hospital da Senhora da Oliveira, EPE - Guimarães. [2]Centro Hospitalar Universitário do Porto, EPE/Hospital Geral de Santo António.

Introduction: Cardiac rehabilitation (CR) after heart surgery is widely recommended and its benefits are well described for patients after coronary artery bypass graft (CABG) surgery. However, these benefits are not so well established for patients following heart valve (HV) surgery.
Objectives: We aimed (1) to assess if patients submitted to elective HV surgery improved their functional capacity after completing a supervised CR phase II program, and (2) to compare this response between those who underwent CABG surgery and combined HV and CABG surgery.
Methods: Retrospective study including consecutive patients that completed an exercise-based CR program from January 2012 to December 2019 in one center, admitted in the program after elective HV surgery, elective CABG surgery or elective combined HV and CABG surgery. Demographic, anthropometric and clinical variables were collected. Baseline and post-CR exercise test (ET) duration and maximum metabolic equivalents (MET) were compared between groups. Statistical analysis was performed using SPSS v20.0.
Results: A total of 106 patients were included, divided into three groups: HV (N = 19), HV+CABG (N = 14) and CABG (N = 73). Among valvular patients (HV and HV+CABG groups), the aortic valve was the most frequently implicated (78.8%), followed by combined aortic and mitral (12.1%) and mitral valve (9.1%). Among patients that had elective CABG surgery (CABG and HV+CABG), the majority had three vessel disease (61.3%), followed by two (26.7%) and one (12.0%) vessel disease. HV group presented a greater proportion of females (42.1%) than HV+CABG (21.4%) and CABG (11.0%) groups. Left ventricle systolic function, obesity and diabetes mellitus prevalence was similar among groups. Hypertension, dyslipidemia and smoking history were significantly more common in CABG and HV+CABG groups than in HV only group, and atrial fibrillation was more prevalent in the latter. When comparing pre and post-CR ET, patients increased 83.0 (IQR = 99.0) seconds in ET duration and 1.3 (IQR = 1.5) MET. Baseline, post-CR, and the variation of ET parameters were similar between groups. Self-reported physical activity, type or position of prosthetic valve didn't relate to improvements in ET parameters.
Conclusions: This study demonstrates that patients submitted to elective HV and/or CABG surgery have comparable improvements in functional capacity after a CR phase II program. This improvement seems to be independent of the existence of coronary artery disease, the type or position of the prosthetic valve, and self-reported physical activity.

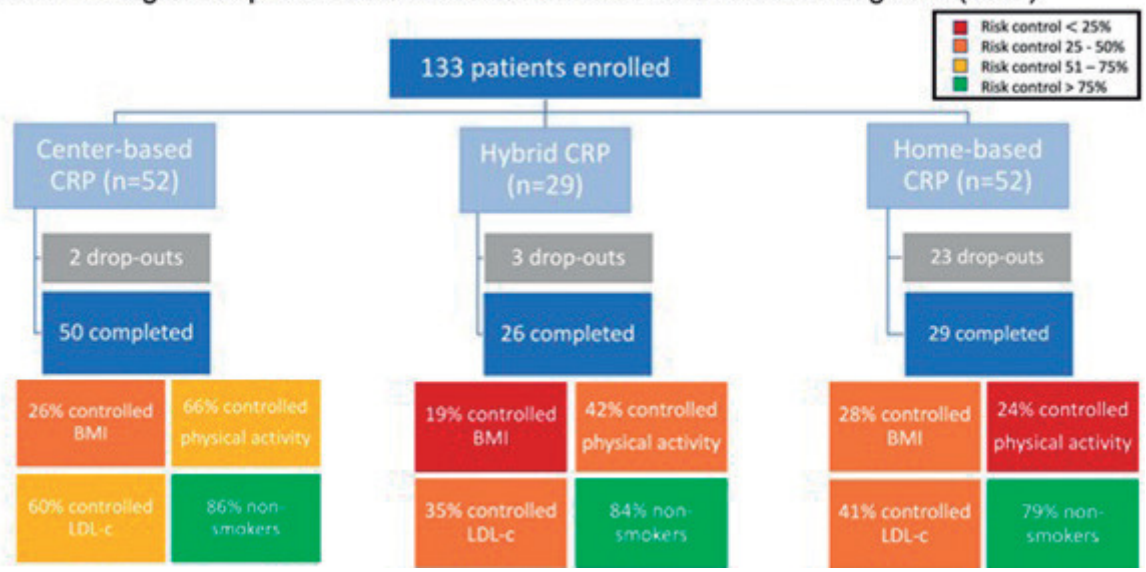
PO 133. THE RISE OF THE DIGITAL ERA IN CARDIAC REHABILITATION: CAN IT KEEP UP WITH THE PRESENTIAL MODEL?

Mariana Sousa Paiva, Rita Reis Santos, Sara Guerreiro, Gonçalo l. Cunha, Daniela Gomes, Rita Amador, Rita Lima, Rita Bello, Sofia Santos, Mónica Neto, Maria la Salete Pinto, Luís Moreno, Anaí Durazzo, Miguel Mendes

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

Introduction: The pandemic raised interest in digital methods to manage and prevent cardiovascular diseases. Thus, cardiac rehabilitation programs (CRP) were adapted, with a marked increase in the delivery of home-based programs. The aim of this study was to evaluate and compare the center-based (CB), hybrid (HyB) and home-based (HB) CRPs developed in our center.
Methods: Single center cohort study of consecutive patients that accepted to join a two-month CRP from April 2019 to September 2021. The CB-CRP, as standard of care, involved 20 supervised exercise sessions, the HyB-CRP included a 2-week program (6 sessions) at the hospital, followed by digital follow-up and counselling, and the HB-CRP was exclusively based on digital platforms and regular phone consultations. Data on medical history, lifestyle, and blood analyses, before and after the program, were collected from electronic charts. All CV risk factor control goals were defined accordingly to the ESC guidelines.
Results: In total, 133 patients were enrolled, but only 105 completed the program, as 23 patients dropped out from the HB-CRP, 3 from the HyB-CRP and 2 from the CB-CRP (Fig.). The mean age was 60 ± 11 years, 71% were male, the majority (88%) was referenced after an acute coronary syndrome and 72% had preserved left ventricular ejection fraction. Baseline risk factors were similar between the 3 groups: systolic blood pressure (SBP) (mean 118 ± 16 mmHg) was controlled, but BMI (median 27 (IQR: 24-31) kg/

Figure 1 – Diagram of patient distribution on Cardiac Rehabilitation Programs (CRP)



PO 133 Figure

m^2), LDL-C values (median 61 (IQR: 47-83) mg/dL) and physical activity (69% of inactive patients) were uncontrolled. Also, there were 18% of active smokers. At the 2-month follow-up, LDL-c values (median 56 (IQR: 44-73) mg/dL), percentage of inactive patients (49%) and active smokers (16%) dropped, while median BMI stood at the same level (27 (IQR: 24-31) kg/m^2). Compared with the standard of care, the digital programs yielded worse results: the HyB-CRP in terms of LDL-C values control (35 *vs.* 60%, p = 0.04) and the HB-CRP in terms of percentage of inactive patients (76 *vs.* 34%, p = 0.004). However, for BMI, SBP and smoke cessation, the results were similar between the 3 groups.

Conclusions: Overall, our programs had a positive impact on risk factor control. However, patients in the digital programs are a challenge for the CRP team, since they are more likely to drop out, less willing to engage healthy behaviors and showed lower CV risk factors control. A stronger approach must be attended to ameliorate the outcomes in the hybrid and home-based programs.

PO 134. SHORTER CARDIAC REHABILITATION PROGRAMS: TAKING TIME IS TAKING EFFECTIVENESS?

Ana Abrantes, Pedro Alves da Silva, Pedro Silvério António, Sara Couto Pereira, Beatriz Valente Silva, Joana Brito, Ana Margarida Martins, Catarina Simões de Oliveira, Ana Beatriz Garcia, João Santos Fonseca, Catarina Gregório, Miguel Azaredo Raposo, Nelson Cunha, Inês Ricardo, Ana Abreu

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Due to the covid-19 outbreak, cardiac rehabilitation programs (CRP) underwent most needed adaptations to stay operative. To face all the requests and guarantee sanitary measures we reduced the duration of the program from about 12 weeks to about 8 weeks, so we could have smaller groups but still respond to all patients who had been referred. However, it is still unclear whether less hours of contact and exercise sessions can achieve the same results as traditional CRP.

Objectives: To analyse the effectiveness of shorter duration CRP on risk factor control after the program conclusion.

Methods: Observational single center study including two groups of patients who underwent CRP: one group who had been in 12 weeks-CRP before the pandemic sprout and another group enrolled in an 8-week program after April 2021. Albeit differences in their duration, both CRP had the same structure: observation by cardiologist, physiatrist, specialist nurse, exercise/aerobic and strength exercices) and educational sessions, as well as nutrition and psychologist consultation.

Results: A total of 114 pts were analysed (mean age 62.4 ± 11.6 years, 85.1% men, 86% with ischemic heart disease). Main comorbidities were hypertension (68.4%), dyslipidemia (70%) and diabetes (30.7%). 78 pts completed a longer programme with 12 weeks duration while 36 underwent a shorter CRP with 8 weeks. There were no statistically significant differences between both groups in regard to population demographics, aetiology, LVEF and co-morbidities. After CRP, there was significant improvement in risk factor control (mainly lipidic profile and weight) and echocardiographic parameters in both groups. We noted an important reduction in LDL levels (85 ± 42.6 mg/dL before CRP and 67.68 ± 28.45 mg/dL after), approaching the guideline recommended levels (< 55 mg/dL): 29.8% before *vs.* 42.6% after (p = 0.079), with no difference between the two groups (p = 0.65). Significant improvement of LVEF was also observed (53% to 57%, p < 0.001) without difference between the two groups (p = 0.112).

Conclusions: Shorter duration CRP showed similar results concerning risk factor control and echocardiographic LVEF, proving they can be an effective alternative when needed.

PO 135. CARDIAC REHABILITATION PROGRAMS: DOES SHORTER COURSE TRANSLATE INTO LESS EXERCISE CAPACITY?

Miguel Azaredo Raposo, Pedro Alves da Silva, Sara Couto Pereira, Pedro Silvério António, Joana Brito, Beatriz Valente Silva, Pedro Alves da Silva, Ana Beatriz Garcia, Catarina Simões de Oliveira, Ana Margarida Martins, Nelson Cunha, Inês Aguiar Ricardo, Fausto J. Pinto, Ana Abreu

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: In face of pandemic imposed restrictions, cardiac rehabilitation programs (CRP) faced new challenges in the past 2 years. Diverse strategies were applied, using tele-rehabilitation and hybrid solutions. Good results were attained, as several studies have shown. Other centers opted for reducing the duration of sessions and programs. In our center, we adapted the CRP duration from 12 weeks to 8 weeks, so we could have smaller, safer groups and still admit all patients who had been referred.

It is still unclear whether less hours of contact and shorter exercise sessions can achieve the same results as traditional CRP.
Objectives: To analyse the effectiveness of shorter duration CRP on exercise tolerance and functional class after concluding the program.
Methods: Observational single center study including two groups of patients who underwent CRP: one group who had been in 12 week CRP before the imposed lockdown and another group enrolled in an 8-week program after April 2021. Albeit differences in their duration, both CRP had the same structure: observation by cardiologist, physiatrist, specialist nurse, exercise (aerobic and strength exercises) and educational sessions, as well as nutrition and psychologist consultation.
Results: A total of 114 pts were analysed (mean age 62.4 ± 11.6 years, 85.1% male, 86% with ischemic heart disease). Main comorbidities were hypertension (68.4%), dyslipidemia (70%) and diabetes (30.7%). 78 pts completed a longer programme with 12 weeks duration while 36 underwent a shorter CRP with 8 weeks. There were no statistically significant differences between both groups regarding population demographics, aetiology, LVEF and co-morbidities. Exercise tolerance improved similarly in both groups, assessed by the time of exercise stress test: we registered a global increase of 65 ± 1.38s after CRP, with no difference between the two groups (p = 0.157). Similarly, there were no differences in hypertensive responses during exercise. In line with the observed results in exercise tolerance, we noted an improvement in NYHA class before and after CRP in both groups, with no statistical differences between them.
Conclusions: Shorter duration CRP showed no significantly different results concerning exercise tolerance improvement and functional class. These findings suggest its use might be an alternative in some settings, as lack of resources or the current pandemic.

Sábado, 23 Abril de 2022 | 17:00-18:00

Sala Jardim de Inverno | Posters (Sessão 4 - Écran 4) - Insuficiência Cardíaca 4 - Vários 2

PO 136. PATIENTS ADMITTED WITH ACUTE HEART FAILURE AT AN INTENSIVE CARE DEPARTMENT - COMPARISON BETWEEN THE CLINICAL PROFILES OF PATIENTS WITH PRESERVED VS. REDUCED LEFT VENTRICULAR EJECTION FRACTION

Ana Rita Moura[1], Marta Reina-Couto[2], Roberto Roncon de Albuquerque[2], José Artur Paiva[2]

[1]Hospital Distrital de Santarém, EPE. [2]Centro Hospitalar Universitário de S. João, EPE.

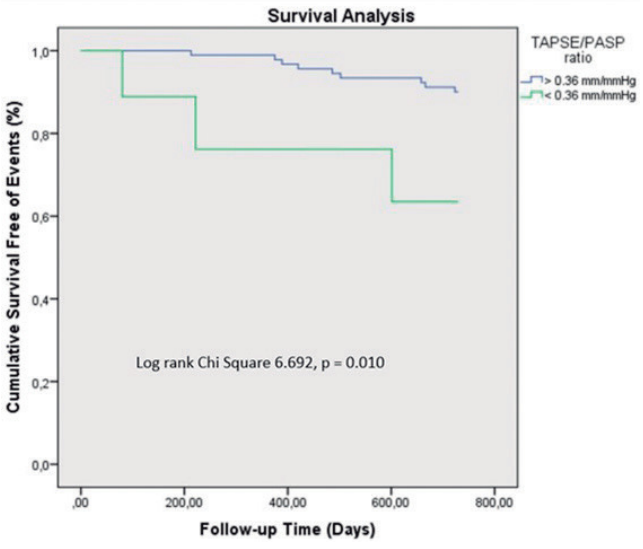
Introduction: Heart failure (HF) is one of the major contemporary clinical challenges. Its prognosis is worse in the presence of exacerbations that require intensive care. Data regarding characterization and prognosis of critical acute heart failure (AHF) in the contemporary era is lacking.
Objectives: Describe and compare the clinical profile of patients with preserved *vs.* reduced left ventricular ejection fraction (LVEF) admitted with AHF to a general Intensive Care Unit (ICU) at a tertiary center.
Methods: Retrospective study of patients admitted at an ICU with the diagnosis of AHF between January and December of 2018 in a tertiary care hospital. Patients were dichotomized according to LVEF at discharge (preserved - ≥ 50% or reduced - < 50%) and compared regarding clinical data, *triggers* and in-hospital and long-term prognosis.
Results: 239 patients were included, mostly men (60.7%), with a mean age of 69.5 ± 14.8 years old. Patients admitted with preserved LVEF (28.9%; n = 69) were a minority. This group was significantly older (73.7 *vs.* 66.2 years; p = 0.001) and had a higher prevalence of female gender (59.4 *vs.* 32.5%; p < 0.001). There was no difference in the prevalence of the majority of previous co-morbidities. Mean maximum brain natriuretic peptide was similar (1,365 *vs.* 1,418 pg/mL, p = 0.82). Although acute coronary syndrome was the most prevalent *trigger* in both groups, it assumed a lighter representativity in the preserved LVEF patients (21.7 *vs.* 46.3%); instead, pulmonary embolism (14.5 *vs.* 1.6%) and infection (18.8 *vs.* 13.8%) assumed more relevant roles in this subgroup. Regarding clinical status, patients with preserved LVEF had a lower probability of low peripheral perfusion status at admission (p < 0.001) that was reflected in a lesser use of aminergic support (21.7 *vs.* 52.8%, p < 0.001) and mechanical circulatory support (used in 2 cases of high-risk pulmonary embolism). Patients with preserved LVEF also had a significantly lower in-hospital death (7.2 *vs.* 20.3%; p = 0.02). There wasn´t a difference in the duration of mean hospital stay (5.25 *vs.* 6.5 days; p = 0.20), nor in the probability of death (p = 0.98) or new HF hospitalization within 12 months after discharge (p = 0.44).
Conclusions: this registry shows that only a minority of patients admitted with AHF at an ICU has preserved LVEF. As compared with HF patients with reduced LVEF, these individuals are more likely to be older, women, to have pulmonary embolism as a *trigger*; and to exhibit less severe clinical status and a better short-term prognosis. However, there weren´t significant differences in terms of mortality and rehospitalization for AHF at 12 months. These findings demonstrate the relatively poor prognostic value of LVEF in this context in terms of long-term prognosis prediction and emphasizes the need of continued monitoring of these patients.

PO 137. EVALUATION OF RV-ARTERIAL COUPLING IN ADVANCED HEART FAILURE

João Pedro Reis, Pedro Brás, Vera Ferreira, António Gonçalves, Tiago Pereira da Silva, Ana Timóteo, Ana Galrinho, Rui Ferreira

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

Introduction: Echocardiographically determined TAPSE/PASP is a noninvasive measure of RV-arterial coupling. TAPSE/PASP ratio is a potent independent predictor of precapillary PH and prognosis in heart failure and pulmonary arterial hypertension, with a prognostic cutoff value of 0.36 mm/mmHg.



Objectives: To assess the prognostic impact of TAPSE/PASP in a population of advanced HF patients.
Methods: Prospective evaluation of adult patients with advanced HFrEF referred to our Institution for evaluation with HF team and possible indication for urgent heart transplantation (HT) or MCS. Patients were

followed up for 2 years for the primary endpoint of cardiac death and HT. Echocardiographically determined TAPSE/PASP ratio was used to assess RV-arterial coupling and a survival analysis was performed to evaluate the prognostic impact of the suggested cutoff of 0.36 mm/mmHg.
Results: A total of 450 HFrEF patients with a mean age of 56 ± 12 years, of which 80% are male, and with a mean LVEF of 29 ± 4%, mean TAPSE of 19 ± 3 mm and PASP of 38 ± 11 mmHg. The mean TAPSE/PASP was 0.80 ± 0.28. Fifty-four patients (12%) met the primary endpoint. Patients with RV-arterial uncoupling (TAPSE/PASp < 0.36 mm/mmHg) were more likely to have a non-ischaemic etiology for HF (66.7 *vs.* 40%, p = 0.047), had a lower prevalence of diabetes (53.3 *vs.* 77.9%, p = 0.041), a higher prevalence of moderate-to-severe mitral regurgitation (33.3 *vs.* 13.0%, p = 0.035), a lower LVEF (26.2 ± 6.1 *vs.* 29.9 ± 5.9, p = 0.038), a higher prevalence of RV dysfunction (73.3 *vs.* 26.7%, p < 0.001) and worse cardiopulmonary fitness (pVO_2: 12.7 ± 5.1 *vs.* 15.8 ± 6.0 ml/kg/min, p = 0.047; VE/VCO_2 slope: 49.5 ± 17.2 *vs.* 37.6 ± 9.7, p < 0.001; cardiorespiratory optimal point: 36.9 ± 11.3 *vs.* 29.0 ± 6.4, p < 0.001). More patients in the group of TAPSE/PASp < 0.36 mm/mmHg met the primary endpoint (33.3 *vs.* 9.6%, p = 0.034) and more patients underwent urgent HT (13.3 *vs.* 1.4%, p = 0.44). RV-arterial coupling was associated with a lower survival free of events during follow-up (log-rank p = 0.010).
Conclusions: RV-arterial coupling predicts a worse prognosis in advanced HF patients, with those below a cutoff of 0.36 mm/mmHg having lower survival. This variable may improve risk stratification in this setting.

PO 138. RESPONSE AND LONG-TERM OUTCOMES WITH RESYNCHRONIZATION THERAPY: DOES HEART FAILURE ETIOLOGY MATTER?

Mariana S. Brandão, João Gonçalves Almeida, Paulo Fonseca, Elisabeth Santos, Filipa Rosas, José Nogueira Ribeiro, Marco Oliveira, Helena Gonçalves, João Primo, Ricardo Fontes-Carvalho

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

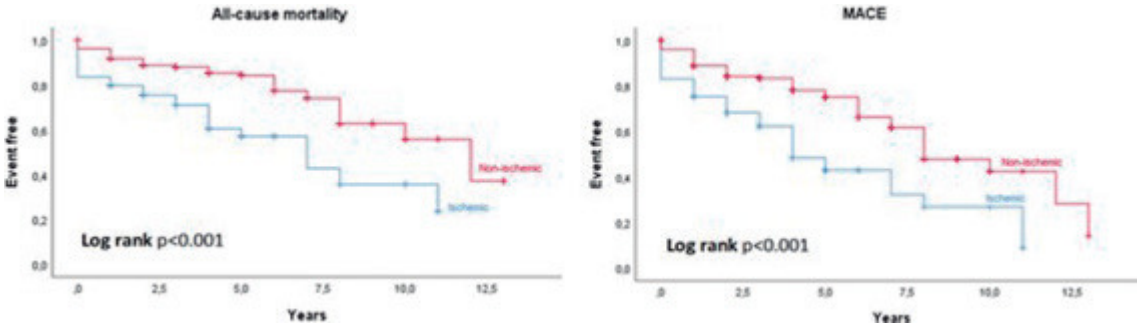
Introduction: Resynchronization therapy (CRT) reduces mortality across all etiologies of heart failure (HF). Reverse left ventricular (LV) remodelling has been reported to occur more often in non-ischemic patients (pts).
Objectives: To compare response and outcomes after CRT in non-ischemic (NIHF) and ischemic (IHF) HF pts.
Methods: Single-center retrospective study of consecutive patients submitted to CRT implantation (2007-2018). Major adverse cardiac events (MACE) included HF hospitalization or all-cause mortality (ACM). Clinical response was defined as New York Heart Association (NYHA) class improvement without MACE in the 1st year of follow-up (FU). Echocardiographic (echo) response implied left ventricle end-systolic volume reduction of > 15% at 1-year. LV ejection fraction [LVEF] ≥ 50% during 1st year of FU defined superresponse. Survival analysis with Kaplan-Meier method and Log-rank test was performed to compare outcomes. Multivariate analysis was performed to assess if HF etiology predicted response to CRT.
Results: 295 pts (mean age 67 ± 11 years, 91.5% left bundle branch block, baseline QRS 171 ± 22 ms) were included. Pts in NIHF group (n = 208, 72.5%) were more often female (35.6 *vs.* 15.6%, p < 0.001), tended to be younger (67 *vs.* 70 years, p = 0.05), had more valve disease (36.7 *vs.* 23.6%, p = 0.037) and kidney disease (32.9 *vs.* 18.5%, p = 0.015). In NIHF pts, right ventricular dysfunction (tricuspid annular plane systolic excursion < 17 mm) was less common (25.6 *vs.* 47.1%, p = 0.039). Addition of defibrillator was identical (53.8 *vs.* 55.7%, p = 0.882). NYHA class improvement (79.4 *vs.* 78.4%, p = 0.987) and echo response (71.2 *vs.* 74.4%, p = 0.860) were similar. NIHF pts were more often superresponders (25.7 *vs.* 9.5%, p = 0.006), with greater improvement in LVEF (Δ 11.6 *vs.* 7.6%, p < 0.001). Clinical response was more frequent in NIHF pts (66.3 *vs.* 50.6%, p = 0.023). After multivariate analysis, HF etiology was not predictive of clinical (p = 0.960) or echo response (p = 0.075). During a mean FU of 3.8 years, occurrence of MACE (*Log rank* test, p < 0.001) and ACM (*Log rank* test, p < 0.001) were lower in NIHF [Fig.]. Ventricular arrythmias (6.4 *vs.* 7.5%, p = 0.993) or appropriate defibrillator therapies (5.3 *vs.* 7.5%, p = 0.743) did not differ.
Conclusions: In this cohort, consisting mostly of pts with LBBB and QRS ≥ 150 ms, HF etiology did not predict clinical or echo response to CRT. Still, NIHF pts showed a greater extent of LV remodelling. Lower MACE and ACM rates were also observed in non-ischemic pts.

PO 139. PROGNOSTIC IMPACT OF RIGHT VENTRICULAR FUNCTION IN ADVANCED HEART FAILURE

Ana Rita Teixeira, João Ferreira Reis, António Valentim Gonçalves, Rita Ilhão Moreira, Tiago Pereira da Silva, Ana Teresa Timóteo, Bárbara Lacerda Teixeira, Sofia Jacinto, Rui Cruz Ferreira

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

Introduction: In patients with heart failure with reduced ejection fraction (HFrEF), the presence of coexistent right ventricular (RV) systolic dysfunction is associated with a worse functional capacity and outcome. However, the measurement of RV function is often overshadowed by its left counterpart.
Objectives: To assess the prognostic impact of RV dysfunction in a population of advanced HF patients.
Methods: Prospective evaluation of adult patients with advanced HFrEF were referred to our Institution for evaluation with HF team and possible indication for urgent heart transplantation (HT) or MCS. Patients were followed up for 1 year for the primary endpoint of cardiac death and HT. RV systolic dysfunction was defined by a tricuspid annular plane systolic excursion (TAPSE) < 17 mm and/or fractional area change (FAC) < 35%. A survival analysis was performed to evaluate the prognostic impact of RV dysfunction and survival curves were compared using the log-rank test.
Results: A total of 450 HFrEF patients (mean age of 56 ± 12 years, 80% male, mean LVEF of 29 ± 4%, mean TAPSE of 19 ± 3 mm and FAC of 37 ± 6%), of which 30.4% had RV dysfunction. Thirty patients (6.7%) met the primary endpoint. Patients with RV dysfunction had a higher NT-proBNP value (3278.9 ± 296.7 pg/mL, p = 0.005) and a lower LVEF (26.7 ± 6.4 *vs.* 31.4 ± 5.1, p < 0.001), as well as worse cardiopulmonary fitness (CPET duration: 7.2 ± 3.8 *vs.* 8.6 ± 4.1, p = 0.019; pVO_2: 13.6 ± 4.9 *vs.* 16.2 ± 6.1 ml/kg/min, p = 0.006;



PO 138 Figure

VE/VCO_2 slope: 41.8 ± 11.9 *vs.* 37.0 ± 10.6, p = 0.015; cardiorespiratory optimal point: 33.0 ± 8.9 *vs.* 28.4 ± 6.2, p < 0.001). RV dysfunction was associated with a lower survival free of events during the first follow-up year (log-rank p = 0.046).
Conclusions: RV is associated with a poor outcome in advanced HF patients, and it may improve risk stratification in this population.

PO 140. FUNCTIONAL MITRAL REGURGITATION IN ADVANCED HEART FAILURE

Bárbara Lacerda Teixeira, João Ferreira Reis, António Gonçalves, Rita Ilhão Moreira, Tiago Pereira Silva, Ana Teresa Timóteo, Pedro Rio, Pedro Brás, Vera Ferreira, Alexandra Castelo, Ana Sofia Jacinto, Ana Rita Teixeira, Tânia Branco Mano, Rui Cruz Ferreira

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

Introduction: Moderate-to-severe functional mitral regurgitation (fMR) is present in about one-third of patients with heart failure (HF) with reduced left ventricular (LV) ejection fraction (HFrEF) and contributes to progression of the symptoms of HF and is an independent predictor of worse clinical outcomes.
Objectives: To characterize the population of advanced HF patients with severe FMR in a tertiary center and assess its prognostic impact.
Methods: Prospective evaluation of adult patients with advanced HFrEF were referred to a single tertiary center for evaluation with HF team and possible indication for urgent heart transplantation (HT) or mechanical circulatory support (MCS). Patients were followed up for 1 year for the primary endpoint of cardiac death and HT. Severe FMR was defined by an EROA ≥ 20 mm^2 and/or a regurgitant volume (RVol) ≥ 30 mL either taken from TTE or TOE. A survival analysis was performed to evaluate the prognostic impact of fMR and survival curves were compared using the log-rank test.
Results: A total of 450 HFrEF patients (mean age of 56 ± 12 years, 80% male, mean LVEF of 29 ± 4%) of which 14.4% had severe fMR, with a mean EROA of 29.2 ± 3.1 mm^2 and a mean RVol of 43.6 ± 4.7 mL. Thirty patients (6.7%) met the primary endpoint. Patients with severe fMR were more likely to be female (69.2 *vs.* 81.5%, p = 0.026) and to have atrial fibrillation (27.0 *vs.* 14.1%, p = 0.028), had a higher NT-proBNP value (3,625.8 ± 496.9 *vs.* 1,940 ± 212.4 pg/mL, p = 0.001), a lower LVEF (25.9 ± 6.8 *vs.* 29.0 ± 6.7, p = 0.001), more dilated LV (LV end-diastolic diameter: 72.8 ± 13.3 *vs.* 66.9 ± 9.0 p = 0.036), a lower HFSS value (8.1 ± 1.0 *vs.* 8.6 ± 1.0). There was no difference regarding HF etiology, NYHA class or cardiopulmonary fitness (pVO_2: 16.6 ± 5.6 *vs.* 16.5 ± 6.3 ml/kg/min, p = 0.19; VE/VCO_2 slope: 35.4 ± 9.9 *vs.* 34.0 ± 9.7, p = 0.328). EROA was an independent predictor of the primary outcome (OR 1.23, 95%CI 1.08-1.54, p = 0.039). Patients with severe fMR had a lower survival free of events during the first follow-up year (log-rank p = 0.012) (Fig.).
Conclusions: Severe fMR is a common complication of HF, and is more prevalent as disease progresses. Increasing severity of fMR is associated with a stepwise increase in mortality. Severe fMR is an independent predictor of poor prognosis.

Sábado, 23 Abril de 2022 | 17:00-18:00

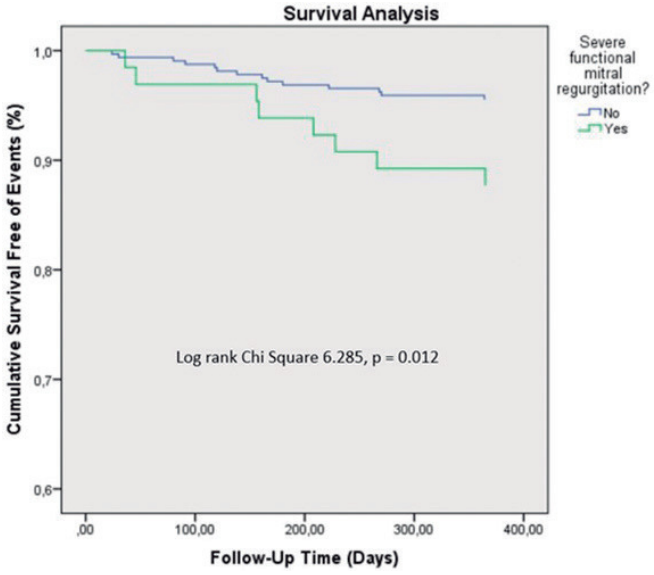
Sala Jardim de Inverno | Posters (Sessão 4 - Écran 5) - Risco Cardiovascular 2

PO 141. CARDIOVASCULAR OUTCOMES ACCORDING TO RISK CATEGORY: RESULTS OF A RETROSPECTIVE DATABASE STUDY

Cristina Gavina[1], Daniel Seabra[1], Marta Afonso-Silva[2], Diana Grangeia[2], Francisco Araújo[3], Tiago Taveira-Gomes[4]

[1]Unidade Local de Saúde de Matosinhos, EPE/Hospital Pedro Hispano. [2]Novartis Farma - Produtos Farmacêuticos SA, Porto Salvo. [3]Hospital dos Lusíadas - Lisboa. [4]Departmento de Medicina da Comunidade, Informação e Decisão em Saúde, Faculdade de Medicina, Universidade do Porto.

Introduction: This study aims to analyze the 10-year risk of death or hospitalization for atherosclerotic cardiovascular disease (ASCVD) by cardiovascular (CV) risk level.
Methods: Retrospective population-based study using data from a Local Health Unit in Portugal. New patients in each CV risk category (defined according to the ESC/EAS 2019 guidelines) and ≥ 1 General Practice appointment in the three years prior to the date of inclusion (date of entry into the respective risk category) were analyzed. This analysis focused on the composite endpoint of 10-year risk of death (from any cause) or ASCVD hospitalization, by CV risk level. Death and hospitalization data were obtained from the corresponding ICD-9-CM and ICD-10-CM codes. Cox regression, sex- and age-adjusted, clustered per patient was used.



PO 140 Figure

Results: The total cohort consisted of 78,459 patients (low risk = 32.6%, intermediate = 28.8%, high = 21.6%, very high = 17.0%). Sociodemographic and clinical characteristics by CV risk, at the time of entry into the risk category, are depicted in the table. The 10-year risk of death or hospitalization for ASCVD was 1.7 times higher in intermediate-risk patients (HR = 1.7; 95%CI: 1.6-1.9), 2.7 times higher in high-risk (HR = 2.7; 95%CI: 2.5-2.9) and 5.3 times higher in very high-risk (HR = 5.3; 95%CI: 4.9-5.7) compared to patients with low risk.

Conclusions: This real-world evidence show an increased risk of death or ASCVD hospitalization in patients in higher CV risk categories, independently of sex and age, reinforcing the need of more effective disease management as patients' CV risk increases. This corroborates the recommendations put forward by the ESC guidelines.

Table 1 – Sociodemographic and clinical characteristics by CV risk, at the time of entry into the risk category

	Low risk	Intermediate risk	High risk	Very high risk
Age, years (median (IQR))	33.0 (18.0)	57.0 (11.0)	65.0 (16.0)	70.0 (18.0)
Males (%)	41.3	45.7	49.3	55.0
Most common comorbidities (%)				
Hypercholesterolemia	10.8	49.2	56.9	57.2
Hypertension	1.7	20.0	27.6	47.3
Type II DM	0.5	5.0	25.3	49.2
CKD	0	0	19.1	28.2
Intermediate CV risk criteria (%)				
SCORE [1, 5[%	-	97.0	-	-
Healthy T2DM	-	3.0	-	-
Young T1DM	-	0	-	-
High CV risk criteria (%)				
GFR 30-60%	-	-	19.1	-
Unhealthy T2D	-	-	24.9	-
HTN G3	-	-	1.9	-
High TC	-	-	3.7	-
Familial Hypercholesterolemia	-	-	0.5	-
High LDL-C	-	-	18.3	-
SCORE [5, 10[%	-	-	37.2	-
Very high CV risk criteria (%)				
Severe Kidney Function	-	-	-	12.3
ASCVD	-	-	-	23.0
Damaged DM	-	-	-	20.1
T2D and 3+ Major Risk Factors	-	-	-	24.4
Unhealthy FH	-	-	-	3.0
SCORE > 10%	-	-	-	21.5
Long T1DM	-	-	-	0
Risk enhancers AHA 18 (%)				
Early Heart Disease	0	0	0	2.1
LDL-C [160, 190[, mg/dL	1.8	13.3	7.7	10.3
HDL-C [190, 220[, mg/dL	1.4	12.0	10.5	10.3
Metabolic Syndrome	32.0	91.8	93.5	95.9
eGFR [15, 60] mL/min	0	0	19.1	26.6
Menopause < 40y	0	0	0	0
Preeclampsia	0	0	0.1	0.1
Hypertriglyceridemia, Primary	1.0	4.2	6.0	8.4
Lipid lowering treatment (LLT) (%)				
Any LLT	5.2	38.7	43.6	57.1
Low intensity statin	0.5	4.5	5.5	6.9
Moderate intensity statin	3.9	30.9	34.5	45.8
High intensity statin	0.1	0.8	0.8	1.5
Ezetimibe	0.2	1.8	2.0	3.0
Fibrates	1.2	6.3	7.4	10.7
Lipid panel (mean (SD))				
LDL-C, mg/dL	116.8 (43.0)	127.0 (45.0)	136.0 (70.7)	125.0 (48.0)
HDL-C, mg/dL	44.0 (15.0)	48.0 (16.5)	48.0 (17.0)	45.0 (16.0)
non HDL-C, mg/dL	140.0 (49.0)	152.3 (51.7)	161.0 (69.0)	154.0 (51.0)
TC, mg/dL	185.1 (50.0)	202.0 (55.0)	211.0 (69.0)	201.6 (53.0)
TG, mg/dL2	98.0 (70.0)	108.0 (69.0)	119.0 (79.0)	121.0 (80.0)

PO 141 Figure

PO 142. DO ATHEROSCLEROTIC EVENTS CHANGE LIPID LOWERING THERAPY USE IN CLINICAL PRACTICE?THE ANSWER WITH RWE

Daniel Seabra[1], Cristina Gavina[1], Francisco Araújo[2], Marta Afonso-Silva[3], Diana Grangeia[3], Tiago Taveira-Gomes[4]

[1]Unidade Local de Saúde de Matosinhos, EPE/Hospital Pedro Hispano. [2]Hospital dos Lusíadas, Lisboa. [3]Novartis Farma - Produtos Farmacêuticos SA, Porto Salvo. [4]Departmento de Medicina da Comunidade, Informação e Decisão em Saúde, Faculdade de Medicina, Universidade do Porto.

Introduction: Acute atherosclerotic cardiovascular events (ASCV) significantly increase risk of its recurrence and should prompt lipid

	Myocardial Infarction	Peripheral Artery Disease	Ischemic Stroke	Recurrent events <2y
n	1817	762	5251	2807
Age, years (median (IQR))	66.0 (20.0)	71.0 (18.0)	71.0 (20.0)	70.0 (21.0)
Males (%)	64.2	62.9	43.4	53.3
LLT medication 1y pre-event (%)				
Low intensity statin	6.3	6.6	6.1	7.5
Moderate intensity statin	58.1	50.9	42.9	67.1
High intensity statin	3.3	4.9	1.9	4.8
High intensity statin+ezetimibe	0.3	0.8	0.3	0.4
Moderate intensity statin+ezetimibe	1.4	2.0	1.1	2.2
Low intensity statin + ezetimibe	1.0	1.6	0.9	1.25
Ezetimibe	1.7	2.1	1.1	2.3
Fibrates	5.2	6.8	3.7	5.2
PCSK9 inhibitors	0.0	0.0	0.0	0.0
Other	0.1	0.4	0.0	0.1
LLT medication 1y post-event (%)				
Low intensity statin	9.2	7.0	8.4	7.0
Moderate intensity statin	82.2	63.4	60.7	70.6
High intensity statin	18.1	10.8	7.6	12.3
High intensity statin+ezetimibe	2.6	1.3	1.1	1.9
Moderate intensity statin+ezetimibe	7.1	5.0	3.2	5.2
Low intensity statin + ezetimibe	2.8	2.4	1.8	2.2
Ezetimibe	7.9	4.9	3.7	5.8
Fibrates	8.7	7.6	6.1	6.1
PCSK9 inhibitors	0.0	0.0	0.0	0.0
Other	0.6	0.7	0.1	0.3
LLT switches post-event (%)				
LLT Step up	19.1	9.9	9.8	11.0
LLT Step down	18.7	10.1	9.3	12.3
≥ 50% LDL-C reduction 1y post-event (%)	25.9	32.5	22.1	17.4
LDL-C 1y post-event (mg/dl)	100.0	105.0	107.0	102.0
Control LDL-C ESC 2019 pre-event (%)	2.8	4.1	2.1	3.4
Control LDL-C ESC 2016 pre-event (%)	8.6	11.3	6.7	10.2
Control LDL-C ESC 2019 3M post-event (%)	3.7	4.7	3.0	4.1
Control LDL-C 2016 3M post-event (%)	11.8	13.8	9.3	12.3
Control LDL-C ESC 2019 1y post-event (%)	4.9	4.7	3.3	4.4
Control LDL-C ESC 2016 1y post-event (%)	15.9	13.1	10.3	14.4

lowering therapy (LLT) intensification towards more ambitious targets. This study aims to analyze LLT changes after an ASCV and respective LDL-C control.

Methods: Retrospective population-based study from a region of Northern Portugal. Population was composed of patients with ≥ 1 General Practice appointment in the three years prior to the index date. We created incident cohorts for Myocardial Infarction (MI), Peripheral Artery Disease (PAD), Ischemic stroke (IS), Recurrent ASCV (2+ events at most 2 years apart). We performed descriptive analysis of the cohorts at baseline (pre-event) and reported LDL-C control and LLT switches at discharge time (post-event) and at 1-year follow-up.

Results: Moderate intensity statins monotherapy is the most used LLT before and after ASCV. After ASCV hospitalization, LLT is upscaled in 19.1% of MI patients, in 9.9% of PAD, in 9.8% of IS and in 11.0% of recurrent events patients. LDL-C mean absolute value 1-year after the ASCV is 100 mg/dl, 105 mg/dl, 107 mg/dl and 102 mg/dl for patients with MI, PAD, IS, and recurrent events, respectively. LDL-C target values are achieved in < 5% of the patients (Table).

Conclusions: These real-world data show that LLT is not adequately adjusted for goals after an acute cardiovascular event, which may explain the low rate of patients with LDL-C at the therapeutic target recommended in the Guidelines. There is a need to optimize LLT in clinical practice in order to reduce ASCV and mortality.

PO 143. URIC ACID AS A RISK FACTOR FOR CARDIOVASCULAR DISEASE AND MORTALITY

M. Raquel Santos[1], Maria Isabel Mendonça[1], Margarida Temtem[1], Débora Sá[1], Ana Célia Sousa[1], Sónia Freitas[1], Eva Henriques[1], Mariana Rodrigues[1], Sofia Borges[1], Ilídio Ornelas[1], António Drumond[1], Roberto Palma dos Reis[2]

[1]Hospital Dr. Nélio Mendonça. [2]Faculdade de Ciências Médicas de Lisboa/NOVA Medical School.

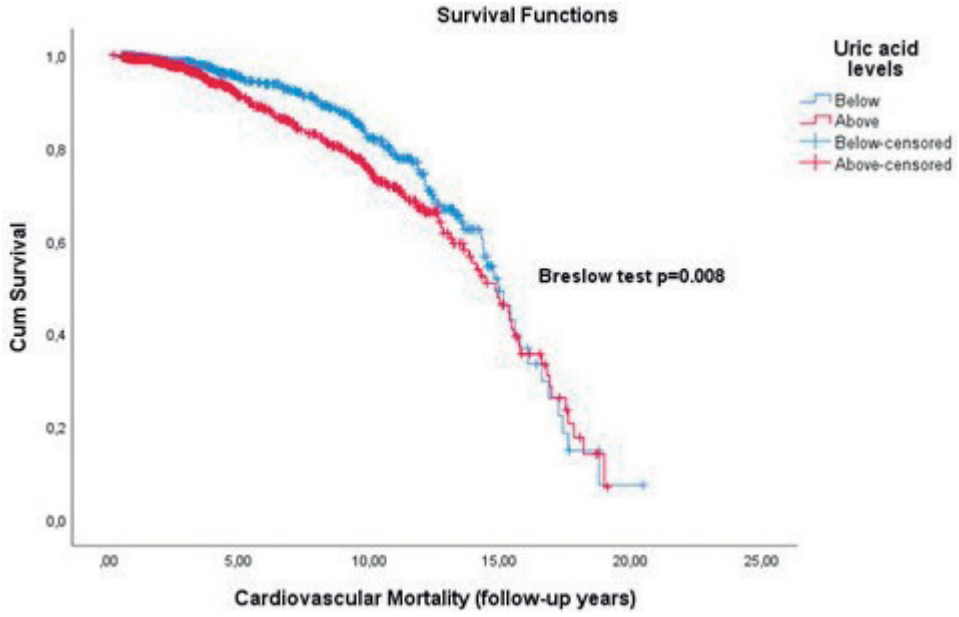
Introduction: Several studies show a central role for high uric acid (UA) levels in several conditions as diabetes, hypertension, dyslipidemia, kidney failure, coronary artery disease (CAD), and cardiovascular (CV) mortality. Most guidelines recommend treating symptomatic patients even with a stabilized plasmatic level of ≤ 6 mg/dL. Treatment of asymptomatic patients remains hotly debated.
Objectives: To estimate whether high UA levels were an independent risk factor to CAD in general or within specific sub-groups: diabetes, hypertension, dyslipidemia and kidney failure and to evaluate their association with CV mortality at the follow-up.
Methods: We performed a case-control study with 3,160 participants (1,723 patients and 1,437 controls), evaluating whether the UA levels (> median) were a risk factor to CAD as well as to the specific sub-groups diabetes, hypertension, dyslipidemia and kidney failure, using bivariate and multivariate analyses. After, we managed a prospective study with 1,723 coronary patients followed a mean of 4.9 ± 3.4 years. Using Cox analysis, we estimated whether the UA high levels were a risk factor for CAD and CVD mortality and assessed the statistical difference in survival for two UA groups (above and below the median) with the Kaplan-Meier survival analysis.
Results: The median value was 6.01 mg/dL, and values above the median were considered as having hyperuricemia. Although there was a significant predisposition for CAD with values > 6 mg/dL in bivariate analyses, this was not maintained after multivariate analysis, except in the diabetic subgroup. In the Cox analyze, the UA > 6.01 had a hazard ratio (HR) of 1.4 (p = 0.020) for CV mortality and 1.9 (p < 0.0001) for diabetes. Kaplan Meier showed that patients below the median had better survival at the follow-up end (p = 0.008).
Conclusions: High UA levels were an independent predictor of cardiovascular mortality in our work. This risk factor showed independent CAD risk only in diabetic patients. This point may allow identifying patient's sets that are likely to benefit from long-term uric acid-lowering therapies.

PO 144. IMPORTANCE OF A GENETIC SCORE IN ASSESSING THE RISK OF ARTERIAL STIFFNESS

Ana Célia Sousa[1], Maria Isabel Mendonça[1], André Ferreira[1], Diogo André[1], Fabiana Gouveia[1], Jéssica Chaves[1], Mariana Rodrigues[1], Sofia Borges[1], Eva Henriques[1], Sónia Freitas[1], Ana Isabel Freitas[1], Maria João Oliveira[1], Ilídio Ornelas[1], Roberto Palma dos Reis[2]

[1]Hospital Dr. Nélio Mendonça. [2]Faculdade de Ciências Médicas de Lisboa/NOVA Medical School.

Introduction: Arterial stiffness is a risk factor for cardiovascular disease and can be assessed by the gold standard technique carotid-femoral pulse wave velocity (PWV). Several factors have been previously described as associated with increased arterial stiffness, including genetic factors, but sometimes results are unclear.
Objectives: Create a score with pathophysiologically associated genes to determine the risk of increased arterial stiffness.
Methods: In a sample of 1,712 individuals, we evaluated the arterial stiffness through cfPWV determination by the Complior method. Population was stratified into two groups: 171 cases with PWV≥ 10m/s (mean age 56.70 ± 8.43; 60.8% male) and 1,541 controls with PWV < 10m/s (mean age 50.39 ± 7.53; 49.9% male). All collected blood for biochemical and genetic analysis. Fourteen genetic variants were selected: those of the renin-angiotensin-aldosterone system (AGT rs4762, AGT rs699, ACE rs4340, ACE rs4343, AGT1R rs5186, CYP11B2 rs1799998); those for sodium and water balance (SCNN1G rs5718 and ADD1 rs4961); those for the Sympathetic Adrenergic System (ADRβ1 rs1801253 and ADRβ2 rs1042713) as well as other genes that act in other systems such as CYP17A1 rs11191548, ATP2B1 rs2681472, SLC4A2 rs2303934 and GNβ3 rs5443. Odds ratio (OR) was calculated for each variant and a multiplicative genetic risk score (mGRS) was calculated. This score was divided into tertiles, with the 1st tertile as the reference class and we compared the 3rd with the 1st tertile in relation to PWV increase.
Results: The highest tertile of genetic score presented an increased PWV risk with an OR of 2.186 (1.462-3.270) compared to the 1st tertile, with statistical significance (p < 0.0001) (Table).
Conclusions: The results of this study show that the mGRS, based on pathophysiological genetic markers, were associated with higher PWV values. This score can be very useful in predicting the arterial stiffness increase and, consequently, the cardiovascular risk in general population.



PO 143 Figure

mGRS	Cases PWV ≥10	Controls PWV <10	OR (CI 95%)	p-value
1st Tertile	39 (33.1%)	531 (51.9%)	2.186 (1.462-3.270)	*<0.0001*
3rd Tertile	79 (66.9%)	492 (48.1%)		

mGRS – multiplicative Genetic Risk Score; PWV – Pulse Wave Velocity;
OR – Odds ratio; CI – Confidence interval. Statistically significant for p<0.05

PO 144 Figure

PO 145. ANTITHROMBOTIC STRATEGIES AFTER LAA OCCLUSION - IS THERE A WINNING STRATEGY?

Ana Beatriz Garcia, Sara Couto Pereira, Pedro Silvério António, Joana Brito, Pedro Alves da Silva, Beatriz Valente Silva, Ana Margarida Martins, Catarina Simões de Oliveira, Ana Abrantes, João Fonseca, Miguel Azaredo Raposo, Ana Rita Francisco, João Silva Marques, Miguel Nobre Menezes, Fausto J. Pinto, Pedro Cardoso

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Left atrial appendage occlusion (LAAO) is an alternative for patients (pts) with atrial fibrillation at risk of stroke or embolic events, especially those with hemorrhagic events under anticoagulation therapy or at high bleeding risk. There are several antithrombotic strategies (ATS) after LAAO depending on the reason leading to the procedure and the patient's bleeding risk, but no consensual strategy.
Objectives: To compare different antithrombotic strategies after LAAO during a 12-year period.
Methods: Single center registry of pts who underwent LAAO. We gathered clinical and procedural characteristics, CHA_2Ds_2VASc and HASBLED scores and antithrombotic therapy. Bleeding events were categorized according to the VARC-3 criteria (minor < 2, major ≥ 2). Differences in stroke or embolic events were assessed. Different ATS were compared: dual antiplatelet therapy (DAT) for 3 or 6 months; single antiplatelet therapy (SAT); oral anticoagulation (OAC); and OAC for 45 days followed by DAT or SAT (a group excluded for its small size and heterogeneity). Efficacy and safety endpoints were defined as embolic events and major bleeding according to HAS-BLED criteria, respectively. For statistical analysis Chi-Square testing and Kaplan-Meier survival curves were used.
Results: A total 139 pts underwent LAAO (mean age 74 ± 8 years, 60.4% male) followed by 4.1 ± 2.8-years.Mean CHADsVASc and HASBLED score was 4.2 ± 1.3 and 3.4 ± 0.9, respectively. Regarding different ATS after LAAO, 4 major groups (92.1% of all pts) were compared: DAT for 3 (16%) or 6 months (51%) followed by SAT up to 12 months or longer; OAC (19%); SAT (6.1%). Safety endpoint was verified in 13% of pts. Comparing the different ATS, bleeding events were observed in 8.4% pts under DAT (2.3 *vs.* 6.1% pts with DAT for 3 *vs.* 6 months), 3.8% anticoagulated and 0.8% treated with SAT. Comparing the ATS, there were no significant statistical differences in bleeding events (p = 0.354), as well as in major and minor bleeding (p = 0.258). No differences concerning hemorrhagic events were seen between 3 and 6 months DAT. Efficacy endpoint occurred in 2.35% of pts. Regarding the different ATS, embolic events were observed in 1.57% pts under DAT for 6 months and 0.78% under SAT. There were no significant statistical differences (p = 0.3) between ATS.
Conclusions: No single antithrombotic strategy following LAAO proved to be superior for either efficacy or safety. A tailored regimen should be sought out for each patient.

