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POSTERS (P)

Sábado, 27 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 1 - ÉCRAN 1 - DOENÇA CORONÁRIA

P 1. COMPLETE REVASCULARIZATION ON PATIENTS PRESENTING WITH CARDIOGENIC SHOCK: REAL LIFE DATA

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Introduction: The CULPRIT-SHOCK trial showed that immediate multivessel percutaneous coronary intervention (PCI) increased the risk of death or severe renal failure at 30 days on patients (P) presenting with cardiogenic shock (CS).
Objectives: Evaluation of prognostic impact of complete revascularization (CR) on P admitted with ST segment elevation myocardial infarction (STEMI) in CS and multivessel disease (MVD).
Methods: Retrospective analysis of P data admitted due to STEMI and CS and MVD at multicentric registry between 2000-2018. Compared demographic and clinical characteristics of P who were submitted to CR (group 1 - G1) *versus* who did not (group 2 - G2) and evaluated its prognostic impact.
Results: Admitted 7919 P with STEMI, which 295 (3.7%) on CS. 46.8% of the P on CS had MVD, 69.6% were submitted to CR. G1 P were younger (61 ± 11 *versus* 73 ± 12 years, p < 0.001). The STEMI location was predominantly anterior (80%) in G1 and inferior in G2 (50%). The stablished timings symptoms start - reperfusion therapy and first medical contact - reperfusion were not statistically different between groups. 20% of G1 P did more than one coronariography during hospitalization, so we can infer that on the others 80% the CR was performed during the *index* procedure. The anterior descendent was the artery more frequently involved in both groups (80 *versus* 89.8%) being the culprit lesion in 47.4% of G1 P and in 27.7% of G2 P, where the most frequently was the right coronary (43.4%, p < 0.001). The majority of G1 P (95%) had 2-vessel disease; in G2 53.4% had 2-vessel disease and 46.6% 3-vessel disease (p < 0.001). All the G1 P did PCI; in G2, 96.6% did PCI and 3.4% had a hybrid technique (in 2.3% coronary artery bypass grafting planned after hospital discharge). Other interventions during hospitalization were needed, namely non-invasive ventilation (35 *versus* 21.6%), invasive ventilation (30 *versus* 34.1%), intra-aortic pump (20 *versus* 17%) and temporary pacemaker (5 *versus* 25%), not statistically significant. The stablished endpoints were reinfarction rate (5% between G1 P *versus* 0%), AHF (70 *versus* 83%), stroke (5.3 *versus* 0%) and in hospital death (35 *versus* 37.5%), not statistically significant.
Conclusions: Although the evaluated endpoints are different and measured at different timings, our results do not appear to follow the trends presented in CULPRIT-SHOCK trial probably as a result of the small sample size and the shorter follow up time.

P 2. MYOCARDIAL INFARCTION WITH NON-OBSTRUCTIVE CORONARY ARTERIES, NOT SO GOOD AS EXPECTED- STRATIFYING RISK OF A «NEW» CLINICAL ENTITY USING AN «OLD» TOOL

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Introduction: It is increasingly recognized that there is a group of myocardial infarction patients with no angiographic obstructive coronary artery disease (≥ 50% diameter stenosis in a major epicardial vessel), and the term myocardial infarction with non-obstructive coronary arteries (MINOCA) has been coined for this entity.
Objectives: The aim of this study was to evaluate the clinical characteristics, natural history and outcome of a cohort of patients with myocardial infarction with non-obstructive coronary arteries (MINOCA) and evaluate if the GRACE score correctly stratifies prognosis in these patients.
Methods: This was a retrospective, observational and single centre cohort study involving patients with MINOCA admitted in a Cardiology ward between January 2014 and December 2017. Data was collected regarding medical history, results of medical tests, drug therapy, complications during hospital stay and the final diagnosis of the MINOCA. The clinical follow-up lasted one year, during which the occurrence of major adverse cardiovascular events (MACE) —all-cause mortality and hospitalization due to myocardial infarction, stroke, acute limb ischemia or heart failure— was evaluated.
Results: Of the 67 patients with MINOCA included in the study, 45% were female (66 ± 11,8 years). On discharge, most patients received a prescription for an angiotensin-converting enzyme inhibitor or angiotensin receptor blocker (74%), a beta-blocker (61%), aspirin (59%) and a statin (78%); 24% received double anti-aggregation. The final diagnosis of the MINOCA was discovered in 22,4% of the patients and cardiac magnetic resonance imaging added diagnostic value in 64,7% of the patients who performed it. During the one-year follow-up period, MACE occurred in 7,6% of the patients and 4,6% died. A more elevated GRACE score calculated on patient admission was associated with the occurrence of heart failure during hospital stay and MACE during follow-up. The ROC curves showed a good capacity of the GRACE score for the prediction of these events, with score cut-offs suggested by the Youden index of 113 for prediction of MACE (area under curve (AUC): 0,783) and 137 for heart failure during hospitalization (AUC: 0,790) and one-year mortality (AUC: 0,892).
Conclusions: The MINOCA population includes patients with diverse definitive diagnoses and the prognosis is not entirely benign. This study reinforces the importance of MINOCA as a working diagnosis, which should