Sábado, 23 Abril de 2022 | 17:00-18:00

Sala Jardim de Inverno | Posters (Sessão 4 - Écran 6) - DAC e Cuidados Intensivos 5 - EAMcST

PO 146. THE IMPACT OF OUTPATIENT EMERGENCY MEDICAL SYSTEM IN STEMI PATIENTS UNDERGOING PRIMARY ANGIOPLASTY: A SINGLE-CENTRE EXPERIENCE

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Introduction: In ST-segment elevation myocardial infarction (STEMI), emergency medical system delays importantly affect outcomes. The place of first medical contact may affect the time to reperfusion and consequently affect outcomes, as the most direct transfer to the catheterization laboratory is warranted.

Median (IQR)	Survivors	Nonsurvivors	p
	1-year		
Total ischaemic time	*217 (186)*	*290 (221)*	<0.01
First medical contact to reperfusion	*120 (77)*	*140 (98)*	<0.01
	In-hospital		
Total ischaemic time	*220 (186)*	*300 (245)*	<0.01
First medical contact to reperfusion	*121 (79)*	*154 (99)*	<0.01

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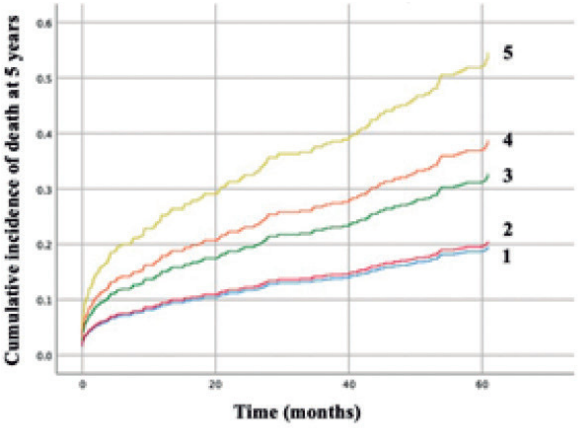
Objectives: The authors aimed to retrospectively describe the association between place of first medical contact and STEMI patient's care standards and outcomes.
Methods: Characteristics and outcomes of 1205 consecutive STEMI patients treated in a PCI-centre were collected. Outpatient emergency medical system (EMS) was provided by different vehicles of the Portuguese National Institute of Medical Emergency. Other patients were first observed in primary care centres or in hospitals (PCC/H). Time delays, in-hospital and one-year all-cause mortality were assessed.
Results: A total of 281 patients (23%) were first observed by the EMS and 924 patients (77%) were first observed in PCC/H. Of those first observed in PCC/H, 258 patients (28%) were admitted in the PCI centre. Baseline characteristics were well-balanced between groups, including the percentage of patients that presented in cardiogenic shock (EMS: 6 *vs.* PCC/H: 5%; p = 0.43). Median total ischaemic time was significantly lower in patients first observed by EMS when compared to patients admitted in PCC/H (182 min *vs.* 246 min, respectively. p < 0.01). Median emergency system dependent time to reperfusion (i.e. first-medical contact to reperfusion) was significantly lower after first contact with EMS instead of direct PCC/H contact (105 min *vs.* 130 min, respectively. p < 0.01). In patients admitted directly in the PCI-centre, median time from first-medical contact to reperfusion was significantly lower than in those first contacted by the EMS (76 min *vs.* 105 min; respectively. p < 0.01). However, the total ischaemic time did not differ between the two groups (EMS 182 min *vs.* PCC/H: 195 min; p = 0.64). First medical contact in a hospital without catheterization laboratory was a strong predictor of time of first-medical contact to artery opening of > 120 min (odds ratio 6.09 95%CI [4.74-7.82]; p < 0.001). The authors observed no association between place of first medical contact and in-hospital mortality (EMS: 5 *vs.* PCC/H 5%, p = 0.94) or 1-year mortality (EMS: 9 *vs.* PCC/H 10%, p = 0.50). Nonetheless, the observed time intervals for nonsurvivors were significantly longer than in survivors (table) and time of first-medical contact to artery opening of > 120 min was a strong predictor of in-hospital (odds ratio 2.51 95%CI [1.42-4.46]; p < 0.01) and 1 year mortality (odds ratio 2.31 95%CI [1.55-3.44]; p < 0.01).
Conclusions: In a contemporary well-organized emergency network, STEMI patients should be first observed by the EMS as it leads to shorter delays treatment. However, less than one-third of the patients with STEMI is first contacted by the EMS.

PO 147. AT THE OUTER EDGE OF STEMI TIME: EVEN AFTER 12 HOURS, THE CLOCK KEEPS TICKING

Mariana Martinho[1], Rita Calé[1], Sara Nabais[2], Alexandra Briosa[1], Ernesto Pereira[1], Ana Rita Pereira[1], Alexandra Briosa[1], João Grade Santos[1], Bárbara Ferreira[1], Diogo Santos Cunha[1], Pedro Santos[1], Sílvia Vitorino[1], Cátia Eusébio[1], Gonçalo Morgado[1], Cristina Martins[1], Hélder Pereira[1]

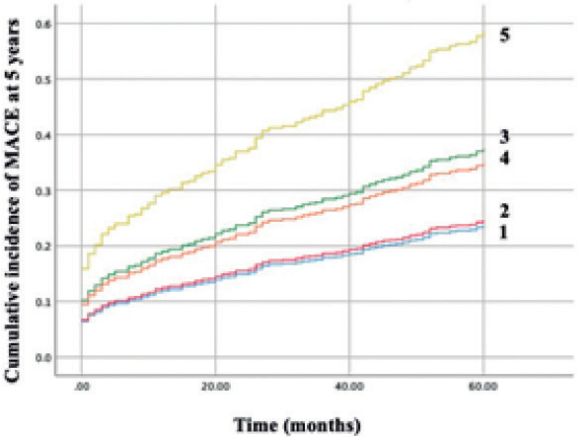
[1]Hospital Garcia de Orta, EPE. [2]Aluna Medicina FML

Introduction: Although primary percutaneous coronary intervention (pPCI) is not a class I recommendation in all patients (pts) presenting within 12 to 48h of symptom onset (late ST-segment Elevation Myocardial Infarction, STEMI), there is increasing evidence supporting its routine use in this population. Data on long-term clinical outcomes is sparse.
Objective: To evaluate long-term MACE in late-STEMI pts submitted to pPCI and compare with clinical outcomes of early reperfusion groups.
Methods: Retrospective analysis of consecutive pts submitted to pPCI due to STEMI between 2010 and 2015 in a pPCI centre. Included pts were stratified in 5 groups according to symptom-to-balloon time (SBT): <3h; 3-6h; 6-12h; 12-24h; 24-48h. Of a total of 903pts, 19pts were excluded due to SBT >48h. Long-term events were established as 5y mortality and 5y-MACE (a composite endpoint of death, re-infarction, heart failure hospital admission



SBT groups	5y-Mortality		HR	95%CI	P-value
	No (n,%)	Yes (n,%)			
(1) <3h	341 (83.0%)	70 (17.0%)			
(2) 3-6h	176 (81.9%)	39 (18.1%)	1.05	0.71-1.55	0.822
(3) 6-12h	103 (72.5%)	39 (27.5%)	1.67	1.23-2.47	0.011
(4) 12-24h	48 (67.6%)	23 (32.4%)	1.98	1.23-3.17	0.005
(5) 24-48h	17 (60.7%)	11 (39.3%)	2.78	1.47-5.25	0.002

$\chi^2(4)=19.43$; p=0.001



SBT groups	5y-MACE		HR	95%CI	P-value
	No (n,%)	Yes (n,%)			
(1) <3h	327 (79.8%)	83 (20.2%)			
(2) 3-6h	169 (78.6%)	46 (21.4%)	1.04	0.73-1.49	0.830
(3) 6-12h	99 (69.2%)	44 (30.8%)	1.59	1.10-2.29	0.013
(4) 12-24h	50 (70.4%)	21 (29.6%)	1.48	0.92-2.38	0.111
(5) 24-48h	16 (57.1%)	12 (49.2%)	2.48	1.35-4.54	0.003

$\chi^2(4)=14.26$; p=0.007

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and ischemic stroke). The cumulative incidence of long-term outcomes was calculated by the Cox regression analysis and presented according to the Kaplan-Meier method.
Results: Of the 884pts included in the study, stratification according to SBT was: pPCI<3h (47.4%), pPCI 3-6h (24.9%), pPCI 6-12h (16.5%), pPCI 12-24h (8.0%), and pPCI 24-48h (3.2%). These groups showed no significant difference in terms of demographic characteristics (age, CV risk factors, previous coronary disease or heart failure), clinical severity (systolic arterial pressure, Killip-Kimball class, left ventricle ejection fraction) and angiography findings (multivessel disease, complete revascularization and PCI success). After a median follow-up of 76(56;98) months, 5-year mortality was 20.6% (182pts) and 5-year MACE was 23.3% (206pts). MACE was associated with increased median SBT: 5.0(2.0;9.0) hours vs 4.0 (2.0;6.5) hours, p<0.001. Of the MACE components, the only that showed a significant association with higher median SBT was mortality: 5.0(2.0;10.0) hours vs 4.0(2.0;6.0), p<0.001. Differences in long-term outcomes were significant when considering SBT stratified by revascularization time (figure 1).
Conclusions: As expected, there is a clinical benefit of early reperfusion for long-term cardiovascular events. Within the late-STEMI group, there seems to be a clear distinction between pPCI<24h and >24h, although the clinical benefit of pPCI timing most probably acts a continuum.

PO 148.STEMI TREATMENT IN REMOTE LOCATIONS: AN UNCOMMON REALITY

M. Inês Barradas, Fabiana Duarte, Luís Resendes de Oliveira, Cátia Serena, António Xavier Fontes, André Viveiros Monteiro, Carina Machado, Raquel Dourado, Emília Santos, Nuno Pelicano, Miguel Pacheco, Anabela Tavares, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: In remote locations, lack of specialized medical facilities, long distance transfer and emergency medical system organization remains a challenge and fibrinolysis is necessary to achieve revascularization in optimal timing in ST-elevation myocardial infarction (STEMI) patients. Our angioplasty center is the only one located in a remote region composed of several locations, some of which do not have hospital facilities and only have small family health care units.
Objectives: To evaluate the reality and outcomes of our interventional angioplasty center and compare cardiovascular outcomes between STEMI patients from the central hospital and remote locations.
Methods: We retrospectively enorolled 121 consecutive patients with STEMI admitted to our center during one year. Patients from the locality where the center is situated underwent primary percutaneous coronary intervention (PCI) (group 1, n = 75) and patients from remote locations underwent fibrinolysis followed by transference to our center with facilitated or rescue PCI (group 2, n = 41). A subanalysis of the far remote locations was performed. Primary outcome was defined as cardiovascular (CV) death or re-infarction at 2 years and secondary outcome as intrahospital haemorrhagic complications.
Results: Mean age was 58.27 ± 12.67 years, 84.3% were males and mean follow up was 30.75 ± 6.44 months. Sixty-seven patients (55.4%) were active smokers, 53 (43.8%) had dyslipidaemia, 24 (19.8%) obesity, 22 (18.2%) previous acute coronary syndrome and 22 (18.2%) diabetes. Troponin I peak was 126.35 ± 150.73 ug/L and 16 (13.2%) were in Killip Class III/IV. Infarct-related artery was the left anterior descending artery in 57 (47.1%) and multivessel disease was present in 48 (39.6%). In group 1 reperfusion after PCI was achieved in 92.0%. In group 2, 68.3% met criteria for reperfusion after fibrinolysis and 22.0% after rescue PCI. Mean time from fibrinolysis to PCI was 654 ± 869 minutes. Rates of successful revascularization did not differ between groups, as well as complete patency of the culprit-vessel defined as thrombolysis in myocardial infarction (TIMI) flow 3 (91.9 *vs*. 88.9% and 89.2 *vs*. 94.4% respectively for group 1 and 2). CV death at two years occurred in 4 (3.3%) patients and re-infarction in 12 (9.9%), similar between groups (3 (4.0%) *vs*. 1 (2.5%) and 7 (9.3%) *vs*. 5 (12.2%) respectively) as well as minor (2 (2.7%) *vs*. 1 (2.4%)) and major (7 (9.3%) *vs*. 4 (9.8%)) haemorrhagic complications. Twenty-two (18.2%) patients were from far remote locations without hospital facilities and when comparing these patients with the others there was also no difference in primary outcome.
Conclusions: Even in remote locations, an organized STEMI network with attempted fibrinolytic treatment and coordinated transference to a PCI center can provide successful revascularization with CV outcomes similar to those submitted to primary PCI.

PO 149. THE OBESITY PARADOX IN ACUTE ST-ELEVATED MYOCARDIAL INFARCTION

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Introduction: It is proposed that among patients with certain chronic diseases (including chronic kidney disease, chronic heart failure, or chronic obstructive pulmonary disease), those with overweight or obesity are associated with survival advantages. These paradoxical findings are known as the "obesity paradox". This phenomenon has also been described in patients with coronary artery disease.
Objectives: The objective of this study is to evaluate the impact of obesity on the presentation, treatment and prognosis of patients hospitalized for ST-elevated Myocardial Infarction (STEMI).
Methods: A retrospective study of patients admitted with a STEMI in the cardiology department of a tertiary centre was performed. Clinical, analytical, angiographic and sonographic parameters were evaluated on admission, as well as at 12-month follow-up. The patients were then divided into 2 groups: group A (GA) obese with a body mass index (BMI) ≥ 30 kg/m^2 and group B (GB) non-obese with a BMI < 30 kg/m^2. SPSS statistical analysis was applied, with a $p < 0.05$ considered to be significant.
Results: A total of 651 patients were evaluated, 73.9% male, age 66 ± 13 years, of which 18.7% were obese. No statistical difference was observed when comparing genders. However, when comparing ages, obese patients were predominantly younger (mean age 61.3 ± 12.8 years in GA *vs*. 67.41 ± 13.4 years in GB, $p < 0.001$). Comparing GA and GB, there was a higher rate of hypertension (72.1 *vs*. 55.8%, $p = 0.001$), dyslipidemia (48.4 *vs*. 39.6%, $p = 0.048$), diabetes mellitus (36.1 *vs*. 19.1%, $p < 0.001$) and obstructive lung disease (11.1 *vs*. 4.5%, $p = 0.017$) in the first group. No statistical differences were found when evaluating previous medication and therapy instituted during hospitalization. Statistical differences were observed when comparing hemoglobin levels (mean 14.7 ± 1.8 g/dl *vs*. 14.1 ± 1.8 g/dl, $p < 0.001$) and triglycerides (152 ± 99.8 mg/dl *vs*. 126 ± 99.3 mg/dl, $p = 0.014$), being higher in GA, while HDL cholesterol levels (38 ± 10.9 mg/dL *vs*. 41 ± 11.0 mg/dL $p = 0.045$) were lower in GA. There was a higher left ventricular ejection fraction (LVEF) in the obese group (58 ± 10.9 *vs*. 52 ± 12.2%, $p < 0.001$). No difference in in-hospital mortality rate (8.2 *vs*. 9.0%, $p = 0.470$) was observed. There was lower mortality in obese patients after 1 year of follow-up (1.0 *vs*. 5.4%, Kaplan-Meier log-rank 0.030). After multivariate analysis, it appears that differences in mortality are dependent on LVEF.
Conclusions: Evidence suggests that obesity is closely related to cardiovascular disease. However, the Obesity Paradox has been described in many diseases, including coronary heart disease. In this study population, although obesity is significantly associated with other cardiovascular risk factors, it seems to act as a protective factor in STEMI patients. This is confirmed with a lower mortality rate after 1-year follow-up.

PO 150. IS SYMPTOMS-BALLOON-TIME A BETTER PROGNOSTIC PREDICTOR?

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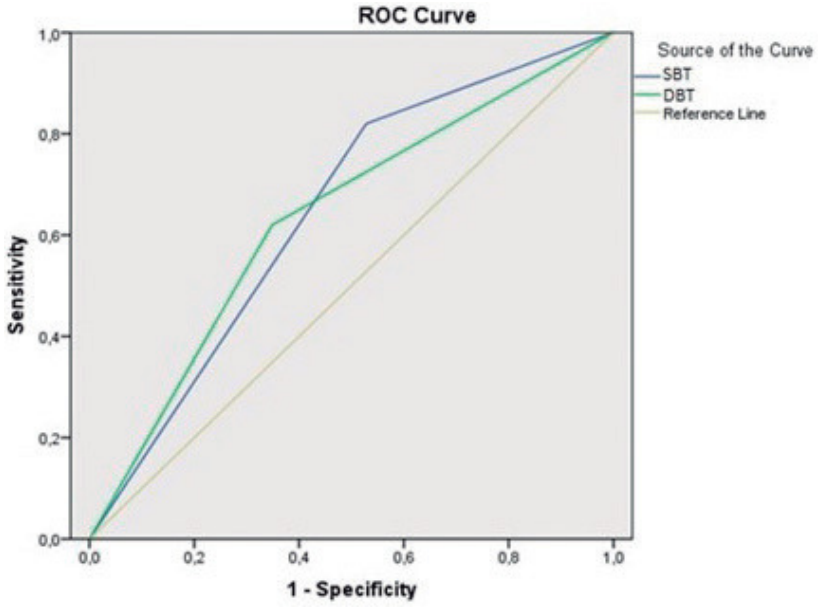
Introduction: There is a strong association between prompt primary PCI as measured by the door to balloon time and improved patients (pts) outcomes.



PO 150 Figure

However ischemia starts even before symptoms. In ST elevation acute myocardial infarction (STEMI), time is crucial, and earlier treatment offers a better prognosis.
Objectives: Evaluate if symptom-to-balloon-time (SBT) is a better outcome predictor than door-to-balloon-time (DBT) in pts with STEMI.
Methods: From a national multicenter registry, we evaluated pts with STEMI who performed emergent coronariography accordingly with DBT > or ≤ 120 min and SBT> or ≤ 240 min. We then evaluated pts who had in-hospital mechanical complications, defined as ventricular wall or interventricular septum rupture, or severe acute mitral regurgitation, due to papillary muscles involvement. We analyzed clinical characteristics, coronary anatomy and intervention. We performed multivariate analysis to assess the impact of DBT and SBT in in-hospital mechanical complications, and their discrimination power in predicting in-hospital mechanical complications, using the area under the ROC curve (AUC) method.
Results: From the 6,461 pts who performed emergent coronariography due to STEMI, DBT was > 120 min in 2,279 and SBT was > 240 min in 3,406. Both DBT > 120 and SBT > 240 min were associated with higher IMC (0.5 *vs.* 1.5%, p < 0.001 and 0.3 *vs.* 1.2%, p < 0.001). Mechanical complications occurred in 50 pts (77% male, 63 ± 13 years old). Those with IMC were older (63 ± 13 years old *vs.* 71 ± 13 years old, p < 0.001) and more often female (23 *vs.* 45%, p < 0.001). No difference was found in comorbidities, STEMI localization nor coronary anatomy. Higher creatinine (0.9 (0.8; 1.1) mg/dL *vs.* 1.1 (0.8;1.5) mg/dL, p < 0.001) and glicemia (134 mg/dL (111;175) *vs.* 154 mg/dL (123;209), p = 0.005) values at admission were present in those who had in-hospital mechanical complications. Left ventricular ejection fraction was lower in pts who had IMC (50 ± 12% *vs.* 44 ± 9, p = 0.012). After multivariate analysis, we found that SBT> 240 min and PBT > 120 min are IMC independent predictors (respectively, OR 2.980; 95%CI [1.370-6.485], p = 0.006, and OR 2.025; 95%CI [1.093-3.753], p = 0.025). For the cutt-off value of 240 min for SBT (sensitivity of 82% and specificity of 52%), and 120 min for DBT (sensitivity of 62% and specificity of 65%), to predict in-hospital mechanical complications, we found that SBT is a better predictor of in-hospital mechanical complications than DBT (AUC 0.646; 95%CI [0.578-0.714], p < 0.001, and AUC 0.636; 95%CI [0.558-0.714], p = 0.001) (Fig.).
Conclusions: Patients who had in-hospital mechanical complications were older and were more often of female gender. These also presented with higher creatinine and glicemia values and lower left ventricular ejection fraction. We found that symptom-to-balloon-time is a better in-hospital mechanical complication predictor than door-to-balloon-time.

Sábado, 23 Abril de 2022 | 17:00-18:00

Sala Jardim de Inverno | Posters (Sessão 4 - Écran 7) - Intervenção Cardíaca Coronária e Estrutural 2 - Foco na Doença Estrutural Não Valvular

PO 151. PERCUTANEOUS PATENT FORAMEN OVALE CLOSURE: 18 YEARS' EXPERIENCE IN A TERTIARY CENTRE

Carolina Saleiro, Sara Matos, Telma Alves, Diana de Campos, Manuel Oliveira-Santos, Fernando Silva, Gustavo Santo, João Sargento Freitas, Luís Paiva, Marco Costa, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE/Hospital Geral.

Introduction: Patent foramen ovale (PFO) is implicated in several medical conditions. Percutaneous closure is the standard therapy when a high risk PFO is considered to have an important pathogenic role.
Objectives: To assess the feasibility and safety of PFO percutaneous closure.
Methods: 336 consecutive patients who underwent PFO closure between 06/2003 and 11/2021 were included in the analysis. Demographic, imagological, and procedural data were collected. Short-term follow-up was done during hospitalization and long-term at 12 [6-29] months.
Results: Mean age was 47 ± 11 years old, with 55.7% female patients. Comorbidity with CV risk factors was low: 27% HTN, 25.9% dyslipidaemia; 16.3% overweight/obesity; 15.7% active smoking; 6.2% DM and 6.5% SOAS. Comorbidity with headache was present in almost a quarter. 4.5% of the patients had history of venous embolism and 16.1% confirmed prothrombotic state. The main indication for closure was previous stroke/transitory ischemic attack (91.1%). Mean RopE Score was 6.8 ± 1.6; mean PFO risk characteristics was 4 ± 2 (aneurismatic septum 41.8%, moderate shunt 14.5%; severe shunt 68.5%; septum hypermobility 41.1%; long tunnel 73.6%; Chiari web 0.9%; large PFO 62.3%). Amplatzer device was employed more frequently (70.6%) followed by Premere (14.8%). The procedure was guided both by fluoroscopy and intracardiac echocardiography. Mean fluoroscopy time was 7.4 ± 4.6 minutes and effective radiation dosage 172 ± 182 mGy. Procedural complication rate was 1.2%: 1 patient had device embolization resolved percutaneously; 3 patients had vascular complications (1 treated conservatively; 1 fistula treated percutaneously and 1 pseudoaneurysm

with need for surgery). No perforations, device thrombosis or periprocedural deaths were reported. Periprocedural atrial arrythmias occurred in 0.7% of the patients. One-month after the procedure, peri device shunt was present in 3.6% of the cases, six-month evaluation with agitated saline showed patent shunt in 7.7% that decreased to 3.6% at one-year. During long-term follow-up, 1.2% of the patients had atrial fibrillation; stroke recurrence rate was 1.5% and all-cause mortality was 1.5%.
Conclusions: Our centre experience shows that percutaneous PFO closure is safe and feasible with a minimal rate of periprocedural complication. Stroke recurrence and atrial fibrillation rates were low during the follow-up.

PO 152. PERMANENT PACEMAKER IMPLANTATION AFTER ALCOHOLIC SEPTAL ABLATION: LONG-TERM OUTCOMES

André Grazina, Sílvia Aguiar Rosa, António Fiarresga, Pedro Garcia Brás, Vera Ferreira, Isabel Cardoso, José Miguel Viegas, Ruben Ramos, Lídia de Sousa, Mário Oliveira, Duarte Cacela, Rui Cruz Ferreira

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

Introduction: Patients with hypertrophic obstructive cardiomyopathy (HOCM) that remain symptomatic despite optimized medical therapy are often submitted to alcohol septal ablation (ASA). One of the most frequent complications is the complete hear block (CHB), requiring permanent pacemaker (PPM) in variable rates, up to 20% of the patients. The long-term impact of PPM implantation in these patients remains unclear.
Objectives: This study aims to evaluate the long-term pacemaker dependency in patients with PPM after ASA and to assess the long-term impact of PPM in these patients.
Methods: In a tertiary center, patients who underwent ASA were retrospectively analyzed. Patients with previous PPM or implantable cardiodefibrillator were excluded. The groups with and without PPM implantation after ASA were compared regarding baseline characteristics, procedure data and outcomes. In the group who implanted PPM, the long-term pacing rates were evaluated.
Results: Between 2009 and 2020, 109 patients underwent ASA. 97 patients were included in this analysis (68% female, mean age 65.2 years-old). 16 patients (16.5%) required PPM implantation for CHB. In those, no vascular access, pacemaker pocket or pulmonary parenchyma complications were noted. The baseline characteristics regarding comorbidities, symptoms, echocardiographic and electrocardiographic findings were identical in the two groups, with statistically significant differences in the mean age (70.6 y/o in the PPM group *vs.* 64.1y/o) and in the beta-blocker therapy rates previously to the intervention (56% in the PPM group *versus* 84%). Procedure-related data showed higher creatine kinase (CK) peaks in the PPM group (1,692 U/L *vs.* 1,243 U/L, p 0.05), without significant differences in the alcohol dose (2.1 ml in both groups, p 0.33). In the PPM group, the mean pacing rates at 1 month, 1 year and 2 years were 66.6 ± 38.0, 50.4 ± 44.1 and 50.8 ± 42.5, respectively, with 2 patients (12.5%) having 1-5% pacing and none having pacing < 1% at 2 years. In the group without PPM, 5 patients (6.2%) required posteriorly PPM implantation during the follow-up. There were no statistically significant differences in the two groups regarding in-hospital mortality, 1 year mortality or 1 year re-hospitalization. Despite a lower mean follow-up period in the PPM group (2.3 ± 1.5 years *vs.* 3.5 ± 2.2 years, p 0.05), there were no differences in the groups regarding all-cause mortality, cardiac cause mortality and all-cause re-hospitalization, with a statistical tendency to a lower cardiac cause re-hospitalization in the PPM group (19 *vs.* 43%, p 0.07).
Conclusions: The registered pacing rates show that all devices were adequately implanted. The long-term impact analysis suggests that the outcomes in patients who implant PPM after ASA are non-inferior to those who do not, with a tendency to reduce the re-hospitalizations for cardiac causes.

	No PM (n=81)	Implanted PM (n=16)	p-value
Pacing rates (%)			
1 month after implantation		66.6 ± 38.0%	
1 year after implantation		50.4 ± 44.1%	
2 years after implantation		50.8 ± 42.5%	
Pacing 1 – 5%		12.5% (n=2)	
Pacing <1%		0% (n=0)	
Outcomes			
PM implantation after discharge	6.2% (n=5)		
In-hospital mortality	0% (n=0)	0% (n=0)	---
1 year mortality	1% (n=1)	0% (n=0)	*p* 0.66
1 year re-hospitalization	23% (n=17)	13% (n=2)	*p* 0.34
Mean follow-up period	3.5 ± 2.2	2.3 ± 1.5	*p* 0.05
All-cause mortality	7% (n=6)	0% (n=0)	*p* 0.26
Cardiac cause mortality	2% (n=2)	0% (n=0)	*p* 0.53
All cause re-hospitalization	43% (n=35)	19% (n=3)	*p* 0.07
Cardiac cause re-hospitalization	23% (n=17)	13% (n=2)	*p* 0.34

Table 1. Long-term pacing rates, mortality and re-hospitalization (PM – Pacemaker)

PO 152 Figure

PO 153. LEFT ATRIAL APPENDAGE OCCLUSION IN PATIENTS WITH CHRONIC KIDNEY DISEASE OR CANCER: AN INTELLIGENT CHOICE?

Ana Margarida Martins, Pedro Silvério António, Sara Couto Pereira, Pedro Alves da Silva, Beatriz Valente Silva, Joana Brito, Catarina Oliveira, Ana Beatriz Garcia, Catarina Gregório, João Santos Fonseca, Ana Rita Francisco, João Silva Marques, Miguel Nobre Menezes, Fausto J. Pinto, Pedro Cardoso

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Introduction: Role of oral anticoagulation (OAC) is well established in preventing stroke and embolic events. However, evidence regarding OAC in this setting is limited in cancer patients (pts). Pts with chronic kidney disease (CKD) are also challenging and evidence is limited for those with CrCl < 30 mL/min, as major clinical trials excluded them. Left atrial appendage occlusion (LAAO) emerged as an alternative to OAC in pts where it may be challenging and thus might represent a good option. However, data regarding LAAO for such cases is also scarce.

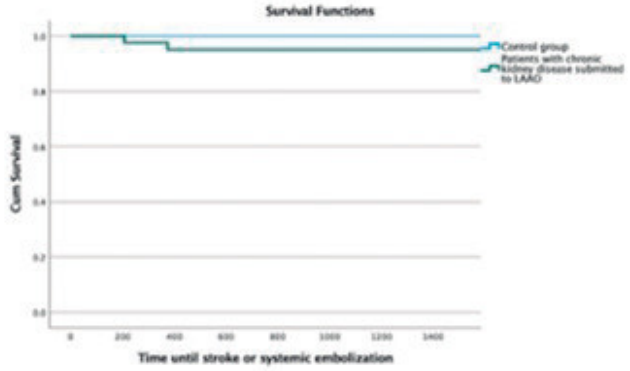

Figure 1: Cumulative survival comparison between patients with CKD and control

Objectives: To evaluate LAAO safety and effectiveness in cancer and CKD pts during a 12-year period.
Methods: From a general cohort pts who underwent LAAO, two subgroups were analysed: (1) pts with history of current or past cancer; (2) CKD, defined as CrCl ≤ 60 ml/min. Pts with CrCl < 30 mL/min were also analyzed. Clinical and demographic characteristics, CHADsVASc and HASBLED score, procedure characteristics, complications and antithrombotic therapy were gathered. Efficacy endpoint was defined as stroke or embolic event and safety endpoint as major bleeding according to HAS-BLED criteria. For statistical analysis, we used Chi-Square test and Kaplan-Meier survival curves.

Results: A total of 139 procedures (59.6% male, mean age 74 ± 8 yrs) were analysed. Mean CHA_2Ds_2VASc and HAS-BLED score was 4.2 ± 1.3 and 3.4 ± 0.9, respectively. CKD was present in 38.8% of pts. The efficacy endpoint occurred more frequently than in non-CKD pts, but the difference was not statistically significant (5.5 *vs.* 1.3%, p = 0.103; Log Rank 2.655). Considering those with CrCl < 30 mL/min (7.9% of the total population), there were also no significant differences when compared to the remaining population regarding the efficacy endpoint (3.1 *vs*. 0%, p = 0.598; Log Rank 0.278). Regarding safety endpoint, there were also no differences between CKD pts and the remainder population (14.8 *vs.* 14.3%, p = p = 0.933). 18.7% had cancer, with hematologic (26%), gastrointestinal (26%) and prostatic (17.4%) accounting for the most common primary tumor locations. There was no statistically significant difference between groups, both regarding efficacy (cancer 0%, control 1.3%, p = 0.342) and safety endpoints (cancer 21.7%, control 14.3%, p = 0.373).
Conclusions: LAAO was an effective and safe strategy in CKD (including those with severe CKD) or cancer populations. Considering the added problems and limited evidence regarding OAC in these pts, LAAO may be considered in such cases.

PO 154. LEFT ATRIAL APPENDAGE OCCLUSION IS AN EFFECTIVE AND SAFE STRATEGY FOR LONG TERM PREVENTION OF STROKE OR SYSTEMIC EMBOLISM

Catarina Simões de Oliveira, Sara Couto Pereira, Pedro Silvério António, Joana Brito, Pedro Alves da Silva, Beatriz Valente Silva, Ana Beatriz Garcia, Ana Margarida Martins, Miguel Azaredo Raposo, Ana Abrantes, Ana Rita Francisco, João Silva Marques, Miguel Nobre Menezes, Fausto J. Pinto, Pedro Cardoso

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Oral anticoagulation (OAC), with either vitamin K antagonists or direct oral anticoagulant agents, has been the mainstay for cardioembolic stroke prevention in atrial fibrillation. Since left atrial appendage (LAA) is the major source of embolism in these patients (pts), mechanical approaches in this setting have been developed, with particular relevance for those with contraindications to OAC or with recurrent events.
Objectives: To describe LAA occlusion (LAAO) safety and effectiveness, using a single center registry during a 12-year period.
Methods: Single center registry of 139 pts submitted to LAAO during a 12-year period. We gathered clinical characteristics, CHADsVASc and HASBLED score, procedure characteristics, complications and ACO therapy. Efficacy endpoint was defined as stroke or embolic event. Safety endpoint was major bleeding according to HAS-BLED criteria. Results were assessed by plotting actual events *versus* expected events according to the risk scores, using Kaplan-Meier curves for analysis.
Results: 139 pts underwent LAAO. 130 Watchman® devices were implanted (22 were WatchmanFlex®). Remaining devices were 5 ACP Amulet® and

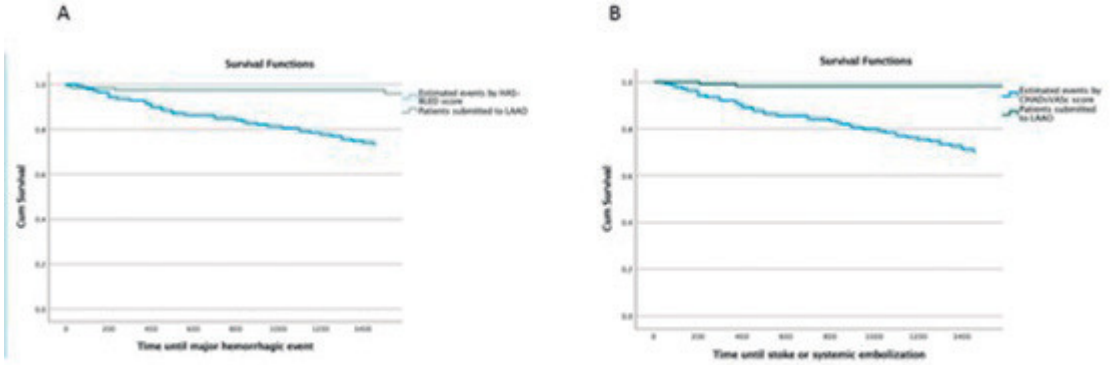

Figure 1: A - Diferences in major hemorragic events between patients submited to LAAO and estimated events by HAS-BLED score; B - Diferences in thrombotic events between patients submited to LAAO and estimated events by CHAD2VASc score

PO 154 Figure

4 Cardiac Plug®. Majority (60.4%) of pts were male, mean age of 74 ± 8 years. Regarding procedural complications, there were 3 cases of cardiac tamponade in the early stages of the program, all successfully resolved with percutaneous pericardiocentesis. During a mean follow-up period of 4.1 ± 2.8 years, 4 strokes and 1 additional embolic event (mesenteric ischemia) occurred. There were 58 deaths, 3 from cardiovascular causes. Mean CHA2Ds2VASc score was 4.2 ± 1.3, which would theoretically correspond to 41 embolic events (25 strokes) during follow-up. Therefore, a statistically significant reduction in events (5 *vs.* 41, log rank 25.006, p < 0.001) was registered, with a relative risk reduction (RRR) of 88%, which is at least not inferior to the expected effect of OAC. As for hemorrhagic risk, 20 hemorrhagic events (6 major bleeding) were registered. Mean HAS-BLED score was 3.4 ± 0.9, which would correspond to 37 major bleeding events. Once again, a statistically significant reduction in events (37 vs6, LogRank 19.728, p < 0.001), after LAAO, was noted in our study (85% RRR).
Conclusions: LAAO was a safe procedure, with major positive impact in embolic risk reduction, sustained over a long follow-up period. A great number of expected hemorrhagic events were averted by avoiding OAC in selected pts at high risk of bleeding.

PO 155. IS REAL WORLD PATENT FORAMEN OVALE CLOSURE A SAFE AND EFFECTIVE STRATEGY?

Pedro S. Morais, Miguel Nobre Menezes, Ana Rita Francisco, Eduardo Infante Oliveira, Cláudia Jorge, Pedro P Cardoso, Fausto J. Pinto

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Patent foramen ovale (PFO) is a very common and benign finding in the adult population. However, it can enable paradoxical embolism and associates with stroke and systemic embolism (SE). Randomized clinical trials have shown that PFO closure (PFOC) in cryptogenic stroke (CS) patients (pts) associates with lower rates of recurrent stroke and real-world confirmation of this strategy safety and efficacy is lacking.
Objectives: To ascertain the real-world PFOC safety and effectiveness in different clinical settings, with a particular focus on CS.
Methods: Single center registry of 142 pts subjected to PFOC in the 2012-2020 period. Patient clinical profile, RoPE score and procedural aspects were gathered using the institution registry. Complications and clinical recurrence during follow-up (FU) were evaluated using the national health database. Procedural safety was evaluated in terms of vascular access complication, cardiac tamponade and infection. Long term safety was evaluated in terms of bleeding event requiring medical attention during FU. Efficacy was evaluated for the recurrence of transient ischemic attack or stroke (TIAS), systemic embolism (SE) and platypnea-orthodoxia (PO). TIAS recurrence was compared with the expected event rate calculated by the RoPE score.
Results: PFOC was performed on 142 pts using Amplatzer PFO Ocluder®, Hyperion PFOO® and Amplatzer Cribiform Ocluder®. The sizes used were 25 (67%), 35 (14%), 24 (11%), 30 (6%) and 18 mm (2%). Average procedure and fluoroscopy time was 52 and 12 minutes. 51.4% of pts were female. Mean age of 51 ± 13 years. There were very few procedural complications, with only 1 case of cardiac tamponade treated with immediate pericardiocentesis. There were no cases of vascular complication or infection. During a mean follow-up period of 3.2 ± 2 years, only 2 pts had bleeding events requiring medical attention (1 epistaxis and 1 menorrhagia), both after the 6 month period of dual anti-platelet therapy used in 86% of pts. Only 2 pts died during FU, both from metastasized cancer and with no cardiovascular event associated. From the 137 pts treated for TIAS or SE, none had SE, 3 had TIA and 3 had CS from which, 1 was a lung cancer patient with Factor V Leiden thrombophilia recently vaccinated for COVID-19, 1 had a large aortic valve fibroelastoma and the last had a transesophageal echocardiogram failing to show agitated saline passage to the left circulation. From the 5 pts treated for PO, none had further positional dyspnea episodes. Mean RoPE score was 5.4 ± 1.4, predicting from 15.4 to 26.2 embolic events in the study follow-up period, contrasting with the 6 events registered after PFOC, that were in their most part non-PFO related.
Conclusions: During a prolonged follow-up, PFOC proved to be a very safe procedure that allows for significant embolic risk reduction, as well as a valid treatment for platypnea-orthodoxia syndrome.

Sábado, 23 Abril de 2022 | 17:00-18:00

Sala Jardim de Inverno | Posters (Sessão 4 - Écran 8) - Doença Arterial Pulmonar - Foco na Embolia Pulmonar

PO 156. PULMONARY THROMBOEMBOLISM: IS B-TYPE NATRIURETIC PEPTIDE AN EARLIER RISK MARKER?

Lisa Maria Ferraz, Simão Carvalho, Adriana Pacheco, Diana Carvalho, Pedro Carvalho, Ana Faustino, Andreia Fernandes, Ana Neves

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

Introduction: Cardiac troponin I provide prognosis information in patients (P) with acute pulmonary embolism (PE), however the role of B-type natriuretic peptide (BNP) to guide treatment decisions is still uncertain.
Objectives: To evaluate the prognostic impact of BNP elevation in P with PE.
Methods: Retrospective study of 237 consecutive adult P admitted with PE since January 1, 2015 and December 31, 2020: 59.9% (n = 142) women, 69.4 ± 1.1 years. Demographics, risk factors, clinical and laboratorial parameters, transthoracic echocardiogram variables and complications during hospitalization were evaluated. PE severity and risk of early death (PESR) was defined according to the 2019 European Society of Cardiology Guidelines on PE.
Results: At admission, 48.6% of P had BNP elevation and 26.6% had troponin I elevation. All P with troponin I elevation at admission, had also BNP elevation. 5.5% of P with BNP elevation and no troponin I elevation at admission had troponin I elevation 2 ± 3 days later. PESR was classified as intermediate-high in 21.5% and high in 5.7% of P. During hospitalization occurred 20 (8.4%) in-hospital deaths and 18 P (17.6%) undergo fibrinolysis due to hemodynamic instability. On univariate analysis, BNP elevation at admission was predictor of high or intermediate-high PESR (89.2 *vs.* 35.9%; p = 0.04), fibrinolysis (81.8 *vs.* 45.6%; p = 0.02) and in-hospital mortality (92.6 *vs.* 42.9%; p < 0.001). On multivariate analysis, elevated BNP at admission was an independent predictor of in-hospital mortality (OR 1.6; 95%CI 0.31-0.83; p < 0.001). There was a trend for BNP value at admission being predictor of fibrinolysis (438 ± 76 *vs.* 305 ± 69 pg/mL, p = 0.06), without association with high or intermediate-high PESR (571 ± 121 *vs.* 480 ± 101 pg/mL, p = 0.25) or in-hospital mortality (893 ± 245 *vs.* 577 ± 70 pg/mL; p = 0.15). Maximum BNP value during hospitalization was predictor of fibrinolysis (669 ± 104 *vs.* 410 ± 94 pg/mL, p = 0.038) and showed a trend for association with high or intermediate-high PESR (661 ± 157 *vs.* 460 ± 106 pg/mL, p = 0.052) and in-hospital mortality (1,256 ± 290 *vs.* 661 ± 92 pg/mL, p = 0.056).
Conclusions: BNP elevation at admission is associated with greater risk of in-hospital mortality and is present earlier than other well-established risk-markers, suggesting that the elevation of this biomarker, more than the value itself, could be used to refine the currently used scheme for risk stratification of early death.

PO 157. ELECTROCARDIOGRAPHIC SCORE IN PREDICTING DIAGNOSIS AND SEVERITY OF PULMONARY EMBOLISM

Margarida Martins, Beatriz Valente Silva, Sara Couto Pereira, Pedro Silvério António, Joana Brito, Pedro Alves da Silva, Catarina Simões de Oliveira, Ana Beatriz Garcia, Ana Abrantes, Miguel Azaredo Raposo, Miguel Nobre Menezes, Lourenço Garcia, Cláudia Jorge, Nuno Cortez-Dias, Fausto J. Pinto

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Pulmonary embolism (PE) is associated with morbidity and mortality. Immediate recognition of this condition is critical to commencement of early and appropriate therapy which could be lifesaving.

Particularly in patients with suspected PE in which computed tomography pulmonary angiography (CTPA) is not promptly available or is contra-indicated, an electrocardiographic (ECG) score could serve as a ubiquitously available test to raise suspicion of PE. This study aimed to evaluate the diagnostic value of an ECG score for PE diagnosis.
Methods: Retrospective study of consecutive patients who performed CTPA in Emergency Department due to PE suspicion. All ECG were scored according to the previous published Daniel's ECG score, by an investigator blinded for the CTPA result.

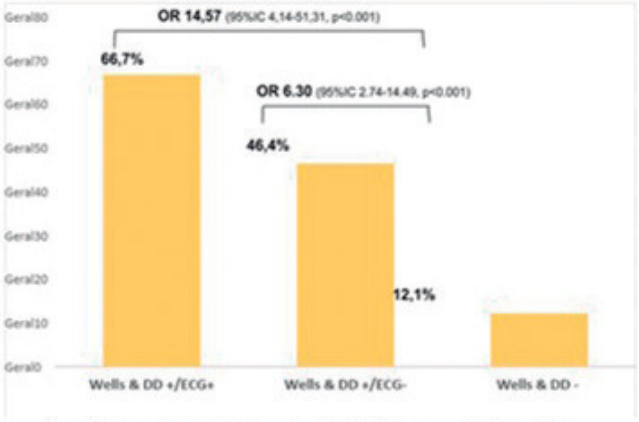

Figure 1: Diagnostic accuracy according to DD, Wells score and ECG variables

Results: The most common ECG findings in patients with PE were incomplete right-brand bock (48%), T wave inversion in DIII (48%), sinus tachycardia (41%) and Q wave in DII (31%). The S1Q3T3 sign was documented in 20% of patients, The ECG score was significantly higher in patients with PE compared to those without PE (5.06 *vs.* 3.70, p = 0.005). ECG score showed moderate accuracy to detect PE (AUC: 0.60; 95%CI: 0.53-0.67; p = 0.004), but it is of a particular value because of very high specificity: an ECG score > 12 identified PE with a specificity of 96% (95%CI 91.93-98.38). The ECG score significantly increased the diagnostic accuracy of the diagnostic algorithm based on pretest clinical probability evaluated by Wells score combined with D-Dimer measurement (Wells & DD). In comparison to patients in which clinical pretest probability combined with D-dimer measurement considers PE excluded (Wells & ECG -), PE was 6.3 times more frequent in patients with Wells & DD +/ECG- (95% 2.7-14.5) and 14.6 times more prevalent in the ones with Wells & DD +/ECG+ (95%CI: 4.1-51.3; p < 0.001) (Fig.).
Conclusions: In patients with clinical suspicion of PE, an ECG score (Daniel's score) > 12 predicts PE with 96% specificity and could be used to increase the suspicion and define therapeutic strategy in patients in whom CTPA could not be immediately performed or is contra-indicated.

PO 158. COMPARISON OF DIFFERENT DIAGNOSTIC MODELS PERFORMANCE IN PATIENTS WITH COVID-19 AND PULMONARY EMBOLISM

João Santos Fonseca, Beatriz Valente Silva, Pedro Silvério António, Sara Couto Pereira, Joana Brito, Pedro Alves da Silva, Ana Beatriz Garcia, Ana Margarida Martins, Catarina Simões de Oliveira, Carlos Mendonça, Luísa Urbano, Tiago Rodrigues, Cláudia Jorge, Rui Plácido, Fausto J. Pinto

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Pulmonary embolism (PE) is a common complication of SARS-CoV-2 infection. Several diagnostic prediction rules based on pretest probability and D-dimer have been validated in non-COVID patients, but it remains unclear whether they can be safely applied in COVID-19 patients.
Objectives: We aimed to compare the diagnostic accuracy of the standard approach based on Wells and Geneva scores combined with a standard D-dimer cut-off of 500 ng/ml with three alternative strategies (age-adjusted, YEARS and PEGeD algorithms) in COVID-19 patients.
Methods: This retrospective study included all COVID-19 patients admitted to the Emergency Department (ED) who underwent computed tomography pulmonary angiography (CTPA) due to PE suspicion. The diagnostic prediction rules for PE were compared between patients with and without PE.
Results: We included 300 patients and PE was confirmed in 15%. No differences were found regarding comorbidities, traditional risk factors for PE and signs and symptoms between patients with and without PE. Wells and Geneva scores showed no predictive value for PE occurrence, whether a standard or an age-adjusted cut-off was considered. YEARS and PEGeD algorithms were

	Wells score + DD threshold of 500 ng/mL	Geneva score + DD threshold of 500 ng/mL	Wells score + age-adjusted DD cut-off	Geneva score + age-adjusted DD cut-off	YEARS algorithm	PEGeD algorithm
Sensitivity, %	**95.65** [85.16-99.47]	**95.65** [85.16-99.47]	**89.13** [76.43-96.38]	**89.13** [76.43-96.38]	**86.96** [73.74-95.06]	**84.78** [71.13-93.66]
Specificity, %	**8.27** [5.19-12.36]	**8.27** [5.19-12.36]	**15.35** [11.15-20.39]	**15.35** [11.15-20.39]	**31.10** [25.46-37.19]	**31.23** [25.57-37.33]
Positive predictive value, %	**15.88** [11.79-20.73]	**15.88** [11.79-20.73]	**16.02** [11.74-21.09]	**16.02** [11.74-21.09]	**18.60** [13.64-24.46]	**18.31** [13.36-24.17]
Negative predictive value, %	**91.30** [71.96-98.93]	**91.30** [71.96-98.93]	**88.64** [75.44-96.21]	**88.64** [75.44-96.21]	**92.94** [85.27-97.37]	**91.86** [83.95-96.66]
Positive likelihood ratio	**1.04** [0.97-1.12]	**1.04** [0.97-1.12]	**1.05** [0.94-1.18]	**1.05** [0.94-1.18]	**1.26** [1.10-1.45]	**1.23** [1.06-1.43]
Negative likelihood ratio	**0.53** [0.13-2.17]	**0.53** [0.13-2.17]	**0.71** [0.29-1.70]	**0.71** [0.29-1.70]	**0.42** [0.19-0.90]	**0.49** [0.24-0.99]
Diagnostic odds ratio	**1.98** [0.45-8.76]	**1.98** [0.45-8.76]	**1.49** [0.55-4.00]	**1.49** [0.55-4.00]	**3.01** [1.23-7.39]	**2.53** [1.08-5.90]
AUC	**0.520** [0.431-0.608]	**0.520** [0.431-0.608]	**0.521** [0.432-0.610]	**0.521** [0.432-0.610]	**0.589** [0.506-0.672]	**0.580** [0.496-0.664]
Correctly avoided CTPA, n	**21**	**21**	**39**	**39**	**79**	**79**
Missed PE diagnosis, n	**2**	**2**	**5**	**5**	**6**	**7**

Table 1. Diagnostic accuracy of Wells and Geneva scores combined with a fixed and an age-adjusted cut-off, YEARS algorithm and PEGeD algorithm to predict pulmonary embolism in COVID-19 patients. Abbreviations: DD, D-dimer; AUC, area under the curve.

PO 158 Figure

associated with increased specificity (19% CTPA reduction) but raising non-diagnosed PE. Despite elevated values in all patients, those with PE had higher D-dimer levels. However, incrementing thresholds to select patients for CTPA was also associated with a substantial decrease in sensitivity.
Conclusions: None of the diagnostic prediction rules are reliable predictors of PE in COVID-19. Our data favour the use of a D-dimer threshold of 500 ng/ml, considering that higher thresholds increase specificity but limits this strategy as a screening test.

PO 159. AGE-DEPENDENCE PERFORMANCE OF DIAGNOSTIC PREDICTION RULES FOR PULMONARY EMBOLISM

Pedro Alves da Silva, Beatriz Valente Silva, Carlos Mendonça, Luísa Urbano, Tiago Rodrigues, Cláudia Jorge, Rui Plácido, Joana Brito, Pedro Silvério António, Sara Couto Pereira, Fausto J. Pinto

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Ruling out pulmonary embolism (PE) through a combination of clinical assessment and D-dimer is crucial to avoid excessive computed tomography pulmonary angiography (CTPA). We aimed to compare the diagnostic accuracy of the standard approach based on Wells and Geneva scores combined with a standard D-dimer cut-off (500 ng/mL), with three alternative strategies (age-adjusted, YEARS and PEGeD algorithms) in patients admitted to the Emergency Department (ED) due to PE suspicion.
Methods: Consecutive outpatients admitted to the ED who underwent CTPA due to PE suspicion were retrospectively evaluated. Sensitivity, specificity, positive and negative predictive values, likelihood ratios and diagnostic odds ratio were calculated and compared among the different diagnostic prediction rules.
Results: We included 1,402 patients (mean age 69 ± 18.32 years, 54% female), and PE was confirmed in 25% of them. Using an age-adjusted strategy increased specificity compared to the standard approach ($p < 0.001$), with a non-significant decrease in sensitivity only in patients over the age of 70. YEARS and PEGeD algorithms, despite the most specific of all prediction rules for all spectrum of ages, were associated with a significant decrease in sensitivity ($p < 0.001$) compared to the standard and age-adjusted approaches, particularly in patients under 60 years (sensitivity of 81% in patients aged between 51 and 60 years).
Conclusions: Compared to the standard approach, all algorithms were associated with increased specificity. The age-adjusted strategy was the only one that was not associated with a significant decrease in sensitivity compared to the standard approach, allowing to reduce CTPA requests safely.

PO 160. ECHOCARDIOGRAPHIC DATA IN ACUTE PULMONARY EMBOLISM – WHAT IS THE PROGNOSTIC VALUE IN THE REAL WORLD?

Fabiana Silva Duarte, M. Inês Barradas, Luís Oliveira, Cátia Serena, António Fontes, André Viveiros Monteiro, Carina Machado, Raquel Dourado, Emília Santos, Nuno Pelicano, Miguel Pacheco, Anabela Tavares, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: Echocardiographic evaluation performed on admission after the diagnosis of pulmonary embolism is used for risk stratification in these patients. The individual prognostic value of the echocardiographic parameters and its association with the clinical data is still being studied.
Objectives: To determine the impact of echocardiographic parameters (TAPSE, PSAP e TAPSE/PSAP), as well as its association with the clinical evaluation in the patient's prognosis.
Methods: Single centre retrospective study, evaluating 131 patients admitted by acute pulmonary embolism between January 2017 and December 2020. Mean age was 67.6 ± 15.3 years, 38 patients were male (29.0%). The patients were stratified according to the European Cardiology Association

A

Age group	Wells score + DD threshold of 500 ng/mL	Geneva score + DD threshold of 500 ng/mL	Wells score + age-adjusted DD cut-off	Geneva score + age-adjusted DD cut-off	YEARS algorithm	PEGeD algorithm
≤ 50 (n=233)	87.72 (76.32-94.92)	87.72 (76.32-94.92)	87.72 (76.32-94.92)	87.72 (76.32-94.92)	82.09 (70.80-90.39)	77.61 (65.78-86.89)
51-60 (n=153)	94.59 (81.81-99.34)	94.59 (81.81-99.34)	94.59 (81.81-99.34)	94.59 (81.81-99.34)	81.08 (64.84-92.04)	81.08 (64.84-92.04)
61-70 (n=227)	96.15 (86.79-99.53)	96.15 (86.79-99.53)	96.15 (86.79-99.53)	96.15 (86.79-99.53)	96.15 (86.79-99.53)	96.15 (86.79-99.53)
71-80 (n=323)	98.77 (93.31-99.97)	98.77 (93.31-99.97)	95.06 (87.84-98.64)	95.06 (87.84-98.64)	93.83 (86.18-97.97)	93.83 (86.18-97.97)
> 80 (n=466)	97.41 (92.63-99.46)	97.41 (92.63-99.46)	94.83 (89.08-98.08)	94.83 (89.08-98.08)	92.24 (85.78-96.39)	92.24 (85.78-96.39)

B

Age group	Wells score + DD threshold of 500 ng/mL	Geneva score + DD threshold of 500 ng/mL	Wells score + age-adjusted DD cut-off	Geneva score + age-adjusted DD cut-off	YEARS algorithm	PEGeD algorithm
≤ 50 (n=233)	30.12 (23.25-37.71)	30.12 (23.25-37.71)	30.12 (23.25-37.71)	30.12 (23.25-37.71)	50.60 (42.75-58.44)	52.41 (44.53-60.20)
51-60 (n=153)	22.41 (15.19-31.09)	22.41 (15.19-31.09)	29.31 (21.23-38.48)	29.31 (21.23-38.48)	44.83 (35.59-54.34)	45.69 (36.41-55.19)
61-70 (n=227)	17.14 (11.88-23.56)	16.57 (11.39-22.92)	29.14 (22.53-36.48)	28.57 (22.01-35.88)	37.71 (30.51-45.34)	40.00 (32.68-47.66)
71-80 (n=323)	10.74 (7.14-15.34)	9.92 (6.46-14.40)	20.66 (15.74-26.32)	19.83 (15.00-25.42)	26.45 (21.00-32.48)	28.51 (22.91-34.65)
> 80 (n=466)	8.29 (5.62-11.68)	8.29 (5.62-11.68)	16.68 (13.09-21.20)	16.68 (13.09-21.20)	20.29 (16.20-24.89)	20.86 (16.72-25.50)

Table 1: A - Sensitivity (%, 95% CI) of different diagnostic prediction rules grouped by age. B- Specificity (%, 95% CI) of the different diagnostic prediction rules grouped by age. Abbreviations: DD, D-dimer.

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(ESC) early mortality risk classification in high or intermediate-high risk (group A) and low or intermediate low risk (group B). The correlation with echocardiographic parameters was evaluated. In-hospital mortality at 30 days and 1 year was determined.
Results: Group A included 27 patients (20.6%) and group B 104 patients (79.4%), with no difference regarding demographic and clinic characteristics between both groups. In group A the mean PSAP was 49.4 ± 22.8 mmHg, TAPSE 14.7 ± 5.2 mm and TAPSE/PSAP 0.3. In group B the mean PSAP was 34.6 ± 16.8 mmHg, TAPSE 20.9 ± 4.5 mm and TAPSE/PSAP 0.7. The ROC analysis shows PSAP has good discriminative power for risk stratification (AUC 0.716; p 0.017 95%CI 0.56-0.87), with a cutoff point at 35 mmHg. The TAPSE/PSAP ratio has an excellent discriminative power (AUC 0.873, p value 0.001, 95%CI 0.767-0.978), with a cutoff point of 0.3. In-hospital mortality was 8.4% (11 patients), 30-day mortality was 12.2% (16 patients) and 1-year mortality was 19.8% (26 patients). There was no difference regarding mortality between groups A and B. Comparing PSAP and TAPSE/PSAP ≤ 0.3, only the latter was correlated with mortality at 1 year (p 0.021). The addition of TAPSE/PSAP ≤ 0.3 to ESC classification for each group had a significant impact on mortality at 1 year (p 0.004).
Conclusions: The addition of TAPSE/PSAP ≤ 0.3 to risk scores in groups A and B confers relevant prognostic information on long term mortality.

Domingo, 24 Abril de 2022 | 12:30-13:30

Sala Jardim de Inverno | Posters (Sessão 5 - Écran 1) - DAC e Cuidados Intensivos 6 - MINOCA, Género e Idade

PO 161. CHARACTERIZATION OF RISK FACTORS AND MORTALITY IN YOUNG PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

João Borges Rosa, Sofia S. Martinho, José Lopes de Almeida, Gustavo M. Campos, João André Ferreira, S. Monteiro, F. Gonçalves, P. Monteiro, R. Baptista, Manuel Oliveira-Santos, Lino Gonçalves

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

Introduction: The incidence of acute myocardial infarction (AMI) among young patients is increasing. Recently, in two cohorts of type 1 AMI from the United States of America, the YOUNG-MI Registry reported that patients under 40 years had similar risk profiles and outcomes compared to those aged 41 to 50 at the time of the event. We aimed to evaluate cardiovascular risk factors and mortality outcomes in two age cohorts from a southern European population.
Methods: We retrospectively evaluated 4,758 patients admitted to our coronary intensive care unit between 2004 and 2017 with a diagnosis of non-ST-elevation myocardial infarction (NSTEMI) or ST-elevation myocardial infarction (STEMI). We only included patients < 60 years old in two subgroups: cohort A (< 50 years) and cohort B (50-60 years). Clinical and all-cause mortality data were collected. T-tests and Pearson's chi-squared tests were used for group comparison, while survival analysis was performed using Kaplan-Meier curves and multivariable Cox regression.
Results: We selected 1,233 patients with mean age 50.5 ± 6.5 years, 82.2% male, and 53% diagnosed with STEMI. Cohort B had higher rates of hypertension (59.8 *vs.* 42.9%, p < 0.001), diabetes (41.8 *vs.* 28.9%, p < 0.001), and dyslipidemia (59.4 *vs.* 46.4%, p < 0.001). However, cohort A had higher rates of familial premature coronary artery disease (20.9 *vs.* 13.2%, p < 0.001) and smoking habits (54.4 *vs.* 40.0%, p < 0.001). Cohort A had lower all-cause mortality rates at the index hospitalization (1.3 *vs.* 3.2%, p = 0.045), 6-months (2.9 vs.5.4, p = 0.038), 1-year (3.1 *vs.* 6.3%, p = 0.014), and 3-years (3.6 *vs.* 8.4, p = 0.001). After multivariable adjustment, we found no relationship between age cohorts and all-cause mortality for any follow-up timing: HR 1.57 (95%CI 0.56-4.37), 1.37 (95%CI 0.50-3.74), and 0.92 (95%CI 0.35-2.39) at 6-months, 1-year, and 3-years, respectively. Regarding coronary angiography (Fig.), cohort B had higher rates of obstructive disease in each epicardial artery, except for left main involvement (3.6 *vs.* 1.8%, p = 0.072). Also, the rate of non-obstructive disease was similar between groups (9.2 *vs.* 11.6%, p = 0.165).
Conclusions: Among patients who suffer AMI, those under 50 years old have a clearly different risk profile, compared to those patients between 50 and 60 years. Despite lower rates of death in younger patients, after multivariable adjustments there is no significant difference in all-cause mortality.

PO 162. GENDER DISPARITIES IN ACUTE MYOCARDIAL INFARCTION - STILL AN UNSOLVED PUZZLING ISSUE

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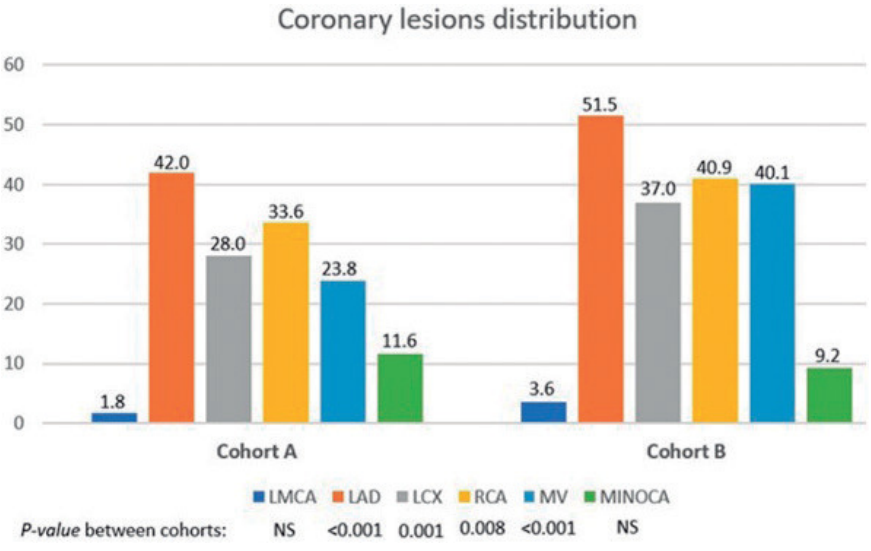
Introduction: Gender differences in acute myocardial infarction (AMI) have been widely described, namely longer time delays, less access to revascularization and worse outcomes for women (W).



PO 161 Figure

GENDER	PATIENT DELAY*1	EMERGENCY MEDICAL SERVICE DELAY*2	TIME TO FIRST MEDICAL CONTACT*3	TIME FROM STEMI DIAGNOSIS TO WIRE-CROSSING*4
Man	92±286	20±19	105±288	114±98
Women	120±180	22±15	147±161	179±111

Figure 1 – Acute Myocardial Infarction (AMI) related time delays presented by gender.
All times are expressed in minutes and as median ± Interquartile Range (IQR). Non-parametric tests were used for statistical analysis.
No significant differences between genders were identified (*1: p=0,5; *2: p=0,2; *3: p=0,5; *4: p=0,2).

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Objectives: To characterize current gender differences regarding presentation, time delays, treatment and outcomes in AMI, as well as explore gender influence in patients (pts) behavior and knowledge about AMI.
Methods: In this 6-month prospective study of pts admitted in a tertiary hospital due to type-1 AMI, 196 pts were consecutively enrolled between May and October 2021. Data was based on a pts well-structured interview within 48h after admission and review of medical records.
Results: A total of 42W (21%) were included. Non-ST/ST Segment Elevation Myocardial Infarction (NSTEMI/STEMI) proportion was similar between genders (49%/51%, respectively, and considering all pts), as well as age distribution (overall mean of 62 ± 13 years). More men (M) had a previous history of AMI (23 *vs.* 10%; p = 0.05) and of percutaneous revascularization (17 *vs.* 5%; p = 0.05). At least 1 cardiovascular risk factor (CVRF) was equally identified (W: 95%; M: 98%). Typical chest pain was reported similarly (W: 95%; M: 94%), as well as pain intensity (0-10 scale): 75%W and 71%M with chest pain intensity equal or greater than 6. W presented more associated symptoms (79 *vs.* 60%; p = 0.02). Coronary angiography (W: 100%; M: 97%) and revascularization (W: 78%; M: 80%) were equally performed. AMI-complications were more frequent in W (43 *vs.* 23%; p = 0.009), with a trend to have more often cardiogenic shock (14 *vs.* 5%; p = 0.08), and significantly more reinfarction (12 *vs.* 2%; p = 0.01) and atrial fibrillation (17 *vs.* 5%; p = 0.02). In-hospital mortality was, however, not significantly different (W: 5%; M: 2%; p = 0.3). W had a longer hospital stay (W: 7 ± 7 days (d); M: 5 ± 4 d; p = 0.03). No significant differences were found regarding time delays (Table). Curious differences were detected in pts behavior and knowledge about AMI: W were less confident about their knowledge of AMI symptoms (45 *vs.* 65%; p = 0.02), although it didn't translate into differences in perceiving their symptoms as AMI (W: 21%; M: 32%). W were more prudent, being less likely to drive with chest pain (5 *vs.* 18%; p = 0.04).
Conclusions: Our study shows no significant gender differences in time delays or access to myocardial revascularization. Although our data suggest an increased awareness and improved care of W with AMI, W still presented worse outcomes. It would be of extreme importance to better represent W data in AMI studies and guidelines to improve their outcomes.

PO 163. MACE IN MYOCARDIAL INFARCTION WITH NON-OBSTRUCTIVE CORONARY ARTERIES: PREDICTORS AND PROGNOSIS

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Introduction: Up to 15% of patients admitted with suspected acute myocardial infarction (AMI) have no significant lesions on coronary angiography (> 50%) (MINOCA). MINOCA is not a benign disease. We aimed to evaluate predictors and prognosis of major adverse cardiac events (MACE) in the setting of MINOCA.
Methods: Based on a multicenter retrospective study, data collected from admissions between 2013 and 2020. Patients (P) were divided in 2 groups (G): GA – P without MACE; GB - P with MACE. MACE included in-hospital death, stroke, heart failure and re-infarction.
Results: MACE occurred in 90 (7.6%) out of 1098 P with MINOCA. There were no differences between G regarding gender (p = 0.851). GB pts were older (72 ± 10 *vs.* 65 ± 13, p < 0.001), had higher rates of arterial hypertension (86.0 *vs.* 68.2%, p < 0.001), diabetes (47.0 *vs.* 26.6%, p = 0.003), previous heart failure history (16.4 *vs.* 5.9%, p = 0.002), kidney dysfunction (18.8 *vs.* 4.5%, p < 0.001), dementia (8.2 *vs.* 0.5%, p < 0.001) and past bleeding events (8.2 *vs.* 0.7%, p < 0.001). GA had higher rates of smoking habits (22.7 *vs.* 4.8%, p < 0.001). GB had higher heart rate at admission (91 ± 24 *vs.* 75 ± 17, p < 0.001), higher rates of hypotension (systolic arterial pressure < 90 mmHg) (4.4 *vs.* 0.8%, p = 0.0.26), and higher rates of KK> 1 (64.3 *vs.* 5.9%, p < 0.001), atrial fibrillation (22.0 *vs.* 8.0%, p < 0.001) and left branch bundle block (LBBB) (7.3 *vs.* 1.4%, p = 0.014). GB presented higher rates of kidney dysfunction (creatinine > 2.0 mg/dL) (19.4 *vs.* 4.5%, p < 0.001), lower haemoglobin levels (12.9 ± 2 *vs.* 13.7 ± 1.8, p < 0.001), higher BNP levels (BNP > 400 pg/ml) (100 *vs.* 17.4%, p < 0.001), and higher rates of left ventricle systolic dysfunction (LVEF < 50%) (51.0 *vs.* 17.4%, p < 0.001). GB patients were treated with diuretics during hospital stay more often (74.5 *vs.* 14.3%, p < 0.001). GB had longer hospital stay (10 *vs.* 5, p < 0,001). KK > 1 (p < 0.001, OR 16.3, CI 5.5-48.5), past bleeding events (p = 0.024, OR 13.90, CI 1.4-122.2), hypotension (p = 0.045, OR 22.1, CI 1.06-458.9) and diuretics usage (p0.001, OR 16.3, CI 5.5-48.5) were independently associated with MACE. Survival analysis confirmed GA had better prognosis regarding 1 year mortality compared to GB (p < 0.001), however there were no differences regarding readmissions for cardiovascular cause (p = 0.318).
Conclusions: MACE in the setting of MINOCA are associated with poorer prognosis. Several features may help predict the MACE occurrence during hospitalizations, allowing an earlier treatment.

PO 164. DISCRIMINATORY CAPACITY OF ACTION-ICU ACCORDING TO AGE - A SCORE FOR ALL?

Mariana da Silva Santos, Sofia B. Paula, Hélder Santos, Margarida Figueiredo, Inês Almeida, Samuel Almeida, João Tavares, Luís Santos, Lurdes Almeida

Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo.

Introduction: Risk stratification at admission is essential to define prognosis in patients (P) with non-ST elevation myocardial infarction (NSTEMI). The ACTION-ICU score quantifies the risk of initially stable patients with NSTEMI developing a complication requiring ICU care. It uses 9 variables, including age at a 70 years old cut off. We aimed to validate ACTION-ICU score in our NSTEMI population and compare its predictive accuracy in P older and younger than 70 years old.
Methods: Single-center retrospective study including P admitted in the Cardiology department with ACS between 2016 and 2019. We compared 2 groups (G): A - < 70 years old; B - ≥ 70 years old. Complications requiring ICU care (CICU) were defined as subsequent development of cardiac arrest, heart failure, high-grade atrioventricular block, respiratory failure, stroke, or in-hospital death.
Results: Among the 422 P admitted with NSTEMI included, mean age was 68.4 ± 12.3 years old and 62.7% were male. GA had more males (69.8 *vs.* 54.9%, p < 0.001), lower rates of dyslipidaemia (49.3 *vs.* 58.5%, p = 0.048) and lower mean ACTION-ICU score (4.95 *vs.* 6.09, p = 0.003). The G were similar regarding other cardiovascular risk factors ad past history events, namely myocardial infarction, revascularization, heart failure, stroke and chronic kidney disease. The G were also similar regarding Killip-Kimball

class, rhythm and haemodynamic conditions at admission, kidney function at admission, in-hospital usage of drugs and CICU. In NSTEMI general population, ACTION-ICU score was predictive of CICU (p < 0.001, odds ratio (OR) 1.4, confidence interval (CI) 1.17-1.62) with fair accuracy (AUC 0.747), but was not predictive of 1-year mortality (1yM) (p = 0.185) or 1-year readmission (1yRA) (p = 0.140). In GA, ACTION-ICU score was predictive of CICU (p = 0.025, OR 1.3, CI 1.04-1.71) with fair accuracy (AUC 0.719) and of 1yM (p = 0.027, OR 1.3, CI 1.03-1.74) with poor accuracy (AUC 0.585). The score was not predictive of 1yRA (p = 0.237). In GB, ACTION-ICU score was predictive of CICU (p = 0.002, OR 1.4, CI 1.14-1.80) with good accuracy (AUC 0.786), but was not predictive of 1yM (p = 0.736) or 1yRA (p = 0.076).
Conclusions: In our center, ACTION-ICU score performed slightly better in older people in predicting CICU. In younger patients ACTION-ICU score may have an additional value at predicting long-term outcomes, namely 1yM. More studies are needed to validate ACTION-ICU score as a long-term prognostic tool.

PO 165. FINDING TAKOTSUBO CARDIOMYPATHY ON CARDIAC MAGNETIC RESONANCE

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Francisco Dias Cláudio, Ana Rita Santos, Renato Fernandes, Manuel Trinca

Hospital do Espírito Santo, EPE, Évora.

Introduction: Takotsubo Cardiomyopathy (TCM) is a reversible pathology with clinical features practically indistinguishable from other cardiomyopathies. Cardiac magnetic resonance (CMR) is uniquely suited in differentiating TCM from other forms of acute ventricular dysfunction, and in identifying potential complications of TCM.
Objectives: The aim is to characterize the features of TCM,as well as to evaluate diagnostic and prognostic impact of CMR in these patients.
Methods: A 7-years prospective study, which included all patients of a center proposed to CMR with presumptive diagnosis of MINOCA based on clinical characteristics, such as acute chest pain,troponin raise, ECG presentation, echo and coronariography results, such as absence of angiographically significant coronary disease (luminal stenosis < 50%). Comparison was made with TCM definitive one after CMR. We followed a protocol to evaluate TCM patients' left and right ventricles (LV; RV) anatomically and functionally, and search for late gadolinium enhancement (LGE).
Results: A total of 93 patients were evaluated, of which 16 had the final diagnosis of Takotsubo Cardiomyopathy. Stress-cardiomyopathy patients were female, with mean age of 69 ± 14 years old. At admission, 75% had ST segment elevation, so emergent coronariography was performed. The median highest troponin I was 2,235 [1,30-4,27] ng/mL. On CMR, 81%presented with preserved ejection fraction (mean LVEF 59% ± 10%). Regional contractility abnormalities were described in 19%, being hypokinesia in all mid and apical segments in 2, and diffuse in 1. Mean LV end diastolic indexed volume (EDIV) was 72 ± 23 mL/m^2, with 2 patients with dilation (LVEDIV 120 ± 7 mL/m^2). RV EIV were normal. LV dysfunction (mean LVEF 32 ± 2%) and RV dysfunction (mean RV EF 42 ± 4%) was present in 2 cases each, with one with biventricular EF depression. Mild pericardial effusion was found in 38%, mild mitral regurgitation in 8 patients and moderate in 1.A possible complication was registered: LV outflow tract protomesossystolic acceleration with mild anterior leaflet prolapse, yet without SAM. No LV thrombus was identified.LGE was observed in 2 patients: one on the apex, on the other one the pattern was intramyocardial on mid segment of inferior septum. After CMR was performed, 25% of cases had their presumptive diagnosis of TCM confirmed. On the other 75%, initial diagnosis was changed due to CMR features, and consequently so patients' management: in 50% and 17% of patients the presumptive diagnoses were respectively reperfunded STEMI and NSTEMI. In 33% the initial diagnosis was myocarditis.
Conclusions: CMR provides a noninvasive and multidimensional assessment for evaluation of Takotsubo cardiomyopathy. In our population, performing CMR allowed initial diagnosis modification in 3/4 of the cases and identification of a complication, both with important therapeutic and prognostic implications.

Domingo, 24 Abril de 2022 | 12:30-13:30

Sala Jardim de Inverno | Posters (Sessão 5 - Écran 2) - Arritmias 5 - Foco na Insuficiência Cardíaca

PO 166. EFFECT OF SACUBITRIL/VALSARTAN ON VENTRICULAR ARRHYTHMIA BURDEN IN HEART FAILURE WITH REDUCED EJECTION FRACTION

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Hospital de Braga, EPE.

Introduction: Sacubitril/Valsartan, an angiotensin receptor-neprilysin inhibitor (ARNI) is currently one the first-line drugs for prognosis improvement in heart failure with reduced ejection fraction (HFrEF). Antiarrhythmic properties of Sacubitril/Valsartan have been suggested. However, limited and conflicting evidence existed regarding this topic.
Objectives: To evaluate the effect of Sacubitril/Valsartan on the incidence of ventricular arrhythmias in HFrEF patients.
Methods: Single-centre, observational and retrospective study. Inclusion criteria: left ventricle ejection fraction (LVEF) ≤ 40%; NYHA class ≥ II, optimal medical therapy (excluding ARNI) for at least 12 months with subsequent ACEi/ARB replacement with ARNI; carriers of implantable cardioverter defibrillator (ICD) or cardiac resynchronization therapy (CRT). Exclusion criteria were NYHA class IV and implantation of ICD/CRT after the introduction of ARNI. Primary outcome was ventricular arrhythmic burden (including appropriate shocks, sustained ventricular tachycardia (VT) and ventricular fibrillation (VF)) pre and post ARNI. Secondary outcomes included change in NYHA class, NT-proBNP, LV end diastolic diameter (LVEDD) and LVEF. Data on arrhythmic episodes was obtained from device interrogation.
Results: Fifty-four patients met the inclusion criteria. Mean age was 69.5 years and 74% (n = 40) were male. HFrEF had ischemic aetiology in 59%. All

Event	12 months prior to ARNI		12 months after ARNI		*McNemar test*	*Effect Size*
	n	*%*	*n*	*%*	*p-value*	*Cohen G*
Appropriate Device Shock	**8**	**18,0**	**1**	**2,0**	**0,016***	**0,50**
Ventricular fibrillation	6	13,0	2	4,0	0,289	0,25
Sustained VT	9	20,0	6	13,0	0,549	0,15
Non-sustained VT	14	31,0	11	25,0	0,549	0,15

PO 166 Figure

the patients were on ACEi/ARB and beta-blockers, 94% on stable doses of diuretics and 72% on mineralocorticoid receptor antagonist. Comparison of the 12 months prior to the 12 months after Sacubitril/Valsartan initiation: The number of patients experiencing appropriate shocks was significantly lower after ARNI initiation (2 *vs.* 18%; p = 0.016). The total number of VT and VF episodes was lower after the initiation of the drug, but this difference was not statistically significant (4 *vs.* 13% for VF; p = 0.289; 13 *vs.* 20% for VT; p = 0.549). NYHA class significantly improved after initiation of Sacubitril/Valsartan (pre ARNI: class I 0%; class II 77%; class III 23%; post ARNI: class I 14%; class II 80%; class III 6%; p = 0,001). However, no significant differences were observed in LVEF (mean 30 *vs.* 28%; p = 0.315), LVEDD (mean 66 *vs.* 65 mm; p = 0.549) or NT-proBNP (mean 775 *vs.* 1,128 pg/mL; p = 0.858).
Conclusions: Sacubitril/Valsartan seems to reduce the risk of arrhythmic events requiring appropriate shock therapy (even without a significant change in echocardiographic LV remodelling parameters). The sample size is an important limitation of this study. Prospective and larger studies are needed to better address this question.

PO 167. TELEMONITORING IN HEART FAILURE MANAGEMENT – THE EXPERIENCE OF A REMOTE CENTER

M. Inês Barradas, Fabiana Duarte, Luís Resendes de Oliveira, Cátia Serena, António Xavier Fontes, André Viveiros Monteiro, Carina Machado, Raquel Dourado, Emília Santos, Nuno Pelicano, Miguel Pacheco, Anabela Tavares, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: Remote patient monitoring (RPM) is a new standard of care in Heart failure (HF) patients with cardiac implantable electronic devices (CIEDs) but its impact in clinical outcomes is still uncertain. In remote locations, HF management is even more challenging and RPM may be an important tool in identifying earlier signs of HF decompensation.
Objectives: To assess the impact of RPM in clinical outcomes, compared to usual standard of care in chronic HF patients with CIEDs and to access the accuracy of multisensor device-based algorithms in a remote center.
Methods: We retrospectively evaluated consecutive patients with HF and CIEDs admitted to our center, through clinical assessments and continuous RPM when available (two different telemonitoring systems were used). Two groups were defined: standard of care plus RPM (group 1) and usual standard of care (group 2). Primary outcome was defined as cardiovascular (CV) death and secondary outcome as HF hospitalizations. A subanalysis of patients with RPM and active multisensor algorithm was also performed.
Results: From 243 patients with HF and CIEDs, RPM was active in 145 (59.7%) patients (group 1) *vs.* usual standard of care in 98 (40.3%) (group 2). Mean age was 66.95 ± 11.848 years, 73.5% were males and follow-up was 52.34 ± 44.05 months. 126 (51.9%) patients had implantable cardiac resynchronization therapy (CRT) defibrillator (CRT-D), 96 (39.5%) transvenous implantable cardioverter defibrillator (ICD) and 21 (8.6%) CRT pacemaker (CRT-P). The aetiology of HF was ischemic in 43.7% and idiopathic in 37.7%, mean left ventricular ejection fraction was 34.33 ± 19.98% and there were 1.12 ± 1.98 HF hospitalizations per patient. Patients in group 1 were younger (65.16 ± 12.57 *vs.* 69.85 ± 10.00 years, p = 0.010) and had fewer HF hospitalizations compared to usual standard of care patients (group 2) (0.70 ± 0.17 *vs.* 1.67 ± 0.39; p = 0.021). CV death occurred in 12 (4.9%) patients in total and was significantly lower in group 1 (2 (13.8%) *vs.* 10 (10.2%), p = 0.001). From the patients with RPM, 31 (25.6%) had active multisensory device-based algorithm from two different telemonitoring systems and from these, 72 alerts were identified. Each patient had 2.41 ± 2.557 alerts with mean duration of 34.52 ± 29.791 days each. The number of HF alerts and total alert days correlated with the number of FV or TV (r = 0.487, p = 0.007 and r = 0.548, p = 0.002, respectively for number of alerts and total alert days) and HF hospitalizations (r = 0.505, p = 0.032 and r = 0.493, p = 0.037, respectively).
Conclusions: In remote locations, the integration of RPM in clinical practice, was associated with reduced CV death. The use of specialized multisensory device-based algorithms in an organized network may help identify patients with higher arrhythmic risk and recognise earlier signs of HF decompensation, reducing the need for HF hospitalizations.

PO 168. THE EFFECTS OF SACUBITRIL-VALSARTAN ON ICD INDICATION IN PATIENTS WITH HEART FAILURE

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Introduction: The use of an implantable cardioverter-defibrillator (ICD) to avoid sudden cardiac death is indicated in patients with symptomatic heart failure (HF) and LVEF ≤ 35% after ≥ 3 months of optimal medical therapy (OMT). Sacubitril-Valsartan (SV) has showed to reduce morbidity and mortality compared to ACEI, due to positive effects on cardiac remodelling.
Objectives: We sought to assess the impact of SV on ICD indication in patients with HF with reduced ejection fraction (HFrEF).
Methods: Retrospective study of patients with HFrEF and a previously implanted ICD who started therapy with SV on top of OMT, observed at an HF clinic between Jan 2018 and Jun 2020, with a follow up period until Oct 2021. Patients treated with SV pre-implantation were excluded.
Results: A total of 28 ICD carriers were included: 65.7 ± 8.7 years; 24 (85.7%) male; mean LVEF at baseline 26.8 ± 7.3%; Over a median follow-up of 9 [5-22] months, SV induced a significant decrease in LV end-diastolic volume index (169 mL/m^2 *vs.* 93 mL/m^2; p = 0.003) and in LV end-systolic volume index (124 mL/m^2 *vs.* 65 mL/m^2; p = 0.001), nonetheless it resulted in a non-significant increase in LVEF (28.5 *vs.* 32.3%). In 21.6% (6) of patients previously implanted with an ICD, LVEF improved to > 35% at follow-up, therefore they did not meet anymore eligibility criteria. At follow up: 8 (28.6%) were in NYHA class I, of which 50% achieved a LVEF > 35%; The remaining 18 (64.2%) were in NYHA class II-III and 2 (7.1%) were in NYHA class IV. Among patients deemed not more eligible for ICD, 50% (3) achieved the target dose of SV, 50% (3) were in NYHA class I and 50% (3) were in NYHA class II-III. One (17%) patient died for an unknown reason. HF hospitalization occurred in 4 (67%), of which 2 (33%) needed inotropic support and 1 (17%) was rehospitalised for HF. One (17%) patient had a ventricular tachycardia and consequently an appropriate ICD shock.
Conclusions: Our findings suggest that in HFrEF, SV may provide favourable effects on LV function and HF symptoms and after a period of therapy some patients may no longer meet the criteria for prophylactic ICD implantation. ICD implantation has a high economic cost, and it is not devoid of serious harm. Consequently, SV treatment may definitely turn out to be cost-effective *versus* ICD implantation. This paradigm opens an entirely new approach to prevent sudden death in HFrEF patients.

PO 169. VENTRICULAR TACHYCARDIA ABLATION IN NON-ISCHEMIC CARDIOMYOPATHY

Joana Brito, Pedro Silvério António, Sara Couto Pereira, Beatriz Valente Silva, Pedro Alves da Silva, Ana Margarida Martins, Catarina Simões de Oliveira, Afonso Nunes Ferreira, Gustavo Lima Silva, Patrícia Teixeira, Luís Carpinteiro, Nuno Cortez-Dias, Fausto J. Pinto, João de Sousa

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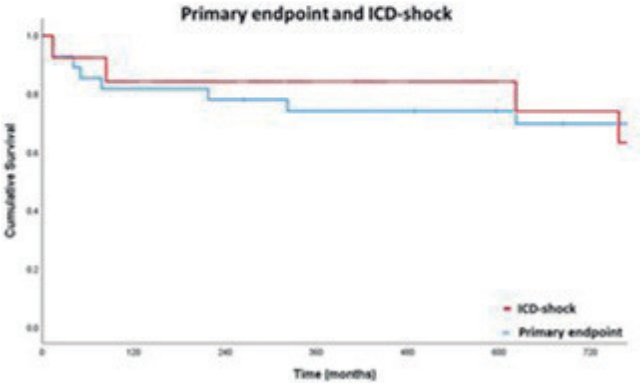
Introduction: Non-ischemic cardiomyopathies (NICM) is a heterogeneous group of diseases of the myocardium, which ventricular dilatation, systolic impairment or hypertrophy can occur. Most frequent etiologies described in studies are dilated idiopathic cardiomyopathy (DCM) 55-66% and arrhythmogenic right ventricular cardiomyopathy (ARVC) 5-13%. Radiofrequency catheter ablation (RCA) is being increasingly performed as adjunctive treatment to implantable cardioverter-defibrillator (ICD) in NICM patients (pts) and refractory ventricular tachycardia (VT). Despite, some recent studies shown that RCA in NICM patients have similar VT recurrence and death results compare to Ischemic cardiomyopathy (ICM), the best approach is not well establish.
Objectives: To report the safety and the long-term outcome after a single RCA procedure for VT in pts with NICM using a high-density substrate-based approach.

Methods: We conducted a prospective, observational, single-centre and single-arm study involving pts with NICM, referred for RCA procedure for VT using high-density mapping catheters. Procedural endpoints were VT noninducibility and local abnormal ventricular activities (LAVAs). Intraprocedural complications were analysed. Primary end-point was a composite of all-cause mortality, recurrence of VT and heart transplantation. Secondary end-point was survival free from appropriate ICD shocks.
Results: A total of 27 pts were included (92.6% males, mean age 60.6 ± 12, mean LVEF 34.8% ± 12.3%, mean NTproBNP 3,400 ± 3,700) and 78% with ICD and/or CRT-D. Major cardiovascular risk factors were HTN (37%) and smoker or ex-smoker (44.4%). The most prevalent etiology was DCM (67%). The epicardial access was the most common approach in 16 patients (59.3%). LAVAs were identified in all patients and sustained monomorphic VT was induced in 83%. LAVAs elimination and noninducibility were achieved in 85.2% and 60%, respectively. The overall complication rate was 14.7% and procedure-related death occurred in one case (3.7%). The commonest complications were pericardial effusion 7.4%, phrenic lesion in 3.7% and cardiogenic shock in 3.7%. After a mean follow-up of 28.7 ± 19.1 months, 10 (37%) pts died, 9 (34%) had cardiovascular admissions, 3 patients underwent cardiac transplant. A total of 7 (26%) pts received an appropriate shock of which 3 with arrhythmic storm and were referred to redo procedure. Freedom from the primary end-point was 56% and 50% pts at 1-year and 2-year, respectively, and freedom from appropriate ICD-shock was 91% and 81% at 1 and 2 years.

Etiology	N	%
DCM	18	67%
ARVC	2	7.3%
Miocarditis	6	22%
Sarcoidosis	1	3.7%



Conclusions: RCA of VT using a high-density mapping substrate-based approach is safety and effective by reducing the ICD shocks. According to the worst prognosis of this population, the results of RCA in mortality and heart transplantation are moderate. Larger studies are needed to evaluate the results of RCA in NICM pts.

PO 170. PRIMARY PREVENTION IMPLANTATION OF CARDIOVERTER DEFIBRILLATORS IN TRULY ASYMPTOMATIC PATIENTS – SHOULD WE RETHINK CURRENT RECOMMENDATIONS?

Fabiana Silva Duarte, M. Inês Barradas, André Viveiros Monteiro, Luís Oliveira, Cátia Serena, António Fontes, Carina Machado, Raquel Dourado, Emília Santos, Nuno Pelicano, Miguel Pacheco, Anabela Tavares, Dinis Martins

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Introduction: Implantable cardioverter defibrillator (ICD) implantation is recommended as primary prevention in symptomatic heart failure (HF) patients with reduced ejection fraction. However, there are conflicting data regarding the real benefit of prophylactic ICD treatment in New York Heart Association (NYHA) class I patients in which the eligibility remains ambiguous and based on the physicians' judgement and patients preference.
Objectives: To determine the clinical impact of ICD therapy in primary prevention and assessed differences in patients with NYHA I *vs.* other classes.
Methods: Retrospective single center cohort study including HF patients undergoing prophylactic ICD implantation. We divided patients according to their NYHA class and analyse cardiovascular death, all-cause mortality, arrhythmic events, appropriate device therapy (ADT) and hospitalizations due to HF decompensation.
Results: Seventy-six HF patients were accessed between April 2007 and January 2021, during a follow-up period of 49 ± 43.6 months. Mean age was 61.2 ± 9.7 years, 66 (86.8%) patients were male. At baseline, 29 (34.5%) were in NYHA I (Group 1), 34 (40.5%) in NYHA II (Group 2) and 12 (14.3%) in NYHA III/IV (Group 3). Fifty-one (67%) of all patients had ischemic etiology. No particular differences in baseline characteristics between groups were seen. Overall 7.9% of patients had significant ventricular arrhythmias (sustained ventricular tachycardia and/or ventricular fibrillation) and 39.5% had hospital admissions by HF decompensation. All-cause mortality were seen in 10.5% and cardiovascular death in 6.6%. During follow-up Group 1 had more non-sustained ventricular tachycardia (28.9 *vs.* 13.2 *vs.* 10.5%, p = 0.034) and appropriate ICD therapy (18.8 *vs.* 11.6 *vs.* 1.4%, p = 0.027). At multivariable analysis, obesity and atrial fibrillation were a significant predictors of ventricular arrhythmias but not NYHA class.
Conclusions: Heart failure patients with a reduced ejection fraction, even if asymptomatic, are at increased risk of significant arrhythmic events, and should therefore be considered for prophylactic ICD implantation. Future studies focusing in asymptomatic HF patients are needed to evaluate the value of ICD therapy in the modern era.

Domingo, 24 Abril de 2022 | 12:30-13:30

Sala Jardim de Inverno | Posters (Sessão 5 - Écran 3) - Doenças do Miocárdio e Pericárdio 2

PO 171. PREDICTORS OF IN-HOSPITAL LEFT VENTRICLE FUNCTION RECOVERY IN TAKOTSUBO SYNDROME

Geraldo Dias, Ana Filipa Cardoso, Tâmara Pereira, Mariana Tinoco, Filipa Almeida, António Lourenço

Hospital da Senhora da Oliveira, EPE - Guimarães.

Introduction: Left ventricular (LV) disfunction in Takotsubo Syndrome (TS) is usually temporary, and a full recovery is expected over time. Nevertheless, some patients are discharged from the hospital without a full recovery of LV systolic function. In this study, we sought to evaluate the in-hospital LV systolic function recovery, and investigate its clinical predictors.
Methods: We performed a retrospective study including patients diagnosed with TS in a single center from January 2018 to December 2020. Clinical, electrocardiographic, laboratory, and echocardiographic data were analyzed. Full recovery was considered when a preserved LV systolic function was documented within the time of hospital stay.
Results: A total of 38 patients were included, of whom 29 (76.3%) were female. The median age was 68.5 (IQR = 17.0) years. Twenty-two patients (57.9%) had full LV systolic function recovery before discharge, while 14 (36.8%) presented mild LV dysfunction and 2 (5.3%) moderate LV dysfunction. When comparing the 22 patients that experienced full recovery with the remaining 16, there were no significant differences considering age (71 IQR = 21 *vs.* 68.5 IQR = 17 years, respectively), gender distribution (77.3 *vs.* 75.0% females), prevalence of cardiovascular risk factors, atrial fibrillation or psychiatric disorders. Hospital stay median duration was comparable in

both groups (6, IQR = 5 *vs*. 6.5, IQR = 5 days). Similarly, no difference was found in laboratory values of troponin I, B type natriuretic peptide or C reactive protein. More patients in the residual dysfunction group presented an identifiable trigger (81.2 *vs*. 21.1%; p = 0.006) and newly developed conduction abnormalities (25.0 *vs*. 0.0%, p = 0.025). On the other hand, more patients in the group that experienced full recovery presented with severe dysfunction at admission (63.8 *vs*. 18.8%, p = 0.006), syncope (31.8 *vs*. 0.0%, p = 0.014) and T wave inversion in V5-V6 (100.0 *vs*. 71.4%, p = 0.017).
Conclusions: Our data suggests that a greater LV systolic dysfunction at presentation might predict a more complete recovery of LV function during hospital stay, and that gender differences aren't present between the groups. This is in contrast to some studies that report LV dysfunction and the male gender as negative factors for early recovery. Additionally, in this study, the presence of a trigger and newly developed conduction abnormalities were negatively associated to LV recovery.

PO 172. TAKOTSUBO SYNDROME: TEN-YEAR EXPERIENCE FROM A SINGLE CENTER

Carla Marques Pires, Barbára Pontes, Paulo Medeiros, Rui Flores, Fernando Mané, Cátia Oliveira, Rodrigo Silva, Inês Conde, António Gaspar, Pedro Azevedo, Miguel Alvares Pereira, Carlos Galvão Braga, Nuno Antunes, Jorge Marques

Hospital de Braga, EPE.

Introduction: Takotsubo Syndrome (TS) is characterized by a transient left ventricular dysfunction and remains a challenging and often misdiagnosed disorder. Previously, TS has been considered a benign disease, although current knowledge challenges this assumption.
Objectives: To characterize the population admitted with TS and to assess the predictors of worst in-hospital outcomes.
Methods: We performed a retrospective observational cohort study including 176 patients (pts) with the presumptive diagnosis of TS admitted at a single center over a 10-year period with at least one-year follow-up. 46 pts were excluded because TS was not confirmed. By multivariate analysis, we evaluate the predictors of admission Killip ≥ III and in-hospital complications (a composite of all-cause of death, ventricular arrhythmias/cardiac arrest, new-onset atrial fibrillation, atrioventricular block, mechanical complications, left ventricle thrombus and major bleeding).
Results: The study population consisted of 130 pts (90% female, mean age 66 years), of whom 89% had at least one Cardiovascular risk factor and 36% had psychiatric disorders. The trigger event was emotional stress in 36%, physical stress in 19% and unidentifiable in 45%. The median ejection fraction (EF) at admission was 38%; 82% of TS pts displayed an apical ballooning (AB) pattern (Typical TS). Regarding clinical presentation, 12% had Killip ≥ III at admission. Over time, there was a trend to a increase in the number of pts diagnosed with atypical TS, although this was not statistically significant. Patients with atypical TS were younger (60 ± 14 *vs*. 67 ± 11, p = 0.009) and had higher admission EF (45% ± 8 *vs*. 38% ± 9, p = 0.006). The trigger event and the level of PNBP were similar across different variants. A significant increase use of CMR was observed over the years (p = 0.001). During hospitalization, 98.5% of pts were treated with at least one disease modifying drug, around 19.2% of pts had at least 1 in-hospital complication and 1.5% died. In the multivariate analysis, left ventricular systolic dysfunction at admission (OR = 3.2, p = 0.019) and higher grades of mitral regurgitation (OR = 2.2, p = 0.02) were independent predictors of Killip ≥ III at admission. Additionally, history of atrial fibrillation (OR = 17.1, p = 0.002), maximum Killip class during hospitalization (OR = 3, p < 0.001) and the in-hospital usage of beta-blockers (OR = 0.2, p = 0.03) were independent predictors of in-hospital complications. During follow-up, 1.5% of pts had recurrence and 11.5% died.
Conclusions: Despite increased awareness TS is still poorly recognized, namely atypical variants which were younger and with higher admission EF. TS is not as benign as initial though and the independent predictors of in-hospital complications were previous atrial fibrillation and maximum Killip class. In-hospital usage of beta-blockers had a protective effect.

PO 173. TRANSTHYRETIN AMYLOID CARDIOMYOPATHY (ATTR-CM): A POTENTIAL ROLE FOR CARDIOPULMONARY EXERCISE TESTING

Rita R. Amador, Mariana Paiva, Gonçalo Cunha, Pedro Lopes, Sérgio Maltês, Catarina Oliveira, Sofia Augusto, Catarina Brízido, Christopher Strong, Anaí Durazzo, Carlos Aguiar, Bruno M. I. Rocha, Miguel Mendes

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

Introduction: Risk stratification tools used in heart failure (HF) patients are useful yet understudied in specific aetiologies. We aimed to evaluate the feasibility and safety of cardiopulmonary exercise testing (CPET) in a cohort of patients with Amyloid Transthyretin Cardiomyopathy (ATTR-CM).
Methods: This is a single-centre study of patients diagnosed with ATTR-CM followed in our dedicated rare disease program who underwent CPET since November 2020. As per site protocol, ATTR-CM was confirmed according to the algorithm of Gilmore and colleagues. Patients performed CPET on a treadmill using an exercise protocol with progressive increase in workload, as tolerated. The test was considered maximal if a respiratory exchange ratio (RER) ≥ 1.05 was obtained.
Results: Overall, we identified 60 patients with ATTR-CM, of whom 23 underwent CPET (mean age 82 ± 6 years; all male with symptomatic HF). The reasons for non-referral included death (n = 14), frailty (n = 13) and recent diagnosis with ongoing investigation (n = 10). Most patients (n = 22) performed CPET with either one of two HF-adapted exercise protocols arranged by our exercise physiology team. Mean RER was 1.05 ± 0.09, with a maximal CPET in 15 (65%) patients. Out of the group who did not achieve an RER > 1.05 (n = 8), all patients stopped the test due to fatigue. Mean peak oxygen consumption (pVO2) was 14.6 ± 3.7 mL/Kg/min. Ventilatory thresholds - VT1 and VT2 were

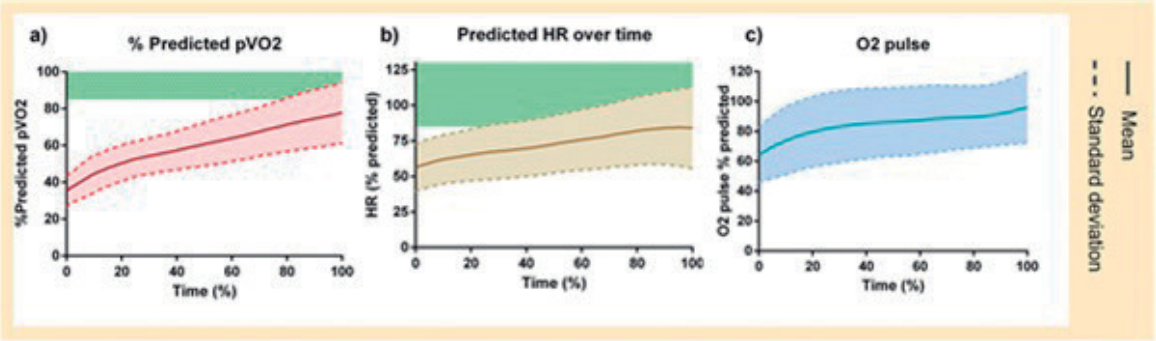


Figure 1 – Graphic representation of a "typical" CPET of an ATTR-CM patient using the mean and standard deviation of the percentage of the maximal predicted peak O2 consumption (pVO2) (a), Heart Rate (HR) (b) and O2 pulse (c)

PO 173 Figure

identified in 21 (87%) and 10 (43%) patients, respectively. Median VE/VCO2 slope was 41 (36-47). Overall, 15 (65%) had exercise ventilatory oscillations. The graphical CPET of the cohort is shown in the figure. The strongest correlations were noted between the percentage of predicted pVO2 (r = 0.493; p = 0.027) with left ventricular ejection fraction and between VE/VCO2 slope and the interventricular septum thickness (r = 0.486; p = 0.035). There were no life-threatening events nor malignant arrhythmias reported.
Conclusions: This pilot study shows CPET to be feasible and well-tolerated in a small subset of patients with ATTR-CM and symptomatic HF. HF-adapted protocols allowed a maximal effort in more than half of the cohort, in parallel with the attainment of submaximal parameters. Whether CPET has prognostic value in ATTR-CM is worth being further assessed.

PO 174. TRANSTHYRETIN CARDIAC AMYLOIDOSIS DUE TO RARE MUTATIONS IN PORTUGUESE PATIENTS

Catarina Martins da Costa, Ana Filipa Amador, João Calvão, Tânia Proença, Miguel Carvalho, Ricardo Alves Pinto, Catarina Amaral Marques, André Cabrita, Raquel Mota Garcia, Isabel Tavares, Goreti Moreira, Teresa Pinho, Susana Fernandes, Elisabete Martins, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Transthyretin amyloidosis (ATTR amyloidosis) is a heterogeneous disorder and a frequent cause of cardiac amyloidosis. The hereditary form is associated with more than 100 different transthyretin (TTR) genetic variants. In Portugal, the Val50Met mutation is particularly frequent and associated with an early neurologic phenotype. Another mutation, the ATTR Val122Ile variant, is predominantly associated with severe cardiomyopathy and is a well-known cause of cardiac amyloidosis between African-American patients frequently described in US cohorts. So far, very few cases of this mutation have been reported in Caucasian patients including Portuguese patients.
Objectives: We aimed to study patients with hereditary cardiac ATTR amyloidosis in our center. Clinical data were retrospectively obtained from electronic records.
Results: We identified 4 patients (72 years old mean age; 3 men) with cardiac amyloidosis, 3 with the Val122Ile variant and 1 with His4Ile (individual characteristics are described in the table). All patients were Caucasian. Patients 1 to 3 presented a variant in exon 4 (the most commonly affected exon). All imaging data including bone cardiac scintigraphy (CS), were in accordance with ATTR amyloidosis diagnosis. They presented with congestive heart failure or syncope. It took on average 2 years from diagnosis to the first heart failure hospitalization. Patient 3 died with advanced heart failure after being considered no candidate for heart transplantation. Interestingly enough this patient carries the Val122Ile variant in homozigoty. Patient 4 was exceptional since she presented a *new* variant in exon 1. She was in NYHA I and had no hospitalization during follow-up. Echocardiogram showed left ventricular hypertrophy and the CS a Perugini score of 0. Cardiac magnetic resonance was suggestive of infiltrative cardiomyopathy and the myocardium biopsy confirmed amyloidosis. She had particularly exuberant hepatic amyloidosis. The family screening revealed that patient 1's 47 years old son, with hypertension, carries the Val122Ile variant. At the time of diagnosis, he was asymptomatic; transthoracic echocardiogram showed basal interventricular septum moderate hypertrophy (15 mm) and the Perugini score was 0. Patient 2 has 1 daughter, who was negative for TTR gene variants, and one son who refused to perform family screening.
Conclusions: Four cases with rare ATTR variants (Val122Ile and His4Ile) were identified in our center, and the family screening allowed the diagnosis of 2 asymptomatic carriers. This study reinforces the importance of the genetic test in patients with cardiac ATTR amyloidosis. Larger studies are needed to evaluate the prevalence of non Val50Met ATTR mutations in Portuguese patients with (cardiac) amyloidosis.