prompt an active approach by the clinician to obtain the definitive diagnosis and provide specific therapy. The GRACE score can be used for risk stratification in patients with MINOCA, with similar cut-offs as those used for non-ST elevation acute coronary syndrome.

P 3. E/EÂ´ RATIO, A PREDICTOR OF IN-HOSPITAL COMPLICATIONS IN ACUTE MYOCARDIAL INFARCTION

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Introduction: Diastolic dysfunction is an early finding in patients presenting with acute myocardial infarction (AMI), often heralded by an increase in E/E' ratio. The purpose of this study was to assess the relationship between the E/E' ratio and in-hospital complications (IHC) in AMI.
Methods: A retrospective analysis of 250 patients admitted to a Cardiology ward diagnosed with AMI was performed. The primary endpoint was defined as the composite of re-infarction, stroke, mechanical complications (MC), heart failure (HF), acute kidney injury (AKI) and/or arrythmia. Mann-Whitney U test was used for mean comparison between variables. Two different multivariable logistic regression (MRlog) models were applied, one evaluating the effect of other echocardiographic variables besides E/E' ratio (left ventricular ejection fraction - LVEF, pulmonary artery systolic pressure - PASP, telediastolic diameter of left ventricle and left atria diameter) and the other one evaluating the effect of clinical variables (age, obesity, history of hypertension and diabetes mellitus) on IHC. A Pearson analysis was performed to evaluate correlation between variables.
Results: IHC occurred in 158 patients (63%). 73% of patients in the population were male, and the mean age was 69 ± 13 years. HF occurred in 51% of patients, arrythmias in 22%, AKI in 11% and MC in 1%. No re-infarction/ stroke was noticed. Mann-Whitney U test revealed a statistically significant association between E/E' ratio and IHC ($p < 0.001$). The MRlog using the echocardiographic variables above mentioned demonstrated a statistically significant result for E/E' ratio ($p = 0.016$ - Exp(B): 0.847) and for PASP ($p = 0.009$ - Exp(B): 0.906). The MRlog model that included clinical variables demonstrated that E/E' ratio retained predictive value for IHC ($p = 0.022$ - Exp(B): 0.922). For each unit increase in E/E' ratio, the probability of not having an IHC decreases by 8-15%, according to the model used. The effect of E/E' ratio on IHC was mainly driven by the risk of developing HF ($p = 0.03$, Exp(B): 0.88). Pearson correlation test between variables did not achieve statistical significance, therefore an independent variation between them was admitted.
Conclusions: The increase in E/E' ratio is associated with a higher risk of IHC. E/E' ratio has predictive value in IHC risk, particularly HF, which is independent from the effect of other clinical and echocardiographic variables.

P 4. THE IMPLEMENTATION OF ECMO IN CARDIAC ARREST REFRACTORY TO CONVENTIONAL RESUSCITATION IS RELIABLE? SINGLE-CENTER EXPERIENCE