PO 175. SPONGY MYOCARDIUM OR LEFT VENTRICULAR NONCOMPACTION: WHICH FACTORS IMPACT PROGNOSIS?

José Miguel Viegas, Sílvia Aguiar Rosa, Pedro Brás, Isabel Cardoso, Pedro Rio, Ana Teresa Timóteo, Ana Galrinho, Luísa Moura Branco, Rui Cruz Ferreira

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

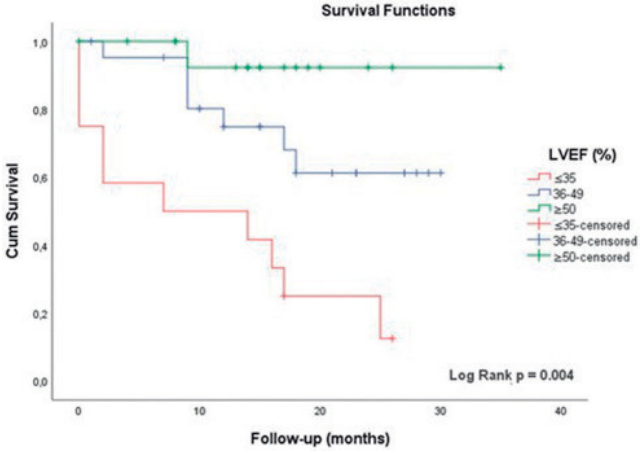
Introduction: The presence of prominent left ventricular (LV) trabeculation fulfilling noncompaction cardiomyopathy (LVNC) criteria on routine echocardiogram is frequently encountered; however the prognostic significance of these findings remains uncertain.
Objectives: To identify clinical and echocardiographic features associated with adverse clinical events in patients (P) with LVNC phenotype.
Methods: Retrospective analysis of all P satisfying LVNC criteria assessed by Chin and Jenni methods between January 2018 and June 2020 in a single tertiary care centre. Endpoint was composite of cardiovascular death, heart failure hospitalization, ventricular arrythmias and nonfatal stroke. Several possible prognostic factors were evaluated by Cox regression.

Table 1. Patient's individual characteristics.

	Patient 1	Patient 2	Patient 3	Patient 4
Diagnoses' age	73	69	66	78
Variant	Val122Ile	Val122Ile	Val122Ile	His4Ile
Genotype	Heterozigoty	Heterozigoty	Homozigoty	Heterozigoty
Perugini visual score	3	3	3	0*
Other organ dysfunction	Sensitive Polyneuropahy; CKD, 3a	-	Polyneuropahy; CKD, IV Liver dysfunction	Liver
Cardiac presentation	Congestive heart failure	Hyperthrophic cardiomiopathy	Congestive heart failure	Light dyspnea
Time to first event (year)	2	3	1	0
Rhythm disturbance	Advanced AVB	Advanced AVB	-	-
Treatment	Tafamidis	Waiting for tafamidis approval	Palliative (died during follow-up)	No

PO 174 Figure

Results: 32P, 75% male, mean age 45 ± 18 years. 21P (66%) had associated heart conditions, mainly dilated cardiomyopathy (10P), followed by ischemic, congenital and valvular heart disease. 2P were in postpartum period and 1P was an athlete. Family history of cardiomyopathy was present in 6P (19%). Genetic testing performed in 8P demonstrated variants in TTN (3P), MYH6, MYH7, PNPLA2, RBM20, and DSP genes. Mean NYHA classification was 1.9 ± 0.8, with 31% in NYHA I. Regarding echocardiographic parameters, LV end-diastolic and end-systolic volume index (LVESVI) were 84 (41) and 51 (37) ml/m², respectively, LV ejection fraction (LVEF) 39 ± 12%, global longitudinal strain (GLS) -11 ± 5%, and pulmonary artery systolic pressure (PASP) 39 ± 13 mmHg. Mean number of affected segments 6.4 ± 1.8, with hypertrabeculation most noticeable in apical and lateral segments. Over a mean follow-up of 18 ± 8 months, survival free of composite endpoint was 50%. In unadjusted Cox regression, hypertension (p = 0.034), chronic kidney disease (p = 0.048), NYHA class (p < 0.001), LVESVI (p = 0.042), LVEF (p = 0.002), GLS (p = 0.022) and PASP (p = 0.017) were associated with increased incidence of events. ECG parameters, laboratory markers, RV function, number of affected segments and extension of noncompacted layer did not significantly influence outcomes. After covariate adjustment, NYHA class (HR: 3.203, 95%CI: 1.212-7.128, p = 0.016) and LVEF (HR: 0.910, 95%CI: 0.825-0.953, p = 0.035) (Fig.) remained independent predictors of adverse events.



Conclusions: P satisfying criteria for LVNC had heterogeneous clinical and morphological characteristics. NYHA class and LVEF were associated with worse outcomes. The number of affected segments and extension of noncompacted layer were not related with the prognosis.

Domingo, 24 Abril de 2022 | 12:30-13:30

Sala Jardim de Inverno | Posters (Sessão 5 - Écran 4) - Insuficiência Cardíaca 5 - Marcadores Serológicos

PO 176. HYPERKALEMIA AND HEART FAILURE WITH REDUCED EJECTION FRACTION: PREVALENCE AND PROGNOSTIC IMPACT ON A PORTUGUESE POPULATION

Marta Azevedo Ferreira[1], Sara Gonçalves[2], Tatiana Duarte[2], Ana Sousa[2], Crisálida Ferreira[2], Joana Ferreira[2], Joana Simões[2], Rui Caria[2]

[1]Hospital Beatriz Ângelo. [2]Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo.

Introduction: Hyperkalemia (hyperK) is a frequent complication in patients (pts) with heart failure (HF). This complication leads to discontinuation or reduction of disease modifying therapy (DMT) exposing the pts to a higher cardiovascular risk. However, data regarding prevalence and clinical impact of hyperK in Portuguese pts with heart failure with reduced ejection fraction (HFrEF) are scarce.
Objectives: To evaluate the prevalence and prognostic impact of hyperK in pts with HFrEF.
Methods: We evaluated 103 consecutive pts with HFrEF admitted in a Heart Failure clinic in 2019. The population was characterized according to baseline and therapeutic characteristics. The prevalence of hyperK - defined as serum potassium (K+) > 5.0 mEq/L - was determined. The population was divided in two groups according to the presence or absence of hyperK. The groups were compared regarding basal characteristics. The need to reduction/discontinuation of DMT was determined. The impact of hiperK on the risk of HF hospitalization and mortality at 1 year was evaluated. Pts with a follow up < 3 months were excluded. Mean follow up was 18 3 months.
Results: We studied 103 pts (76.7% male, mean age 65.2 years ± 11.5). Mean left ventricular ejection fraction (LVEF) was 29.9 ± 8.8%, 57% (n = 59) had ischemic etiology, 88.3% (n = 91) had hypertension; 37.9% (n = 39) had Diabetes Mellitus (DM) and 63% (n = 65) had chronic kidney disease (CKD), with a mean estimated glomerular filtration rate (eGFR) of 69.5 ml/min/1.73 m². At the last follow-up pts were under angiotensin receptor neprilysin inhibitor (ARNI) in 64.1% (n = 66), mineralocorticoid receptor antagonist (MRA) in 70.9% (n = 73), angiotensin converting enzyme inhibitors (ACEi)/ angiotensin receptor blockers (ARBs) in 30.1% (n = 31), sodium-glucose cotransporter 2 inhibitors (SGLT2i) in 63.1% (n = 65) and β-blockers in 96.1% (n = 99) of the cases. HyperK was present in 61.2% (n = 63) of the pts. Pts with hyperK were older (62 ± 11 *vs.* 67 ± 11 years, p = 0.047) and had lower eGFR (74 ml/min/1.72 m² *vs.* 52 ml/min/1.72 m², p < 0.001). MRA were reduced in 10% (n = 6) of the pts and suspended in 23% (n = 14). ARNI were reduced in 1.6% (n = 1) of the hiperK pts and suspended in 5% (n = 3) and ACEi/ARA were suspended in 3% (n = 2). HyperK > 5.5 mEq/L (n = 33) was associated with higher rates of hospitalization (27.7 *vs.* 11.4% p = 0.043). Nevertheless, in multivariate analysis hiperK was not an independent predictor of HF hospitalization or mortality.
Conclusions: HyperK is frequent in pts with HF and limits the use of drugs with prognostic benefit. The prevalence of hyperK was high in this population. Although it frequently led to DMT reduction/suspension, hyperK was not associated with an independent increased risk of hospitalization or mortality in this population.

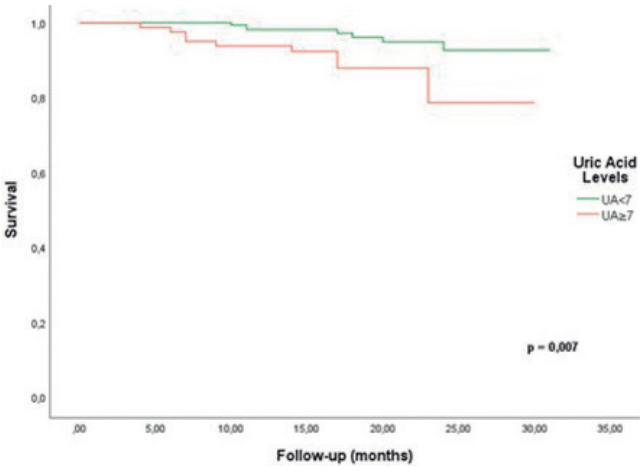
PO 177. SERUM URIC ACID LEVELS PROGNOSTIC VALUE IN CHRONIC HEART FAILURE PATIENTS WITH REDUCED EJECTION FRACTION

Pedro Rocha Carvalho, José Monteiro, Catarina Carvalho, Marta Bernardo, Ana Baptista, Rita Godinho, Miguel Moz, Paulo Fontes, Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de São Pedro.

Introduction: The relationship between serum uric acid (UA) and cardiovascular disease has been a matter of debate over the last years. Increased levels of UA may be either a marker of poor prognosis, which could be used in conjunction with other risk factors, or an active player in the pathogenesis of heart failure (HF) and thereby representing a novel and attractive therapeutic target.
Objectives: To study the prognostic impact of high levels of UA in patients with HF with reduced ejection fraction (HFrEF).
Methods: Retrospective study of consecutive patients admitted to a single heart failure outpatient clinic from February/2018 to December/2020, with an initial left ventricular ejection fraction (LVEF) < 50%. The primary outcome was cardiovascular mortality.
Results: A total of 267 patients were selected, with a mean age of 71.1 ± 11.1 years old, 69.0% were males and 40.0% had ischemic cardiomyopathy. In the initial evaluation, 31.5% had UA levels ≥ 7 mg/dl. These patients were mostly man (83.7 *vs.* 62.6%, p < 0.001) and had higher diuretic doses (30.2 *vs.* 20.2%, p = 0.071), but had less arterial systemic hypertension (61.4 *vs.* 72.8%, p = 0.041). Both groups had similar age (70.9 ± 11.8 *vs.* 71.4 ± 10.6 years, p = 0.727) and LVEF (30.1 ± 10.1 *vs.* 31.2 ± 7.7%, p = 0.323). Incidence of diabetes *mellitus* (35.1 *vs.* 34.1%, p = 0.868), active or previous smoking history (11.7 *vs.* 7.0%, p = 0.456 and 24.7 *vs.* 24.9%, p = 0.456, respectively),

functional NYHA class ≥ 2 (93.8 *vs.* 94.1%, p = 0.207), chronic kidney disease (15.4 *vs.* 11.0%, p = 0.327) and allopurinol prescription (21.2 *vs.* 14.0%, p = 0.151) were also comparable between both groups. During a median follow-up of 17 months (IQR 14-31), 17 patients (6.4%) experienced the primary outcome. After adjusting for sex, arterial hypertension and diuretic doses, UA levels ≥ 7 mg/dl on the first evaluation were an independent predictor of cardiovascular death in HFrEF (HR 2.73, 95%CI: 1.01-7.42).



Conclusions: In our heart failure outpatient clinic, patients with HFrEF with UA levels ≥ 7 mg/dl on the first evaluation had a higher risk of cardiovascular death. Larger randomized controlled trials are needed to predict the real significance and the eventual benefit of a new treatment approach for these patients.

PO 178. IRON STATUS VARIATION IN ACUTE HEART FAILURE: A PROSPECTIVE STUDY - RELEASE OF PRELIMINARY DATA

Gonçalo Durão-Carvalho, André Maia, Margarida Pimentel Nunes, Ana Lopes dos Santos, Anabela de Carvalho, Hugo Raposo Inácio, Joana Gamelas de Carvalho, Bruno Rocha, Gonçalo Cunha, Joana Duarte, Catarina Rodrigues, Célia Henriques, Inês Fornelos Araújo, Cândida Fonseca

Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de S. Francisco Xavier.

Iron deficiency (ID) is a frequent comorbidity in Heart Failure (HF) with symptomatic and prognostic impact and can be assessed through biomarkers, such as ferritin and transferrin saturation (TSAT). Due to the proinflammatory state characteristic of HF, ferritin cutoffs used to define ID are higher (absolute ID [AID] < 100 ng/mL or functional ID [FID] 100-299 ng/mL and TSAT < 20%) than in other conditions. In acute and frequently congestive HF, the optimal timing for biomarkers assessment and ID correction is not known. To address this gap in evidence, we performed a pilot study aiming to compare the Iron Status (IS) of patients at admission and at hospital discharge. The preliminary results are shown. A prospective observational study of patients admitted to an HF unit between August-October 2018 and June-November 2021 was done. Their IS at admission and discharge (after decongestion) was compared. Out of 98 eligible patients, we excluded those without the complete blood workup (n = 27), those who received ferric carboxymaltose (FCM) (n = 13) or blood transfusions (n = 8) between admission and discharge workup, those who died (n = 5), disease states which might influence IS or hemoglobin level (2 with an active infection at discharge, 1 with polycythemia), or therapy with oral iron before admission (n = 1). Regarding the included patients, 44% were women, median age was 76 years [63.5; 82] and median length of hospital stay was 7 days [5; 12]. Left ventricle ejection fraction was reduced in 46%, preserved in 44%, improved in 5% and mildly reduced in 5%. Comparing IS at admission and discharge, absence of ID was verified in 44 *vs.* 68% of patients, FID in 39 *vs.* 20%, and AID in 17 *vs.* 12%. Specifically, 26 patients (64%) maintained their IS; 9 (22%) with FID and 3 (7%) with AID were no longer iron deficient; 2 (5%) without ID developed FID; one patient (2%) changed from FID to AID. Comparing median admission and discharge values, hemoglobin was 12.6 g/dL (*vs.* 12.5 g/dL, Δ = 0), ferritin was 237 ng/mL (*vs.* 268 ng/mL, Δ = +9), TSAT 18% (*vs.* 24%, Δ = +5, Wilcoxon Signed Rank Test p = 0.001). In addition, the median accumulated fluid balance was -820 mL [-4,650; 707.5], and median ΔNT-proBNP was -2,049 pg/mL [-6,275; -290]. The transition from hypervolemia to euvolemia appears to parallel an improvement in IS. Thus, the decision to prescribe FCM could be deferred until patient iron status is reevaluated at discharge, in order to avoid unnecessary administrations.

PO 179. HIGH PREVALENCE OF POLYCYTHEMIA IN HEART FAILURE PATIENTS

Joana Silva Ferreira, Sara Gonçalves, José Maria Farinha, Ana Esteves, António Pinheiro, Rui Coelho, Rui Caria

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

Introduction: Secondary polycythemia is associated with states of oxygen rarefaction such as altitude and lung disease. Heart failure (HF), similarly to lung disease, can be associated with periods of hypoxemia. However, the prevalence of polycythemia in HF patients has not yet been reported.
Objectives: To assess the prevalence of polycythemia in patients hospitalized for heart failure, whether it persists after hospital discharge and potential risk factors for this anomaly.

	Persistent polycythemia (N=10)	No or transitory polycythemia (n=91)	p
Patient characteristics and comorbidities			
Age	51 (46—60)	69 (60-76)	**<0.001**
Male	9 (90%)	62 (68%)	0.274
Preserved ejection fraction	0	22 (24%)	0.112
Ejection fraction	29 (24-36%)	30 (24-42%)	0.285
Smoking (current or past history)	7 (70%)	3 (30%)	**0.048**
Chronic obstructive pulmonary disease	0	10 (11%)	0.592
Sleep apnea	3 (30%)	10 (11%)	0.118
Multivariate analysis			
Age			**0.010**
Smoking			0.080
Ejection fraction (%)			0.977
Creatinine (mg/dL)			0.825

PO 179 Figure

Methods: We conducted an observational study including all consecutive patients (with no exclusion criteria) admitted in the Cardiology ward for HF between August 2018 and November 2021, which we compared with a control group of non-HF hospital admissions. Polycythemia was defined, according to the World Health Organization criteria, as hematocrit (Htc) > 49% or hemoglobin (Hb) > 16.5 g/dL in males and Htc > 48% or Hb > 16 g/dL in females. Patients (pts) who presented Hb or Htc values compatible with polycythemia in more than one assessment were then divided into two groups – "persistent polycythemia (PP)" and "transitory polycythemia" – according to whether the elevated Htc/Hb persisted or resolved after hospital discharge, respectively.
Results: We studied 101 pts admitted for HF (70% male with a median age of 68 years) with a median ejection fraction (EF) of 30%. 10% of patients in the HF group had chronic obstructive pulmonary disease and 13% had sleep apnea. The control group consisted of 101 pts, mostly admitted for acute coronary syndrome (67%) and dysrhythmias (20%). Apart from the higher prevalence of non-preserved ejection fraction in the HF group (78 *vs.* 26%, p < 0.001) and the higher prevalence of dyslipidemia in the non-HF group (62 *vs.* 45%, p = 0.014), there were no other significant differences in demographics and comorbidities between two groups. The prevalence of polycythemia in pts hospitalized for HF was 21%, from which approximately half persisted after discharge, a prevalence much higher to the one observed in the control group (10 *vs.* 2%, p = 0.007). Within the HF group, pts with PP were younger and were more often smokers. Prevalence of COPD and sleep apnea did not significantly differ. On multivariate analysis, age was the only independent predictor of PP.
Conclusions: This study reports a 10% prevalence of persistent polycythemia in patients with HF. To our knowledge, this is the first study to report this high prevalence of polycythemia in HF patients, which is much higher than the one observed in non-HF patients and comparable with its reported prevalence in COPD patients. We speculate that a response to chronic or repeated episodes of hypoxemia might promote erythropoietin (EPO) production and consequently result in a secondary polycythemia. Further studies with a larger sample (and dosing of EPO) are necessary to confirm this prevalence and establish the prognostic implications of PP.

PO 180. PLASMA VOLUME VARIATION AND GLOMERULAR FILTRATION RATE IN HEART FAILURE ADMISSIONS

Carolina Pereira Mateus, Mariana Passos, Inês Fialho, Joana Lima Lopes, Marco Beringuilho, João Baltazar Ferreira, David Roque

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

Introduction: The use of diuretics as management of Acute Heart Failure (AHF) is part of our daily routines. A known side effect of overly vascular volume depletion is worsening of renal function, which can also lead to activation of Renin-Angiotensin-Aldosterone System (RAAS), perpetuating the maladaptive pathophysiological mechanisms. The goal of this study was to assess the correlation between vascular volume contraction after diuretic usage, and glomerular filtration rate (GFR) in patients admitted for AHF.
Methods: Single center, retrospective study involving 258 consecutive patients admitted a district hospital's Emergency Department in a period of 6 consecutive months (median age of 74.3 ± 17.3 years, 54.3% female). Patients included exhibited AHF, defined as ≥ 2 clinical signs of Heart Failure, and were treated with diuretics. Differences between discharge and admission laboratory values for Haematocrit (ΔHtc), Haemoglobin (ΔHb), Sodium (ΔNa) and GFR (ΔGFR), using the Modification of Diet in Renal Disease (MDRD), were calculated. Weight difference was not taken into consideration because of inconsistent data. The relative change in plasma volume (PV) from admission until discharge was estimated using the formula: {([Hb admission/Hb discharge] × [(100-Htc discharge)/(100-Htc admission)])-1} × 100.
Results: From a total of 258 patients admitted with AHF, 11,6% were excluded for lacking laboratory assessment at admission or discharge, as well as patients suffering from documented bleeding or blood transfusions during the hospital stay. After furosemide treatment (mean of the maximum dosage was 69.3 ± 17.3 mg), PV increased in 61% (n = 139) and decreased in 39% (n = 89). Two groups were established, according to the mean percentage of PV (2.5%): Group 1 (G1), with preserved volume [%PV > 2.5% (varying between > 2.5% and 44%, n = 101] and Group 2 (G2), with non-preserved volume [%PV < 2.5% (varying between -13.8% and < 1.5%, n = 127]. ΔNa did not exhibit significant statistical differences between both groups (mean 0.73 ± 3.52 in G1 *vs.* 1.52 ± 4.56mEq in G2, p = 0.396). Patients from G2 had significantly less positive variations in ΔHb (mean of -1.34 ± 0.78 in G1 *vs.* 0.57 ± 1.01 g/dL in G2, p = < 0.001) and in ΔHtc (mean of -4.66 ± 2.69% in G1 *vs.* 2.21 ± 3.23% in G2, p = < 0.001). Also, patients in G2, with the greater PV contraction are those who have the lowest GFR during hospital stay (mean of 49.7 ± 25.9 in G1 *vs.* 41.8 ± 19.8 ml/min/1.73m^2 in G2, p = 0.045).
Conclusions: This study was able to find a correlation between the percentage of variation in plasma volume and the nadir of GFR in patients with AHF under diuretic treatment. Hb and Htc levels revealed as useful tools to assess congestion and volume contraction. Sequence calculation of PV variation may be an additional measure to be taken into consideration to avoid over-using diuretics and reduce the incidence of worsening renal function during hospital admission.

Domingo, 24 Abril de 2022 | 12:30-13:30

Sala Jardim de Inverno | Posters (Sessão 5 - Écran 5) - Exercício e Reabilitação Cardíaca 2

PO 181. EXERCISE TRAINING IMPROVES CARDIORESPIRATORY FITNESS IN HEART FAILURE PATIENTS: A LOOK BEYOND PEAK OXYGEN CONSUMPTION

Cristine Schmidt[1], Priscilla Gois Basílio[2], Maria Isilda Oliveira[2], Inês Lopes[3], Sandra Magalhães[4], Preza Fernandes[4], Rita Pinto[1], Fernando Ribeiro[5], Mário Santos[4]

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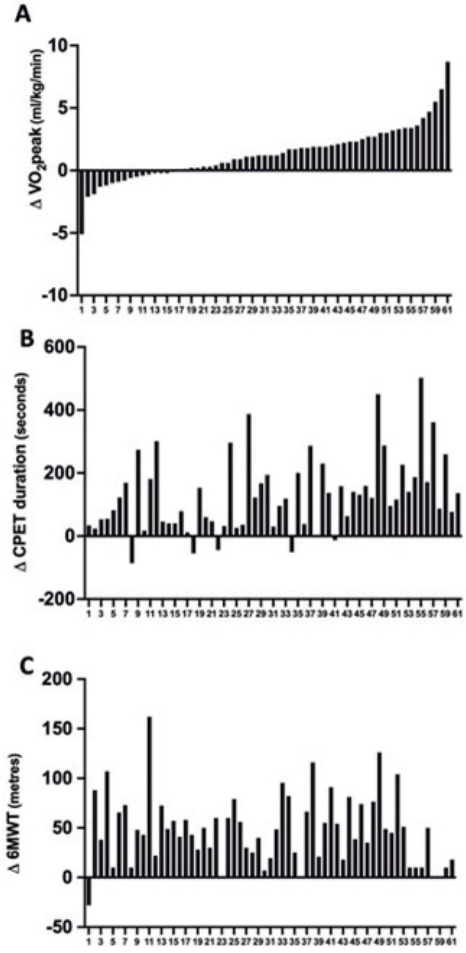
Introduction: Exercise-based cardiac rehabilitation (ExCR) is an essential component in the treatment of heart failure (HF), as it improves functional capacity and quality of life, and reduces hospitalization rates. Cardiorespiratory fitness (CRF), as assessed by peak oxygen consumption (VO_2 peak) at a cardiopulmonary exercise test (CPET), is commonly used to assess the efficacy of ExCR because it is independently associated with all-cause mortality and HF hospitalization. To date, it remains poorly understood whether HF patients who do not show improvements on VO_2 peak after an ExCR program exhibit a concordant response in relation to other submaximal CRF parameters.
Objectives: To study the impact of an ExCR program on VO_2 peak, duration of the effort, and the distance walked in the six-minute walking test (6MWT) in HF patients.
Methods: This is a retrospective study that evaluated consecutive HF patients who attended and completed a phase-2 ExCR program between September 2019 to November 2021. The ExCR program consisted of a 12-week combined exercise program (60-80% of VO_2 peak), 2 training sessions/week, for a total of 24 sessions. All patients performed a CPET and the 6MWT before and after the ExCR program.
Results: Sixty patients (81%) who had an attended rate for at least 80% of exercise sessions were included in the study (65% males; age: 63 ± 12y; LVEF: 36 ± 11%). Overall, VO_2 peak improved by 1.31 ml/kg/min (95%CI: 0.7 to 1.8; p < 0.001), the duration of the CPET improved in 2.11 minutes (95%CI: 1.40 to 2.42; p < 0.001) and the distance at the 6MWT increased 48 meters (95%CI: 38 to 57; p < 0.001). VO_2 peak did not improve (a variation less than +10% of baseline) in 57% of patients. From those, 88% improved the duration of the test (> 10s). The 8% of patients that did not improve these 2 parameters, all had improved the walked distance in the 6MWT (+30m).

Figure 1: Response to different cardiorespiratory fitness parameters after an exercise-based cardiac rehabilitation program. A: Δ peak oxygen consumption; B: Δ duration of exercise test; C: Δ distance at the six-minute walking test.



PO 181 Figure

Conclusions: Our results suggest that the assessment of submaximal physiological variables beyond VO_2 peak can provide a more comprehensive understanding of the impact of ExCR programs in HF patients. Further studies are needed to assess the prognostic significance of these submaximal variables.

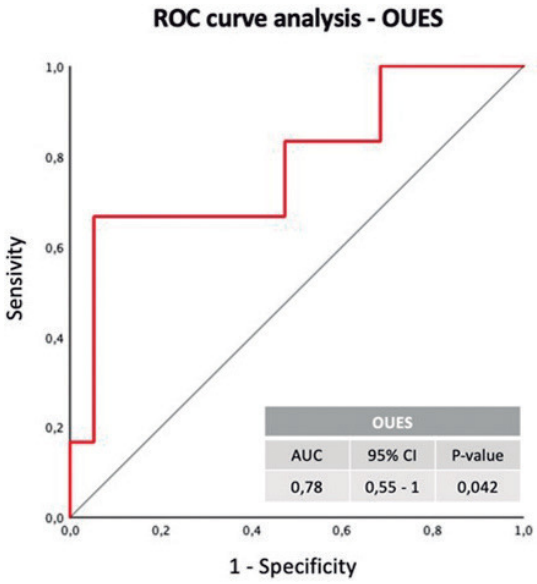
PO 182. VALUE OF CARDIOPULMONARY EXERCISE TEST SUBMAXIMAL PARAMETERS IN THE ASSESSMENT OF AORTIC STENOSIS PATIENTS

Rita Reis Santos, Mariana Paiva, Daniel a. Gomes, João Presume, Maria João Andrade, Luís Raposo, Anaí Durazzo, Luís Moreno, Miguel Mendes

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

Introduction: Exercise test is recommended for risk stratification of asymptomatic patients with severe aortic stenosis (AS), although a significant number of patients can't perform a maximal exercise test, increasing the potential value of sub-maximal parameters for the assessment of these patients.
Objectives: To assess which parameters could be useful for risk stratification in case of a submaximal Cardiopulmonary Exercise Testing (CPET) in asymptomatic patients with severe AS.

Methods: Retrospective evaluation of adult patients with asymptomatic severe AS, in a single center, who underwent CPET between December 2016 and November 2021. All patients underwent a treadmill CPET using an exercise protocol with progressive increase in workload. Patients were divided in group A (maximal CPET) or group B, respectively, if respiratory exchange ratio (RER) was > 1.10 at peak exercise or below this value. Known parameters accessed in a submaximal CPET were evaluated: mean minute ventilation/carbon dioxide production slope (VE/VCO2), VO2 value in first ventilatory threshold (VT1), peak circulatory power, and oxygen uptake efficiency slope (OUES).
Results: CPET was performed in 25 patients with severe asymptomatic AS (80 years ± 7 years, 56% male), median AVA was 0.86 cm^2 [IQR 0.65-0.95 cm^2] and transaortic pressure gradient was 46 mmHg [IQR 41-55 mmHg]. The most used protocol was a ramp slope. Nineteen patients (76%) didn´t reach a RER> 1.10 (group B) due to respiratory (26%) or peripheral limitation (53%). Comparing both groups, group B patients showed a shorter duration of exercise of (8 ± 3 min *vs.* 9 ± 4 min, p = 0.422), and a lowest mean peak VO2 (16.3 ± 3.6 *vs.* 20.5 ± 6.9 ml/kg/min, p = 0.207). In our population, bivariate analyses demonstrated that OUES was the only submaximal parameter that could discriminate both groups: Group B patients had the lowest values (1.53 [IQR 1.47-1.70] *vs.* 1.94 [IQR 1.56-2.11], p = 0.042). ROC curve analysis of OUES values revealed an AUC of 0.78 (p = 0.042) for maximal CPET prediction. The cut-off point with most sensitivity (S) and specificity (E) obtained using the Youden index (0.62) was 1.9 (S ≈ 67%; E ≈ 95%) (Fig.).



Conclusions: In our cohort of asymptomatic AS patients, even with submaximal CPET, OUES accurately identify patients with higher degrees of functional limitation. Whether OUES is useful as prognostic marker to the workflow treatment of AS it's worth to be assessed prospectively.

PO 183. CARDIAC OPTIMAL POINT: IDENTIFYING HIGH RISK PATIENTS FOR AN OPTIMAL APPROACH

Pedro Alves da Silva, Pedro Silvério António, Sara Couto Pereira, Joana Brito, Beatriz Valente Silva, Ana Margarida Martins, Ana Beatriz Garcia, Catarina Simões de Oliveira, João Santos Fonseca, Inês Aguiar-Ricardo, Nelson Cunha, Rita Pinto, Fausto J. Pinto, Ana Abreu

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: In recent years it has been proposed the concept of cardiorrespiratory optimal point (COP) to best characterize populations who underwent cardiac rehabilitation programmes (CRP). The COP is defined as the minimum ratio between ventilation and oxygen consumption (VE/VO2) obtained during the cardiopulmonary exercise test (CPET) and it has been suggested that COP values > 30 conveyed worse prognosis.
Objectives: To validate OP as a predictor of events and its correlation with exercise activity and quality of life on the long term.
Methods: Single center observational study of patients enrolled on CRP - from February 2018 to May 2019 – who did CPET as part of routine evaluation. COP was defined as the lowest point of VE/VO2 ratio. Clinical and laboratorial characteristics were obtained at admission and discharge of CRP. Exercise practice was accessed using IPAQ questionnaire and quality of life was assessed based on a validated inquire - Kansas City Cardiomyopathy Questionnaire (KCCQ-23) – both by phone interview.
Results: A total of 78 patients (mean age 63.2 ± 11.6, 84.6% male) were evaluated and followed for a mean follow-up of 2.68 ± 0.53 years. Main aetiology was ischemic heart disease (86%), followed by dilated cardiomyopathy (5.1%) and valvular heart disease (2.6%). A COP value below 30 correlated with a worse global score in KCC-23 ($r = 0.283$, $p = 0.47$), and in particular domains such as frequency and severity of symptoms (r 0.335, $p = 0.046$; and $r = 0.4$, $p = 0.16$, respectively), quality of life ($r = 0.293$, $p = 0.039$) and social limitation ($r = 0.5$, $p = 0.001$,). COP also correlated with VO2 peak in basal CPET ($r = 0.450$, $p < 0.001$,) and on follow-up CPET ($r = 0.303$, $p = 0.39$). COP failed to predict events or levels of exercise activity on the long term, as evaluated by the IPAQ score. However, COP> 30 did seem to correlate with a higher mortality rate on the follow-up although such trend was not statistically significant (possibly due to short follow-up time and sample size).
Conclusions: COP values > 30 identified patients with worse prognosis, predicting worse quality of life and higher mortality. Although it did not seem to be a good predictor of exercise adherence after CRP.

PO 184. VERY ACUTE BENEFITS ON PHYSICAL PERFORMANCE IN ELDERLY PATIENTS WHO UNDERGONE TAVI

Catarina Gregório, Nelson Cunha, Pedro Silvério António, Sara Couto Pereira, Joana Brito, Beatriz Valente Silva, Pedro Alves da Silva, Ana Beatriz Garcia, Ana Margarida Martins, Catarina Simões de Oliveira, João Santos Fonseca, Miguel Azaredo Raposo, Ana Abrantes, Inês Ricardo, Ana Abreu

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Transcatheter aortic valve implantation (TAVI) emerged as a safe and efficient procedure in patients with high or prohibitive surgical risk or in older patients. The prevalence of severe aortic stenosis is growing up, given de aging of population. These patients are much often frailty and experience low levels of physical activity and functional capacity as a result of their aortic valve disease and comorbidities. When untreated severe aortic stenosis has a poor prognosis so it is of utmost importance to restore the normal hemodynamic condition and consequently to improve functional capacity.
Objectives: To assess the acute benefits (in 1 moth) of TAVI on functional capacity and physical performance.
Methods: Single center prospective study of patients submitted to TAVI between April 2021 and September 2021. Patients were evaluated at baseline (before TAVI) and one month after the procedure. To assess physical activity and functional capacity it was used the International Physical Activity Questionnaire (IPAQ) and the short physical performance battery (SPPB) which is a group of measures that combines the results of the gait speed (two timed trials of a 4-m walk – fastest recorded), chair stand (time to raise for a chair 5 times) and balance tests (ability to stand for 10 seconds with feet in 3 different positions). Additionally, patients were submitted to handgrip strength test. Paired sample t-test and Wilcoxon test were used to statistical analysis.
Results: We included 20 patients, with a mean age of 85 ± 5.86 years, 40% (8) male. 19 patients undergone TAVI due severe native aortic stenosis and 1 due to bioprosthetic aortic valve dysfunction. The vascular access site was transfemoral in 19 patients and transapical in 1 patient. No patient had vigorous physical activity either before or after TAVI, but the daily sitting time was lower after the procedure (mean time: 634 *versus* 570 minutes), however not statistically significant. Regarding the results of SPPB patients experience improvements in balance ($p = 0.035$) and chair stand (time to raise for a chair 5 times: 19.04 *vs.* 17.05 seconds), $p = 0.01$. Patients tended to be faster in 4m velocity test, however with no statistical difference (8.49 *vs.* 6.6 seconds). No statistical differences were also observed in handgrip strength test.
Conclusions: In an elderly population, TAVI appears to have an early and beneficial effect (in 1 moth) on some domains oh physical activity and functional capacity.

PO 185. TREADMILL TESTING AND PROGNOSIS: ARE WE LOOKING AT THE RIGHT THINGS?

Rafaela Gonçalves Lopes, Inês Oliveira, Isabel Cruz, Bruno Bragança, Joel Ponte Monteiro, Alexandra Castro, Conceição Queirós, Paula Pinto, Aurora Andrade

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

Introduction: Patients with known coronary artery disease (CAD) are frequently re-evaluated with treadmill stress-testing (TT). Typical parameters for decision making are ST-T changes, symptoms, and stress-test positivity. However the long-term prognostic value of such parameters is unclear.

Objectives: To identify TT parameters associated with all-cause mortality.
Methods: We performed a retrospective analyze of a cohort of 497 consecutive patients with known CAD, who underwent Bruce protocol treadmill testing (TT) between 2009-2010, followed during 9.7 ± 2.7 years. We analyzed known cardiovascular risk factors and the available parameters of TT, and their correlation with the occurrence of all-cause mortality during the follow-up.
Results: During the follow-up period 73 deaths occurred, of these 22 were cardiovascular (CV) deaths (15%). In survival analyses, ST-T changes (p = 0.55), symptoms (p = 0.59), and test positivity (p = 0.618) were not associated with death. Age (68.1 ± 10.7 *vs.* 73.9 ± 11.4, p < 0.01), heart rate (HR) at peak of effort (134.9 ± 19.1 *vs.* 123.7 ± 23.4, p < 0.01), metabolic equivalent of task (MET) (9.1 ± 1.8 *vs.* 7.89 ± 1.76, p < 0.01), double product at peak (22,724.3 ± 5,049.3 *vs.* 20,830 ± 5,760.6, p = 0.03), variation of heart rate from peak to rest (63 ± 18 *vs.* 51 ± 22, p < 0.01) and variation of heart rate from rest to recovery (14.9 ± 16.3 *vs.* 9.4 ± 7.7, p = 0.03) were statistically correlated with all-cause mortality.
Conclusions: This work shows that the most commonly valued treadmill stress testing parameters might not be relevant prognostic markers in patients with known CAD. On the other hand, the underappreciated simple parameters might predict all-cause mortality in this group of patients.

Domingo, 24 Abril de 2022 | 12:30-13:30

Sala Jardim de Inverno | Posters (Sessão 5 - Écran 6) - DAC e Cuidados Intensivos 7 - Marcadores de Risco e Prognóstico

PO 186. CHRONOTROPIC INCOMPETENCE- STILL A SUITABLE INDICATOR?

Isabel Martins da Cruz, Inês Oliveira, Bruno Bragança, Rafaela Lopes, Rui Pontes dos Santos, Conceição Queirós, Aurora Andrade

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

Introduction: Chronotropic incompetence (CI) is defined as the incapacity to increase heart rate in response to increased activity. It is common in patients (pts) with cardiovascular disease; however, its importance is often undervalued in clinical practice.
Objectives: Evaluate the prognostic value of CI in pts with known coronary artery disease (CAD) who performed Bruce protocol treadmill testing.
Methods: Unicentric, retrospective analysis of consecutive pts with known CAD who underwent Bruce protocol treadmill testing between 2009 and 2014. Chronotropic index (ChI) was calculated according to the following formula: (peak heart rate-resting heart rate)/(220-age-resting heart rate). CI was generally defined as ChI< 80% (or < 62% to pts prescribed with beta-blockers). Pts were divided in two groups- G1: CI and G2: normal chronotropic response. Events were defined as: all-cause mortality, cardiovascular mortality, *de novo* heart failure, CAD progression, myocardial infarction and stroke.
Results: A total of 471 pts were included (87.3% male, mean age 69 ± 9.8 years). Mean follow-up was 9.7 years. The groups were similar regarding sex (p = 0.157), age (p = 0.057), body mass index (p = 0.172), diabetes (p = 0.110), arterial hypertension (p = 0.782), dyslipidemia (p = 0.549), myocardial infarction (p = 0.487) and left ventricle ejection fraction (p = 0.656). CI was identified in 129 pts (27.4%). Comparing G1 *vs.* G2, no differences were found related to all-cause mortality (18.6 *vs.* 11.7%, p = 0.051), *de novo* heart failure (10.9 *vs.* 9.6%, p = 0.698), CAD progression (31.8 *vs.* 26.3%, p = 0.238), myocardial infarction (34.1 *vs.* 32.2%, p = 0.688) and stroke (9.3 *vs.* 8.8%, p = 0.857). However, statistically significant differences were found regarding cardiovascular deaths (7.0 *vs.* 2.6%, p = 0.028).
Conclusions: CI is a simple and easily available parameter that shows a clear association with cardiovascular death in a long term follow-up of consecutive pts with known CAD. Even though cardiovascular death was the only endpoint with a statistically significant difference between the groups, G1 presented a higher absolute rate of pts in all endpoints.

PO 187. ACUTE KIDNEY INJURY ON ADMISSION FOR ACUTE CORONARY SYNDROME AS A PREDICTOR OF 1-YEAR MORTALITY

Miguel Carias de Sousa[1], Bruno Piçarra[1], Ana Rita Santos[1], Rita Rocha[1], Mafalda Carrington[1], Francisco Cláudio[1], Kisa Congo[1], Manuel Trinca[1], em Nome dos Investigadores do Registo Nacional de Síndromes Coronárias Agudas[2]

[1]Hospital do Espírito Santo, EPE, Évora. [2]CNCDC - Centro Nacional de Coleção de Dados em Cardiologia.

Introduction: The approach of patients admitted for acute coronary syndrome (ACS) is a challenge due to the high complications that can occur. This can affect the prognosis in these patients. Acute kidney injury (AKI) is often observed by external damage or decreased peripheral perfusion conditioned by the patient's hemodynamic status.
Objectives: To evaluate the AKI as a predictor of in-hospital and 1-year mortality in patients with ACS.
Methods: A 3-year retrospective study was performed, including patients from a National Multicenter Registry with ACS. A linear regression analysis and a Cox regression survival analysis were performed, with in-hospital mortality and 1-year mortality as endpoints respectively. The sample was divided into two groups: with and without AKI. An increase in creatinine of 0.3 mg/dL and > 50% compared to baseline value was defined as AKI. The population was also characterized according to demographic data, cardiovascular risk factors (CVRF), days of hospitalization and in-hospital complications (reinfarction, major hemorrhage, stroke, heart failure, atrioventricular block, atrial fibrillation and sustained ventricular tachycardia). Thus, the mortality of patients with ACS with and without AKI was compared.
Results: 5,275 patients were enrolled and 294 met the mortality endpoints (5.6%). The population consisted of 72.4% of male elements and 27.6% of female elements, with an average age of 66 ± 13 years. Regarding CVRF, 70.0% had arterial hypertension, 60.0% dyslipidemia, 29.7% Diabetes mellitus and 27.8% were smokers. A Linear regression analysis revealed that elements with AKI had higher in-hospital mortality than those without [b = 0.891; p = 0.002; OR 2.437 (CI: 1.392-4.269)]. In addition, these elements had a greater number of major bleeding events during the inpatient regime (3.0 *vs.* 1.1%; p < 0.001) and longer hospital stays (8.3 days *vs.* 4.7 days; p < 0.001). The other associations were not statistically significant. According to a survival analysis using a Cox regression, elements with AKI had an in-hospital and 1-year mortality 1.813 times higher compared to those without AKI [b = 0.595; p = 0.001; HR 1.813 (CI: 1.262-2.605)].
Conclusions: In ACS, the risk of in-hospital and 1-year death in patients with AKI is 81.3% higher compared to those without. Thus, we conclude that AKI entails a high-risk profile in patients with ACS, so its identification and approach is extremely important and could change the prognosis in these patients.

PO 188. MODIFIED M-CHA2DS2-VASC SCORE PREDICTS MORTALITY AT EMERGENCY DEPARTMENT ADMISSION IN COVID-19 PATIENTS

Ana Beatriz Garcia, Beatriz Valente Silva, Sara Couto Pereira, Pedro Silvério António, Pedro Alves da Silva, Joana Brito, Catarina Simões de Oliveira, Ana Margarida Martins, Catarina Gregório, Ana Abrantes, Miguel Azaredo Raposo, Carlos Mendonça, Luísa Urbano, Tiago Rodrigues, Cláudia Jorge, Rui Plácido, Fausto J. Pinto

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Many risk factors comprising the CHA2DS2VASc score are recognized as risk factors for venous thromboembolism and mortality in COVID-19 patients. A modified CHA2DS2VASc score (M-CHA2D2VASc), created

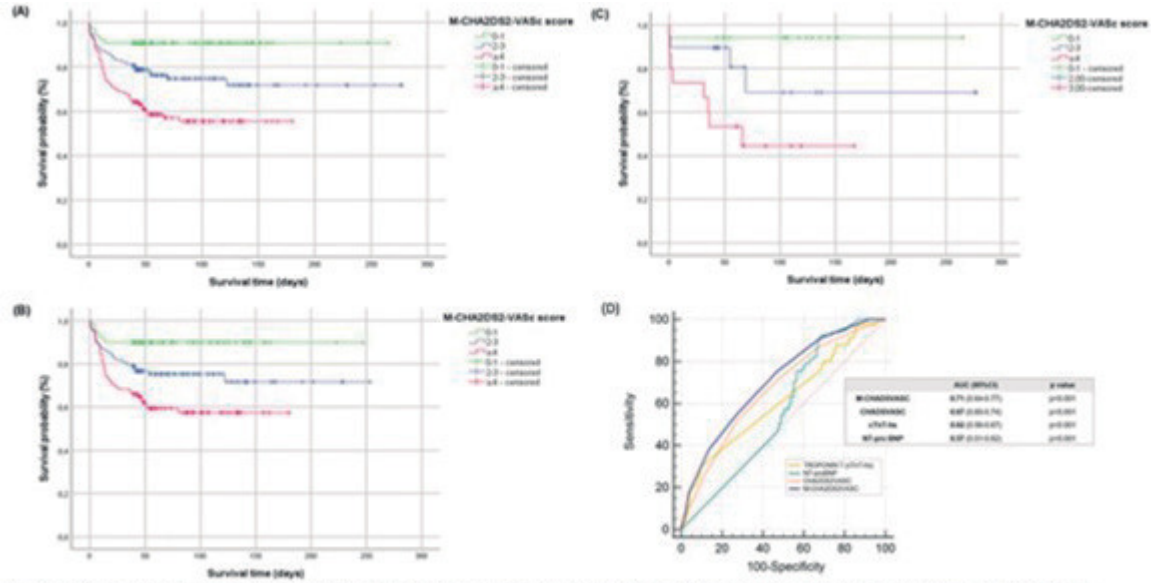


Fig. 1 Kaplan-Meier survival analysis stratified by terciles of M-CHADsVASc score: low-risk (0-1 points), intermidiate risk (0-2points), and high risk (≥4). (A) All cohort (n=300); log-Rank p<0.001; (B) Hospitalized patients (n=249); log-Rank p<0.001; (C) Discharged patients from emergency department (n=51); log-Rank p=0.007. (D) ROC analysis comparing the predictive ccuracy of M-CHADsVASc, CHADsVASc, high-sensitive troponin (cTnT-hs) and N-terminal prohormone BNP (NTproBNP).

PO 188 Figure

by changing gender criteria from female to male, has been proposed to predict in-hospital mortality in COVID-19 patients.

Objectives: To evaluate the prognostic value of M-CHA2D2VASc to predict pulmonary embolism (PE) and short-term mortality in COVID-19 patients admitted to the Emergency Department (ED).

Methods: Retrospective study of consecutive patients admitted to the ED who underwent computed tomography pulmonary angiography due to clinical worsening. Patients were stratified into three M-CHA2DS2VASc risk categories: low (0-1 points), intermediate (2-3 points) and high risk (≥ 4 points).

Results: We included 300 patients (median age 71 years, 59% male). The PE incidence was 15%, and no difference was found in PE incidence according to M-CHA2DS2VASc categories (p = 0.531). The overall mortality was 27% (median follow-up: 56 days). M-CHA2DS2VASc was higher in non-survivors than in survivors [4 (IQR 3-5) *vs*. 2 (IQR 1-4), respectively, p < 0.001). M-CHA2DS2VASc was identified as an independent predictor of mortality in a multivariate logistic regression analysis (OR 1.406, p = 0.007). Kaplan-Meier showed that M-CHA2DS2VASc was associated with short-term mortality (log-rank test < 0.001): the survival rate was 92%, 80% and 63% in the lower, intermediate and higher risk groups. The prognostic value of M-CHA2DS2VASc was maintained whether the patients were hospitalized or discharged from ED (log-rank test p < 0.001 and p = 0.007, respectively).

Conclusions: M-CHA2DS2VASC might be a simple score to predict short-term mortality in COVID-19 patients admitted to the ED.

PO 189. C-REACTIVE PROTEIN AS A PROGNOSTIC MARKER IN MYOCARDIAL INFARCTION WITH NON-OBSTRUCTIVE CORONARY ARTERIES

Eric Alberto Monteiro[1], José Barbosa[2], Joana Guimarães[1], Diogo Fernandes[1], Gonçalo Costa[1], Rita Gomes[1], João Rosa[1], Gustavo Campos[1], Sofia Martinho[1], Carolina Saleiro[1], José Almeida[1], Diana Campos[1], João Gameiro[1], André Azul[1], José Sousa[1], Cátia Ferreira[1], Rui Baptista[1], Pedro Monteiro[1], Sílvia Monteiro[1], Francisco Gonçalves[1], Marta Madeira[1], Lino Gonçalves[1]

[1]Centro Hospitalar e Universitário de Coimbra, EPE/Hospitais da Universidade de Coimbra. [2]MEDCIDS, FMUP, Department of Community Medicine, Information and Decision in Health, University of Porto, Faculty of Medicine.

Introduction: The prognosis of patients with myocardial infarction with non-obstructive coronary arteries (MINOCA) is worse than that of the general population. Nevertheless, the predictors for a worse outcome in patients with MINOCA are not fully determined. The aim of this study was to evaluate the prognostic value of C-Reactive Protein (CRP) in MINOCA patients.

Methods: Retrospective analysis of 706 consecutively admitted patients due to acute myocardial infarction (AMI), in whom coronary angiography revealed absence of obstructive coronary artery disease (≥ 50% stenosis). CRP levels were measured at admission. Demographic characteristics, symptoms at presentation, past medical history, laboratory characteristics and medication at discharge were examined. The primary endpoint analysed was all-cause mortality at 5 years. Possible predictors of the endpoint were assessed by Cox regression models. When statistically significant values were found in univariable analysis, multivariate analysis was used to determine whether CRP was an independent predictor of the outcome.

Results: In the studied sample, 55% of the patients were male. Median age was 64 [interquartile range (IQR) 55-72] and median body mass index was 27.3 kg/m^2 (IQR 24.6-30.1). Regarding past medical history, 76.5% were hypertensive, 77.8% were dyslipidemic, 12.6% were smokers, 37.4% were diabetic and 59.3% had a previous history of angina. At presentation, 94.8% were in Killip 1, 3.8% were in Killip 2, 1% were in Killip 3 and 0.4% were in Killip 4. At admission, median CRP was 0.38 mg/dL (IQR 0.14-0.81), median Troponin I was 0.09 ng/ml (IQR 0.04-1.65), median creatinine was 0.85 mg/dL (IQR 0.73-1), median low density lipoprotein cholesterol (LDL-C) was 121.5 mg/dL (IQR 97.5-146), median haemoglobin was 13.6 g/dL (IQR 12.5-14.6) and median left ventricular ejection fraction (LVEF) was 58% (IQR 50-60). At discharge, 74.2% had a beta-blocker prescribed, 88.4% had a renin-angiotensin system inhibitor (RASi) prescribed, 98.2% had a statin prescribed and 76.5% had aspirin prescribed. All-cause mortality at 5 years was 8.5%. In univariable analysis, CRP was significantly associated with the endpoint [hazard ratio (HR) 1.138 per 1 mg/dL increase, 95%CI 1.090-1.188, p < 0.001], as was age, diabetes, Killip class, troponin I, creatinine, LDL-C, haemoglobin, LVEF and absence of prescription of RASi. In multivariate analysis, CRP remained significantly associated with the endpoint (HR 1.141, 95%CI 1.087-1.199, p < 0.001), as did age, creatinine and absence of prescription of RASi.

Conclusions: CRP at admission seems to be an independent predictor of all-cause mortality at the 5-year mark. This could indicate that inflammation has an important role in the pathophysiology and prognosis of MINOCA patients. It would be interesting to investigate if targeting inflammation would improve the long-term prognosis of these patients.

PO 190. PERFORMANCE OF DIFFERENT HIGH SENSITIVITY CARDIAC TROPONIN ASSAYS IN PATIENTS WITH SUSPECTED ACUTE CORONARY SYNDROME

Gustavo M. Campos, Ana Vera Marinho, Luís Leite, André Azul, Cátia Ferreira, Sofia Martinho, José Paulo Almeida, João Rosa, Rita Gomes, Patricia Alves, Rui Batista, João Pego, Isabel Fonseca, Fernando Rodrigues, Francisco Gonçalves, Lino Gonçalves

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Introduction: High-sensitivity cardiac troponin (hs-cTn) is increasingly used in the assessment of cardiovascular (CV) risk in the emergency department (ED). Although guidelines recommend the use of 99th centile as the diagnostic threshold for myocardial infarction (MI), there is less consensus on the optimal troponin threshold to rule-out patients with low risk of CV events with a single measurement.

Objectives: We aimed to compare prognostic accuracy of three high-sensitivity troponin assays in a large cohort of patients admitted in ED.
Methods: Prospective cohort study enrolling all consecutive patients admitted to the ED of a tertiary hospital with suspected MI. Triple testing included Abbott Architect hs Troponin, Roche Elecsys hsTroponin T and Siemens Dimension EXL Troponin. The predefined combined endpoint included MI, unscheduled coronary revascularization and CV mortality.
Results: A total of 548 patients (mean age of age 67 ± 19 years) were included. During a mean follow-up of 34 ± 10 months, the incidence of primary endpoint was 12.6%. With only one measurement, the Roche Elecsys assay had the highest accuracy (AUC: 0.84, 95%CI: 0.75-0.93). The negative predictive values for undetectable values of troponin in Abbott Architect and Roche Elecsys assays were: 100.0% (95%CI: 90.0-100.0%) and 99.2 (95%CI: 97.2-100.0%), respectively. Using an optimized risk stratification threshold of 5 ng/L in Abbott Architect, compared with the limit of < 2 ng/L, identifies twice more low risk patients.
Conclusions: Both hs-cTn assays have excellent accuracy in the evaluation of suspected ACS, but a higher threshold can optimize the selection of patients that can be safely discharged with a single measurement.

Baseline Characteristics	Total (n=548)
Age (years)	66.5 ± 18.7
Male gender	275 (50.2%)
Symptoms	
- Chest pain	199 (36.3%)
- Dyspnea	93 (17.0%)
- Nausea	65 (11.9%)
- Dizziness	59 (10.8%)
- Syncope	47 (8.6%)
- Palpitations	36 (6.6%)
Past medical history:	
- Hypertension	349 (63.7%)
- Diabetes	129 (23.5%)
- Dyslipidaemia	217 (39.6%)
- Active smoker	21 (3.8%)
- Ex-smoker	20 (3.6%)
- Peripheral arterial disease	22 (4.0%)
- Advanced chronic kidney disease	21 (3.8%)
- Previous HF admission	21 (3.8%)
- Atrial fibrillation/flutter	83 (15.1%)
- Previous stroke	50 (9.1%)
- Previous venous thromboembolism	14 (2.6%)
Known coronary artery disease:	63 (11.5%)
- History of AMI	57 (10.4%)
- Previous PCI	25 (4.6%)
- Previous CABG	5 (0.9%)
Previous medication:	
- Single antiplatelet	139 (25.4%)
- Dual antiplatelet	14 (2.6%)
- Anticoagulation	91 (16.6%)
- Statin	180 (32.8%)
- Nitrates	20 (3.6%)
- Beta-blockers	141 (25.7%)
- ACE-I/ARB	244 (44.5%)
- Diuretics	156 (28.5%)
- Insuline	39 (7.1%)
- Dialysis	5 (1.1%)
GRACE score	118 ± 38

Table 1.

Final diagnosis (most frequent)	Total (n=548)
Acute myocardial infarction	43 (7.8%)
- Type 1 MI ○ ST-elevation MI	25 4.6%) 9 (1.6%)
- Type 2 MI	17 (3.1%)
- Type 4MI	1 (0.2%)
Respiratory infection	40 (7.3%)
Heart failure	34 (6.2%)
Tachiarrhythmia	39 (5.3%)
Stroke / Transient Ischemic Attack	23(4.2%)
Hypertensive crisis	17 (3.1%)
Acute gastroenteritis	13 (2.4%)
Other	75 (13.7%)

Table 2.

Clinical endpoints	Total (n=548)
Type 1 MI	29 (5.3%)
Unscheduled revascularization	21 (3.8%)
Admission for decompensated HF	39 (7.1%)
CV mortality	139 (25.4%)
Global mortality	61 (11.1%)
Combined enpoints:	
MI + Revasc + HF + Global death	178 (32.5%)
MI + Revasc + HF + CV death	69 (12.6%)
AMI + Revasc + CV death	51 (69.3%)

Table 3.

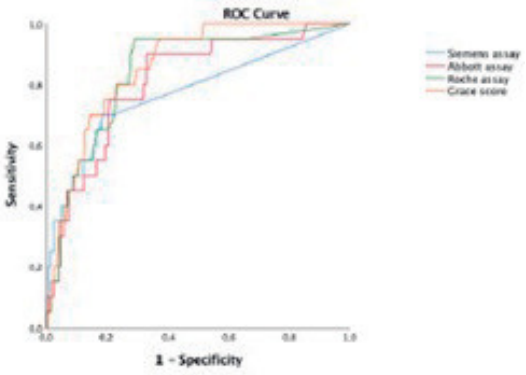

Figure 1.

Domingo, 24 Abril de 2022 | 12:30-13:30

Sala Jardim de Inverno | Posters (Sessão 5 - Écran 7) - Intervenção Cardíaca Coronária e Estrutural 3 - Foco na Válvula Aórtica

PO 191. IMPACT OF THE USE OF CUSP OVERLAP PROJECTION TECHNIQUE IN THE INCIDENCE OF POST-TAVR PERMANENT PACEMAKER IMPLANTATION WITH SELF-EXPANDING VALVES

Ana Rita Moura[1], Alberto Rodrigues[2], Pedro Braga[3], Cláudio Guerreiro[3], Gustavo Pires de Morais[3], Lino Santos[3], Bruno Melica[3], Ricardo Fontes-Carvalho[3]

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Introduction: Current rates of new Permanent Pacemaker (PPM) Implantations in the context of Transcatheter Aortic Valve Replacement (TAVR) range from 2-36% and that necessity is related to worse prognosis. The use of self-expanding valves and a lower valve implantation depth are two factors associated with an increased risk of conduction disturbances post-TAVR. Theoretically, cusp overlap implantation technique has the potential to enable a higher valve deployment by eliminating parallax of the delivery catheter.
Objectives: To compare the in-hospital incidence of PPM post-TARV using self-expandable valve according to the fluoroscopic guidance technique.
Methods: Retrospective, single-centre study, with evaluation of patients consecutively submitted to TAVR with self-expanding CoreValve™ between July 2020 and July 2021 dichotomized according to the use of cusp overlap implantation technique for fluoroscopic valve implantation guidance.
Results: 97 patients were included, predominantly women (55.7%), with a mean age of 78.6 ± 8.1 years old, with severe aortic stenosis of the native valve being the most common indication for TAVI (86.6%). Cusp overlap view technique was applied in 50.5% of the patients (n = 49). Frailty and co-morbidities were the most common cause for surgical refusal (54.6%). There was a significantly higher percentage of previous medication with β-blockers in the group of patients in whom was used the standard fluoroscopic technique (43.8 *vs.* 20.8%, p = 0.02); there were no other relevant differences related to the baseline characteristics. First degree atrioventricular block was present in 20.8% and complete right bundle block in 13.0% of the patients. Incidence of in-hospital post-TAVR PPM implantation wasn't significantly different between the two cohorts of patients (cusp overlap *vs.* standard approach: 22.4 *vs.* 25%, p = 0.77) (78.3% implanted in the context of complete heart block). Likewise, there were similar proportions of in-hospital new-onset of complete left bundle branch block (27.5 *vs.* 33.3%, p = 0.95), volume of contrast used (145.4 ± 41.6 mL *vs.* 148.7 ± 76.7 mL, p = 0.25), fluoroscopy time (16.6 ± 10.1 min *vs.* 19.5 ± 10.8 min, p = 0.54) and radiation dose (561.9 ± 426.8 mGy *vs.* 815.1 ± 537.8 mGy, p = 0.07).
Conclusions: This study shows that using the cusp overlap view for self-expanding valve implantation does not seem to achieve a significant reduction in in-hospital PPM implantation rate in comparison with the traditional 3 cusp co-planar fluoroscopic view. A larger and probably randomized clinical trial is needed to confirm these results.

PO 192. PREDICTORS OF FUNCTIONAL RECOVERY AFTER PERCUTANEOUS AORTIC VALVE IMPLANTATION – DATA FROM 459 CASES

Diogo Santos Ferreira[1], Isabel Fernandes[2], Silva Diaz[2], Cláudio Guerreiro[1], Mariana Brandão[1], Mariana Ribeiro Silva[1], Gualter Silva[1], Pedro Ribeiro Queirós[1], Eulália Pereira[1], Gustavo Pires de Morais[1], Bruno Melica[1], Lino Santos[1], Alberto Rodrigues[1], Pedro Braga[1], Ricardo Fontes-Carvalho[1]

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Introduction: Aortic valve stenosis is now the most common primary valve lesion requiring intervention and is frequently associated with heart failure symptoms, which can be easily assessed through New York Heart Association (NYHA) classification. Transcatheter Aortic Valve Implantation (TAVI) is an

Table 1 – Predictors of NYHA recovery ≥1 class after TAVI.

Characteristic	NYHA non-responders N = 145[1]	NYHA responders N = 314[1]	p-value[2]
Sex			**0.009**
Male	56 (39%)	163 (52%)	
Female	88 (61%)	150 (48%)	
Age (years)	82 [77, 85]	81 [75, 85]	0.3
Body mass index (kg/m²)	26.9 [24.6, 30.3]	27.0 [24.1, 29.7]	0.9
NYHA class (baseline)			**<0.001**
1	7 (4.8%)	0 (0%)	
2	112 (77%)	83 (26%)	
3	26 (18%)	192 (61%)	
4	0 (0%)	39 (12%)	
EuroScore II (%)	3.9 [1.9, 5.4]	4.2 [2.7, 6.7]	**0.002**
STS score (mortality, %)	3.35 [2.46, 5.46]	4.01 [2.76, 6.04]	0.055
STS score (morbimortality, %)	20 [15, 26]	21 [16, 29]	0.10
COPD	36 (25%)	47 (15%)	**0.010**
Previous CABG	10 (6.9%)	50 (16%)	**0.008**
Anemia	50 (39%)	127 (40%)	0.2
Atrial fibrillation	41 (28%)	106 (34%)	0.2
Aortic valve area (cm²)	0.70 [0.60, 0.80]	0.70 [0.50, 0.80]	>0.9
Transaortic maximum gradient (mmHg)	78 [66, 96]	76 [64, 93]	0.5
Transaortic mean gradient (mmHg)	48 [41, 60]	46 [40, 57]	0.4
Moderate-to-severe aortic insufficiency	46 (17%)	12 (16%)	>0.9
Ejection fraction (%)	57 [52, 62]	55 [42, 59]	**<0.001**
Reduced ejection fraction (≤40%)	8 (10%)	39 (22%)	**0.028**
Stroke volume (ml)	72 [59, 89]	72 [57, 89]	0.9
TAVI design			0.13
Self-expandable	88 (61%)	174 (56%)	
Balloon-expandable	51 (35%)	133 (43%)	
Maximum gradient after TAVI (mmHg)	18 [13, 25]	19 [14, 25]	0.6
Mean gradient after TAVI (mmHg)	10.0 [7.0, 14.0]	10.0 [7.6, 13.0]	0.6
Ejection fraction at discharge (%)	56 [52, 60]	55 [47, 59]	0.064
Transaortic flow at discharge (ml/s)	252 [213, 302]	246 [204, 294]	0.4
Stroke volume at discharge (ml)	72 [61, 83]	66 [56, 83]	0.054
Estimated creatinine clearance (ml/min²)	50 [37, 66]	49 [38, 68]	>0.9
Pacemaker implantation	23 (16%)	44 (16%)	0.6

[1]n (%); Median [IQR]
[2]Pearson's Chi-squared test; Wilcoxon rank sum test; Fisher's exact test

Table 2 – Predictors of NYHA recovery ≥2 classes after TAVI.

Characteristic	NYHA recovery <2 N = 371[1]	NYHA recovery ≥2 N = 88[1]	p-value[2]
Sex			0.063
Male	169 (46%)	50 (57%)	
Female	200 (54%)	38 (43%)	
Age (years)	82 [76, 85]	79 [74, 83]	**0.002**
NYHA class (baseline)			**<0.001**
1	7 (1.9%)	0 (0%)	
2	195 (53%)	0 (0%)	
3	160 (43%)	58 (66%)	
4	9 (2.4%)	30 (34%)	
EuroScore II (%)	3.9 [2.2, 5.8]	5.0 [3.6, 9.6]	**<0.001**
STS score (mortality, %)	3.70 [2.56, 5.42]	4.90 [2.94, 7.37]	**<0.001**
STS score (morbimortality, %)	20 [15, 26]	26 [19, 35]	**<0.001**
Arterial Hypertension	272 (83%)	68 (85%)	0.6
Diabetes mellitus	132 (36%)	49 (55%)	**0.001**
Dyslipidemia	231 (70%)	65 (81%)	**0.048**
COPD	73 (20%)	10 (11%)	0.066
Ejection fraction (%)	55 [46, 60]	55 [40, 57]	0.078
Reduced ejection fraction (≤40%)	32 (16%)	15 (27%)	0.056
Ejection fraction at discharge (%)	55 [50, 59]	54 [43, 58]	**0.047**
Serum creatinine (mg/dl)	1.02 [0.85, 1.33]	1.12 [0.93, 1.51]	**0.035**
Creatinine clearance (ml/min²)	49 [37, 66]	50 [39, 65]	>0.9

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increasingly attractive solution for its treatment as a less-invasive approach, especially in a higher surgical risk subgroup of patients. However, not all patients exhibit a symptomatic improvement after the procedure.
Methods: A single-centre retrospective database of all consecutive TAVI procedures performed between March 2012 and December 2019 was analyzed. The primary outcome was defined as a reduction of NYHA class of at least 1 point over the six months after treatment, and the secondary outcome considered a reduction of at least 2 classes. Clinical, echocardiographic and blood-analysis data previous to TAVI were explored as potential predictors of good NYHA response, using Pearson's Chi-squared test, Wilcoxon rank sum test and Fisher's exact test, as appropriate. A $p < 0.05$ was considered statistically significant.
Results: A total of 459 cases had full information regarding NYHA status both prior and 6 months after TAVI (Fig.). 68% patients improved at least one NYHA class, with a less predominance of female patients on NYHA responders (48% *vs.* 61%, p = 0.009). Patients with a higher estimated surgical risk tended to exhibit a better symptomatic response after the procedure (p = 0.002 for EuroSCORE II, p = 0.055 and p = 0.10 for STS mortality and morbimortality, respectively). Fewer patients suffered from chronic obstructive pulmonary disease (COPD) in the NYHA-responders subgroup (15% *vs.* 25%, p = 0.01). Ejection fraction (EF) was slightly lower among the patients who recovered at least one functional class (55 *vs.* 57%, p < 0.001), and there was a higher predominance of patients with reduced EF (≤ 40%, 22% *vs.* 10%, p = 0.028). 19% of patients improved at least 2 functional classes, and these tended to be also younger (78- *vs.* 82-years-old, p = 0.002), more frequently diabetic and dyslipidemic and with higher basal serum creatinine, despite no differences in estimated creatinine clearance.
Conclusions: According to the present study, only about two-thirds of patients improved their NYHA class after TAVI. Basal characteristics portraying a higher periprocedural risk are associated with symptomatic improvement over follow-up, thus demanding a more careful risk-benefit consideration. The identification of accurate predictors of clinical response to treatment might better guide patient selection and expectations regarding TAVI for severe aortic stenosis.

PO 193. BLEEDING AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION – WHAT ARE THE OUTCOMES AND HOW CAN WE PREDICT IT

Alexandra Castelo, André Grazina, Tiago Mendonça, Inês Rodrigues, Vera Ferreira, Pedro Brás, Sofia Jacinto, António Fiarresga, Ruben Ramos, Duarte Cacela, Rui Ferreira

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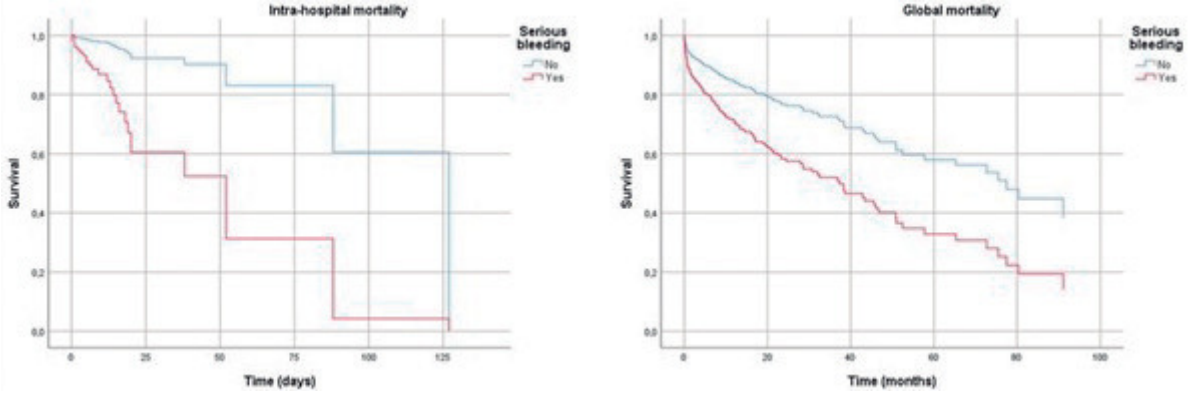
Introduction: Bleeding is a known complication after transcatheter aortic valve implantation (TAVI), but there is a paucity of information about bleeding predictors and related outcomes.
Objectives: To identify post-TAVI bleeding predictors and evaluate related outcomes.
Methods: Retrospective analysis of consecutive patients (P) submitted to TAVI between 2009 and 2020 in a tertiary center. Baseline characteristics, procedural information, bleeding after TAVI and outcomes were collected.
Results: A total of 517P (56.3% female) were included, with a mean age of 82 ± 6 years. 112P (21.6%) had a hemorrhagic complication after the procedure (10% minor, 5.8% major and 5.8% life-threatening, according to VARC 2 classification). Patients with serious bleeding (major or life-threatening) had more global, intra-hospital and 30 day mortality (45.8 *vs.* 23.1%, p < 0.0001; 28.3 *vs.* 2.6%, p < 0.0001; 28.3 *vs.* 3.7%, p < 0.0001), global and 30 day cardiovascular mortality (32.2 *vs.* 7.3%, p < 0.0001 and 28.3 *vs.* 2.2%, p < 0.0001), higher global hospital stay (24 days *vs.* 15 days, p < 0.0001), intensive care unit stay (7 days *vs.* 4 days, p = 0.001) and post TAVI hospital stay (18 days *vs.* 10 days, p < 0.0001), lower minimum hemoglobin level (7.7 g/L *vs.* 9.9 g/L, p < 0.0001) and higher maximum creatinine level (2.4 mg/dL *vs.* 1.6 mg/dL, p < 0.0001) and were more frequently in NYHA class III or IV at 30 days (11.4 *vs.* 3.8%, p < 0.0001). When other predictors of these outcomes are included in multivariable analysis, serious bleeding is still an independent predictor of intra-hospital and 30 days mortality (p = 0.004 and p = 0.014), global and 30 days cardiovascular mortality (p < 0.0001 and p = 0.001), post TAVI hospital stay (p = 0.002), minimum hemoglobin level (p < 0.0001) and 30 days NYHA III or IV (p = 0.018). Considering baseline characteristics, patients with serious bleeding had worse vascular accesses (24 *vs.* 8.3%, p < 0.0001), more frequently previous coronary angioplasty (33.3 *vs.* 20.2%, p = 0.021), peripheral artery disease (25 *vs.* 14.9%, p = 0.046), chronic kidney disease (65 *vs.* 48.7%, p = 0.017) and higher STS score (7.4 *vs.* 5.8%, p = 0.013). They also had more frequently major vascular complications (40 *vs.* 1.3%, p < 0.0001). There were no differences according to transfemoral *vs.* non transfemoral route (11.5 *vs.* 11.1%, p = 0.943). In a multivariable analysis, considering these differences, worse vascular accesses (p = 0.049, OR = 2.68), chronic kidney disease (p = 0.007, OR = 3.14) and major vascular complication (p < 0.0001, OR = 73.96) were the independent predictors.
Conclusions: Hemorrhage is a relatively common complication after TAVI, and when serious is associated with a significant worst prognosis. There are some clinical characteristics that are associated with a higher risk which should be considered when treating these patients, for an earlier detection in case of its occurrence.

PO 194. IS ILIOFEMORAL CALCIUM VOLUME ASSOCIATED WITH VASCULAR AND BLEEDING COMPLICATIONS AFTER TAVI?

Mariana Ribeiro Silva[1], Joana Oliveira[2], Inês Rodrigues[2], Cláudio Guerreiro[1], Wilson Ferreira[1], Nuno Ferreira[1], Gustavo Pires Morais[1], Bruno Melica[1], Lino Santos[1], Alberto Rodrigues[1], Pedro Braga[1], Francisco Sampaio[1], Ricardo Fontes-Carvalho[1]

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

Introduction: Pre-procedural iliofemoral computed tomography angiography (CTA) study and the use of ultrasound guidance for femoral artery puncture



PO 193 Figure

can reduce vascular (VC) and bleeding (BC) access site complications after transfemoral (TF) TAVI. However, is yet to be proven that CTA-derived iliofemoral calcium volume is associated with VC and BC following TF TAVI.
Objectives: To assess the impact of iliofemoral calcium volume and distribution, as evaluated by CTA, in VC and BC after TF TAVI.
Methods: Patients (pts) who underwent TF TAVI between January and December 2017 (fluoroscopy-guided access) and between June 2018 and May 2019 (echo-guided access) were included. All pts underwent iliofemoral CTA prior to the procedure and classical CTA-derived data and iliofemoral calcium volume ipsilateral to the puncture site were collected to evaluate its impact on VC and BC, which were defined by Valve Academic Research Consortium 2 criteria.
Results: We included 221 pts, 51.6% female, mean age 80.4 ± 7.8 years and median STS mortality risk score of 3.9% (IQR 2.6-6.1). Right TF access was obtained in 84.2%; 47.5% fluoroscopy and 52.5% echo-guided access, with a sheath size > 14Fr in 43%. VC occurred in 49 pts (22.2%) (18.6% minor, 3.6% major) and BC in 36 pts (16.3%) (13.6% minor, 2.2% major, 0.5% life-threatening). There was a significant lower prevalence of VC (16.4 *vs.* 28.6%, p = 0.029) and BC (8.6 *vs.* 24.8%, p = 0.001) in the echo-guided group. Iliofemoral CTA qualitative assessment of calcium quantity, distribution (anterior *vs.* posterior) and tortuosity was not different between pts with or without VC or BC. Univariate analysis showed that external iliac artery (EIA) and common femoral artery (CFA) luminal minimal diameter and area, CFA maximal luminal diameter were significantly smaller in pts with VC and BC (p < 0.05 for all). Sheath to external iliac artery ratio (SEIAR) and sheath to femoral artery ratio (SFAR) were higher in pts with VC and BC (p < 0.05 for all). There were no significant differences in CTA-derived total Iliofemoral calcium volume, EIA and CFA calcium volume between pts with or without VC and BC (p> 0.05 for all).
Conclusions: Echo-guided access reduced TAVI-related VC and BC. In this study, iliofemoral calcium volume was not associated with VC and BC after TAVI, while other classical CTA-derived factors such as SEIAR, SFAR, EIA and CFA minimal diameter and area were, and should be systematically assessed during pre-procedural CTA to reduce these events.

PO 195. CONTEMPORARY MANAGEMENT AND OUTCOMES OF PATIENTS WITH VASCULAR COMPLICATIONS DURING TRANSFEMORAL TAVI

Francisco Albuquerque, Daniel A. Gomes, Rui Campante Teles, Pedro Lopes, Mariana Gonçalves, Afonso Félix de Oliveira, João Brito, Luís Raposo, Sílvio Leal, Henrique Mesquita Gabriel, Pedro de Araújo Gonçalves, Manuel de Sousa Almeida, Miguel Mendes

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Introduction: Vascular complications (VC) after transcatheter aortic valve implantation (TAVI) are associated with increased mortality and morbidity. The aim of this study was to report the incidence, management, and impact on outcomes of VC in patients undergoing transfemoral TAVI.
Methods: Observational single center study from a prospective registry including 668 consecutive patients who underwent transfemoral TAVI between January 2016 and December 2020 (median age = 84 [IQR 81-87], 26.7% male; median EuroSCORE II of 4.11% [IQR 3.11-6.18]). Vascular complications were defined according to Valve Academic Research Consortium-3 criteria. VC endovascular treatment success was defined as residual stenosis < 30%, absence of blood extravasation assessed by fluoroscopy and no need for surgical or endovascular intervention at 30 days.
Results: Overall, 99/668 patients (14.8%) experienced at least one VC (105 in total), including 60/668 patients (9.0%) experiencing at least a major VC. VCs included 25/105 (23.8%) acute iliofemoral bleeding, 22/105 (21.0%) femoral artery occlusions, 50/105 (47.6%) retroperitoneal hematoma/ilioinguinal hematoma and 8/105 (7.6%) femoral pseudoaneurysms. Endovascular treatment during the index procedure was performed in 47/105 (44.8%) patients and successful in most (93.6%) cases. Management strategy according to VC type and VC severity are presented in the table. Primary surgical repair was necessary in 3/47 patients (6.4%), for iliofemoral bleeding control in all cases. Patients with major VC had higher 30-day and 1-year mortality rates (OR [95%CI]: 15.2 [5.42-42.4], p < 0.001; 3.3 [1.68-6.3], p < 0.001, respectively).

Vascular complication severity
Major complications (N, %) - 67
Iliofemoral bleeding – 17/67 (25.4%)
Femoral stenosis/occlusion – 4/67 (6.0%)
Femoral pseudoaneurysm – 7/67 (10.4%)
Retroperitoneal/ Inguinal hematoma – 39 (58.2%)
Minor complications (N, %) – 38
Ileofemoral bleeding – 8/38 (21.1%)
Femoral stenosis /occlusion – 18/38 (47.3%)
Femoral pseudoaneurysm – 1/38 (2.6%)
Retroperitoneal/ Inguinal hematoma – 11/38 (23.9%)
Management Strategy according to vascular complication type
Endovascular therapy (N,%)
Ileofemoral bleeding – 25
Covered stent – 17/25 (68.0%)
Prolonged baloon inflation – 8/25 (68.0%)
Bailout surgery – 3/25 (12.0%)
Femoral stenosis/Occlusion - 22
Balloon angioplasty – 20/22 (90.1%)
Covered stent - 3/22 (13.6%) *
No endovascular treatment (N, %)
Retroperitoneal/ilioinguinal hematoma - 50
Conservative management - 50/50 (100%)
Femoral pseudoaneurysm - 8
Conservative management – 6/8 (75.0%)
Thrombin injection – 2/8 (25.0%)

* One covered stent for bailout management of post-balloon angioplasty bleeding

Conclusions: Major vascular complications following transfemoral-TAVI are frequent, impact prognosis and occur in nearly 1 out of 10 patients (9.0%). When needed, percutaneous techniques are successful in most cases. Strategies to mitigate this serious event should be implemented.

Domingo, 24 Abril de 2022 | 12:30-13:30

Sala Jardim de Inverno | Posters (Sessão 5 - Écran 8) - Doença Valvular 4 - Foco na Endocardite

PO 196. ENDOCARDITIS IN-HOSPITAL MORTALITY: WHAT CAN WE EXPECT?

Catarina Simões de Oliveira, Sara Couto Pereira, Pedro Silvério António, Joana Brito, Pedro Alves da Silva, Beatriz Valente Silva, Ana Beatriz Garcia, Ana Margarida Martins, Miguel Azaredo Raposo, Catarina Gregório, João Santos Fonseca, Ana Abrantes, Pedro Carrilho Ferreira, Fausto J. Pinto

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Infective endocarditis (IE) is a deadly disease. Despite diagnostic and therapeutic advances, it remains a challenging illness, with

high mortality and serious complications. Early identification of high-risk patients could promote the best therapeutic strategy and improve outcomes.
Objectives: To evaluate predictors of in-hospital mortality in patients with IE.
Methods: Single centre observational study of 219 patients with IE established by Duke modified criteria and 2015 ESC modified criteria, admitted to a tertiary hospital between 2010 and 2020. Clinical and demographic characteristics, laboratorial and microbiological results and echocardiographic features at baseline were analyzed. Chi-square and Mann-Whitney tests, Cox-regression for multivariate analysis and Kaplan-Meier to assess survival were used.
Results: In-hospital death occurred in 25% of pts (n = 54). Mean age was 69.3 ± 15.7-years and 63% were man. Arterial hypertension (57%), diabetes (24.1%), cancer (13%) and immunosuppression (13%) were the main co-morbidities. 37% had an acquired valvular disease (33.3% with prosthetic valve). Most common etiologic agents were *S. aureus* (24%) and *Enterococcus* spp (24%). Regarding in-hospital complications 24.1% of pts needed mechanical ventilation and renal replacement therapy and 29.6% evolved to sepsis. Considering local complications, 16.7% had valvular abscess, 5.5% prothesis disfunction and 5.5% cardiac fistula, with a positive correlation of abscess and cardiac fistula with in-hospital mortality (p = 0.027 and p = 0.002, respectively). On univariate analysis, we observed a positive correlation of in-hospital mortality with presence of prosthetic valve (p = 0.010), NTproBNP > 2,000 pg/mL (p < 0.001) as well as evidence of vegetations in the first echocardiographic evaluation (p = 0.026) and immunosuppression (p = 0.004). At diagnosis or during hospitalization, 22.2% of pts had cerebral embolization, which also correlated with mortality (p = 0.011). On multivariate analysis, immunosuppression (95%CI 1.261-8.687) cardiac fistula (95%CI 1.074-20.796) and cardiogenic shock (95%CI 1.154-5.190) were independent predictors of mortality.
Conclusions: In our cohort, mortality was as high as 25% and NTproBNP and vegetation at echo were associated with an unfavorable outcome. Immunosuppression, cardiac fistula and cardiogenic shock were independent predictors of death.

PO 197. INFECTIVE ENDOCARDITIS: EXPERIENCE OF THE LAST 20 YEARS

Catarina Ribeiro Carvalho, José João Monteiro, Pedro Rocha Carvalho, Marta Bernardo, Ana Baptista, José Ilídio Moreira

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

Introduction: Infective endocarditis (IE) as an important rate of in-hospital complications and mortality. However, there is a paucity of randomized controlled trials to guide clinical practice. In that way, characterization of this population is relevant to improve our understanding and thus the management of IE.
Methods: This was a retrospective study that included all patients hospitalized in a single centre with diagnosis of IE, between January 2000 and December 2020.
Results: A total of 161 patients were selected. Patients were predominantly males (65.8%), with a mean age of 66.4 ± 16.4 years. Diagnosis was based mainly on the following Modified Duke Criteria: echocardiographic major criteria (91.7%), fever (82.1%) and blood cultures positive for IE (49.3%), allowing a definite diagnosis in 59.0% of the patients. Most patients had some predisposing factor for IE, predominantly valvular disease. Native valve IE was more frequent than prosthetic or device IE (67.8%, 16.1% and 16.1%, respectively), involving predominantly mitral and aortic valves (35.6% and 30.0%, respectively). The most commonly identified microorganisms were Staphylococcus (28.8%) and Streptococcus (28.5%). In 27.5% of the patients, blood cultures were sterile. The most used antibiotics were vancomycin followed by beta-lactams and aminoglycosides, with a medium duration of therapy of 33.9 ± 22.5 days. Embolic complications occurred in 31.3% of the patients, most frequently cerebral (16.4%) and splenic embolic events (10.3%). Furthermore, 43.4% of the patients developed acute renal failure, 33.3% acute heart failure and 13.8% septic shock. Echocardiography revealed perivalvular complications in 26.1% of the patients, namely fistulae in 18.5%, abscess in 13.2% and pseudoaneurysm in 11.3%. Although 48.6% of the patients had indication for surgery, only 37.2% were submitted to this procedure during admission, after 22.0 (IQR 14.0-50.5) days of admission. The main reason for surgery was locally uncontrolled infection in 29.2%, followed by heart failure (20.0%) and prevention of embolic events (18.1%). Device extraction was performed in 70.4% of the 26 patients presenting with electrocatheter involvement. In-hospital mortality reached 16.8%, occurring on average 35.0 ± 17.5 days after admission. The average length of stay was 44.5 ± 22.8 days.
Conclusions: this single centre study illustrates the burden of IE, with prolonged hospitalizations and high rates of complications and in-hospital mortality.

PO 198. INFECTIVE ENDOCARDITIS: HAS ITS PROGNOSIS CHANGED 5 YEARS AFTER THE NEW ESC GUIDELINES?

Catarina Ribeiro Carvalho, José João Monteiro, Pedro Rocha Carvalho, Marta Bernardo, Ana Baptista, José Ilídio Moreira

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

Introduction: In 2015, new European Society of Cardiology (ESC) guidelines for the management of infective endocarditis (IE) were published, mainly updating antibiotic and surgical recommendations for these patients.
Objectives: To analyse the impact of the implementation of 2015 ESC guidelines on clinical outcomes of IE patients.
Methods: Retrospective study including all IE patients hospitalized in a single centre, between January 2000 and December 2020. Patients were categorized into two groups based on admission date: before (group A) and after 2015 (group B). Baseline and clinical characteristics, and outcomes were compared between the two groups.
Results: A total of 161 patients were selected, 65.8% were males, with a mean age of 69.0 ± 16.4 years. After 2015, 65 patients (40.4%) were hospitalized.

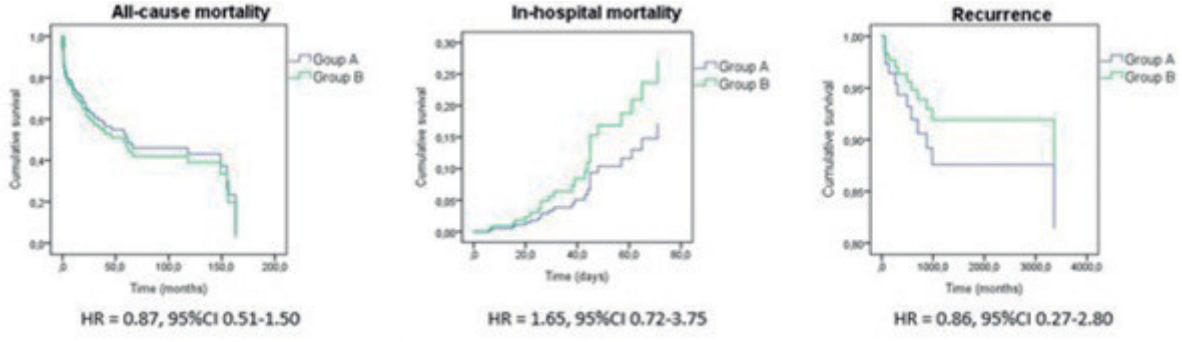

Figure 1. Multivariate regression analysis, after adjusting for all the confounders, there were no significant differences between groups regarding all-cause mortality during follow-up, in-hospital mortality or infective endocarditis recurrence.

PO 198 Figure

There were no significant differences between groups concerning age or comorbidities. Regarding major diagnostic criteria, group B had less positive blood cultures (35.2 *vs.* 64.8%, p = 0.018). Prosthetic valve IE was more frequent (65.4 *vs.* 34.6%, p = 0.005), with less native valve involvement (35.1 *vs.* 64.9%, p = 0.044). There was a greater proportion of aortic valve involvement (50.7 *vs.* 49.3%, p = 0.024). After 2015, a reduction on *Streptococcus* IE was observed (13.8 *vs.* 37.5%, p = 0.001), as well as a trend to more frequent *Staphylococcus* (33.8 *vs.* 25.0%) and *Enterococcus* IE (12.3 *vs.* 5.2%). Perivalvular complications were more commonly diagnosed after 2015 (67.6 *vs.* 32.4%, p = 0.002), namely intracardiac fistulae (66.7 *vs.* 33.3%, p = 0.037) and pseudoaneurysms (71.4 *vs.* 28.6%, p = 0.042). There were no significant differences regarding embolic complications, acute heart failure or septic shock during hospitalization. Also, average hospitalization length remained similar (45.8 ± 22.4 *vs.* 43.7 ± 23.1 days). Antibiotic choices didn't significantly differ, however duration of therapy was longer after 2015 [34.0 (IQR 27.5-46.0) *vs.* 30.0 (IQR 21.0-42.0) days, p = 0.043]. The proportion of patients with urgent surgical indication and the surgical timing remained similar [group A: 22.0 (IQR 14.0-55.0) *vs.* group B: 24.0 (IQR 14.0-38.0) days]. The median follow-up duration was 20.0 (IQR 3.0-46.5) months. In a multivariate regression analysis, after adjusting for all the possible confounders, there were no significant differences between groups regarding in-hospital mortality (HR = 1.65, 95%CI 0.72-3.75), all-cause mortality during follow-up (HR = 0.87, 95%CI 0.51-1.50) or infective endocarditis recurrence (HR = 0.86, 95%CI 0.27-2.80).
Conclusions: This study suggests that, albeit a tendency to potentially more severe causative agents and more frequent diagnosis of perivalvular complications, there was no significant improvement of in-hospital mortality, all-cause mortality during follow-up or endocarditis recurrence 5 years after the publication of ESC guidelines.

PO 199. PREDICTORS OF IN-HOSPITAL MORTALITY IN INFECTIOUS ENDOCARDITIS

Catarina Ribeiro Carvalho, José João Monteiro, Pedro Rocha Carvalho, Marta Catarina Bernardo, Ana Baptista, José Ilídio Moreira

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

Introduction: Infectious endocarditis has a high rate of in-hospital mortality, ranging between 15 and 30%. Still, there is a paucity of studies on the assessment of short-term prognosis in these patients.
Objectives: to determine predictors of in-hospital mortality in patients with infective endocarditis.
Methods: This was a retrospective study that included all patients hospitalized in a single centre with the diagnosis of infective endocarditis, between 2000 and 2020. The relationship between clinical, laboratory and echocardiographic variables and in-hospital mortality was evaluated.
Results: A total of 161 patients were selected, 65.8% were males, with a mean age of 66.4 ± 16.4 years. The in-hospital mortality rate was 16.8%, occurring on average after 35.0 ± 17.5 days of hospitalization. The average length of stay was 44.5 ± 22.8 days. Age > 70 years was associated with higher mortality rate (p = 0.021). There were no other significant differences between groups regarding clinical variables and comorbidities. Although not statistically significant, in-hospital mortality group had higher mean ejection fraction (57.2 ± 2.7 *vs.* 54.6 ± 12.9%). Laboratory parameters associated with mortality included isolation of Staphylococcus (p = 0.019) or Enterococcus (p = 0.045) in blood cultures. Though the classification of endocarditis (in native *vs.* prosthesis valve) did not differ between groups, the presence of perivalvular complications on echocardiography (p = 0.042) namely pseudoaneurysm (p = 0.003), were more frequent in the group with higher mortality rate. There were 70 patients with indication for urgent surgery, namely for locally uncontrolled infection in 29.2%, heart failure (20.0%) and prevention of embolic events (18.1%). The existence of urgent surgical indication (p = 0.009) was associated with higher mortality, and surgery during hospitalization was associated with lower mortality (p = 0.011). In a multivariate regression analysis, after adjusting for all the possible confounders, the independent predictors of in-hospital mortality were the previous history of heart failure (HR = 3.29, 95%CI 1.41-7.66), chronic liver disease (HR = 4.33, 95%CI 1.23-15.30) and evolution with septic shock (HR = 6.87, 95%CI 2.89-16.39).
Conclusions: The present study confirms the high mortality rate of patients with infective endocarditis, highlighting the importance of patient baseline characteristics and comorbidities, as it identified as independent predictors of in-hospital mortality the previous history of heart failure, chronic liver disease and evolution with septic shock.

PO 200. PREDICTORS OF RECURRENCE IN INFECTIOUS ENDOCARDITIS

Catarina Ribeiro Carvalho, José João Monteiro, Pedro Rocha Carvalho, Marta Catarina Bernardo, Ana Baptista, José Ilídio Moreira

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

Introduction: Infectious endocarditis (IE) has a high recurrence rate, ranging between 2 and 6%. However, there is a paucity of studies related to the identification of recurrence predictors.
Objectives: To determine predictors of recurrence in patients with IE.
Methods: This was a retrospective study that included all patients hospitalized in a single centre with diagnosis of IE, between 2000 and

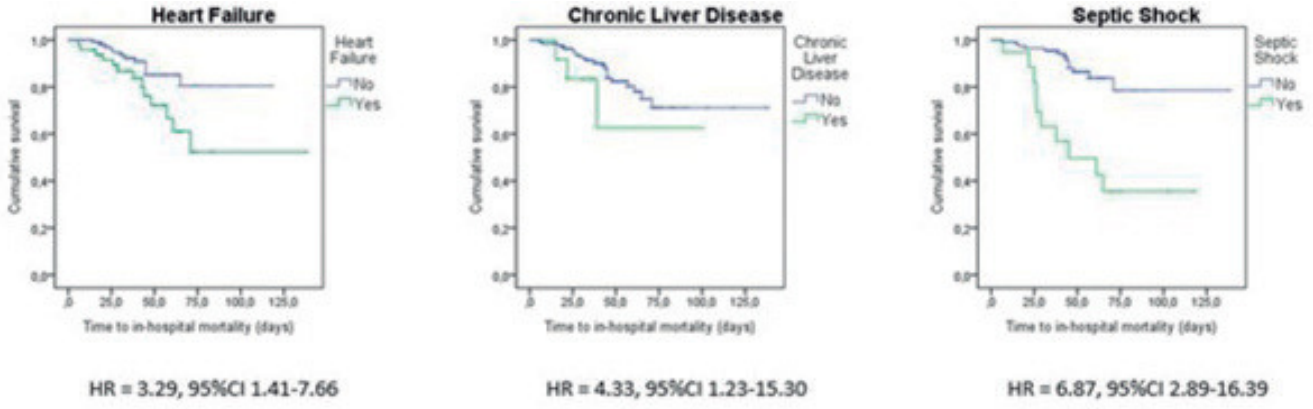

Figure 1. Multivariate regression analysis, after adjusting for all the confounders, the independent predictors of in-hospital mortality were previous history of heart failure, chronic liver disease and evolution with septic shock.

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2020. The relationship between clinical, laboratory and echocardiographic variables and the recurrence of IE was evaluated at a mean follow-up of 37.4 ± 46.0 months.
Results: A total of 157 patients were selected, 66.2% were males, with a mean age of 66.6 ± 16.3 years. IE recurrence rate was 8.9%, occurring on average 37.2 ± 47.4 months after discharge. Recurrent IE involved predominantly prosthetic valve implanted in the previous IE episode (50.0%), followed by native valve (21.4%) and previous prosthetic valve (21.4%). Most frequent agents included *Streptococcus* (42.9%), *Staphylococcus* (14.3%), *Enterococcus* (14.3%) and fungi (14.3%). In a multivariate regression analysis, after adjusting for all the possible confounders, the only significant independent predictors of recurrence were previous history of chronic liver disease (HR = 4.34, 95%CI 1.01-18.69) or chronic kidney disease in peritoneal dialysis program (HR = 23.02, 95%CI 2.67-198.14) and the isolation of fungi in blood cultures (HR = 10.54, 95%CI 1.82-61.19).
Conclusions: The present study demonstrated a significant rate of IE recurrence and highlighted the importance of comorbidities on the recurrence risk, namely when involving invasive techniques, as it identified as independent predictors for recurrence the previous history of chronic liver disease or chronic kidney disease in a peritoneal dialysis program, and the isolation of fungi in blood cultures. These high-risk patients might benefit from antibiotic prophylaxis.

Domingo, 24 Abril de 2022 | 16:00-17:00

Sala Jardim de Inverno | Posters (Sessão 6 - Écran 1) - Imagem 3 - RM Cardíaca e Cardiologia Nuclear

PO 201. MYOCARDIAL INFARCTION IN THE ABSENCE OF OBSTRUCTIVE CORONARY ARTERY DISEASE - CARDIAC MAGNETIC RESONANCE USE IN IDENTIFYING THE UNDERLYING CAUSES

Miguel Martins de Carvalho, Ricardo Alves Pinto, Tânia Proença, Pedro Grilo Diogo, Carlos Xavier Resende, Ana Filipa Amador, Catarina Martins da Costa, João Calvão, Sofia Cardoso Torres, André Cabrita, Catarina Amaral Marques, Mariana Vasconcelos, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

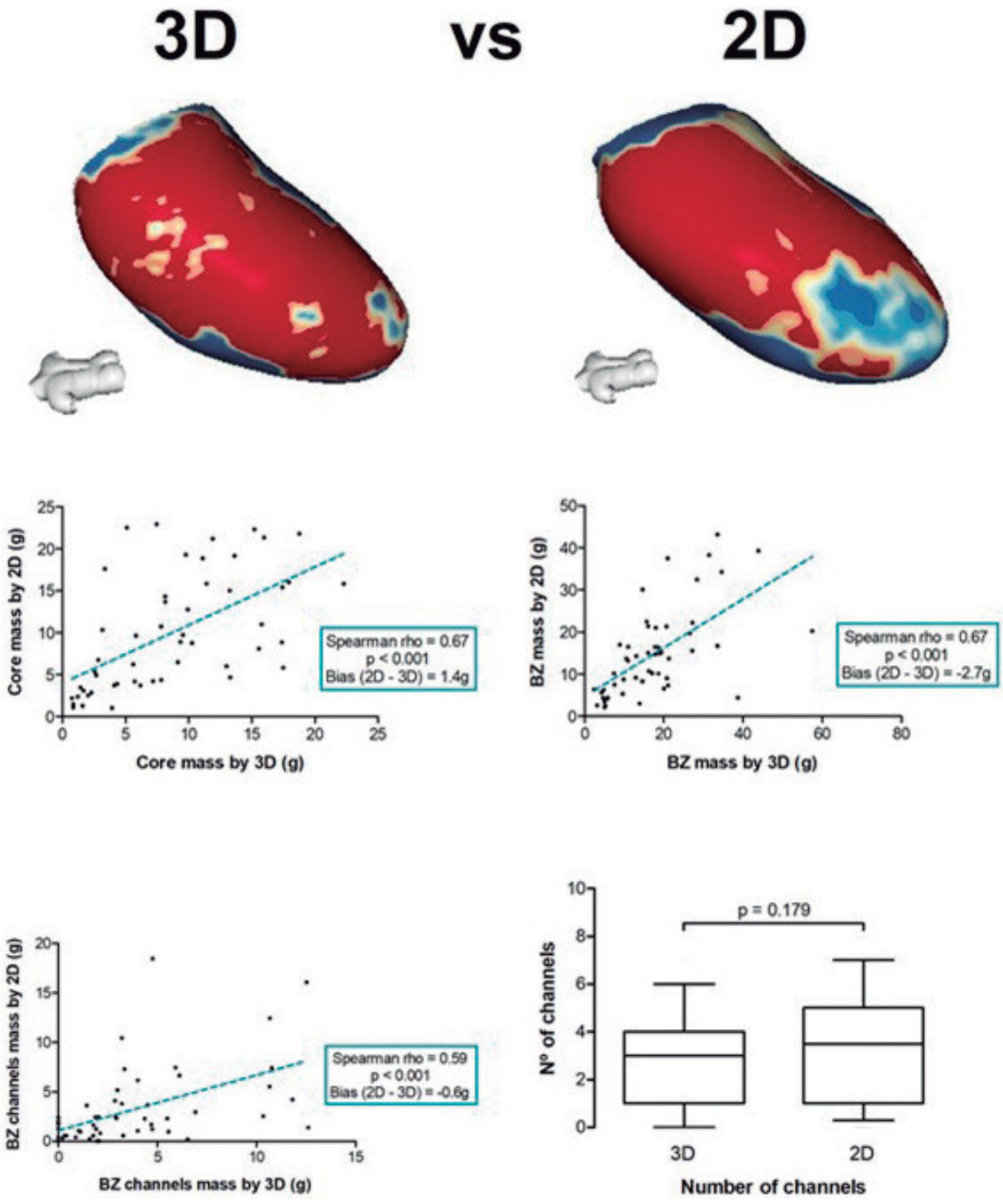
Introduction: Myocardial Infarction in the Absence of Obstructive Coronary Artery Disease (MINOCA) is a clinical entity that occurs in up to 15% of all acute coronary syndromes (ACS). It is a "working diagnosis", as it is constituted by several etiologies.
Objectives: To identify the utility of CMR in determining the etiological diagnosis of MINOCA events, with potential impact in the therapeutic management of these patients.
Methods: Patients with MINOCA who were admitted to the Cardiology department at a tertiary center, between 2015 and 2020, were included. MINOCA was defined as an ACS with non-obstructive (< 50%) coronary artery disease and no other clinically specific cause, in accordance with definition adopted in the 2020 ESC Guidelines for the management of ACS in patients presenting without persistent ST-segment elevation. Patients who did not had a coronary exam (either CT or invasive angiogram) or a CMR were excluded. All CMR exams were performed in a 3 Tesla equipment using a comprehensive protocol (cine, T2-weighted, and late gadolinium sequences). Clinical, electrocardiographic, echocardiographic and CMR data were collected.
Results: In a population of 29 patients, the mean age was 55 ± 17 years-old at the time of the cardiac event, 51.7% were male. Concerning to cardiovascular risk factors, 58.6% of patients had dyslipidaemia, 51.7% had hypertension, 13.7% were diabetic, 41.4% were smokers or previous smokers and 31.0% had obesity. Atrial fibrillation was present in 3.4% of patients. As for the EKG patterns, 41.4% of the patients had ventricular repolarization changes, 13.8% had a transitory ST elevation pattern, 6.9% had a complete left bundle branch block and 37.9% had a normal EKG; most of the ischemic EKG alterations were on the anterior wall (66.7%). The median high sensitivity I troponin levels were 1,877.5 (IQR 225.3-5,985.8) ng/L. The majority of patients (58.6%) had echocardiographic wall motion abnormalities; of those, the most common (41.1%) were on the left anterior descendent artery territory. CMR (performed at a median of 5 days from presentation) was able to identify the cause for the troponin rise in 58.6% of the cases; late gadolinium enhancement and oedema were present in 41.4% and 62.1% of patients, respectively. The mean left ventricle ejection fraction (EF) was 57.7 ± 8.5% and the mean right ventricle EF was 61.5 ± 6.1%. An ischemic pattern was present in 29.4% of the total population. In 17.6% of the patients findings were consistent with Takotsubo syndrome and in 29.4% with myocarditis.
Conclusions: CMR established the etiological cause in 58.6% of the cases, with potential implications in medical therapy. These findings highlight the importance of CMR in MINOCA diagnosis and the potential improvement in patient care with multi-modality imaging.