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Introduction: The implementation of assisted cardiorespiratory resuscitation (CPR) with extracorporal membrane oxygenation (ECMO) of the veno-arterial type at the cardiac arrest refractory to conventional CPR (technically called E-PCR), both intrahospital and extrahospital, has been discussed in several sectors and may turn out to be a promising alternative in specific cases. We aim to review the efficacy and safety of E-PCR in a consecutive series of patients referred to our center.
Methods: We performed a retrospective analysis of clinical and technical procedural data of consecutive patients undergoing ECMO during cardiac arrest refractory to conventional resuscitation at our center, between January 2011 and June 2018.
Results: Fifty nine patients underwent ECMO due to refractory cardiogenic shock, of which 15 were implanted during refractory cardiac arrest. Most were referred to our center with a diagnosis of acute myocardial infarction for primary stratification. The mean age was 54.7 (24-68 years); male with 53.3%; the underlying etiology of refractory CPR was acute myocardial infarction (66.7%); the most frequent arrest rhythm was the pulseless electrical activity (46.7%), followed by ventricular fibrillation (33.3%); the mean duration in ECMO was 6.1 days (0-23 days); the most frequent cause of death was multiorgan dysfunction, mostly triggered by refractory cardiogenic shock. The history of ischemic heart disease (13.3%), hypertension (53.3%), smoking (40.0%) and dyslipidemia (60.0%) were associated with a lower probability of survival. E-CPR was rapidly implemented by direct cannulation of the right femoral artery in the hemodynamic laboratory by interventionists and intensivists, was admitted to the cardiac intensive care unit, except 33.3% of these were transferred to the operating theater for emergent cardiac surgery due to mechanical prosthesis dysfunction and 6.67% referred for transplantation; 26.7% were discharged; 20% transferred to the multipurpose care unit due to the need for isolation and difficult ventilatory weaning. Technical success was achieved in 15 (100%) of the procedures. Six cases (40%) submitted to renal replacement technique, due to acute or chronic acute renal injury. Vascular surgical intervention was necessary in three cases (20%), which consisted of fasciotomy of the lower limbs due to ischemia. Death during ECMO occurred in 20.0% of cases; weaning occurred in 11 cases (73.3%) and the mean hospitalization time was 6.1 (0-23 days).
Conclusions: In in-hospital E-CPR was favorable in terms of technical success, procedural safety and clinical improvement. Handling by intensivist and interventional cardiologists is reliable, it is associated with a relatively high survival rate when deployed early. The procedure is complex, requires a multidisciplinary effort that can lead to favorable results.

P 5. CARDIAC ARREST: WHICH PATIENTS CAN BENEFIT FROM CORONARY ANGIOGRAPHY?

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Introduction: The identification of the cardiac arrest's (CA) etiology and the survival probability is challenging. Studies show an association between coronary angiography (CAT) and survival, but the available data are limited and incomplete with respect to the selection of these patients (pts).
Objectives: To identify predictors of coronary disease(CD) in a sample of pts submitted to CAT in the context of CA and look for relationship between CD and death.
Methods: A single-center retrospective study including consecutive pts submitted to CAT in the context of CA from January 2015-July 2018. Demographic, clinical, echocardiographic, ECG and angiographic data were evaluated. The results were obtained using logistic regression.
Results: 121 pts (mean age 63.2 ± 13 years, 76% men) were included. The most frequent comorbidities were: hypertension (63.2%) and dyslipidemia (42.2%). Most of CAs have shockable-rythms (69.4%) and the mean CA duration was 16 ± 17 min. On average, patients underwent CAT 1.3 ± 3 days after CA. The most common cause of CA was myocardial infarction (MI) (65.3%), type 1 in 59.4%, and with ST elevation in 36.4%. 70.6% of the pts had significant elevation (> 5x the upper limit of normality) of troponin (Tn) and 53.7% had wall motion abnormalities (WMA) on the echocardiogram. Significant CD was recorded in 75.4% pts, predominantly involving the

anterior descending (55%) and the right coronary (44.9%) arteries. The Tn value presented moderate capacity to predict CD (AUC: 0.67, p = 0.022), best cut-off was 168 ng/L (Sens = 60.4%, Spec = 72.7%). There were independent predictors of CD: hypertension (OR: 2.43, p = 0.045), post-CA rhythm other than AF/flutter (OR: 4.77, p = 0.032), presence of WMA (OR: 36.27, p = 0.001), ST elevation (OR: 11.1, p = 0.002) and TnThs > 168 ng/L (OR: 4.06, p = 0.012). There was no association between the presence of CD and mortality, however, a trend towards higher mortality was observed in the group of patients with left main and circumflex disease (p = 0.085 and 0.065, respectively). In patients with CD, angioplasty had no impact on prognosis.
Conclusions: This study supports the current recommendations, suggesting that patients with the highest suspicion of MI (Tn elevation, especially TnThs > 168 ng/L, WMA and ST elevation) are those who will benefit most from CAT. In our population, hypertensive pts with post-CA rhythm other than AF/flutter had a higher probability of significant CD. On the other hand, there was no relationship between the presence of CD and death suggesting the need for prospective studies with a greater number of pts to assess the value of CAT in this population.