PO 202. QUANTITATIVE COMPARISON BETWEEN 2D *VERSUS* 3D LATE GADOLINIUM ENHANCEMENT FOR MYOCARDIAL SCAR CHARACTERIZATION – POSSIBLE IMPLICATION FOR INTERVENTION GUIDANCE AND ARRHYTHMOGENIC RISK ASSESSMENT

Pedro Freitas, Sofia Mancelos, Pedro Lopes, Sérgio Maltés, Daniel Nascimento Matos, João Carmo, Salomé Carvalho, João Abecasis, Sara Guerreiro, Francisco Costa, Pedro Galvão Santos, Pedro Carmo, Diogo Cavaco, Pedro Adragão, António Miguel Ferreira

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

Introduction: The characterization of myocardial scar tissue using late gadolinium enhancement (LGE) is a promising technique for refining the risk stratification of life-threatening arrhythmias and for planning interventions such as VT ablation.
Objectives: The purpose of this study was to assess the impact of using a 2D-*vs.* 3D-LGE acquisition for the characterization of scar and arrhythmogenic substrate in patients with previous myocardial infarction.
Methods: Patients with chronic myocardial infarction who underwent CMR for clinical proposes were included. Two LGE-sequences [1) breath-hold 2D-phase-sensitive inversion recovery; and 2) free-breathing 3D-inversion recovery with respiratory gating] were acquired 10 and 20 minutes after injection of 0.15 mmol/kg gadolinium, respectively. Patients were excluded if the 3D dataset was considered of poor/intermediate quality by two expert readers, and if the 2D dataset presented significant misalignment between slices. Scar characterization was performed in both 2D- and 3D-LGE datasets using ADAS 3D software and included core mass, borderzone (BZ) mass, BZ channels (BZC) and BZC mass.
Results: 133 patients with chronic myocardial infarction and with 2D- and 3D-LGE acquisitions were identified. The quality of the 3D-LGE dataset was poor in 18 patients (14%), intermediate in 40 patients (30%) and good in 75 patients (56%). Among these, 23 (31%) presented significant misalignment in the 2D dataset, precluding imaging processing. A final population of 52 chronic myocardial infarction patients – representing 52 pairs of 2D- and 3D-LGE datasets – was analyzed (mean age 62 ± 11; 83% male; mean LVEF 40% ± 15%). Core infarct mass, BZ mass, and BZC mass using 2D- and 3D-LGE showed moderate correlation (Spearman rho values 0.59-0.67, $p < 0.001$), with small systematic biases - Figure. BZ channels were detected in 44 patients (85%) by 3D-LGE and in 47 patients (90%) by 2D-LGE. Overall, the number of detected BZ channels was similar between 2D and 3D-LGE (BZ channels: 3 [IQR 1-4] *vs.* 3 [IQR 1-4], $p = 0.179$).
Conclusions: Scar tissue characterization parameters with 2D- and 3D seem to be moderately correlated, but not interchangeable since significant differences in individual terms are frequently found. The clinical significance of these differences remains to be established.



PO 202 Figure

PO 203. LEFT VENTRICULAR MECHANICS IN PATIENTS WITH LEFT BUNDLE BRANCH BLOCK ASSESSED BY CARDIAC MAGNETIC RESONANCE - INFLUENCE OF ETIOLOGY AND PRESENCE OF FIBROSIS

Mariana da Silva Santos[1], Marina Santos[2], Sara Guerreiro[3], Daniel Gomes[3], Bruno Rocha[3], Gonçalo Cunha[3], Pedro Freitas[3], João Abecasis[3], Ana Santos[3], Carla Saraiva[3], Miguel Mendes[3], António Ferreira[3]

[1]Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo. [2]Hospital Dr. Nélio Mendonça. [3]Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Cardiovascular magnetic resonance (CMR) is the gold standard to evaluate myocardial structure and function, and recent advances have allowed the assessment of myocardial deformation by feature tracking CMR (FT-CMR). Our aim is to evaluate the impact of left bundle branch block (LBBB) on left ventricle (LV) function and mechanics as measured by FT-CMR in patients with non-ischemic cardiomyopathy (NICM) *vs.* ischemic cardiomyopathy (ICM).

Methods: Single center registry including LBBB pts referred to CMR to assess structural cause of LV dysfunction from 2015 to 2021. LBBB was defined according to Strauss criteria as strict LBBB and non-strict LBBB. Myocardial mechanics including longitudinal (GLS), circumferential (GCS) and radial (GRS) global strain were assessed using a semi-automated FT-CMR (Circle CVI42®). Late gadolinium enhancement (LGE) pattern was used to distinguish ICM and NICM (NICM-LGE). Patients with no LGE were classified as having isolated LBBB-related septal dyssynchrony (LBBB-SD).

Results: We included 104 LBBB patients (53% male; mean age 66 ± 12 years; mean QRS 153 ± 18 ms and mean LV ejection fraction (LVEF) was 35 ± 12%). Compared with NICM, those with ICM were more often male (73.1 *vs.* 46.2%, p = 0.015), and had lower LVEF (31 ± 8 *vs.* 36 ± 12%, p = 0.023), lower absolute global strain values (p = 0.012 for GLS, p = 0.007 for GCS and p = 0.003 for GRS), and shorter septal-lateral delay (183 ± 109 *vs.* 241 ± 108 ms, p = 0.021). Among LBBB-SD patients, all myocardial strain components were significantly less impaired in comparison with ICM patients (GLS: -9.5 ± 3.1 *vs.* -7.0 ± 3.2,

Table: Overall patients' characteristics and comparison between groups

	All (n=104)	ICM (n=26)	NICM-LGE (n=29)	LBBB-SD (n=49)	p-value	p-value 1 vs 2	p-value 1 vs 3	p-value 2 vs 3
QRS duration	153±18	140±20	157±22	154±13	0.232	0.265	0.868	1.000
iLVEDV*	132±43	135±33	151±50	119±40	0.006	0.468	0.372	**0.005**
iLVESV*	89±43	93±27	111±53	74±37	<0.001	0.321	0.136	**<0.001**
LVEF	35±12	31±8	30±14	39±10	<0.001	1.000	**0.006**	**0.002**
GLS	-8.4±3.5	-7.0±3.2	-7.9±3.8	-9.5±3.1	0.006	0.878	**0.007**	0.137
GRS	14.5±7.1	11.8±4.1	12.5±8.3	17.1±7.1	0.001	1.000	**0.004**	**0.012**
GCS	-10.1±3.9	-8.7±2.5	-8.7±4.6	-11.7±3.5	<0.001	1.000	**0.003**	**0.003**
Septal-lateral delay	229±119	190±133	215±114	256±108	0.044	1.000	0.052	0.344

*iLVEDV – indexed LV end-diastolic volume; iLVESV – indexed end-systolic volume

PO 203 Figure

p = 0.007; GRS: 17.1 ± 6.8 *vs.* 11.8 ± 4.1, p = 0.004; GCS: -11.7 ± 3.5 *vs.* -8.7 ± 2.5, p = 0.003) but this difference was not detected between NICM-LGE and ICM. Furthermore, in LBBB-SD group, LV dimensions were smaller and LVEF higher than NICM-LGE (Table). LGE was found in 53% of patients and all types of global strain values were lower in this group (p < 0.05 for all). Within NICM, LGE was mainly distributed as an intramural pattern (n = 22; 69%) and more often located in the ventricular septum (n = 23; 72%).

Conclusions: Among LBBB patients, myocardial strain analyzed by FT-CMR was independently associated with LV remodeling. LBBB patients with NICM without LGE seem to present a distinct phenotype in terms of LV mechanics, characterized by less severe compromise of LVEF and strain parameters.

PO 204. VENTRICULAR ARRHYTHMIA IN PATIENTS WITH NORMAL ECHOCARDIOGRAPHY – CAN CARDIOVASCULAR MAGNETIC RESONANCE ENHANCE THE DIAGNOSIS OF STRUCTURAL HEART DISEASE?

Catarina Martins da Costa, João Calvão, Ana Filipa Amador, Ricardo Alves Pinto, Catarina Amaral Marques, André Cabrita, Ana Isabel Pinho, Luís Daniel Santos, Cátia Oliveira, António J. Madureira, Gonçalo Pestana, Ana Lebreiro, Luis Adão, Teresa Pinho, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Ventricular arrhythmias (VA) include a broad spectrum ranging from premature ventricular beats (VPBs) to ventricular fibrillation (VF) and account for approximately 50% of all cardiovascular deaths. Echocardiography is commonly used to identify structural heart disease (SHD), the most frequent substrate of VA. Cardiovascular magnetic resonance (CMR) is recommended to complement echocardiography when image quality is suboptimal.

Objectives: This retrospective study sought to determine whether CMR may identify SHD in patients (pts) with VA, who had normal baseline ECG and whose echocardiogram, with adequate technical conditions, ruled out pathological findings.

Methods: We included consecutive pts followed in the arrythmia outpatient clinic of one tertiary center from June 2014 to June 2021 for significant VA. This was categorized as > 1,000 but < 10,000 VPBs/24 h; ≥ 10,000 VPBs/24 h; nonsustained ventricular tachycardia (NSVT), sustained VT, or a history of resuscitated cardiac arrest, and no pathological findings at echocardiography, requiring a clinically indicated CMR. The primary endpoint was detection of SHD on CMR.

Results: A total of 75 pts were included. Fifty-nine pts had no SHD (mean age 45 ± 15 years old) and 16 pts presented signs of SHD (mean age 53 ± 15 years old). All pts performed CMR, and the table shows pts' baseline characteristics, VA diagnosis and CMR measurements. Definite SHD was diagnosed in 8 patients (11%): ischemic cardiopathy (three pts), myocarditis (1 pt), hypertrophic cardiomyopathy (1 pt), right ventricle arrhythmogenic disease (1 pt), non-compaction cardiomyopathy (1 pt); 1 patient presented higher myocardial T2 signal and was later diagnosed with sarcoidosis. Furthermore, abnormal findings not specific for a definite SHD diagnosis were found in 8 additional pts (10%) who showed unspecific intra-myocardium enhancement.

Table 1. Patients' characteristics and CMR measurements, N (%)	No SHD (N=59)	SHD (N=13)
Cardiovascular risk factors		
Male	27 (46)	13 (81)
Arterial hypertension	13 (22)	7 (44)
Dyslipidemia	12 (20)	5 (31)
Diabetes Mellitus	5 (9)	1 (6)
Smoking history	10 (17)	3 (23)
Family history of sudden death	1 (2)	1 (6)
Diagnosis		
EVB	32 (54)	9 (56)
VT	16 (27)	6 (37)
NSVT	5 (8)	-
VF	6 (10)	1 (6)
CMR measurements		
LVEF (%)	61±4	57±11
LVEDV (ml)	139±41	164±37
index (ml/m²)	77±22	85±19
LVESV (ml)	54±19	70±28
index (ml/m²)	30±9	36±15
LVSV (ml)	86±22	93±17
index (ml/m²)	47±12	48±7
Cardiac index (L/min/m²)	3±1	3±1
LV mass (g)	103±35	119±20
index (g/m²)	59±15	61±8
RVEF	60±7	61±7
RVEDV	129±41	148±38
index (ml/m²)	71±21	76±17
RVESV	53±21	57±20
index (ml/m²)	30±10	29±10
Late gadolinium enhancement	-	13

CMR - Cardiovascular magnetic resonance; EBP – ectopic ventricular beat; LV – left ventricle; LVEDV - left ventricle end-diastolic volume; LVEF - left ventricle ejection fraction; LVESV - left ventricle end systolic volume, LVSV – left ventricle stroke volume; NSVT – non sustained ventricular tachycardia; RVEDV - right ventricle end diastolic volume; RVEF – right ventricle ejection fraction; RVESV – right ventricle end systolic volume; SHD - structural heart disease; VF – ventricular fibrillation; VT – ventricular tachycardia

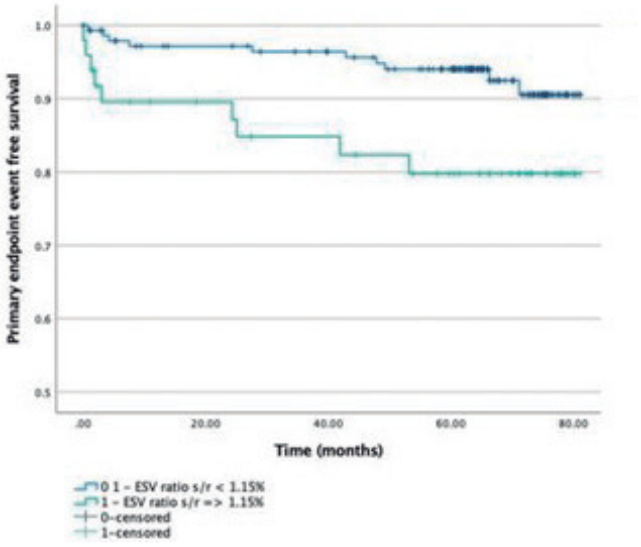
Conclusions: CMR imaging identified SHD in about 20% of patients with normal ECG and echocardiogram. Among patients with a definite SHD diagnosis, ischemic cardiopathy was the most common finding, unlike previous studies showing myocarditis as the main cause. This finding may be related to the older age of SHD group. In conclusion, CMR allowed diagnosis of clinically relevant SHD even when echocardiography excluded it.

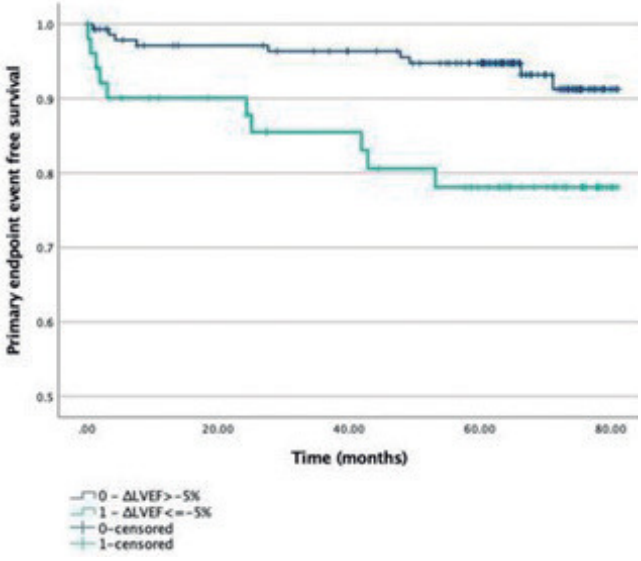
PO 205. SEEING BEYOND PERFUSION - IS THERE A ROLE FOR OTHER HIGH-RISK ISCHEMIA MARKERS IN PATIENTS WITH NORMAL PERFUSION ON SPECT MYOCARDIAL PERFUSION IMAGING?

Paulo Medeiros[1], Bárbara Pereira[2], Paula Soeiro[2], Jorge Rodrigues[1], Victor Alves[2]

[1]Hospital de Braga, EPE. [2]Centro Hospitalar Universitário de S. João, EPE.

Introduction: Single-photon emission computed tomography myocardial perfusion imaging (SPECT-MPI) is a useful non-invasive test for the diagnosis of obstructive coronary artery disease (CAD). The incidence of significant CAD in patients with normal perfusion studies is < 1%/year. Other high-risk markers include decrease of left ventricle ejection fraction (LVEF) on stress study compared to rest or transient ischemic dilation (TID), but the impact of these markers in patients with normal perfusion is unknown.





Objectives: To evaluate the incidence of significant CAD in patients with high-risk markers of ischemia despite a normal perfusion study.
Methods: Single-center, observational, retrospective, and longitudinal study. Inclusion criteria were age ≥ 18 years, availability of both rest and stress SPECT-MPI studies, normal perfusion (defined by visual assessment and as a Summed Stress Score (SSS) < 4) and gated-study for LVEF and volume analysis. Exclusion criteria were known CAD, non-ischemic cardiomyopathy, and congenital heart disease. Defined high-risk markers: LVEF reduction ≥ 5% on stress *vs.* rest study; TID (defined as a stress/rest volume ratio ≥ 1.15. Primary endpoint was the identification of significant CAD (stenosis > 70% on an epicardial coronary artery or > 50% on the left main artery) on invasive coronary angiography.
Results: A total of 197 patients met the inclusion criteria. Mean age was 63.4 years and 40.6% (n = 80) of patients were male. Regarding background, 75.6% of patients had hypertension, 54.3% dyslipidemia, 26.9% diabetes mellitus, 14.2% chronic kidney disease. Twenty-six percent of patients had a LVEF reduction > 5% on stress study; 24.9% had a stress/rest end-systolic volume ratio > 1.15; 7.1% had a stress/rest mean volume ratio > 1.15; 7.1% had a stress/rest end-diastolic volume ratio > 1.15. Time-to-primary endpoint was significantly lower in patients with LVEF reduction > 5% on stress (67.99 *vs.* 77.56 months, 95%CI: 60.49-75.49; p = 0.003) and on patients with stress/rest end-systolic volume ratio > 1.15 (68.39 *vs.* 77.3 months, 95%CI: 60.69-76.10; p = 0.013).
Conclusions: In patients with normal perfusion on SPECT-MPI, the incidence of significant CAD was significantly higher in those with LVEF reduction ≥ 5% on stress study and in those with a stress/rest end-systolic volume ratio ≥ 1.15. These markers may be of clinical relevance in the follow-up of patients with suspected CAD.

Domingo, 24 Abril de 2022 | 16:00-17:00

Sala Jardim de Inverno | Posters (Sessão 6 - Écran 2) - Arrítmias 6 - Arrítmias Ventriculares 2

PO 206. LONG-TERM IMPACT OF ACTIVATION CIRCUIT-BASED VENTRICULAR TACHYCARDIA ABLATION ON VENTRICULAR ARRHYTHMIA BURDEN

Francisco Barbas de Albuquerque, Guilherme Portugal, Pedro Silva Cunha, Bruno Valente, Ana Lousinha, Ana Sofia Delgado, Margarida Paulo, Tiago Rosa, Manuel Brás, Rui Cruz Ferreira, Mário Oliveira

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

Introduction: Ventricular arrhythmias (VA) are a major cause of morbidity and mortality in heart failure patients. Ventricular tachycardia (VT) ablation is an established treatment for the reduction of recurrent implantable cardioverter-defibrillator (ICD) therapies in this population. In patients with substrate-related VT, mapping of the entire tachycardia circuit, when feasible, may allow for more accurate targeting of the clinical VT.
Objectives: To assess the long-term impact of catheter ablation based on activation mapping of substrate-related VT on VA burden.
Methods: Consecutive patients submitted to VT ablation between January 2013 and October 2021 were included. A comprehensive review of clinical records and device monitoring was performed to assess VA burden, defined as all ICD therapies and clinically documented VTs, before and after ablation. The primary outcome was reduction in the overall burden of VA after ablation. The impact of ablation on VA burden was assessed by fixed-effects Poisson regression; comparison at fixed time intervals was performed with a paired-sample Wilcoxon signed-rank test (STATA 12, JASP).
Results: A total of 134 VT ablation procedures were performed during the study period. Of these, there were 21 procedures where complete mapping of the VT activation circuit was achieved, corresponding to 18 patients. Mean age was 56.7 years, 88% male sex, mean left ventricular ejection fraction 39 ± 13%, BNP 540 ± 627 pg/mL. Etiology was ischemic in 44%, non-ischemic dilated cardiomyopathy in 39%, arrhythmogenic right ventricular dysplasia in 11% and hypertrophic cardiomyopathy in 6%. Mechanical support was *in situ* in 3 patients (two with temporary VA ECMO and one with LVAD as destination therapy); all but one patient had an ICD. Procedural duration was 209 ± 61 minutes. One patient developed complete AV block; no other

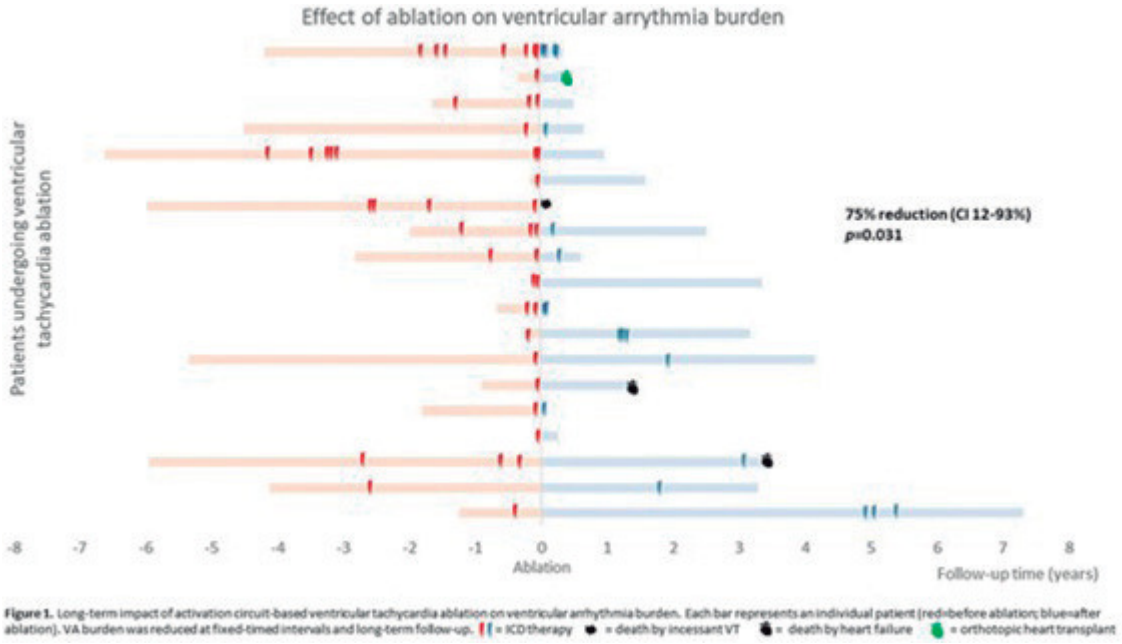


Figure 1. Long-term impact of activation circuit-based ventricular tachycardia ablation on ventricular arrhythmia burden. Each bar represents an individual patient (red=before ablation; blue=after ablation). VA burden was reduced at fixed-timed intervals and long-term follow-up. = ICD therapy = death by incessant VT = death by heart failure = orthotopic heart transplant

PO 206 Figure

peri-procedural complications were observed. During follow-up two patients died due to heart failure, one patient died from refractory cardiogenic shock with refractory incessant VT and one patient underwent orthotopic heart transplant. The mean follow-up time after ablation was 2.2 ± 1.9 years. A significant reduction in VA burden was observed (Fig.) at 3 months (92.5% reduction, p = 0.002) and 6 months after ablation (83.3% reduction, p = 0.041). After fixed-effects Poisson regression, there was an estimated long-term reduction of 75% (CI 12-93%, p = 0.031) of VA burden after VT circuit ablation.

Conclusions: Targeted circuit ablation is feasible in a subset of patients referred to VT ablation and leads to a significant sustained decrease in VA burden and device therapies.

PO 207. FOLLOW-UP OF SUSTAINED VENTRICULAR TACHYCARDIA IN ACUTE CORONARY SYNDROMES

Hélder Santos, Mariana Santos, Sofia B. Paula, Inês Almeida, Samuel Almeida, Lurdes Almeida

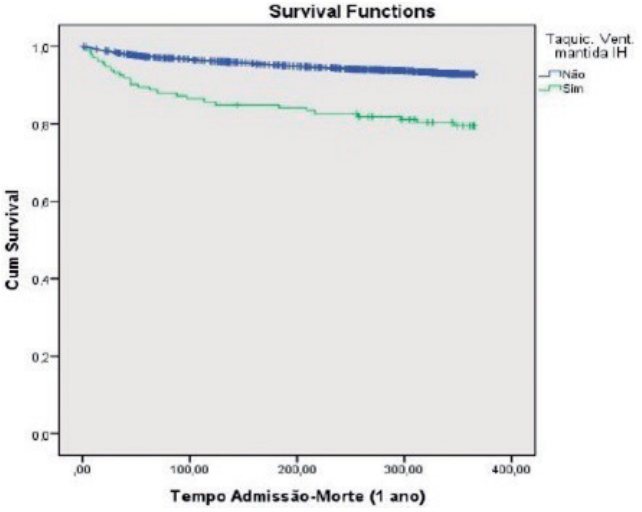
Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo.

Introduction: Sustained ventricular tachycardia (VT) is a dangerous but frequent situation associated with the onset of Acute Coronary Syndrome (ACS). It is related to the worst short-term prognosis, however, the long-term prognosis of VT in the ACS is not clarified.

Objectives: Evaluate if the presence of VT in ACS is a predictor of long-term mortality.

Methods: Multicenter retrospective study, based on the Portuguese Registry of ACS between 1/10/2010-4/09/2019. Patients were divided in two groups: A – patients without VT, and B – patients that presented VT on the hospitalization. VT was defined as a register or more of the VT with at least 30 seconds. Logistic regression was performed to assess predictors of mortality at one year of follow-up.

Results: 25,725 patients were included, yet just 9,686 had a 1-year follow-up, with 9,543 in group A (98.5%) and 143 in group B (1.5%). Both groups were similar regarding gender, age, cardiovascular risk factors, previous ACS therapy, cholesterol, creatinine and hemoglobin at admission, multivessel disease and revascularization rates. Group A had higher time since the onset of symptoms until the medical assistance (371 ± 163 *vs.* 278 ± 115, p = 0.003), chest pain (91.8 *vs.* 72.7%, p < 0.001), HbA1c (6.7 ± 1.8 *vs.* 5.3 ± 0.5, p = 0.008), radial access (81.7 *vs.* 55.8%, p < 0.001) and left ventricular ejection fraction (LVEF) > 50% (68.6 *vs.* 36.7%, p < 0.001). On the other hand, group B exhibited higher rates of direct cardiac unit admission (22.6 *vs.* 37.6%, p = 0.022), previous heart failure (6.2 *vs.* 12.0%, p = 0.005), STEMI (40.2 *vs.* 65.7%, p < 0.001), admission heart rate (77 ± 19 *vs.* 84 ± 33, p = 0.025), admission systolic blood pressure (SBP) (141 ± 29 *vs.* 127 ± 34, p < 0.001), Killip-Kimball classification > I (KK > I) (13.5 *vs.* 32.9%, p < 0.001), atrial fibrillation at admission (AF) (7.1 *vs.* 14.1%, p = 0.001), admission glycemia (155 ± 79 *vs.* 176 ± 87, p = 0.002), BNP (360 ± 589 *vs.* 598 ± 612, p < 0.001), hybrid revascularization strategy (0.7 *vs.* 3.3%, p = 0.011), in-hospital time (5 ± 4 *vs.* 10 ± 7, p < 0.001) and major adverse cardiac events (all p < 0.001). Mortality rates significantly increase at one year of follow-up, with a Kaplan-Meier test of p < 0.001 (Fig.), however readmission for all causes (p = 0.873) and cardiovascular readmission (p = 0.792) at one year were similar between the groups. Logistic regression revealed that VT was not a predictor of mortality at one-year follow-up (p = 0.117). Also logistic regression revealed that age > 75 years (*odds ratio* (OR) 2.53, p < 0.001, confidence interval (CI) 2.04-3.14), SBP (OR 1.85, p = 0.004, CI 1.21-2.81), KK> I (OR 1.51, p < 0.001, CI 1.21-1.89), AF (OR 1.32, p = 0.0033, CI 1.02-1.70), LVEF< 40% (OR 1.89, p < 0.003, CI 1.51-2.34) and mechanical complication (OR 7.79, p < 0.001, CI 2.84-21.37) were predictors of mortality at one-year follow-up in ACS patients.



Conclusions: VT during the admission for ACS was not a predictor of mortality at one-year follow-up.

PO 208. EFFICACY OF MEXILETINE IN THE TREATMENT F PATIENTS WITH RECURRENT VENTRICULAR ARRHYTHMIAS IN LONG-TERM FOLLOW-UP

Gonçalo Lopes da Cunha, Sérgio Maltês, Miguel Mendes, Pedro Adragão

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

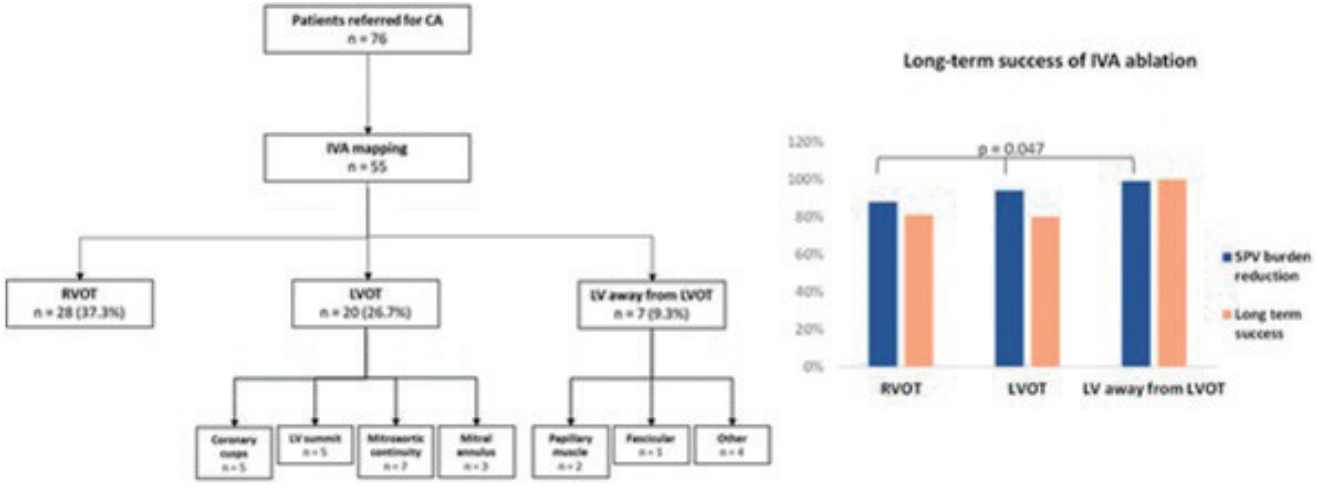
Introduction: Several studies report a significant reduction in arrhythmic burden in patients with recurrent ventricular arrythmias treated with mexiletine during a midterm follow-up (1 to 3 years). However, the number and distribution of arrhythmic events along time is not constant, possibly leading to under or overestimation of the effect of anti-arrhythmic drugs in shorter follow-ups. This study sought to evaluate the efficacy of mexiletine in suppression of ventricular arrhythmias in long term follow-up.
Methods: This was a single centre, retrospective study enrolling patients who were prescribed mexiletine for treatment of recurrent ventricular arrhythmias. In order to evaluate efficacy, patients were only included if they were on mexiletine for more than 12 months. Follow-up was done through electronic records and telephonic questioning when appropriate. The events occurring during the mexiletine treatment period were compared with those observed in a matched duration interval before the initiation of therapy. We collected all the episodes of electric storm and isolated defibrillator shocks (i.e. defibrillator shocks administered outside the electric storm episodes).
Results: Overall, 22 patients were included (86% male, mean age at initiation of mexiletine of 68 ± 7 years). Of these 64% had previous myocardial infarction and 68% had at least one ventricular tachycardia (VT) ablation. All patients had an implanted defibrillator. Mean mexiletine dosage was 419 ± 157 mg. In 5 (20%) patients mexiletine was withdrawn (2 after successful VT ablation, 1 due to heart transplantation, 1 due to pro-arrythmia and 1 due to heart failure). During a median follow up of 53 (28 to 97) months, there were 9 episodes of electric storm (ES) and 39 episodes of isolated electrical cardioversions (EC).There was no significant decrease in the total number of ES or EC after the beginning of mexiletine therapy (p = 0.204 and p = 0.144, respectively).
Conclusions: We found that there was no significant decrease in the number of ventricular arrhythmias during a long term follow up. In this challenging subset of patients, medical therapy has very limited efficacy, leading to the need for further developments in VT ablation technique.

PO 209. IDIOPATHIC VENTRICULAR ARRHYTHMIA ABLATION - A CENTER EXPERIENCE

Joana Brito, Pedro Silvério António, Afonso Nunes Ferreira, Gustavo Silva, Luís Carpinteiro, Sara Couto Pereira, Beatriz Valente Silva, Pedro Alves da Silva, Ana Margarida Martins, Ana Bernardes, Nuno Cortez-Dias, Fausto J. Pinto, João de Sousa

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Idiopathic ventricular arrhythmia (IVA) is defined as ventricular tachycardia (VT) and premature ventricular beats (PVC) in the absence of structural heart disease or in whom site of origin is independent from structural abnormalities. Generally, IVA are associated with good long-term prognosis. Catheter ablation (CA) is the treatment of choice in highly symptomatic PVC, induced tachycardiomyopathy or PVC with malignant presentation.
Objectives: To describe a population referred for IVA CA and the efficacy and safety of IVA CA.
Methods: Consecutive patients (pts) referred for IVA CA from January 2015 to June 2021 were included. All pts were telemonitored and submitted to CA if there was a documentation of frequent spontaneous PVC, if PVC were induced by effort or isoprenaline or previously documented VT. Baseline and follow-up clinical, laboratory and intraprocedural data were collected. Acute procedural success was defined as procedural complete suppression of IVA. Long-term success was defined as either a reduction of 80% of PVC burden or absence of VT recurrence.
Results: 75 pts were included (mean 51 ± 16 age, 51.3% male). Mean LVEF was 50.53 ± 19.5% and 17% had Heart Failure. Frequent PVC (23.2 ± 14%) was the main reason for CA referral (57.3%), followed by nonsustained (33.3%) and sustained VT (9.3%). Palpitations were the most frequent symptom (61.3%), although 14.7% presented with syncope or hemodynamic compromise. In 55 pts (73.3%) IVA mapping was feasible and were submitted to ablation. Acute success was observed in 48 patients (87.2%). The distribution of site of origin was the followaing: RVOT in 37.3%, LVOT in 26.7% and away from the LVOT in 9.3% (Fig. 1). Procedure complications occurred in 9 (12%) pts, the most common being pericardial effusion resolved with pericardial drainage. In 2 patients transient vasopressor support was required. Long-term success was observed in 40 (83.3%) pts independent from the site of origin. The mean PVC burden reduction was 91 ± 14%, with significant differences among the sites of origin, slightly inferior in RVOT (88%, p = 0.047) (Fig. 2). Two pts underwent redo procedures. Successful CA allowed a follow-up free from antiarrhythmic drug in 41 patients (85.4 *vs.* 52%, p = 0.002).
Conclusions: In our cohort a significant percentage of IVA had a site of origin in the LVOT or LV. Idiopathic VT ablation is a safe procedure with a significant long-term impact free from IVA and antiarrhythmic drug.



PO 209 Figure

PO 210. VENTRICULAR TACHYCARDIA ABLATION IN PATIENTS WITH ISCHAEMIC AND NON-ISCHAEMIC CARDIOMYOPATHY

Pedro Silvério António, Joana Brito, Sara Couto Pereira, Pedro Alves da Silva, Beatriz Valente Silva, Catarina Oliveira, Beatriz Garcia, Margarida Martins, Miguel Raposo, Afonso Nunes-Ferreira, Gustavo Lima da Silva, Luís Carpinteiro, Nuno Cortez-Dias, Fausto J. Pinto, João de Sousa

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Ventricular tachycardia (VT) is frequently in the setting of structural heart disease – ischaemic cardiomyopathy (ICM) or non-ischaemic cardiomyopathy (NICM). Radiofrequency catheter ablation (RCA) is an effective treatment for VT in ICM, but the results in NICM patients are not so satisfactory, and studies comparing efficacy are limited.
Objectives: To report the description and long-term outcome after a single RCA procedure for VT in patients with ICM and NICM using a high-density substrate-based approach.
Methods: We conducted a prospective, observational, single-centre and single-arm study involving patients with ICM and NICM, referred for RCA procedure for VT using high-density mapping catheters. Procedural endpoints were VT noninducibility and abolition of local abnormal ventricular activities (LAVAs). Primary end-point was a composite of all-cause mortality, recurrence of VT and heart failure hospitalization. Secondary end-point was survival-free from appropriate ICD shocks.
Results: We included 102 patients (94.1% males, mean age 67 ± 11, mean follow-up of 2.6 ± 1.7 years), 73.5% had ischemic aetiology and 26.5% NICM. Patients had a mean LVEF 33.9% ± 11.3% and 50% were in NYHA II class. Baseline characteristics were similar between two groups, except that NICM patients were younger (mean age 61 ± 12 *vs.* 69 ± 9, p = 0.001) and ICM patients had more hypertension, smoking habits (p = 0.001) and chronic kidney disease (58.8 ml/min *vs.* 71.7 ml/min, p = 0.039). At time of ablation 47% patients presented with arrhythmic storm and 62% with ICD-shock. LAVAs were identified in all patients and sustained monomorphic VT was inducible in 41%. LAVAs elimination and noninducibility were achieved in 93.8% and 60%, respectively in ICM and NICM. At 1-year 55% were free from the primary composite end-point irrespective of aetiology (ICM 60 *vs.* NICM 43%) and 33% at 2-year (ICM 36 *vs.* NICM 29%), p = 0.135. Freedom from appropriate ICD shocks was 91% at 1-year (91% ICM *vs.* 92% NICM) and 86% at 2-year (85.5% ICM *vs.* 86% NICM), p = 0.358. Overall survival was 86% and 83% at 1 and 2 years, respectively.
Conclusions: In patients submitted to RCA of VT using a high-density mapping substrate-based approach the long-term success rate was similar in both ICM and NICM, namely in long-term freedom from ICD shocks or cardiovascular hospitalizations.

Domingo, 24 Abril de 2022 | 16:00-17:00

Sala Jardim de Inverno | Posters (Sessão 6 - Écran 3) - Arritmias 7 - Fibrilhação Auricular 2

PO 211. INITIAL EXPERIENCE OF ATRIAL FIBRILLATION CATHETER ABLATION IN A LOW-VOLUME CENTER: CRYOABLATION VS RADIOFREQUENCY

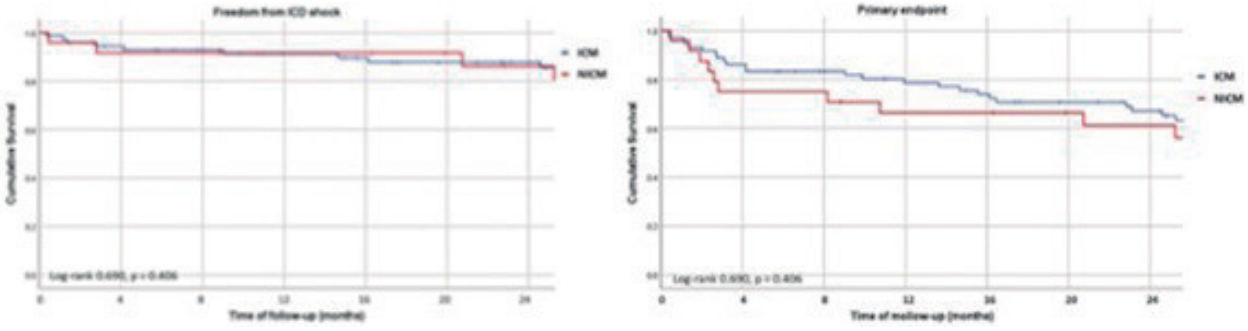
Pedro Campos Amador, Leonor Parreira, Rui Antunes Coelho, Dinis Mesquita, Rita Marinheiro, Alexandra Gonçalves, Duarte Chambel, Maria João Lopes, Tânia Teixeira, Pedro Contreiras, Dina Ferreira, Rui Caria

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

Introduction: Atrial fibrillation (AF) catheter ablation is increasingly being performed worldwide, nevertheless there are concerns of lower success rates and higher complications of AF ablations performed in low-volume centers. Cryoablation (CRYO) is accepted as a technique with a faster learning curve, so usually suggested as the procedure of choice for those centers. Thus, we sought to evaluate the safety and efficacy of AF catheter ablation during the learning curve for the two different technologies: radiofrequency (RF) and CRYO in a low-volume center.
Methods and results: We studied the first 25 patients with paroxysmal AF that underwent catheter ablation with each technique at our center. We evaluated the procedure time, fluoroscopy time, major complications and outcomes. Primary outcome was AF recurrence rate. Secondary outcomes included periprocedural complications, hospitalization for symptomatic tachy-arrhythmias post-ablation and number of repeat ablations. Mean age of our cohort was 64.0 ± 9.1 years, of which 22 (44%) were males. Baseline characteristics of both groups were not significantly different (Table). Procedure times were significantly longer for RF (193.8 ± 48.7 min *vs.* 120.8 ± 17.6 min, p < 0.001; Fig. 1A) and fluoroscopy times were also longer (20.5 ± 5.8 min *vs.* x ± 15.1 ± 3.8 min, p = 0.02, Fig. 1B). Survival free from AF was not significantly different between the 2 groups (HR 0.47; 95%CI 0.14-1.61, p = 0.231) (Fig. 1C). There were no significant differences in secondary outcomes.
Conclusions: Starting of AF ablation at low volume centers is feasible with comparable efficacy and safety outcomes to high-volume centers using contemporary ablation technologies. In our group of patients procedure and fluoroscopy times with RF were longer but both techniques achieved comparable results.

	12 months		24 months		p*
	Ischemic	Non-ischemic	Ischemic	Non-ischemic	
Primary end-point	60%	43%	36%	29%	0.135
Freedom from schock	91%	92%	85.5%	86%	0.358
Survival	91.5%	83.5%	86%	79%	0.418
Freedom from cardiovascular hospitalization	87%	75%	72%	75%	0.653

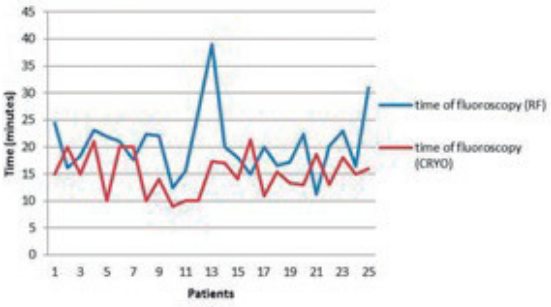
* Total follow-up



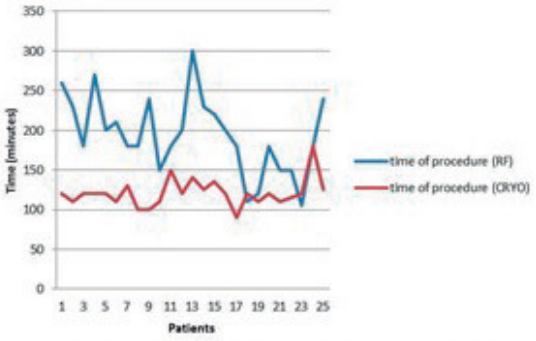
PO 210 Figure

	RF (n=25)	CRYO (n=25)	p
Age, y	64.3 ± 9.8	63.7 ± 8.5	0.942
Men	11 (44%)	12 (48%)	0.777
Weight, kg	78.1 ± 13.2	77.2 ± 13.5	0.931
Hypertension	15 (60%)	12 (48%)	0.395
Diabetes	3 (12%)	2 (8%)	0.637
Previous Stroke	2 (8%)	2 (8%)	1.000
Sleep apnea	6 (24%)	5 (20%)	0.732
Creatitine clearance < 60 ml/min	2 (8%)	2 (8%)	1.000
Antiarrhythmic drugs	20 (80%)	19 (76%)	0.732
CHA_2DS_2-VASc score ≥ 2	15 (60%)	14 (56%)	0.774
Left atrial volume (ml/m2)	36.8 ± 10.0	41.8 ± 8.1	0.107

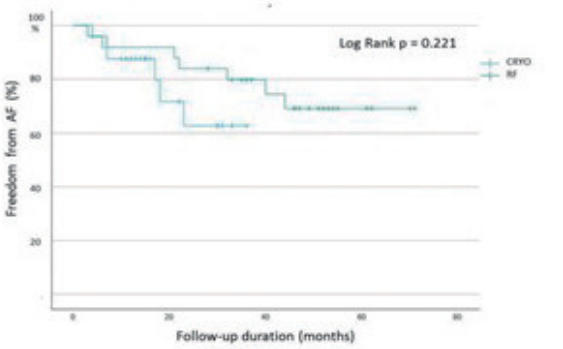
Table 1. Baseline characteristics



Graph 1B . Fluoroscopy times for RF and CRYO procedures (first 25 patients with paroxysmal AF)



Graph 1A . Procedure times for RF and CRYO procedures (first 25 patients with paroxysmal AF)



Graph 1C . Kaplan–Meier survival curve—proportion of patients free of AF during the follow up

PO 211 Figure

PO 212. IMPACT OF INDUCED ATRIAL FIBRILLATION DURING ATRIOVENTRICULAR NODAL REENTRANT TACHYCARDIA ABLATION

Ana Raquel Carvalho Santos, Ana Lousinha, Madalena Coutinho Cruz, Guilherme Portugal, Paulo Osório, Bruno Valente, Pedro Silva Cunha, Sérgio Laranjo, Margarida Paulo, Manuel Brás, Ana Sofia Delgado, Tiago Rosa, Helena Fonseca, Mário Martins Oliveira, Rui Cruz Ferreira

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

Introduction: Ablation is the treatment of choice for atrioventricular nodal reentrant tachycardia (AVNRT). Atrial fibrillation (AF) can incidentally occur during this procedure, labeling these patients (P) as susceptible for AF in the future. Our aim was to assess the presence of new onset AF in P who presented this arrhythmia during the electrophysiological study (EPS).
Methods: We retrospectively analyzed 580 P that underwent AVNRT ablation between November 2008 and August 2020. Patients with previous AF were excluded. After having AF induced during the EPS, 62 P were identified as susceptible for developing AF. Data were collected by contacting P and consulting medical records.
Results: The studied population had 64.5% (n = 40) females, 35.5% (n = 22) males, with ages between 15 and 81 years old (median 52.3, mean 50.1). At ablation date, 33.9% (n = 21) had hypertension, 3.2% (n = 2) diabetes, 6.5% (n = 4) chronic kidney disease, 3.2% (n = 2) obstructive sleep apnea, 6.5% (n = 4) coronary artery disease and 6.5% (n = 4) structural heart disease. Previously to ablation, 46.8% (n = 29) were on beta-blocker, 1.6% (n = 1) on amiodarone and 3.2% (n = 2) on flecainide. When admitted to the procedure, 98.4% (n = 61) were in sinus rhythm and 1.6% (n = 1) had a pacemaker. "Slow-fast" was the most common AVNRT type (96.8%). During the EPS, other arrhythmias were induced: in 12.9% (n = 8) atrial flutter and in 9.7% (n = 6) atrial tachycardia. After AF induction, 12.9% (n = 8) needed electrical cardioversion and 3.2% (n = 2) needed both electrical and pharmacological. At the time of ablation, transient complete atrioventricular block was noted in 6.5% (n = 4) P. When contacted, 100% (n = 62) had 1 year of follow-up, 69.4% (n = 43) 5 years and 25.8% (n = 16) 10 years, with a mean follow-up of 6.6 years. It was not possible to contact 12.9% (n = 8) of the P, of those, 6.5% (n = 4) died and 6.5% (n = 4) did not reply. Recurrence of AVNRT was documented in 6.4% (n = 4) P and all underwent a successful second ablation. Almost one third, 32.3% (n = 20), were symptomatic, mainly with palpitations, and 27.4% (n = 17) maintained follow up with a Cardiologist. New-onset AF was documented in 1 P only (1.6%), diagnosed 9 years after the procedure.
Conclusions: In our cohort, the induction of AF during EPS did not translate into clinical AF during follow-up. Whether this is a nonspecific finding related to catheter manipulation or pacing maneuvers on pharmacological provocation deserves further investigation.

PO 213. SCREENING STRATEGIES FOR ATRIAL FIBRILLATION IN THE ELDERLY POPULATION: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

Rafael Whitfield

Faculdade de Medicina da Universidade de Lisboa.

Opportunistic screening is currently recommended for patients aged 65 years and older to detect atrial fibrillation (AF). However, this has recently been called into question by two studies that report that opportunistic screening is no more effective than usual care. Furthermore, there seems to be no consensus on the most effective screening strategy. Thus, we aimed to compare efficacy outcomes of different AF detection strategies using the methodology of systematic review with network meta-analysis. An electronic database search of MEDLINE, Cochrane Central Register of Controlled Trials (CENTRAL), and EMBASE was performed. We included randomised clinical trials (RCTs) or cluster RCTs that employed systematic or opportunistic screening in populations age ≥ 65 years against usual practice without AF screening. The outcome was the incidence of previously undiagnosed AF. The risk of bias of the included studies was assessed using Cochrane Risk of Bias Tool. We performed a random-effects pairwise meta-analysis and network meta-analysis within a frequentist framework R, for the outcome

reported both in an intention to screen (ITS) analysis and in an as-screened (AS) analysis. We reported the results as relative risk (RR) with 95% confidence intervals (CI). We assessed the confidence in the evidence using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) framework. Ten studies were included, enrolling 94378 participants. Overall quality of evidence was low due to risk of bias. Pooled effect sizes from both network meta-analysis performed suggested that systematic screening was effective for detecting AF when compared with usual care (ITS: RR 2.12; 95%CI 1.41 to 3.16) (AS: RR 3.12; 95%CI 1.81 to 5.36) and opportunistic screening (ITS: RR 1.80; 95%CI 1.21 to 2.68) (AS: RR 2.18; 95%CI 1.31 to 3.63) but no significant difference was found between opportunistic screening and usual care (ITS: RR 1.18; 95%CI 0.82 to 1.69) (AS: RR 1.43; 95%CI 0.89 to 2.30). Systematic screening was the most effective strategy for detecting AF in individuals aged 65 years or older without a known previous diagnosis. Opportunistic screening was no more effective than usual care, but the results were weakened by a low quality of evidence and imprecision in the results.