P 6. SURVIVAL ANALYSIS IN A POPULATION OF PATIENTS WITH CARDIOGENIC SHOCK AFTER ACUTE MYOCARDIAL INFARCTION: CHARACTERIZATION OF THE POPULATION AND IDENTIFICATION OF MORTALITY PREDICTORS

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Introduction: The presence of cardiogenic shock (CC) after acute myocardial infarction (AMI) is associated with high mortality.
Objectives: To compare the clinical characteristics, cardiac and non-cardiac complications among survivors and non-survivors of CC after AMI in order to identify predictors of in-hospital mortality.
Methods: An observational study involving 467 patients (P) with CC after AMI included in a national multicenter registry. Considered 2 groups: Group 1 - P with CC who died (n = 190) and Group 2 - P with CC who survived (n = 277). We recorded age, gender, personal history, coronary angiography and angioplasty performed, in-hospital therapy and ejection fraction, cardiac complications (Re-infarction, mechanical complications, high-grade atrial ventricular block, sustained ventricular tachycardia) and non-cardiac complications (acute renal injury [ARI], major bleeding and stroke). Multivariate analysis was performed to identify predictors of in-hospital mortality.
Results: Mortality in patients with CC after AMI was 40.6%. Group 1 P were older (77 ± 10 *versus* 68 ± 13 years, p < 0.001), presented higher prevalence of diabetes *mellitus* (41.8% *versus* 28.2%, p = 0.003), previous AMI (23.8% *versus* 12%, p < 0.001) 7%, p = 0.002), previous angor (31.9% *versus* 14.1%, p = 0.001), heart failure (18.6% *versus* 8.7%, p = 0.002) and peripheral arterial disease (11.8% *versus* 6.2%, p = 0.03). There were fewer coronary angiographies (64.2% *versus* 87.7%, p < 0.001), with no difference in the number or type of vessels with lesions in both groups, as well as inotropic therapy. With the exception of mechanical complications, more prevalent in group 1 (12.6% *versus* 5.4%, p = 0.006), there were no differences in the prevalence of the remaining cardiac complications. Among the non-cardiac complications considered, only the presence of ARI was more prevalent in Group 1 (72.1% *versus* 37.5%, p < 0.001). After multivariate analysis the presence of age > 75 years (OR: 2.21, CI: 1.39-3.51), previous angor [OR: 1.91, CI: 1.09-2.92), LRA (OR: 3.14, CI: 4.0-7.04) and mechanical complications (OR: 3, CI: 2.39-6.10) were independent predictors of in-hospital mortality of P with CC post-AMI.
Conclusions: Mortality in patients with CC after AMI remains high. Age > 75 years, prior angor, ARI and mechanical complications are independent predictors of in-hospital mortality in P with CC post-AMI.