PO 214. VITAMIN-K ANTAGONISTS *VERSUS* NON-VITAMIN K ORAL ANTICOAGULANTS IN ELDERLY PATIENTS WITH SEVERE AORTIC STENOSIS AND ATRIAL FIBRILLATION

João Calvão, Ana Filipa Amador, Catarina Martins da Costa, Carlos Xavier Resende, Pedro Grilo Diogo, Tânia Proença, Ricardo Alves Pinto, Miguel Martins de Carvalho, André Cabrita, Catarina Amaral Marques, Cátia Oliveira, Luís Daniel Santos, Mariana Vasconcelos, João Freitas, Filipe Macedo

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Data comparing Non-vitamin K oral anticoagulants (NOAC) to Vitamin-K antagonists (VKA) in patients with severe aortic stenosis (AS) and atrial fibrillation (AF) are limited. Guideline recommendations on the use of NOAC in these patients are based on studies including a low number of patients with severe AS. Elderly patients with AS represent a particular subgroup with high thromboembolic and hemorrhagic risk.
Objectives: To compare the effect of NOAC *versus* VKA on the presence of left atrial appendage (LAA) thrombus among elderly patients with AF and severe AS.
Methods: In this retrospective study, we identified 315 patients ≥ 70 years with severe aortic stenosis who were proposed for transcatheter aortic valve implantation (TAVI) in our center between January 2014 and December 2019. Among this cohort, 79 (25.1%) patients had history of AF. We analyzed the association between the type of anticoagulation used (NOAC *versus* VKA) and the presence of LAA thrombus in the preprocedural cardiac computed tomography scan.
Results: Of the 79 patients included, 40 (50.6%) were anticoagulated with VKA and 39 (49.4%) with NOAC. The prevalence of LAA thrombus was similar in both groups (37.5% in the VKA group and 41.0% in the NOAC group, p = 0.75), as was the incidence of ischemic stroke (5.0 *vs.* 5.2%, p = 0.51) and death (2.6 *vs.* 2.6%, p = 0.75) during hospitalization. At 1-year follow-up, the cumulative incidence of ischemic stroke was 11.1% among the population studied (8.5% and 14.7% in the VKA and NOAC group, respectively; p = 0.48).
Conclusions: Elderly patients with severe AS and AF who are proposed for TAVI have a high prevalence of LAA thrombus despite anticoagulation. No significant difference in this prevalence was seen in patients anticoagulated with VKA or NOAC. These patients have a similar high incidence of ischemic stroke at 1 year. Further studies are needed in order to better characterize the safety and efficacy of NOAC in this patient population.

PO 215. RESPIRATORY DISTURBANCE INDEX AS A PREDICTOR OF ATRIAL FIBRILLATION

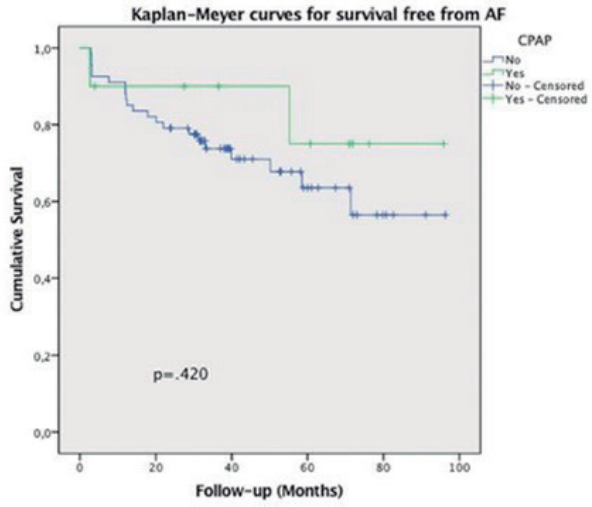
Diana Vale Carvalho, Pedro Carvalho, Lisa Ferraz, Adriana Rei Pacheco, Simão Carvalho, Raquel Ferreira, Andreia Fernandes, Pedro Cardoso, Ana Briosa

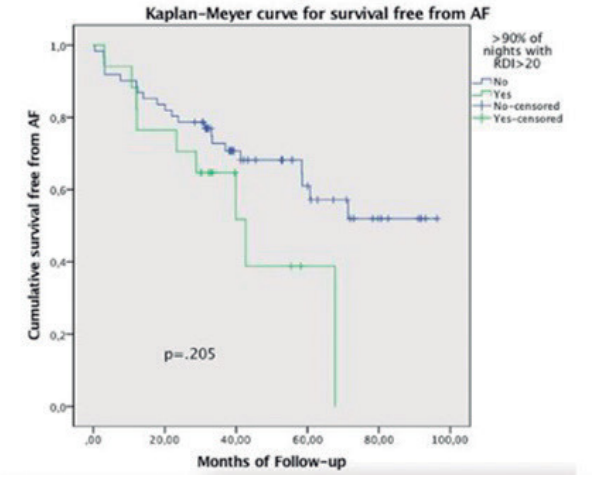
Centro Hospitalar do Baixo Vouga, EPE/Hospital Infante D. Pedro.

Introduction: Obstructive sleep apnea (OSA) is a risk factor for development of atrial fibrillation (AF). Recent pacemakers have specific algorithms for detecting of OSA based on impedance measurement.

Objectives: The aim was to determine the burden of AF in patients with high respiratory disturbance index (RDI). It was also intended to determine if the onset of continuous positive airway pressure (CPAP) reduced the AF burden.
Methods: Retrospective observational study carried out through the analysis of the patient records. It included patients with pacemakers evaluated in an outpatient clinic during the first 8 months of 2018. All had the RDI algorithm. AF burden was assessed according to automatic mode switch (AMS) duration. The percentage of nights with an RDI > 20/h was analysed to assess the risk of OSA.

Risk Factors/comorbidities	Prevalence
Arterial hypertension	83.3% (n=90)
Dyslipidemia	68.5% (n=74)
Smoking History	11.1% (n=12)
Diabetes Mellitus	37.0% (n=40)
Obesity	31.5% (n=34)
Previous obstructive sleep apnea	4.6% (n=5)
Chronic kidney disease	23.1% (n=25)
Heart Failure	13.9% (n=15)
Chronic obstructive	4.6% (n=5)
Ischemic heart disease	11.1% (n=12)
Cerebrovascular disease	7.4% (n=8)





Results: 108 patients were included (mean age = 70.3 ± 9.0 years; 56.5% men). The most prevalent indication for cardiac pacing was atrioventricular

node dysfunction (59.3%). The average percentage of nights with an RDI > 20/h was 44.2%. The average follow-up (FU) period was 4.1 years. Of all cardiovascular risk factors, diabetes mellitus was the only one associated with a higher incidence of AF at FU (p = 0.044). Considering just the patients with an RDI > 20/h in more than 20% of nights (RDI20%), male gender was associated with higher rate of major adverse cardiovascular events [(acute myocardial infarction, stroke, acute heart failure and death) (p = 0.019)]. Considering patients with AF prior to pacemaker implantation (n = 34), 76% of patients had an RDI > 20/h in more than 20% of nights (mean of 58.1%). 23 of these patients had long standing persistent AF at the end of FU (*vs.* 17 at the beginnig of FU). Considering patients who developed AF after pacemaker implantation (n = 24), 58% of patients had an RDI > 20/h in more than 20% of nights (mean of 45.3%). Most patients had paroxismal AF (83%). Patients with prior paroxysmal AF or those who developed AF during FU (n = 37) had a higher burden of AF at the end of FU when they had RDI > 20/h in more than 50% of nights (mean burden of 24.66 *vs.* 14.69%, p = 0.005). There was no statistically significant correlation between the percentage of nights with RDI > 20/h and the Apnea Hypopnea Index (AHI) value. Patients who underwent polysomnography (n = 30) had a mean AHI of 16/h (which corresponds to moderately severe OSA). 63% of patients who were referred from the pacemaker consultation to pneumology and performed polysomnography started CPAP. CPAP use was not associated with a statistically significant reduction in any endpoints or AF burden.

Conclusions: There is a progression of AF in patients with RDI> 20/h in a significant percentage of nights, with a greater burden of AF at the end of follow-up. OSA is probably an underdiagnosed and undertreated disease. Therefore, continuous monitoring of RDI> 20/h can lead to early diagnosis and treatment of OSA.

Domingo, 24 Abril de 2022 | 16:00-17:00

Sala Jardim de Inverno | Posters (Sessão 6 - Écran 4) - Insuficiência Cardíaca 6 - Inibidores SGLT1

PO 216. DAPAGLIFLOZIN IN HEART FAILURE WITH REDUCED EJECTION FRACTION: A RANDOMIZED CONTROLLED TRIAL

João Pedro Reis

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

Introduction: Sodium-glucose co-transporter 2 inhibitors (iSGLT2) have shown to reduce morbidity and mortality in Heart Failure (HF) with reduced Ejection Fraction patients – HfrEF. Our aim was to evaluate the safety and efficacy of Dapagliflozin in non-diabetic HF outpatients in a real-world setting.

Methods: Adult HF patients (Ps) were randomized 1:1 to receive dapagliflozin 10 mg or placebo. All patients had a LVEF < 50%, were in NYHA class II-III and under guideline-recommended OMT for the previous 3 months, including a BB, ARNI/ACEi and MRA. They were excluded if they had a previous history of diabetes mellitus or a GFR ≤ 30 ml/min. Study protocol included an initial evaluation with clinical assessment, laboratorial data, transthoracic echocardiography and CPET. All Ps were followed-up for 6 months and the aforementioned evaluation was then repeated. The variation of several clinical parameters was compared between groups.

Results: A total of 40 Ps were included (mean age 61 ± 13 years, 82.5% male, mean LVEF 34 ± 5%, 70% with ischemic etiology and mean $HbA1_c$ 5.8 ± 0.3%). In the 20 Ps randomized to dapagliflozin, no major safety events were recorded and the reported compliance was 100%. There were no significant differences between groups regarding baseline clinical and demographic characteristics. Ps in the dapagliflozin group presented a greater reduction of NT-proBNP levels compared to controls (-217.56 ± 35.30 *vs.* 650.28 ± 127.23 pg/mL, p = 0.007) despite similar adjustments in diuretic dosages in both groups during follow-up. Ps in the dapagliflozin group experienced a greater improvement in global longitudinal strain – GLS (-2.2 ± 2.6 *vs.* +1.6 ± 2.3%, p = 0.001) but not LVEF improvement (p = 0.510). Dapagliflozin was associated with a greater improvement in parameters of LV-filling pressure: LA indexed volume (-6.9 ± 6.2 mL/m² *vs.* 6.2 ± 9.2 mL/m², p < 0.001), PASP (-5.9 ± 8.7 mmHg *vs.* 9.6 ± 6.5 mmHg, p < 0.001) and medium E/e' (-1.4 ± 2.6 *vs.* 1.5 ± 4.3, p = 0.026). There was greater improvement in pVO_2 in the dapagliflozin group: 3.09 ± 3.81 *vs.* 0.11 ± 3.29 mL/kg/min, p = 0.030. No statistically significant difference in HF events was found: 9.5 *vs.* 5.3%, p = 0.609. In the dapagliflozin group, there was a greater reduction in the number of Ps in NYHA class III: 26.3 *vs.* 0%, p = 0.004.

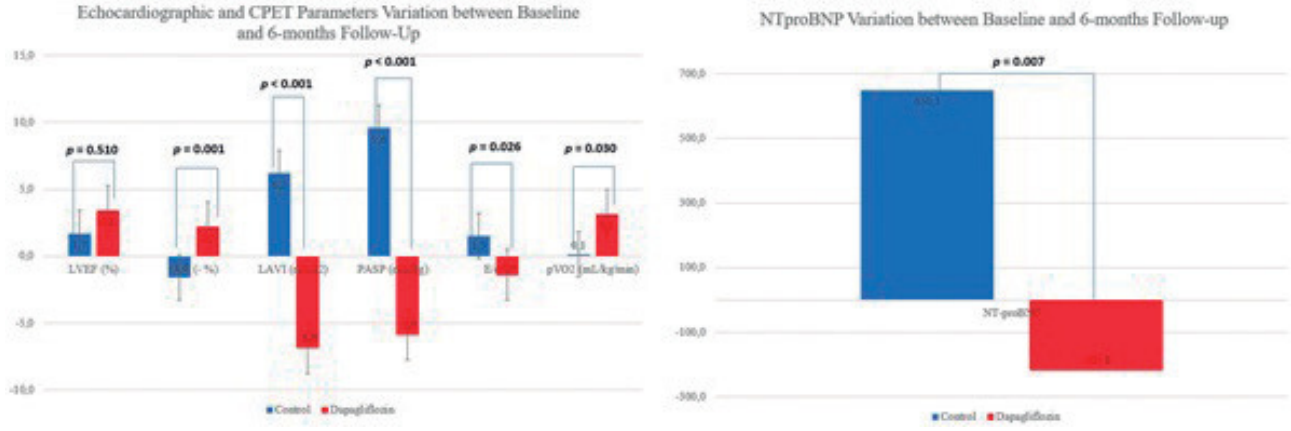
Conclusions: Dapagliflozin use was safe and associated with a significant reduction in NT-proBNP levels and an improvement in GLS and cardiopulmonary fitness at 6-months follow-up in non-diabetic HFrEF Ps.

PO 217. IMPACT OF SGLT2 INHIBITORS ON CARDIOVASCULAR OUTCOMES IN PATIENTS WITH HEART FAILURE WITH REDUCED EJECTION FRACTION

Mariana Tinoco, Ana Filipa Cardoso, Geraldo Dias, Tâmara Pereira, Bebiana Faria, Filipa Almeida, Sérgio Leite, António Lourenço

Hospital da Senhora da Oliveira, EPE - Guimarães.

Introduction: DAPA-HF and EMPEROR-Reduced trials showed that SGLT2 inhibitors (SGLT2i) reduced primary outcome events (CV death or hospitalization for HF) in patients with HF with reduced ejection fraction (HFrEF). However, neither trial was powered to assess effects on CV death or all-cause death.



PO 216 Figure

Objectives: This study aims to compare the effect of SGLT2i *vs.* a control group without SGLT2i on CV outcomes in a real-world population.
Methods: We performed a retrospective study of patients with HFrEF observed at an HF clinic between Jan 2018 and Jun 2020, with a follow up (FUP) period until Oct 2021. One-to-one propensity score matching was used.
Results: A total of 211 HFrEF patients were included, of which 78 (37%) were medicated with SGLT2i. The final propensity-matched cohort included 58 pairs treated with SGLT2i *vs.* a control group. Mean age was 65.9 ± 12.1 and 80.2% (93) were male. A total of 42.2% (49) of patients were treated with ACEI/ARB, 52.6% (61) with sacubitril-valsartan, 94% (109) with beta-blockers and 86.2% (100) with mineralocorticoid receptor antagonists. A total of 40.5% (47) of patients had an ICD and 29.3% (34) had a CRT-D. During a median FUP of 32.5 months (IQR 21-49), primary outcome events were lower in the SLGT2i group (16 patients; 27.6%) than in the control group (24 patients; 41.4%), however it was statistically non-significant (p = 0.075). Hospitalizations for heart failure occurred in 15 (25.9%) patients in the SGLT2i group and in 17 (29.3%) patients in the control group (p = 0.678). Death from CV causes occurred in 2 patients (3.4%) in the SGTL2i group and in 9 patients (15.5%) in the control group (HR 0.210; 95%CI 0.045-0.971; p = 0.046); 3 patients (5.2%) and 20 patients (34.5%), respectively, died from any cause (HR 0.143; 95%CI 0.042-0.480; p = 0.002). The effect of SLTG2i on all-cause mortality and CV mortality was consistent in patients regardless of the presence or absence of diabetes. Disease-free survival was higher in the group treated with SGLT2i (1015 *vs.* 878 days) but it was not statistically significant.
Conclusions: These results are different from clinical trials which demonstrated a reduction in HF hospitalizations but not in CV mortality. In this real-world population, those in SGLT2i group had a lower risk of CV and non-CV death, time to first hospitalization tended to be longer, with fewer hospitalizations for HF (although not statistically significant which may be due to the number of the sample and the FUP time).

PO 218. SGLT2 INHIBITORS IN HEART FAILURE WITH REDUCED EJECTION FRACTION: THEIR BIOLOGICAL PROPERTIES GOES WELL BEYOND A SMART DIURETIC EFFECT

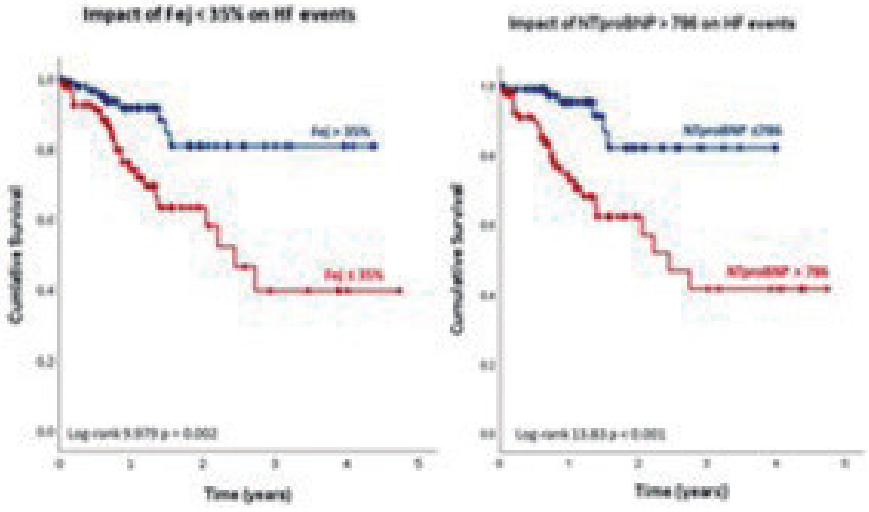
Pedro Alves da Silva, João R. Agostinho, Sara Couto Pereira, Pedro Silvério António, Rafael Santos, Joana Brito, Beatriz Valente Silva, Ana Beatriz Garcia, Ana Margarida Martins, Catarina Simões de Oliveira, Joana Rigueira, Doroteia Silva, Nuno Lousada, Fausto J. Pinto, Dulce Brito

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Latest ESC heart failure (HF) guidelines added SGLT2i to the foundational therapy of chronic HFrEF, based on trials that showed that SGLT2i on top of standard care led to a reduction on HF hospitalizations and cardiovascular mortality. However, pathophysiological mechanisms responsible for these benefits are still a matter of debate, as some authors postulate that its diuretic properties have a central role and others emphasize its metabolic effects that could lead to reverse cardiac remodelling.
Objectives: To compare echo and laboratorial surrogates of diuresis and cardiac remodelling before and after SGLT2i initiation as a mean to hypothesize which mechanism predominantly leads to HF events reduction.
Methods: Single-center, retrospective study of pts with HFrEF followed in a HF unit in a tertiary center. Data regarding epidemiologic, clinical and echo parameters were recorded before and after SGLT2i initiation. Surrogate markers of diuresis and cardiac remodeling variation and its impact were evaluated using Wilcoxon Test, Cox Regression and Kaplan-Meier analysis.
Results: We included 176 pts with HFrEF started on SGLT2i. Mean age was 66.5 ± 12 years, 70.5% male. Most had ischemic (51.1%) or dilated cardiomyopathy (38.6%) with mean left ventricular ejection fraction (LVEF) of 31 ± 9.7%. 89% were in NYHA class I or II, and mean NTproBNP was 2,737 ± 4,008 pg/mL. After

	Before SGLT2i	After SGLT2i	p-value
Weight	80.4±17.8	81±16.8	0.985
Hematocrit	41.3±5.3	41.5+-5.3	0.230
Haemoglobin	13.7±1.8	13.9±1.6	0.026
NTproBNP	2737±4008	2258±3304	<0.001
Creatinine	1.48±3.28	1.29±0.5	0.125
Sodium	140±3.4	136±2.3	0.412
Ejection Fraction	31±9.7	34.1±11.2	0.001
E/e'	14.4±8.6	11.7±5.6	0.017

Table 1 - Clinical and laboratorial characteristics before and after iSGLT2 introduction



PO 218 Figure

a mean follow-up (FUP) of 1.38 ± 1.59 years we saw no statistical difference between characteristics often used as surrogates for diuresis, namely weight, hematocrit, creatinine or sodium (p = NS) (Table). Interestingly, we did find a significant difference concerning LVEF (31 ± 9,7 *vs.* 34,1 ± 11,2%; p = 0.001), NTproBNP (2,737 ± 4,008 pg/mL *vs.* 2,258 ± 5,204 pg/mL; p < 0.001) and filling pressures evaluated by mean E/e' (14.4 ± 8.6 *vs.* 11.7 ± 5.6; p = 0.017). During FUP, 11.4% pts were hospitalized, 9.7% had outpatient treated HF decompensations and 1.1% died. Lower LVEF < 35% and higher NTproBNP (> 786 pg/mL) correlated with events (HR 3.197, 95%CI 1.492-6.850, p = 0.003; HR 4.631, 95%CI 1.905-11.263, p = 0.001) in contrast to hematocrit or Hb levels (p = NS). No impact was estimated with mean E/e'.
Conclusions: These data support the hypothesis that iSGLT2 effects go beyond its diuretic properties and extend to anti-remodeling processes, as noted by differences in NTproBNP, LVEF and diastolic function. Such processes have significant impact on prognosis and events during FUP, reinforcing the importance of the new foundational therapy.

PO 219. SODIUM-GLUCOSE COTRANSPORTER 2 INHIBITORS: THE GLUE FOR HEART FAILURE WITH REDUCED EJECTION FRACTION FOUNDATIONAL THERAPY

Sara Couto Pereira, João R. Agostinho, Pedro Silvério António, Joana Brito, Pedro Alves da Silva, Beatriz Garcia, Ana Margarina Martins, Catarina Oliveira, Joana Rigueira, Rafael Santos, Nuno Lousada, Doroteia Silva, Fausto J. Pinto, Dulce Brito

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Hyperkaliemia is one of the major limiting factors for foundational therapy (FT) uptitration in heart failure with reduced ejection fraction (HFrEF) patients (pts). However, according to EMPEROR-Reduced Trial subanalysis, SGLT2 inhibitors (SGLT2i) may have an impact on reducing hyperkaliemia, allowing the introduction and maintenance of sacubitril/valsartan (ARNI) and mineralocorticoid receptor antagonists (MRA).
Objectives: To evaluate the impact of SGLT2i on potassium levels (K) and, consequently, on FT introduction and uptitration in HFrEF pts.
Methods: Single-center, retrospective study of HFrEF pts followed in a tertiary center HF clinic. Epidemiologic, clinical and echocardiographic data were recorded before and after SGLT2i initiation. The population was divided in 2 groups: pts treated with SGLT2i – SGLT2i group; and pts not treated with SGLT2i – control group. Hypokalemia was defined as K< 3.5 mmol/L, hyperkalemia as K> 5.1 mmol/L and severe hyperkalemia as K> 5.9 mmol/L. Both groups were compared using Chi-square and Mann-Whitney tests.
Results: 275 pts were included, 176 (74%) in the SGLT2i group and 99 (36%) in the control group. The mean age was 66 ± 14 years and 195 (70.7%) pts were males. Most pts had ischemic heart disease (45.7%) or dilated cardiomyopathy (41.7%) and were at NYHA functional class II (58.3%) or III (33%). Pre-SGLT2i initiation clinical, laboratorial and therapeutic data are available in the table. There were no statistically significant differences between the two groups, apart from diabetes, that was more frequent in the SGLT2i group (p < 0.001). After a mean follow-up period of 47 ± 96 months, no statistically significant differences between the 2 groups regarding K, creatinine, eGFR and urea were observed (p = NS). In SGLT2i group there were no cases of hypokalemia (*vs.* 4 cases in the control group; p = 0.007); There were less cases of hyperkalemia in the SGLT2i group (42 (23.9%) *versus* 35 (35.4%) cases in control group (p = 0.036)). Two cases of severe hyperkalemia (1.1 *vs.* 2%; p = NS) were reported in both groups. This difference in K may help to explain the higher prescription rate of ARNI (79 *vs.* 38.4%; p < 0.001) and MRA (90.3 *vs.* 76.8%; p = 0.002) in the SGLT2i group and also by its higher doses (p < 0.001 and p = 0.004, respectively) (Figs.). Doses of diuretics and B-blocker were similar in both groups (p = NS).
Conclusions: This study suggests that introduction and uptitration of ARNI and MRA may be facilitated by concomitant administration of SGLT2i due to its effect in serum potassium levels.

PO 220. DAPAGLIFOZIN IN THE REAL WORLD – WHAT IS THE IMPACT ON HEART FAILURE WITH REDUCED EJECTION FRACTION ALREADY UNDER OPTIMIZED THERAPY?

Joana Silvério Simões, Tatiana Duarte, Sara Gonçalves, Ana Sousa, Crisálida Ferreira, Marta Ferreira, Joana Ferreira, Rui Caria, Ermelinda Pedroso

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

Introduction: Heart failure with reduced ejection fraction (HFrEF) has a high worldwide prevalence and considerable morbidity and mortality, even

Baseline characteristics			
	iSGLT$_2$ group (n=176)	Control group (n=99)	
Age (years)	65.5±13	67.5±16	p=NS
Male	123	72	p=NS
LVEF (%)	27.7±7.7	28.2±7.2	p=NS
Ischaemic cardiomyopathy	90 (51%)	36 (36.4%)	p=0.042
Dilated cardiomyopathy	68 (38.6%)	46 (46.5%)	p=0.042
Diuretic	128 (72.7%)	67 (67.7%)	p=NS
Hypertension	105 (59.7%)	57 (57.6%)	p=NS
Basal creatinine (mg/mL)	1.25±0.8	1.43±1	p=NS
eGFR (mL/Kg/1.73m^2)	69.9±24	63.6±27	p=NS
K$^+$ (mmol/L)	4.5±0.6	4.5±0.6	p=NS
NT-proBNP (pg/mL)	3864±5854	5072.5±13819	p=NS
NYHA functional class			
I	13 (7.4%)	7 (7.1%)	
II	106 (60.2%)	54 (54.5%)	p=NS
III	55 (31.3%)	36 (36.4%)	
IV	2 (1.1%)	2 (2%)	
Baseline therapy			
B-blocker	160 (91%)	92 (93%)	p=NS
iECA/ARA	113 (64%)	73 (73.7%)	p=NS
ARNI	51 (29%)	16 (16.2%)	p=NS
ARM	126 (71.6%)	65 (65.7%)	p=NS
Diuretic	128 (72.7%)	67 (67.7%)	p=NS

Table 1 – Baseline characteristics of the patients with HFrEF before iSGLT$_2$ initiation

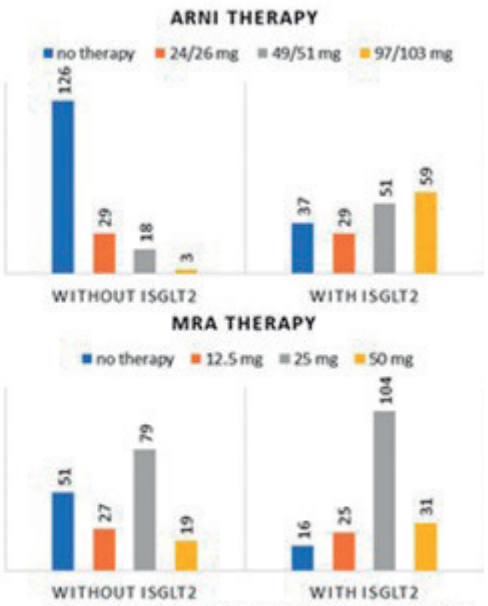


Figure 1 and 2 – ARNI and MRA therapy before and after iSGLT$_2$ initiation

PO 219 Figure

under optimized therapy. Dapaglifozin, one of the lastet drugs approved for its therapy, was associated with a significative reduction of cardiovascular death and hospitalization for HF (DAPA-HF trial).
Objectives: To evaluate the real-world impact of the introduction of dapaglifozin in patients (pts) with HFrEF already under optimized therapy.
Methods: A retrospective cohort study was conducted, including pts followed for HF in a district hospital, with LVEF ≤ 40% under optimized therapy that received dapaglifozin. The outcomes evaluated were NYHA functional class, renal clearance, NT-proBNP, LVEF, adverse events, hospitalization for decompensated HF and mortality during the 1-year follow-up.
Results: In a sample of 73 pts (72.6% male; mean age 66.3 ± 12.1 years; 68.5% in NYHA II), 79.5% were treated with neprisilin inhibitor, 95.9% with beta-blocker and 82.2% with mineralocorticoid receptor antagonists. One month after starting dapaglifozin, there was no statistically significant reduction in NT-proBNP (1516 (IQR 4,348.0) *vs.* 1,326.5 (IQR 3,858.0) pg/mL, p = 0.506), with 32.9% (n = 24) with a reduction > 15% in this parameter. NYHA class has improved or sustained in 82.3% patients (p = 0.072). There was a slight improvement in ejection fraction (26.0 (IQR 15.8) *vs.* 27.5 (IQR 20.3)%, p = 0.456), however without statistically significance. Only 5 patients (6.8%) were hospitalized for HF and 14 (19.2%) needed diuretic therapy adjustment. There was a mortality of 2.7% (n = 2). There were 3 cases of pruritus and 2 cases of genitourinary tract infection. There was a slight worsening of renal clearance (65.6 ± 24.1 *vs.* 60.9 ± 24.6 ml/min/1.73 m^2; p = 0.001), however only 1 patient had a reduction > 50% in the estimated GFR, like DAPA-HF trial (1.4 *vs.* 1.2%). There was no need to discontinue the drug or hospitalization for adverse effects.
Conclusions: Dapaglifozin in pts with optimized therapy, even if clinically stable, showed clinical and functional improvement, associated with a good safety profile. The similarity of the good results in the real world to the DAPA-HF trial highlights the importance of new therapies and the fight against therapeutic inertia.

Domingo, 24 Abril de 2022 | 16:00-17:00

Sala Jardim de Inverno | Posters (Sessão 6 - Écran 5) - Imagem 4 - Ecocardiografia 2

PO 221. CAN WE COUNT ON ECHOCARDIOGRAPHY TO IDENTIFY DIFFERENT TYPES OF CARDIAC AMYLOIDOSIS?

Miguel Azaredo Raposo, Pedro Silvério António, Sara Couto Pereira, Joana Brito, Beatriz Valente Silva, Pedro Alves da Silva, Ana Beatriz Garcia, Ana Margarida Martins, Catarina Simões de Oliveira, João Santos Fonseca, Catarina Gregório, Ana Abrantes, João Agostinho, Fausto J. Pinto, Dulce Brito

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Cardiac amyloidosis (CA) is a heterogeneous disease with diverse phenotypes. Most cases are caused by one of two misfolded proteins: immunoglobulin light-chain (AL) or amyloid transthyretin (ATTR). Target therapies may influence ATTR amyloidosis prognosis and so an early diagnosis is critical. Selected echocardiographic parameters have been suggested to distinguish AL-CA from ATTR-CA.
Objectives: To compare the diagnostic accuracy of various conventional and deformation echo parameters in differentiating AL-CA from ATTR-CA.
Methods: Single-center retrospective study in a reference center of hereditary ATTR-CA patients (pts) with cardiac amyloidosis. At baseline, laboratory, electrocardiography (ECG), 2D echocardiography and DPD-scintigraphy were performed in all pts. Some pts performed cardiac magnetic resonance imaging. Quantifiable conventional morphological and functional parameters along with strain analyses of left and right ventricle were analyzed.
Results: We included 84 pts with CA, 18 pts with AL-CA and 66 pts with ATTR-CA - 24 with hereditary (h) ATTR-CA and 42 ATTR-wt CA. ATTR pts were 65 ± 9 year-old and 83.3% were male while AL pts 71 ± 12 year-old and 61.1% were male. Pts with ATTR-wt CA presented more LV hypertrophy, predominantly of IVS (17.6 ± 2.9 mm *vs.* 15.3 ± 3.9 mm h-ATTR-CA *vs.* 15.6 ± 2.9 mm AL-CA), reduced LVEF (46 ± 16%vs59 ± 8% in h-ATTR-CA *vs.* 55 ± 10% in AL-CA) and more RV hypertrophy (5.7 ± 3.3 mm *vs.* 5 ± 2.1 mm in h-ATTR-CA *vs.* 4.4 ± 2.7 mm in AL-CA), with no statistically significant differences. When comparing only ATTR amyloidosis types, pts with ATTR-wt CA had higher grade of LV hypertrophy, reduced biventricular function (LVEF, TAPSE) and higher grades of LV diastolic dysfunction, with statistically significance (Table 1). Moreover, pts with ATTR-CA tend to present with pericardial effusion at diagnosis (p = 0.44). Strain analysis was reduced in all pts, with statistically differences between ATTR-wt CA pts and hATTR-CA (LV GLS: 9.5 ± 4.3 *vs.* 13.9% ± 3.1, p < 0.001; RV 4 chamber strain: 11 ± 3.8%vs15.9% ± 4.3, p = 0.001), but with no differences between AL-CA and ATTR-CA (Table 2). Other echocardiographic variables were very similar between different types.

A

Echocardiogram	ATTR-wt (n=24)	hATTR (n=42)	P
IVS (mm)	17.6±2.9	15.3±3.9	0.008
Posterior wall (mm)	15.9±3.3	13.2±2.9	0.002
LVEF (%)	46±16	59±8	0.003
TAPSE (mm)	16.6±3.2	19.6±3.2	0.005
LV GLS (%)	9.5±4.3	13.9±3.2	<0.001
RV 4C strain (%)	11±3.8	15.9±4.3	0.001
Grade 3 Diastolic disfunction (%)	85.7	41.7	0.001

B

Echocardiogram	ATTR (n=66)	AL (n=18)	P
IVS (mm)	16.1±3.7	15.6±2.7	NS
Posterior wall (mm)	14.1±3.3	14.6±2.7	NS
LVEF (%)	54±13	55±10	NS
TAPSE (mm)	18.5±3.5	17.4±5.8	NS
LV GLS (%)	12.5±4.1	13.0±5.9	NS
RV 4C strain (%)	14.5±4.7	15.2±6.0	NS
Grade 3 Diastolic disfunction (%)	69.7	72.2	NS

Table 1: (A) Echocardiographic evaluation ATTR-wt vs hATTR. (B) Echocardiographic evaluation ATTR vs AL.

Conclusions: Our study showed that in pts with CA, cardiac involvement could be more expressive in ATTR-wt, which probably relates to late diagnosis and absence of modifier therapeutic in these pts when compared to h-ATTR. Despite that, no echo parameters were able to accurately differentiate between h-ATTR and AL-CA.

PO 222. AN ECHOCARDIOGRAPHIC INSIGHT ON POST-COVID-19 SYMPTOMS

Rui Files Flores, Olga Pires, Joana Alves, Nuno Salomé, Fernando Mané, Paulo Medeiros, Carla Pires, Rodrigo Silva, Vítor Hugo Pereira

Hospital de Braga, EPE.

Introduction: Since the first cases described in China in late 2019, Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) infection became worldwide spread in just a few months, instigating fear and anxiety, menacing international borders, and raising awareness on health implications, such as cardiovascular disease. Studies using magnetic resonance imaging show the presence of myocardial edema and right ventricular dysfunction during and shortly after a SARS-CoV-2 infection. Whether this cardiac involvement could have any long-term implications is yet unknown. Our main objective is to describe the echocardiographic findings of patients with previous SARS-CoV-2 infection.

Methods: A single-center prospective study was conducted. Patients who tested positive for SARS-CoV-2 were selected and submitted to a transthoracic echocardiogram 6 months after infection. A complete echocardiographic assessment, including tissue doppler, E/E' ratio and ventricular longitudinal strain, was performed. Data was sorted by admission in intensive care units.
Results: A total of 88 patients were enrolled. Mean values and respective standard deviation were as follows: left ventricular ejection fraction 60.8 ± 5.9%; left ventricular longitudinal strain - 17.9 ± 3.6%; tricuspid annular plane systolic excursion 22.1 ± 3.6 mm; longitudinal strain of the free wall of the right ventricle – 19.0 ± 6.0%. We found no statistically significant differences between the subgroup of patients admitted to the intensive care unit and the remainder in relation to any of the echocardiographic parameters that were evaluated.
Conclusions: Six months after a SARS-CoV-2 infection, echocardiographic findings showed globally preserved left and right ventricular systolic function. Despite being associated with worse acute prognosis, long-term implications of myocardial involvement are still unclear. According to our data, this acute myocardial injury does not appear to be related to long-term impaired ventricular function; for instance, long-term symptoms may be related to pulmonary, less likely cardiac, involvement. Overall, further studies are needed to clarify the cause of these patients' symptoms and to access the impact on long-term events.

PO 223. CLINICAL AND ECHOCARDIOGRAPHIC FEATURES OF PLATYPNEA-ORTHODEOXIA SYNDROME: A SINGLE-CENTRE EXPERIENCE

Inês Fialho, Mariana Passos, Joana Lima Lopes, Carolina Mateus, Marco Beringuilho, João Baltazar Ferreira, Hilaryano Ferreira, José Morais, António Freitas, Carlos Morais

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

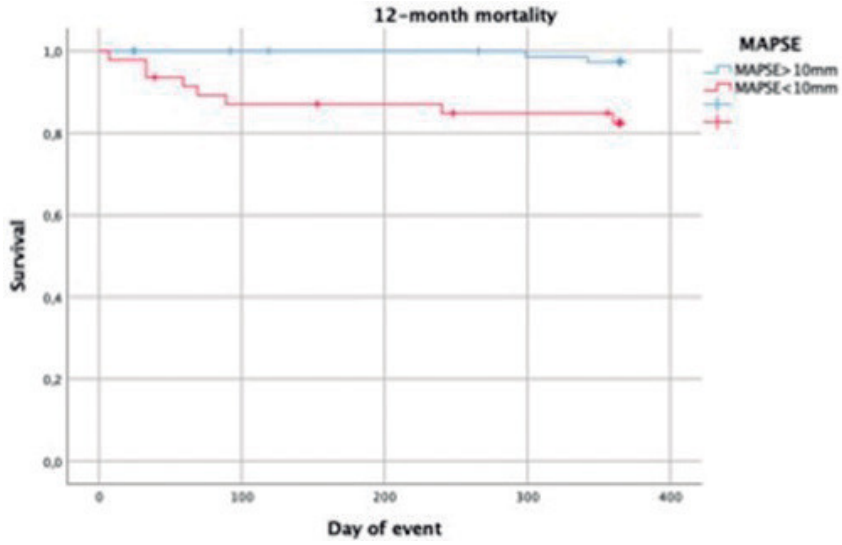
Introduction: Platypnea-orthodeoxia syndrome (POS) is an uncommon condition characterized by dyspnoea and hypoxemia in the upright position that improves with recumbency. Echocardiography (TTE) is the cornerstone for POS diagnosis.
Objectives: To evaluate the clinical characteristics of patients presenting with POS.
Methods: We performed a single-centre retrospective analysis of patients diagnosed with POS between January 2015 and June 2021. Clinical presentation, blood tests, TTE information, and patent foramen ovale (PFO) closure procedure details were recorded.
Results: Seven patients were included, 86% female (n = 6), median age 78 (72-85) years. The median age was 78 (72-85) years. The most prevalent cardiovascular risk factors were arterial hypertension (100%, n = 7) and overweight/obesity (85.7%, n = 6). Two patients (28.6%) had chronic pulmonary disease. The most common symptom was fatigue and exercise intolerance (n = 5, 71.4%) and the most frequent sign was persistent hypoxemia (n = 7, 100%), although 28.6% (n = 2) patients did not present the typical positional changes in peripheral oxygen saturation. Haemoglobin levels [14.1 (13.3-15.2) g/dL] were normal and NTproBNP levels [656 (287-1,196) ng/dL] were slightly elevated. Right ventricle (RV) morphology and function were normal in 86% (n = 6), low probability of pulmonary hypertension was found in 86% (n = 6), and exuberant Eustachian valve was observed in 14% (n = 1). All patients presented atrial septal hypermobility, 86% (n = 6) with atrial septal aneurysm criteria. PFO was found in 86% (n = 6) and ostium secundum ASD in 14% (n = 1). POS precipitating factors were aortic root dilation (29%; n = 2), chest trauma (14%; n = 1), right hip arthroplasty (14%; n = 1), atrial septal stretching regarding RV volume overload (14%; n = 1). The underlying mechanism was unknown in 29% (n = 2). ASD closure was performed in 57% (n = 4) of patients with clinical improvement in all. No acute complications were found, except for paroxysmal atrial fibrillation (14%; n = 1).
Conclusions: POS diagnosis depends on high clinical suspicion: the most common manifestations are fatigue and persistent hypoxemia. Typical positional changes in oxygen saturation could be absent. Polycythaemia, RV dilation, and pulmonary hypertension are not common.

PO 224. PROGNOSTIC VALUE OF MITRAL ANNULAR PLANE SYSTOLIC EXCURSION IN PATIENTS WITH ACUTE CORONARY SYNDROME AND PRESERVED EJECTION FRACTION

Vanda Devesa Neto, João Miguel Santos, Joana Laranjeira Correia, Inês Costa Silva, Inês Pires, Gonçalo Ferreira, Luís Ferreira Santos

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

Introduction: Mitral annular plane systolic excursion (MAPSE) is a quick and reliable echocardiographic tool for assessing longitudinal left ventricular (LV) systolic function. Also, MAPSE correlates with LV longitudinal strain but is less dependent on the quality of echocardiographic images.
Objectives: Identify the association between average MAPSE (aMAPSE) and 12-month mortality and hospitalizations (12MM and 12MH) in patients with ACS and preserved ejection fraction (EF).
Methods: Retrospective analysis of 127 patients admitted in a cardiology department with ACS and preserved ejection fraction (LV ejection fraction



PO 224 Figure

> 40%). Echocardiography was performed in all patients, and anterior, lateral, inferior, and septal MAPSE were recorded. Then average MAPSE (aMAPSE) was calculated, and 10 mm was assumed as the cut-off value for population division. Mann-Whitney U was performed for univariate analysis, and Cox-regression analysis was used to assess independent risk factors. Kaplan-Meier survival plot was used to evaluate the predictive power of aMAPSE on 12MM and 12MH.
Results: Mean age was 63.7 ± 14.2 years; 81% were men. 54% had diagnosis of ST-segment elevation. Mean LV ejection fraction (LVEF) was 55.1 ± 9%, 28% had LVEF < 50%. Mean wall motion score index was 1.25 ± 0.24. Mean TAPSE was 20.2 ± 3.8 mm. Mean aMAPSE was 10.4 ± 2.2 mm. 37% (n = 47) had aMAPSE < 10 mm. 12MM and 12MH were 7.5% and 15%, respectively. When stratified by non-reduced or reduced aMAPSE, there were significantly differences in age (60.2 ± 14.2 *vs.* 69.6 ± 12.1; p < 0.01), FEVE (57.2 ± 8.3 *vs.* 51.4 ± 9.0; p < 0.01) and global longitudinal strain (15.9 ± 3.2 *vs.* 11.7 ± 3.3; p < 0.01). In survival analysis, aMAPSE < 10 mm was significantly associated with superior 12MM (10 *vs.* 6%; p < 0.01, χ^2 6.8) and superior 12MH (6 *vs.* 2%; p < 0.01; χ^2 8.9). Cox regression analysis demonstrated that aMAPSE < 10 mm independently predicts 12-MH (OR: 4.7) even after adjustment for other prognostic markers, such as sex, diagnosis of ST-elevation segment elevation, and history of ischemic heart disease.
Conclusions: Previous history of aMAPSE < 10 mm is associated with higher 12 month-mortality and hospitalizations in patients with ACS and preserved EF. Its use may identify patients with an increased risk of re-admission and mortality, needing specialized care and a closer follow-up.

PO 225. LONG TERM LEFT VENTRICULAR IMPAIRMENT AFTER SARS-CoV-2 INFECTION

Catarina Simões de Oliveira, Joana Brito, Pedro Silvério António, Pedro Simões Morais, Sara Couto Pereira, Pedro Alves da Silva, Beatriz Valente Silva, Ana Margarida Martins, Ana Beatriz Garcia, Ana Abrantes, Miguel Azaredo Raposo, Joana Rigueira, Rui Plácido, Fausto J. Pinto, Ana G. Almeida

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: The impact of acute infection by SARS-CoV-2 on the cardiovascular (CV) system has been previously reported, with a higher propensity in patients (pts) with more serious pattern of disease and pro-inflammatory status. Nevertheless, the long-term burden of COVID-19 on the CV system is still unknown.
Objectives: To evaluate the long-term impact of COVID-19 on left ventricular function in pts with severe clinical presentation requiring intensive care hospitalization.
Methods: This was a single-center observational, prospective study which included pts admitted to the Intensive Care Unit (ICU) due to COVID-19 infection from January to November 2020 who accepted to perform a post-discharge clinical evaluation. For the global longitudinal strain (GLS) analysis all pts with significant wall motion abnormalities and valvular heart disease were excluded. Statistical analysis was performed with Mann-Whitney and a safety cut-off was established with ROC curve analysis.
Results: A total of 43 pts were included (mean age 64 ± 12, 67.4% males). During SARS-CoV-2 infection 49% presented with severe ARDS and 51% with moderate, 35% required invasive mechanical ventilation, 14% noninvasive mechanical ventilation and 52%with high nasal flow cannula. On the follow-up fatigue was the most reported symptom (52% pts) and the majority did not present other signs or symptoms suggestive of heart failure; the mean NT-proBNP was 49 ± 389 pg/dL. The standard ECG and echocardiogram did not show significant differences with a mean LVEF of 58 ± 7.8 and mean TAPSE of 21 ± 4. The GLS analysis was performed in 28 pts and a significant reduction was objected suggesting subclinical left ventricular dysfunction in this subset of pts (mean GLS of -17.14 ± 2.36 for a reference cut-off of -18%, t(27) = -1.928, p = 0.06) Maximum CPR values during ICU did not correlate either with the extent of disease evolvement in CT or ARDS severity. Nevertheless, maximum CPR correlated significantly with GLS reduction (R = 0.44, p = 0.019). A CPR value higher than 30 mg/dL had 100% specificity for GLS reduction and a cut-off of 14 gm/dL reported a sensitivity of 65% and specificity of 75% for reduction in GLS.
Conclusions: In our study, we reported subclinical impairment in left ventricular function detected with GLS after serious infection with SARS-CoV-2. The detected myocardial dysfunction correlated significantly with higher CPR values. Therefore, pts with higher inflammatory response should undergo a cardiologic evaluation.

Domingo, 24 Abril de 2022 | 16:00-17:00

Sala Jardim de Inverno | Posters (Sessão 6 - Écran 6) - Doença Cardiovascular em Populações Especiais 2 - Covid 19

PO 226. PREDICTORS OF DYSRHYTHMIAS IN COVID-19 INTENSIVE CARE PATIENTS AND IMPACT ON IN-HOSPITAL MORTALITY

Diogo de Almeida Fernandes, Joana Guimarães, Patrícia Costa, Eric Monteiro, Gonçalo Costa, Natália António, Paulo Martins, Lino Gonçalves

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

Introduction: The COVID-19 pandemic has had a dramatic impact on clinical practice, amounting to more emergency department and intensive care unit (ICU) admissions. Due to their frequent multiple comorbidities, management in the ICU is challenging. Early studies suggest that cardiac injury is frequent in hospitalized patients with COVID-19, and it is plausible that these patients have a higher risk of cardiac dysrhythmias.
Objectives: To determine the prevalence of dysrhythmias in ICU patients with COVID-19 pneumonia, identify major predictors and determine the impact on in-hospital mortality.
Methods: A retrospective study of 98 consecutive patients with COVID-19 Pneumonia admitted to the ICU of a tertiary hospital in 2020. The main outcome was dysrhythmias (including significant bradycardia, high/slow ventricular rate or new-onset atrial fibrillation (AF) or atrial flutter, other supraventricular tachycardias, ventricular tachycardia and ventricular fibrillation). Significant bradycardia was defined as heart rate lower than 40 or need of treatment. Sociodemographic variables and clinical data were retrieved for each patient, severity scores at admission (Apache II, SOFA and SAPS II), number of days on mechanical ventilation or high-flow oxygen and placement on Venovenous Extracorporeal Membrane Oxygenation (ECMO) or prone position were recorded. Statistical comparison was made between groups, including logistic regression adjusting for confounding variables.
Results: The most frequent arrhythmia was significant sinus bradycardia (28, 28.5%) followed by high ventricular rate AF (14, 14.2%). Patients who had dysrhythmias were older (66.24 ± 10.13 *vs.* 60.85 ± 12.69 years, p 0.024), more severe (SAPS II score 42.55 ± 11.08 *vs.* 35.98 ± 11.26, p 0.006), had more atrial fibrillation (AF) (p 0.022), had higher maximum C-reactive protein (mCRP) (6.56 ± 2.68 *vs.* 6.24 *vs.* 2.86, p 0.009), were mechanically ventilated for a longer time (15.64 ± 13.18 *vs.* 8.92 ± 8.85 days, p 0.004), had longer intubation time (14.52 ± 9.39 *vs.* 8.70 ± 8.21 days, p 0.002) and had higher usage of dexamethasone (p 0.042) and prone position (p 0.016). When adjusted for confounding variables, prone was the most significant predictor (OR 2.80; 95%CI 1.20-6.52) followed by use of dexamethasone (OR 2.484; 95%CI 1.02-6.05). Days intubated, days on mechanical ventilation, age, mCRP and SAPS II on admission were also predictors of dysrhythmia. Regarding mortality, patients with arrhythmic events had a tendency for greater in-hospital death (OR 2.44; 95%CI 0.95-6.31; p 0.065).

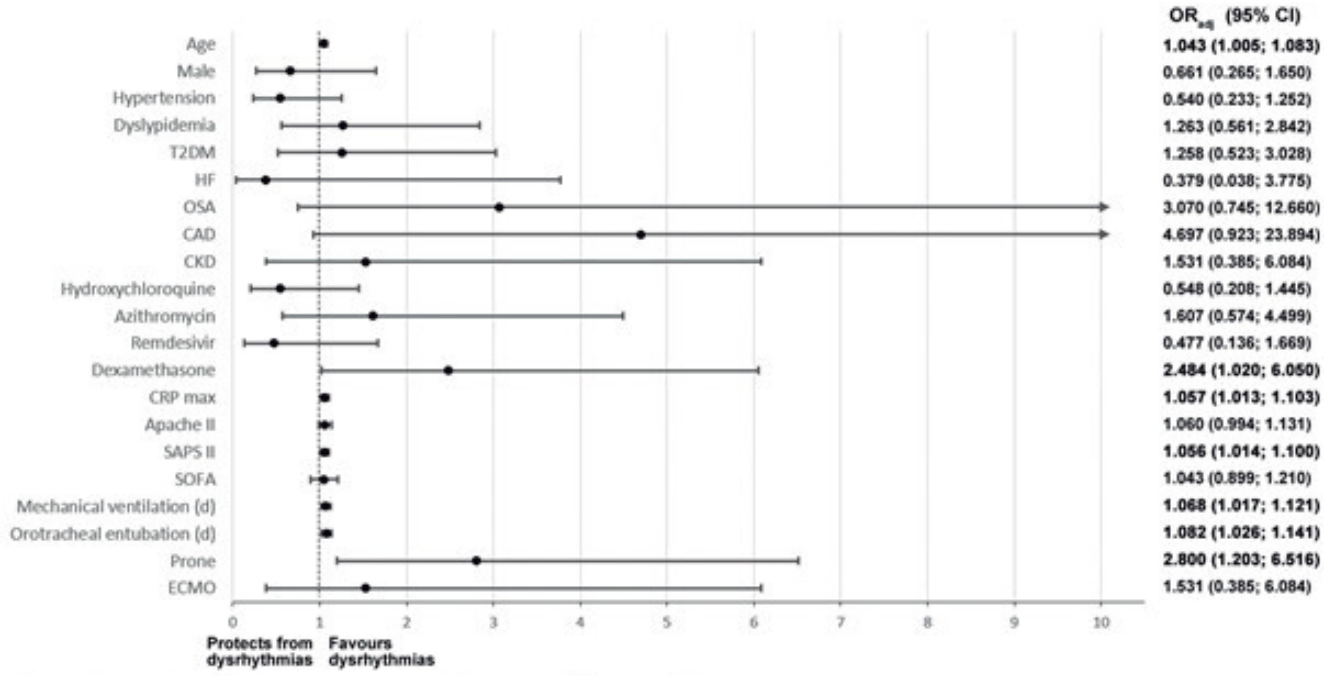


Fig. 1 - Forest plot of primary outcome according to the different variables

PO 226 Figure

Conclusions: COVID-19 ICU patients are a subset of patients at risk of cardiac arrhythmias. Use of prone position was the main contributor to these events, but clinical history, severity and treatment may also play an important role. Efforts must be made to optimize ventilatory support and treatment in order to reduce the risk of dysrhythmias.

PO 227. MYOCARDITIS AND PERICARDITIS FOLLOWING COVID-19 VACCINATION IN ADOLESCENTS

João Oliveira Dias, Joana Marinho, Fernanda Rodrigues, António Pires

Centro Hospitalar e Universitário de Coimbra, EPE/Hospital Pediátrico de Coimbra.

Introduction: In adolescents, myocarditis and pericarditis are known, rare complications, of COVID-19 mRNA vaccines, affecting mostly males. The pathophysiological mechanisms remain unclear, but most cases have a mild acute clinical course. However, the long-term effects are still uncertain. In Portugal, COVID-19 vaccination in adolescents started in mid-August 2021 for the over 16-year-old and in late August for the over 12-year-old groups. Within 3 months, 87% of this population was inoculated (data: Direção Geral da Saúde). In this report we aim to characterize the adolescent population with COVID-19 vaccine related myocarditis (C-VAM) in a single tertiary referral centre in Portugal.
Results: A total of 6 cases of myocarditis were reported and are currently being followed-up, 5 males, with a median age of 15.5 years [13-17]. All patients received the Pfizer-BioNTech COVID vaccine, and all but one had C-VAM following the second dose given 3 weeks after the first. The median onset of symptoms was 2 days [1-4] following vaccine administration. Two of these patients also had pericarditis. All common causes of myocarditis/pericarditis were excluded, including ongoing COVID-19 infection. None met diagnostic criteria for multisystem inflammatory syndrome in children (MIS-C). All patients presented with precordial pain and two with fever. Mean peak troponin I levels were 6,586 ng/L [1,219-16,290 ng/L]. Echocardiographic changes were present in 3 (50%) of the patients, two presenting with mild systolic dysfunction and one with mild pericardial effusion. All changes resolved within 7 days of admission. Patients with isolated myocarditis were managed with ibuprofen, and those with associated pericarditis were also given colchicine. Mean hospital stay was 5.7 days (range 5-7 days). Cardiac magnetic resonance imaging (C-MRI) was performed within 1 month of presentation and findings were normal in all but one patient, who had hyperintense signal in T2-weighted images, showing myocardial edema. As of the time of submission, 5 of the 6 patients had undergone 24h Holter monitoring, with one patient having ST-T changes in the left precordial leads. This patient had a recurrent episode of myopericarditis 3 weeks post discharge. Only one patient underwent a treadmill exercise test, which was normal.
Conclusions: Patients with C-VAM had a mostly favorable early clinical evolution. However, continued clinical monitoring is recommended due to the uncertain pathophysiology and long-term outcomes.

PO 228. THROMBOEMBOLIC EVENTS IN THE FOLLOW UP OF COVID-19 PATIENTS

Margarida G. Figueiredo, Hélder Santos, Mariana Santos, Sofia B. Paula, Inês Almeida, Hugo Miranda, Samuel Almeida, João Tavares, Luís Santos, Boban Thomas, Filomena Caetano, Lurdes Almeida

Centro Hospitalar Barreiro/Montijo, EPE/Hospital Nossa Senhora do Rosário.

Introduction: The severe acute respiratory syndrome in SARS-CoV-2 patients and the resultant coronavirus disease are accountable for the present pandemic status. Hospitalization patients with SARS-CoV-2 have been linked to an increased incidence of thromboembolic phenomena, particularly in critical care patients. The potential higher risk of thromboembolic events post discharged remains controversial.
Objectives: Review the evidence regarding the occurrence of thromboembolic events during the follow-up of SARS-CoV-2 patients.
Methods: A systemic research on MEDLINE and PUBMED with two the following terms "COVID-19", "SARS-CoV-2", "thromboembolic events", "embolism", "thromboembolic" and "venous thromboembolism". A total of 56 results were identified. However, after excluding just abstract and repeated papers, just 41 manuscripts were analyzed. From there, just 5 papers were selected since are the only ones that described thromboembolic events after the discharge in SARS-CoV-2 patients. The 5 papers presented

different and irregular follow-up periods after a discharged and reported diverse types of thromboembolic events.
Results: Five studies were selected, including a total of 3,691 patients. The studies were performed with different objectives and goals, as well, did not differentiate between the clinical severity of the disease. Mean age 56.32 years old, 55.78% were male, 12.41% were admitted to intensive care units and with a median follow up of 38.63 days. The rates of thromboembolic events in SARS-CoV-2 patients after the hospitalization discharge was 3.28% (121 events in 3,691 patients, reported in the 5 studies). Rates of documented acute pulmonary embolism 0.003% (10 events in 3,569 patients, reported in the 3 studies), 0.001% of documented venous thromboembolism (5 events in 3,495 patients, reported in the 3 studies), 0.006% of documented ischemic stroke (1 event in 163 patients, reported in the 1st study), 1.23% of other documented tromboembolic events, like a cardiac thrombus or thrombosed arteriovenous fistula, (2 events in 163 patients, reported in the 1study). Major hemorrhagic events in SARS-CoV-2 patients during the follow up were 2.38% (6 events in 252 patients, reported in the 2 studies). Were register 2.87% deaths during the follow up period in SARS-CoV-2 patients (52 events in 1814 patients, reported in the 4 studies), nevertheless, the death etiology was unknown.
Conclusions: The rates of thromboembolic events in SARS-CoV-2 patients are similar to the general population. Curiously, mortality rates in SARS-CoV-2 patients during just approximately one month of follow up was significantly higher in this population, suggesting a worst prognosis and more complications in this group. Further analysis and data are essential for a conclusion.

PO 229. COMPARISON OF 5 ACUTE PULMONARY EMBOLISM MORTALITY RISK SCORES IN PATIENTS WITH COVID-19

Tiago Graça Rodrigues[1], Beatriz Valente Silva[1], Rui Plácido[1], Carlos Mendonça[2], Luísa Urbano[2], Joana Rigueira[1], Ana G. Almeida[1], Fausto J. Pinto[1]

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

Objectives: Pulmonary embolism (PE) is a common complication of SARS-CoV-2 infection. We aimed to explore the short-term outcomes among patients with acute PE and COVID-19 and to further determine and compare the performance of the different prognostic scores (PESI, sPESI, BOVA, FAST and ESC scores) for risk-stratification in this scenario.
Methods: Retrospective single-centre study of 85 patients with SARS-CoV-2 infection and PE admitted to the Emergency Department (ED). The diagnostic accuracy of each above-mentioned prognostic score was calculated post hoc, and their discriminative power was evaluated through an AUC curve.
Results: Among the 85 patients, all-cause death occurred within 7 days for 6 patients (7.1%) and within 30 days for 14 patients (16.5%). Despite being older and having a higher percentage of altered mental status on presentation, non-survivors patients did not differ from survivors regarding comorbidities, traditional risk factors for venous thromboembolism and signs and symptoms at the ED presentation. Each risk stratification tool had modest discriminative power for 7-day mortality (AUC range, 0.601-0.730) with slightly lower discrimination for 30-day mortality (AUC range, 0.543-0.638) (Fig.). The pair-wise comparison of ROC curves showed that PESI had better predictive value for short-term mortality than ESC score (z test = 3.92, p = 0.001) and sPESI (z test = 2.43, p = 0.015); there is no significant difference between PESI and BOVA score (z test = 1.05, p = 0.295) and FAST score (z test = 0.986, p = 0.324).
Conclusions: The most common risk-stratification tools for PE had modest discriminative power to predict short-term mortality in patients with acute PE and COVID-19.

PO 230. IS STANDARD CARDIAC EVALUATION ENOUGH FOR COVID-19 PATIENTS WITH SEVERE DISEASE?

Miguel Azaredo Raposo, Joana Brito, Sara Couto Pereira, Beatriz Valente Silva, Pedro Silvério António, Ana Margarida Martins, Catarina Simões de Oliveira, Ana Abrantes, Catarina Gregório, João Santos Fonseca, Ana Beatriz Garcia, Fausto J. Pinto, Ana G. Almeida

Centro Hospitalar Universitário de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Acute infection by SARS-COV2 has been broadly associated with cardiovascular disease. An increased burden is seen in patients (pts) with severe lung disease and pro-inflammatory status. The cardiac long-term impact of COVID-19 is still unclear.
Objectives: To evaluate the long-term impact of COVID-19 on patients admitted to the intensive care unit (ICU).
Methods: This was a single-center, observational and prospective study which included (pts) requiring admission to the ICU due to COVID-19 from January to November 2020 who accepted to submit to pos-discharge clinical evaluation. Severe disease was defined as the necessity of invasive mechanical ventilation and either severe ARDS or involvement > 75% of lung parenchyma in CT scan. Statistical analysis was performed with Mann-Whitney and Chi-square.
Results: A total of 43 pts (mean age 64 ± 12, 67.4% males) were included. During ICU admission 49% presented with severe ARDS, 51% with moderate

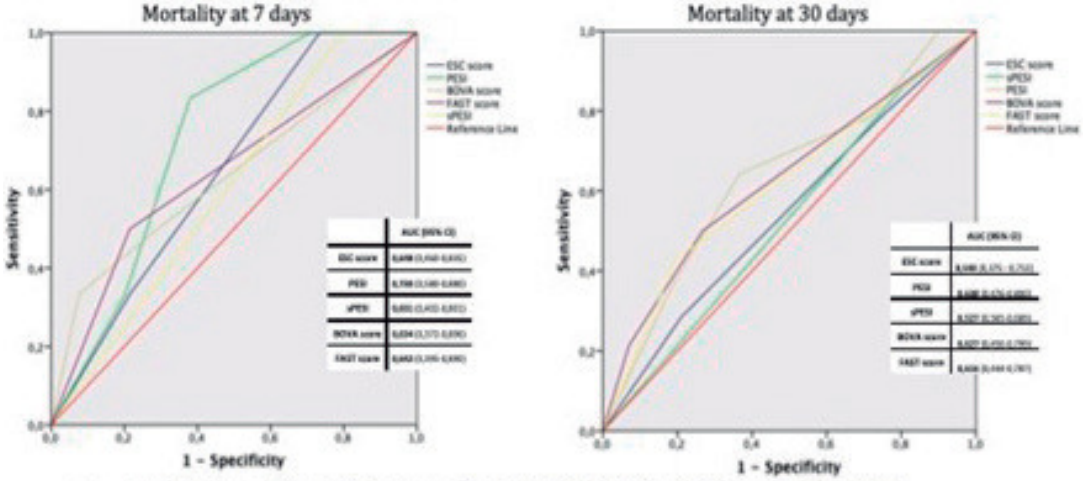


Figure 1 - **analysis comparing the predictive accuracy for mortality at 7 and 30 days of ESC score, PESI, sPESI, BOVA and FAST score**. Abbreviations: AUC = area under the curve; CI = confidence interval.

PO 229 Figure

and a minimum P/F ratio of 100 ± 40. The mean troponin levels were 37 ± 43 pg/mL. Concerning acute disease complications, segmental pulmonary embolism (PE) was documented in 21% with no detection of central PE, acute kidney injury in 39.5% and shock in 14% pts. Follow-up evaluation was performed 189 ± 83 days after discharge. All pts were in sinus rhythm except for one, who had prior atrial fibrillation diagnosis. With standard echocardiogram, no significant biventricular dysfunction was reported (mean LVEF 58 ± 7.8 and mean TAPSE 21 ± 4), a median elevation of E/e' was reported as 10.3 ± 4.8 and diastolic dysfunction was present in 35% pts. Fatigue was the most frequently reported symptom (52% pts) and no association was found with NT-proBNP elevation, LVEF reduction, diastolic dysfunction, echocardiographic probability of pulmonary hypertension, RV systolic dysfunction or dilation. Likewise, fatigue on follow-up did not correlate with the highest troponin T levels, disease severity or complications during acute disease. Pts that reported fatigue had a significantly lower 6-min walking test performance (526 ± 115 *vs.* 432 ± 170 p = 0.016).
Conclusions: This study suggests that the most frequent sequela for severe COVID-19 survivors is fatigue, confirmed by a 6-min walking test. The lack of correlation between fatigue and standard echocardiographic or NT-proBNP suggests either a non-cardiac mechanism for post-COVID-19 fatigue or a lack of sensitivity for these parameters in diagnosing post-COVID-19 cardiac disease.

Domingo, 24 Abril de 2022 | 16:00-17:00

Sala Jardim de Inverno | Posters (Sessão 6 - Écran 7) - Intervenção Coronária e Estrutural 4 - Doença coronária

PO 231. LEFT MAIN ARTERY LESIONS- THE ROLE OF IVUS AND CORONARY PHYSIOLOGY

Rita Caldeira da Rocha, Diogo Brás, Francisco Dias Cláudio, Miguel Carias, António Almeida, Ângela Bento, David Neves, Renato Fernandes, Sandra Nunes, Tânia Emerenciano, Marisa Serrano, Manuel Trinca, Lino Patrício

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Introduction: LMA lesions have a major impact on patients' prognosis. Consequently, their additional characterization using image or physiology evaluation (PE) is extremely important. However, with PE little information is given about plaque morphology or stability. Imaging lacks data about physiological impact of anatomically significant lesions.
Objectives: The aim of this study is to determine the prevalence and impact of treatment decision failure of ambiguous LMA lesions assessed by physiology evaluation and/or IVUS.
Methods: Retrospective study, including all consecutive patients who performed PE (iFR, RFR or FFR, and, when clinically necessary, iFR followed by FFR) and/or IVUS (Volcano™) of LMA lesion in our center between June 2010 and December 2020, with clinical follow-up. The primary endpoint of this follow-up was defined as clinically-driven target lesion (TL) revascularization (TLR), TL was defined as the treated segment, when treated (due to positive PE/IVUS), or the evaluated segment, when deferred (negative PE/IVUS). Additionally, acute coronary syndrome (ACS) was sought after.
Results: A total of 140 LMA evaluations of 125 patients were analyzed during a median follow-up of 63 [37-97] months, minimum of 12 months and maximum of 140 months. Male patients accounted for 67%, with a mean age of 67 ± 10 years old. Hypertension was present in 91%, diabetes and prior coronary artery disease in 40% each and smoking habits in 46%. Lesion characterization by imaging technique was performed in 83 and PE in 57 cases (39 rest evaluations and 26 stress exams). Image and functional tests were performed in 14 patients. The initial treatment plan was changed in 25% of the patients due to IVUS and in 32% with PE. The decision of revascularization was made using both techniques in 4 cases, and of differing intervention in 10, of whom 2 presented with TLR. Therapy decision based on IVUS was changed due to PE in 5 cases, the opposite happened in just 1 patient. In only 1 case PE wasn't measured, due to technical problems, which weren't reported with IVUS. No clinical complications were reported. Primary endpoint was achieved in 4%, with 4 cases with IVUS evaluations and in 3 with PE, not having a statistical difference. Globally, ACS was found in 10% of patients after a median follow-up of 24 [19;43] months.
Conclusions: LMA revascularization decision based on IVUS and/or physiology evaluation proved to be useful, changing the initial treatment strategy in almost a third of the cases, and safe (target lesion revascularization of 4%).

PO 232. PERCUTANEOUS CORONARY INTERVENTION IN ELDERLY PATIENTS WITH CHRONIC KIDNEY DISEASE AND NON-ST SEGMENT ELEVATION ACUTE CORONARY SYNDROME - IS IT WORTH IT?

Alexandra Briosa, Rita Cale, Mariana Martinho, João Santos, Barbara Ferreira, Diogo Cunha, Ana Rita Pereira, Ana Marques, Sofia Alegria, Daniel Sebaiti, Ana Catarina Gomes, Gonçalo Morgado, Cristina Martins, Helder Pereira

[1]Hospital Garcia de Orta, EPE

Introduction: The ESC guidelines recommend appropriate revascularization in patients (pts) with chronic kidney disease (CKD) irrespective of age. However, elderly pts are usually underrepresented in the available data on percutaneous coronary intervention (PCI). The decision on whether to perform PCI in elderly pts with CKD and acute coronary syndrome is usually at the discretion of the cardiology team.
Aim*:* Evaluate the impact of PCI vs conservative approach (CA) in elderly pts with CKD enrolled in the Portuguese National Registry of Acute Coronary Syndromes, admitted with unstable angina(UA) and non-ST segment elevation myocardial infarction (NSTEMI). Determine impact of CKD in in-hospital and long-term outcomes, including MACE (myocardial infarction, stroke and death).
Method*:* Included elderly pts (> 80 years) admitted with UA and NSTEMI, from 2010 until today. The pts were divided in 3 groups: Group 1 - eGFR ≥ 60 ml/min/1.73m^2; Group 2- between 30 and 59 ml/min/1.73m^2 and Group 3 - < 30 ml/min/1.73m^2. Pts with STEMI and cardiogenic shock were excluded.
Results: A total of 2443 pts, of which 921 (37,7%) were submitted to PCI. 50.2% of pts were from group 1, 38.5% from group 2 and 11.3% from group 3. Regarding overall population, pts submitted to PCI were mainly male (60,4%) with mean age of 84±3 years. They had previous history of PCI (21,6% vs 15,1% p<0.001), less history of heart failure (HF), stroke or dementia (8,5% vs 16,5%; 8,1 vs 13.3% and 2,1 vs 5,9%, p<0.001 respectively). At presentation they had more angina (88,8% vs 81,2% p<0.001), lower NT-proBNP levels (387 vs 561 p< 0.001) and were more frequently in KK class I (75,6% vs 70,2% p=0.004). Concerning outcomes, they developed less HF (21% vs 27%, p<0.001) and less MACE (5,7% vs 9,1% p=0.003). Pts in the group 3 were less submitted to PCI (27,5% vs 38,2% vs 39,6% p< 0.001) and had more MACE and death when comparing to group 2 and 1 (16,1% vs 8,7% vs 5,3% and 10,5% vs 5,5% vs 2,6% p<0.001 respectively).
Comparing PCI vs CA, there was no difference in intrahospitalar outcomes between both strategies in group 3. The same was not true for pts in groups 1 and 2, in which PCI seemed to favor overall outcomes (p=0.001 and p=0.015).
Predictors of intrahospitalar death were: age (OR 1.068 p=0.010), dementia (OR 2,376 p=0.015), KK class > 1 (OR 2,243, p<0.001), atrial fibrilhation (OR 1.605, p= 0.046), PCI (OR 0.309, p<0.001), eGFR <30 (OR 3.51, p<0.001) and PCI in pts with eGFR <30 (OR 2.923, p=0.019).
Interestingly, survival analysis showed that pts submitted to PCI in all 3 groups had a longer 1- year survival (p<0.001, p<0.001 and p< 0.004).
Conclusions: The decision of performing PCI in elderly pts with CKD should be individualized, considering its beneficial risks. In our study, more specifically in group 3, the performance of PCI is associated with a higher in-hospital mortality, however, after surviving hospitalization, these pts seem to have a benefit in 1 year survival.

PO 233.PCI OF CHRONIC TOTAL OCCLUSIONS: WHAT IS THE CLINICAL BENEFIT AND IMPACT ON QUALITY OF LIFE?

Hugo Alex Costa, Raquel Fernandes, Teresa Faria da Mota, Miguel Espirito Santo, Jimmy Martins, Hugo Palmeiro, Daniela Carvalho, João Bispo, João Guedes, Hugo Vinhas, Ilídio Jesus

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

Introduction: Coronary chronic total occlusions (CTO) are relatively common findings in the context of coronary angiography. The indication for revascularization of this type of lesions remains controversial. The recommendations of international cardiology societies consider the treatment of CTO by percutaneous coronary intervention (PCI) in selected patients, but this technique is not yet widely used in this context.

Objectives: To evaluate the clinical and quality of life impact of patients undergoing PCI-CTO, including angina, heart failure (HF), acute myocardial infarction (AMI), mortality and improved quality of life (QoL) after the procedure.

Methods: Retrospective study for biennium 2019/2020, composed of n = 177 patients undergoing PCI-CTO. A descriptive and comparative analysis of the sample regarding the demographic and clinical characteristics of patients was performed, to whom a quality of life questionnaire (WHOQOL-Brief) was applied. The descriptive analysis was based on means and standard deviations and on the analysis of statistical tests, t-Student and Mann-Whitney were performed according to the parametric and non-parametric context, respectively.

Results: A total of 177 patients were identified, with a mean age of 65.7 ± 11.2 years, 51.5% female. 75% of patients showed high blood pressure, 39% diabetes and 80.5% NSTEMI. At 30 days after PCI only 21% of patients had symptoms (angina or HF), with clinical improvement at 180 days to 10% symptomatic.

Table 1: Patients Characterization: Epidemiological, Clinical Factors and Outcomes.

(n.%)	População geral (177, 100%)	Masculino (86, 48,5%)	Feminino (91, 51,5%)	P Valor
Características Sociodemográficas				
Idade *(anos, média ± desvio-padrão)*	65,7 ± 11,2	65,2 ± 10	65,7 ± 12,1	0,762[1]
Fatores de Risco Cardiovasculares				
Tabagismo				0,359[3]
Fumador	49/177 (28%)	23/49 (47%)	26/49 (53%)	
Não Fumador	75/177 (42%)	33/75 (44%)	42/75 (56%)	
Ex fumador	53/177 (30%)	30/53 (57%)	23/53 (43%)	
Hipertensão Arterial	132/177 (75,0%)	66/132 (50%)	66/132 (50%)	0,520[3]
Diabetes Mellitus	70/177 (39%)	34/70 (49%)	36/70 (51%)	0,997[3]
Dislipidémia	129/177 (73%)	62/ 129 (48%)	67/129 (52%)	0,819[3]
Obesidade	32/176 (18%)	18/32 (56%)	14/32 (44%)	0,319[3]
Antecedentes cardiovasculares				
EAMeSST	62/177 (80,5%)	38/62 (61%)	24/62 (39%)	**0,013[3]**
EAMeSST	36/177 (20%)	19/36 (53%)	17/36 (47%)	0,573[3]
CABG (Cirurgia Revascularização Coronária)	16/177 (9%)	9/16 (56%)	7/16 (44%)	0,520[3]
Insuficiência Cardíaca	27/177 (15%)	11/27 (41%)	16/27 (59%)	0,376[3]
Fibrilhação Auricular	22/177 (12%)	9/22 (41 %)	13/22 (59%)	0,441[3]
Doença Renal Crónica	14/177 (8%)	8/14 (57%)	6/14 (43%)	0,505[3]
Doença Pulmonar	10/177 (6%)	4/10 (40%)	6/10 (60%)	0,576[3]
Acidente Vascular Cerebral	8/177 (4,5%)	4/8 (50%)	4/8 (50%)	0,935[3]
OutCome Clínico — 30 Dias				
Sintomatologia				0,529[3]
Não	134/177 (76%)	61/134 (45,5%)	73/134 (54,5%)	
Sim	37/177 (21%)	19/37 (51%)	18/37 (49%)	
Angor	17/177 (10%)	9/17 (53%)	8/17 (47%)	**0,032[3]**
Insuficiência Cardíaca	21/177 (12%)	10/21 (48%)	11/21 (52%)	**0,037[3]**
OutCome Clínico — 180 Dias				
Sintomatologia				0,842[3]
Não	133/177 (75%)	67/133 (50%)	66/133 (50%)	
Sim	17/177 (10%)	9/17 (53%)	8/17 (47%)	
Angor	10/177 (6%)	5/10 (50%)	5/10 (50%)	0,427[3]
Insuficiência Cardíaca	8/177 (4,5%)	4/8 (50%)	4/8 (50%)	0,427[3]
Eventos Finais — 180 Dias				
Enfarte Agudo do Miocárdio	3/177 (2%)	1\3 (33%)	2/3 (66%)	0,227[3]
Morte	10/177 (6%)	8/10 (80%)	2/10 (20%)	**0,045[3]**
Bioquímica				
Creatinina *(mg/dl, ± desvio-padrão)*	1,14± 1,08	1,22±1,41	1,06±0,55	0,657[2]
Taxa de Filtração Glomerular *(%, ± desvio-padrão)*	76± 26,4	76,4±25	75,6±28	0,864[2]
Ecocardiograma				
FEVE *(em percentagem, média ± desvio-padrão)*				
Antes	47±9,9	47,8±8,8	46,22±10,9	0,483[2]
Após	51/9,5	51,7±8,9	51,6±8,9	0,841[2]

(n.%)	30 dias Sem Sintomas	30 dias Com Sintomas	P Valor	180 dias Sem Sintomas	180 dias Com Sintomas	P Valor	Eventos finais Sem eventos	Eventos finais Com Evento	P Valor
	134/171 (78%)	37/171 (22%)		133/150 (89%)	17/150 (11%)		141/153 (92%)	12/153 (8%)	
Ecocardiograma									
FEVE *(em percentagem, média ± desvio-padrão)*									
Antes	48,05±9,43	45,33±11,09	**0,044[2]**	47±9,4	46,8±13,1	0,903[2]	47,6±9,5	39,5±10,2	**0,009[2]**
Após	52,43±9,05	47,35±10,32	**0,016[2]**	52±9,6	45,3±7,8	**0,029[2]**	52±9,3	44,4±12	**0,010[2]**
Qualidade de Vida									
Domínio Física	81,5±14,9	76±17,1	0,170[2]	80,5±15	75±19,9	0,108[2]	79,7±15,5	0 (sem resposta)	NA
Domínio Psicológico	75,2±15,9	66,2±16,9	0,025[2]	73,4±15,8	70±14,3	0,724[2]	72,8±14,6	0 (sem resposta)	NA
Domínio Social	74,1±11	69,2±20,3	0,081[2]	72,7±14,3	74,2±10,8	0,695[2]	72,8±13,9	0 (sem resposta)	NA
Domínio Ambiental	81,9±11,7	77,2±15,7	0,309[2]	81,2±11,8	77,5±19,9	0,547[2]	80,7±12,9	0 (sem resposta)	NA

[1]Teste T-Student; [2]Teste Mann Whitney; [3]Teste Qui-Quadrado de Pearson;

Regarding QoL, an average score of 4.3 (maximum of 5) was obtained for the 2 questions that independently assess the patient's perception of their QoL after the procedure. High levels of scores were also obtained by domains (QoL > 70%), with marked improvement in the Physical, Environmental and Psychological domains, becoming more evident in the latter at 30 days after the procedure in patients who remained asymptomatic (75.2%, p = 0.023). This benefit was accompanied by improvement in left ventricular function (LVEF), being more evident in asymptomatic patients and without events after procedure. Mortality and AMI occurred in 6% and 2%, respectively.
Conclusions: The majority of patients had clinical benefit and expressed improvement in QoL after undergoing PCI-CTO, which was accompanied by improvement in LVEF, reinforcing the usefulness of the technique and the approach of this type of lesions in selected patients.

PO 234. PCI OF LEFT MAIN CORONARY ARTERY: REAL LIFE VS CLINICAL TRIALS OUTCOME RESULTS

Hugo Alex Costa, Miguel Espirito Santo, Raquel Fernandes, Teresa Faria da Mota, Hugo Palmeiro, Daniela Carvalho, João Bispo, João Guedes, Hugo Vinhas, Ilídio Jesus

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. Although it is not the standard of care, PCI of LMCA has been increasing. It is important to compare real life outcome results with those described in clinical trials, justifying the use of this technique.
Objectives: Population characterization. Try to identify prognostic factors and outcomes of LMCA PCI comparing with those described in recent clinical trials.
Methods: Retrospective study between 2019/2020, composed of n = 120 patients that were submitted to LMCA PCI. Descriptve analysis was carried out regarding the demographic and clinical characteristics of the patients. Chi-Square test was used for categorical variables and the T-Student test for numerical variables, with a significance level of 95%, and the results were compared with 3 clinical trial data.
Results: A total of 120 patients were identified, with a mean age of 70.5 ± 10.8 years, 76.7% were male. 81.7% had multivessel disease, with LMCA plus 1 artery in 54.1% (anterior descendig artery most frequent (31.7%)). Compared to reference trials, besides being older, they also had more comorbidities like hypertension (75%), previous myocardial infarction (50.9%), chronic renal failure (CRF) (8.3% - p = 0.019), lower left ejection fraction (49.5 ± 11.1) and presented more often with acute coronary syndrome (72.5%). Heart failure (3.4% - p = 0.02) and CRF were independent prognostic factors. In general, they were less fit for surgery (EURO score 4.0 ± 3.8) and presented with more complex coronary anatomy (SYNTAX score 27.3 ± 12.2). At 2 years, outcomes of death (10.0%), myocardial infarction (MI) (8.8%) or ischemia-driven revascularization (IDR) (1.8%) were similar to EXCEL and NOBLE trials at 2 years, and higher compared to PRECOMBAT trial, probably because this included younger patients with less comorbidities and better left ventricular function. The use of intravascular ultrasound in our sample was low (18.3%).
Conclusions: After 2 years follow up, we report outcomes of mortality, MI and IDR of patients submitted to LMCA PCI similar to the 3 biggest trials in the field. It is important to highlight that our pool of patients presented with worse overall general status, reinforcing the usefulness of this technique in selected cases.

PO 235. STENT STRATEGIES IN DISTAL LEFT MAIN LESIONS: THE SIMPLER, THE BETTER?

Gustavo M. Campos, Luís Leite, Manuel Oliveira Santos, Luis Paiva, Elizabete Jorge, Joana Silva, Vítor Matos, Hilário Oliveira, Marco Costa, Lino Gonçalves

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

Introduction: Although percutaneous coronary intervention (PCI) for ostial or midshaft lesions in left main (LM) disease has shown similar results as compared with coronary artery bypass grafting (CABG), distal LM bifurcations are associated with an increase in procedural complexity and higher rates

Table 1. Baseline clinical and angiographic characteristics

	All patients (n = 106)	Provisional Stenting (n = 57)	Two-stenting Strategy (n = 49)	p value
Age – yr	74 [66-82]	72 [67-81]	75 [65-84]	0.912
Male sex	79 (74.5)	46 (80.7)	33 (67.3)	0.125
Clinical characteristics				
Hypertension	91/105 (86.7)	49/56 (87.5)	42 (85.7)	1.000
Diabetes mellitus	57/105 (54.3)	25/56 (44.6)	32 (65.3)	**0.049**
Insulin treated diabetes	17/105 (16.2)	9/56 (16.1)	8 (16.3)	1.000
Dyslipidemia	99/105 (94.3)	54/56 (96.4)	45 (91.8)	0.414
Smoking history	31/91 (34.1)	16/47 (34.0)	15/44 (34.1)	0.147
Body mass index	27.7 [25.7-32.2]	27.2 [25.9-29.7]	29.3 [25.5-32.8]	0.453
Atrial fibrillation	20/104 (19.2)	11/55 (20.0)	9/49 (18.4)	1.000
Valvular heart disease				
Chronic kidney disease	24/103 (23.3)	15/54 (27.8)	9/49 (18.4)	0.351
LVEF (> 50%)	45/90 (50.0)	20/47 (42.6)	25/43 (58.1)	0.205
Angiographic characteristics				
SYNTAX score	29.6 ± 10.0	29.6 ± 10.6	29.6 ± 10.6	0.976
Low (score ≤ 22)	27/104 (26.0)	15/55 (27.3)	12 (24.5)	
Intermediate (score 23-32)	41/104 (39.4)	23/55 (41.8)	18 (36.7)	
High (score ≥ 33)	36/104 (34.6)	17/55 (30.9)	19 (38.8)	
Intravascular imaging use	29 (27.4)	13 (22.8)	16 (32.7)	0.282
Calcium technique				0.277
Rotablator	8 (7.5)	6 (10.5)	2 (4.1)	
Cutting-ballon	4 (3.8)	1 (1.8)	3 (6.1)	
Cumulative incidence of adverse events at follow up				
TLF *	19/88 (21.6)	10/46 (21.7)	9/42 (21.4)	1.000
TLR	7/106 (6.6)	2/57 (3.5)	5/49 (10.2)	0.245
Myocardial infarction	8/85 (9.4)	4/44 (9.1)	4/41 (9.8)	1.000
Stroke/TIA	1/71 (1.4)	1/33 (3.0)	0	0.465
All-cause death	43/102 (42.2)	28/56 (50.0)	15/46 (32.6)	0.107
Cardiac death	9/104 (7.7)	6/57 (10.5)	2/47 (4.3)	0.289

Values are expressed as mean ± SD, median [IQ], or numbers/total (%)
LVEF, left ventricular ejection fraction; TLR, Target Lesion Revascularization; TLF, Target Lesion Failure

* Primary endpoint, defined as a composite of cardiac death, myocardial infarction, and TLR

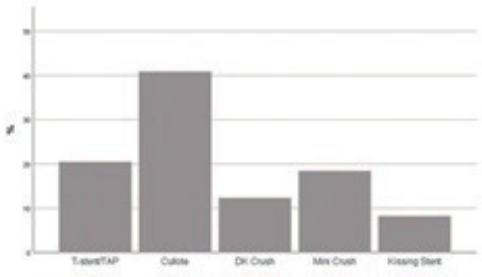

Figure 1. Frequencies of two-stent techniques.

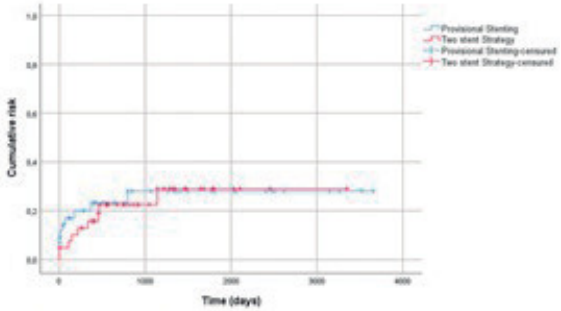

Figure 2. Cumulative risk for primary composite endpoint (target lesion failure) according to the stent strategy.

PO 235 Figure

of target lesion revascularization. Several studies have investigated the optimal stenting strategy in patients with coronary bifurcation lesions and showed no benefit for the systematic two-stent approach in comparison with provisional stenting. This is reflected in the current guidelines that recommend provisional stenting of the side branch as the preferred approach for most bifurcation lesions. However, there is still debate about the optimal strategy according to lesion location.

Objectives: This analysis aimed to compare the clinical outcomes of distal LM bifurcation PCI using a provisional strategy *versus* a two-stent strategy.

Methods: Retrospective, observational study including patients submitted to LM bifurcation (Medina 1,1,1) PCI between January 2010 and December 2019. Data was collected from the emergency department and hospitalization registries. Patients were divided according to the stenting approach. We made a global analysis including baseline clinical and angiographic data. The primary endpoint was target lesion failure (TLF), defined as the composite of myocardial infarction, cardiac death, and target lesion revascularization (TLR). Secondary endpoints included the individual components.

Results: A total of 106 patients were included (median age 74 [66-82], 79 (74.5%) males, 57 (53.8%) submitted to provisional stenting and 49 (46.2%) to a two-stent technique. Baseline characteristics were well matched (Table). The mean SYNTAX score was 29.6 ± 10.0 and LM stenosis grade was ≥ 70% in all lesions. Median follow-up was 26.6 [12.0-48.6] months. No differences were found regarding the primary endpoint (TLF in provisional stenting was 21.7 *vs.* 21.4%, HR 2,432; 95% confidence interval, 0.472-12,450; p = 0.233). Although target lesion revascularization within the LM complex was numerically higher in the two-stent group (10.2 *vs.* 3.5%, p = 0.245); the opposite was found in cardiac death (provisional group 10.5 *vs.* 4.3%, p = 0.289).

Conclusions: Besides being a "simpler" technique, provisional stenting had no significant differences in outcomes compared to two-stent techniques. Without further evidence, revascularization strategies should primarily rely on operator expertise.

Domingo, 24 Abril de 2022 | 16:00-17:00

Sala Jardim de Inverno | Posters (Sessão 6 - Écran 8) - Intervenção Coronária e Estrutural 5 - Intervenção Valvular

PO 236. TRANS-SUBCLAVIAN TRANSCATHETER AORTIC VALVE IMPLANTATION: THE SECOND-LINE ACCESS

André Grazina[1], Inês Rodrigues[1], Tiago Mendonça[1], Alexandra Castelo[1], Rita Teixeira[1], Bárbara Teixeira[1], Sofia Jacinto[1], Ruben Ramos[1], António Fiarresga[1], Lino Patrício[2], Duarte Cacela[1], Rui Cruz Ferreira[1]

[1]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [2]Hospital do Espírito Santo, EPE, Évora.

Introduction: Transfemoral (TF) access is widely accepted as the preferential route for transcatheter aortic valve implantation (TAVI). However, in some patients this is not possible because of severe peripheral artery disease of the aorto-iliac-femoral axis. In such cases trans-subclavian (TS) access TAVI is an option.

Objectives: This analysis aims to describe the initial experience of TS TAVI in a tertiary center, regarding technique safety and outcomes.

Methods: Retrospective descriptive analysis of the patients submitted to TS TAVI in a single center. Baseline characteristics, procedure data and 1-year outcomes were noted according to the Valve Academic Research Consortium-2 (VARC-2).

	%	n		%	n
Mean age	79.0 ± 8.0 y/o		CKD (KDIGO stage ≥ 3)	70%	14
Gender (% of male)	65 %	13	CKD w/ haemodialysis	5%	1
Coronary artery disease	55%	11	Previous Pacemaker	15%	3
Previous MI	25%	5	Euroscore II	7.45 ± 5.53	
Previous CABG	10%	2	STS score	5.48 ± 3.36	
Atrial Fibrillation	45%	9	NYHA class	3.0 ± 0.7	
Previous stroke	10%	2	Aortic mean gradient	47.3 ± 13.6	
Symptomatic PAD	65%	13	LVEF < 50%	30%	6
Diabetes Mellitus	30%	6	LVEF < 40%	25%	5

Table 1. Baseline Characteristics (MI- Myocardial Infarction; CABG – Coronary Artery Bypass Graft; PAD – Peripheral Artery Disease; CKD – Chronic Kidney Disease; KDIGO – Kidney Disease: Improving Global Outcomes; STS – Society of Thoracic Surgeons; NYHA – New York Heart Association; LVEF – Left Ventricle Ejection Fraction)

	%	n		%	n
Technical Success	90%	18	1-year Pacemaker implantation	35%	7
In-hospital mortality	15%	3	1-year MI	0%	0
Major vascular complications	10%	2	1-year Prosthetic dysfunction	0%	0
1-year mortality	30%	6	1-year Prosthetic endocarditis	0%	0
1-year stroke	10%	2	1-year Prosthetic thrombosis	0%	0
1-year major bleeding	15%	3	3 months NYHA class	1.3 ± 0.6	

Table 2. Procedure data and Outcomes (MI – Myocardial Infraction; NYHA – New York Heart Association)

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Results: During the study period, 535 TAVI procedures were performed including 20 patients (mean age 79.0 ± 8.0 y/o, 80% male) who underwent TS TAVI (70% with surgical access, 30% with percutaneous). Regarding the latter baseline characteristics (Table), it was noted a mean Euroscore II and STS scores of 7.45 and 5.48, respectively, obstructive coronary artery disease in 55% (previous myocardial infarction in 25%, previous CABG in 10%), symptomatic peripheral artery disease in 65%, previous stroke in 10%, significative renal dysfunction (GFR < 60 ml/min/m^2) in 70% and high frailty scores. Basal NYHA class was 3.0 ± 0.7. VARC-2 procedure success rate was 90% (one intra-procedural death after left ventricle perforation and one patient with post-procedural moderate periprosthetic regurgitation) *versus* 92.4% in the TF population. In-hospital mortality was 15% (one intra-procedural death, one due to cardiac tamponade 3 days after TAVI and another death due to a hypoxemic respiratory infection 7 days after TAVI). One-year mortality rate was 30% which compares unfavorably with the 16.1% one-year mortality in the TF TAVI population. These other 3 patients died with a severe SARS-CoV2 infection, an acute renal failure and a mesenteric ischemia, respectively. Two minor, non-disabling strokes were noted during hospitalization (10% *versus* 5.3% in the TF population) and none after discharge in the first year. No other major vascular or access related complications were noted (10% *versus* 5.5% in the TF group). No peri-procedure or first year myocardial infarctions occurred (0.2% in the TF population). Seven patients required permanent pacemaker implantation after TAVI (37% *versus* 21.5% in TF population), all during hospitalization. No prosthetic dysfunction, endocarditis or thrombosis occurred in the first year. There was significant symptomatic improvement at one-year follow-up (mean NYHA class of 1.3 *vs.* 3.0 preprocedural).
Conclusions: This analysis describes *real-world* and initial experience with TS TAVI in high and very high-risk patients, regarding the technique safety and outcomes. In selected patients with high-risk femoral access, trans-subclavian TAVI may be a reasonable alternative.

PO 237. PERCUTANEOUS TRICUSPID VALVE INTERVENTION – EARLY EXPERIENCE IN A SINGLE CENTRE

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Introduction: Tricuspid valve pathology is associated with significant morbidity and mortality and surgical approach is not always an option. New percutaneous interventions are being developed to treat these patients.
Objectives: To describe our early experience and results with percutaneous tricuspid valve intervention.
Methods: Retrospective analysis of patients (P) submitted to percutaneous tricuspid intervention between 2018 and 2021 in a tertiary center. Baseline and procedural characteristics and outcomes were collected.
Results: 8P (62.5% female) were included, mean age 73 ± 10 years. All P had comorbidities (hypertension 75%, dyslipidemia 62.5%, previous stroke 37.5%, atrial fibrillation 100%). 5P had previous valvular surgery (1 with tricuspid intervention with a bioprosthesis). A device was implanted in 6P (5 pacemakers and 1 defibrillator). All P were taking diuretics (8P furosemide, mean dose 85 mg, 4P spironolactone, mean dose 25 mg, 1P metolazone 5 mg) and all of them were under oral anticoagulation. 8P were in NYHA class 2 or 3, 7P had peripheral edema, 3P had ascites and 3P had previous hospital admissions for heart failure. On echocardiography 6P had right ventricle dilation, mean TAPSE was 17 mm and PASP 51 mmHg. 1P had tricuspid bioprosthesis disfunction, with mean gradient 13 mmHg and moderate insufficiency. All other patients had severe or torrential tricuspid insufficiency (6 due to annulus dilation and 1 lead induced). Mean euroscore II was 6.5 ± 5.9%. 4P were submitted to TricValve® implantation (1 with an inferior vena cava valve that tilted into the right atrium, with paravalvular leak). 3P were submitted to clip implantation (1 with Mitraclip® and 2 with Triclip®), one with 2 clips implanted and the other two with one clip, all with a reduction of ≥ 2 grades of tricuspid insufficiency. One P was submitted to valve-in-valve implantation, with an end result without any residual insufficiency and a mean gradient of 3.6 mmHg. All the procedures were done under general anesthesia, with intraprocedural transesophageal echocardiography. A femoral vein route was used in all P, with one access complication (arterio-venous fistula, with surgical correction). After the procedures 1P died during the hospital stay (late tamponade and, weeks later, multi organ failure) and 1P died 4 months later, with septic shock. There were no other complications related to the procedures. There were no hospital admissions for heart failure. Excluding the patient with early complications, all patients had ≥ 1 NYHA class improvement, peripheral edema and ascites resolution and diuretic dose reduction during at least 1 month follow up.
Conclusions: Tricuspid valve pathology is associated with high morbidity and patients are frequently considered inoperable. Percutaneous interventions in selected patients are feasible and associated with few complications and significant clinical improvement.

PO 238. CLINICAL OUTCOMES OF TRANSCATHETER AORTIC VALVE IMPLANTATION IN YOUNGER PATIENTS

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Introduction: Currently, the European Society of Cardiology recommends TAVI for patients older than 75 years as a result of trials that demonstrate a non-inferiority in relation to SAVR. TAVI is also performed in younger patients, particularly in those unsuitable for surgery. However, the clinical outcomes in this subgroup of patients are still scarce. Concerns in relation about valve durability and pacemaker implantation acquire even more importance in younger patients.
Objectives: The aim of the study was to describe the characteristics and the outcomes of TAVI in patients < 75 years old.
Methods: Retrospective analysis of patients who underwent TAVI (n = 846) in a single centre between August 2007 and December 2020. All patients were stratified by age (</> 75 years) and baseline characteristics, complications of procedure and mortality were compared between the two groups.
Results: Overall, 173 (20.4%) patients were < 75 years; the mean age was 68.7 ± 6.8 years. The younger patients were more often male (64.7 *vs.* 45.5%, p < 0.001), had higher prevalence of diabetes (52.3 *vs.* 35.3%, p < 0.001), lung disease (30.7 *vs.* 20.2%, p = 0.017) and previous cardiac surgery (31.7 *vs.* 16.3%, p < 0.001), had lower mean LV ejection fraction (46.8 ± 13.4 *vs.* 52.3 ± 11.5%, p < 0.001) and STS score (4.2 ± 4.4 *vs.* 5.4 ± 3.7) and had lower prevalence of atrial fibrillation (23.7 *vs.* 34.0%, p = 0.010). Regarding post-procedure complications, younger patients had lower incidence of acute kidney injury (11.0 *vs.* 18.3%, p = 0.027). There were no differences in rates of permanent pacemaker implantation, vascular complications and cerebral events. 30-day mortality was similar between two groups (5.7 *vs.* 7.2%, p = 0.730) and 1-year mortality was non-significant lower in younger patients (7.5 *vs.* 11.4%, p = 0.092).
Conclusions: Use of TAVI in younger patients will continue to increase. Our study showed that although patients were clinically different, the outcomes were similar between younger and older TAVI patients. Dedicated trials of TAVI/SAVR in younger patients are needed to guide decisions concerning expansion of TAVI indications.

PO 239. EARLY AORTIC VALVE REPLACEMENT IN ASYMPTOMATIC SEVERE AORTIC STENOSIS WITH PRESERVED EJECTION FRACTION

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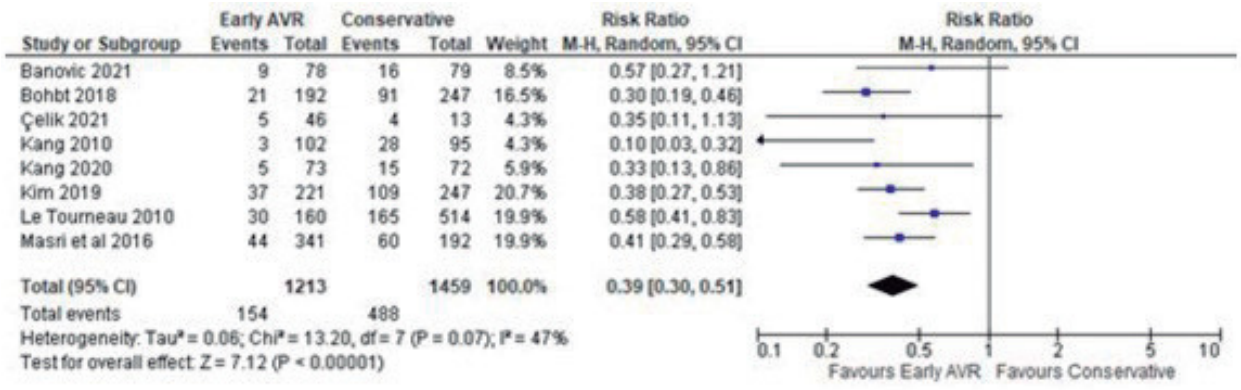
Introduction: Aortic stenosis (AS) is the most common valvular disease in developed countries. Specific timing of intervention for asymptomatic



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patients with severe aortic stenosis and preserved ejection fraction remains controversial.

Objectives: To compare the outcomes of early aortic valve replacement (AVR) *versus* watchful waiting (WW) in asymptomatic AS patients with preserved ejection.

Methods: We systematically searched PubMed, Embase and Cochrane databases, in November 2021, for both interventional or observational studies comparing early-AVR with WW in the treatment of asymptomatic severe AS with preserved ejection fraction criteria. Random-effects meta-analysis was performed.

Results: Eight studies were included in which two were randomized clinical trials. A total of 2672 patients were included, providing a 642 pooled death events (327 in early-AVR and 941 in watchful waiting). In our meta-analysis, early-AVR revealed a significant lower all-cause mortality (pooled OR, 0.39; 95%CI [0.30, 0.51], $p < 0.01$; $I^2 = 47\%$). Additionally, the early-AVR group presented a lower rate of cardiovascular mortality (pooled OR, 0.33; 95%CI [0.19, 0.56], $p < 0.01$; $I^2 = 64\%$). Both strategies had similar rate of stroke (pooled OR, 1.30; 95%CI [0.39, 4.27], $p = 0.67$; $I^2 = 0\%$) and myocardial infarction (pooled OR, 0.49; 95%CI [0.14, 1.78], $p = 0.28$; $I^2 = 0\%$). Heart Failure hospitalizations presented a lower trend early-AVR group (pooled OR, 0.22; 95%CI [0.05, 1.08], $p = 0.36$; $I^2 = 36\%$).

Conclusions: Our pooled data suggests that early-AVR strategy is preferable for asymptomatic severe AS patients with preserved ejection fraction.

PO 240. BIVALVE: PROCEDURAL AND MID-TERM RESULTS IN PATIENTS WITH AORTIC STENOSIS TREATED WITH IMPLANTATION OF 2 (IN-SERIES) PROSTHESES IN A SINGLE PROCEDURE

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Introduction: Despite the increasing experience in transcatheter aortic valve implantation (TAVI), valve mispositioning still occurs. This study sought to report the incidence, management as well as post-procedural and mid-term outcomes of patients in which a second "in-series" prosthesis was implanted during the same intervention.

Methods: Single-center retrospective analysis on prospectively collected data of all consecutive patients who underwent a second "in-series" prosthesis implantation during a single TAVI procedure, between january 2015 and november 2021. Clinical and echocardiographic characteristics were recorded at baseline and after successful TAVI. Procedural, immediate post-procedural as well as mid-term follow-up data were collected for analysis.

Case #	Reasons for 2nd valve implantation	Size of Second Valve Deployed During the Index Procedure, mm	Position of Embolized Valve	NYHA Functional Class (Follow-up)
1	Valve embolization	29	Ascending aorta	Dead
2	Valve embolization	25	Ascending aorta	II
3	Low implantation with severe aortic regurgitation	23	Ascending aorta	I
4	Valve embolization	23	Ascending aorta	II
5	Left main occlusion	29	Ascending aorta	I
6	Valve embolization	29	Aortic arch	II
7	Valve embolization	23	Descending aorta	II
8	Valve embolization	29	Ascending aorta	II
9	Valve embolization	23	Aortic arch	I

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Results: A total of 887 TAVI procedures were performed during the study period. A second "in-series" prosthesis implantation was necessary in 9 cases (1,0%) due to valve malpositioning (Table): 7 - valve embolization; 1 - left main occlusion; 1 - low implantation with severe aortic regurgitation. All implantations of the second device were successful. Overall, 6 patients had peri-procedural events: 1 patient died the day after procedure due to intestinal ischemia; 2 patients implanted permanent pacemaker; 2 patients had a minor vascular complication of the main access - pseudoaneurysm; 1 patient had type 5 myocardial infarction. During a median follow-up of 31 months, all survivors (n = 8) remained clinically stable and the extra-anatomically placed prosthesis (ascending aorta, n = 6; aortic arch, n = 2, descending aorta = 1) was not associated with clinical events.

Conclusions: The need for a second "in-series" prosthesis implantation during a single procedure is an extremely rare event. Mid-term clinical outcomes were favorable, even though periprocedural complications are common in this bailout scenario.