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P 7. THE YOUNG FEATS THE MASTER - AN ONGOING JOURNEY

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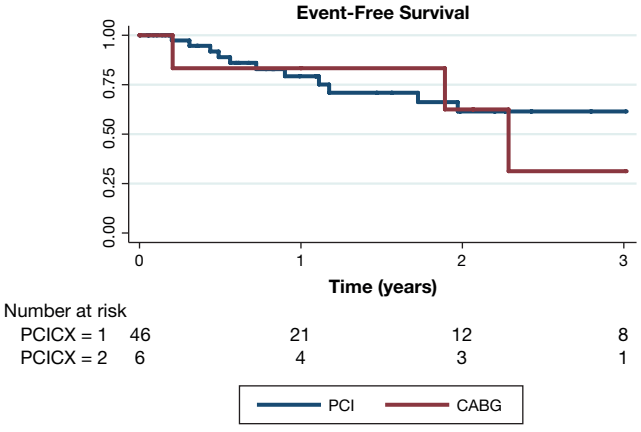
Introduction: According to the European guidelines, left main coronary artery (LMCA) disease is, commonly, an indication for Coronary Artery Bypass Graft (CABG) surgery. However, percutaneous coronary intervention (PCI) has shown to be safe and, at least, equally effective, representing an alternative to CABG with increasing applicability. The aim of this study is to assess the safety and efficacy of PCI in real-world patients with LMCA.
Methods: We conducted a retrospective longitudinal single centre study, including unselected patients undergoing coronary angiography between January 2011 and December 2017, with significant LMCA disease. The primary endpoint was the composite of coronary events (recurrent angina or acute coronary syndrome (ACS)) and mortality. Predictors of the endpoint and time to the first event were analysed using logistic regression and survival analysis with multivariate cox regression model, respectivelly, and assessed according to revascularization strategy (Rs) used. Anaysis with STATA 14.2 (α = 0.05).
Results: 63 patients with LMCA disease were analyzed, during a mean follow-up of 2.0 ± 2.0 years. The mean age was 69.2 ± 11.4 years, mostly male (77.8%). Regarding the type of admission, 68.3% (n = 43) patients were admited with ACS and 31.8% (n = 20) with stable coronary disease. More than one half of the patients (n = 34) had 3 vessel coronary artery disease. The mean Syntax score (Ss) was 28.8 ± 13.9 and two-thirds of the population (n = 40) had Ss over 22. PCI was chosen in 43 patients (73%), managed through the radial approach in 65% and mostly (93%) with drug-eluting stents. Of the remaining patients, 6 (9.5%) were submitted to CABG and 11 (17.5%) were kept with optimal medical therapy. One-fourth of the patients (n = 16) had a coronary event during follow-up, although there was no statistically significant difference between the Rs used, nor after controlling for known confounders (age, gender, Ss > 22, stenosis degree and location and number of diseased vessels). Incidence rate ratio of the outcome was 1.51, with 21 patients (20%) submitted to PCI and 4 (16%) with CABG presenting with a coronary event during 1-year follow-up. Overall mortality was 20% (n = 13) of which 4 of cardiovascular causes, with no difference between Rs used.



Conclusions: In the current study, patients with LMCA disease submitted to PCI showed similar results regarding the occurrence of coronary events or dead, as well as a similar event-free survival, compared to CABG.

P 8. THE ASSOCIATION BETWEEN GENETIC VARIANT ZNF259 AND DECREASED KIDNEY FUNCTION IN THE DIABETIC PATIENTS

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Introduction: Type 2 Diabetes (T2D) is a risk factor for dysregulation of glomerular filtration rate (GFR) and albuminuria. However, it remains unclear whether this association is only causal. Genetic variants are inherited independent of potential confounding factors and represent a lifetime exposure.
Objectives: Investigate whether the reduction of GFR is a direct consequence of T2D or there are other genetic mechanisms involved in the pathophysiology of the evolution to chronic kidney disease.
Methods: Cross-sectional study with a total of 2579 individuals was performed, of which 735 patients had T2D. Subjects were classified as 'diabetic' if they were taking oral anti-diabetic medication or insulin or if their fasting plasma glucose was higher than 7.0 mmol/l or 126 mg/dL. Within the diabetic group, we considered those with (n = 63) and without (n = 627) decreased GFR. GFR was calculated through the Cockcroft and Gault formula and decreased GFR was defined as GFR < 60 mL/min/1.73 m^2. Twenty-four genetic variants associated with T2D, metabolic syndrome, dyslipidemia and hypertension were investigated for its impact on GFR, namely: MTHFR 677 and 1298; MTHFD1L; PON 55, 192 and 108; ATIR A/C; AGT M235T; ACE I/D; TCF7L2; SLC30A8; MC4R; ADIPOQ; FTO; TAS2R50; HNF4A; IGF2BP2; PPARG; PCSK9; KIF6; ZNF259; LPA; APOE; PSRS1. Risk factors for decreased GFR were also evaluated (essential hypertension, glycaemia > 120 mg/mL, dyslipidemia, alcohol consumption, CAD diagnosis). A logistic regression was performed firstly with the risk factors solely; and secondly adding the genetic variants in order to evaluate the independent predictors of progression to renal failure in T2D.
Results: After the first multivariate logistic regression with all the risk factors for decreased GFR, only CAD remained in the equation, showing to be an independent risk factor for progression to renal failure, in T2D (OR: 4.17; 95%CI: 1.64-10.59; p = 0.003). In the second logistic regression, including risk factors and the genetic variants, only ZNF259 rs964184 showed an independent and significant association with the risk of decreased GFR (OR: 3.03; 95%CI: 1.06-8.70; p = 0.039).
Conclusions: This study shows that the variant ZNF259 rs964184 is associated with decreased kidney function, independently of other risk factors. This finding needs further investigation to clarify the genetic mechanism behind the association of rs964184 with decreased GFR, in Type 2 diabetes.

P 9. RISCO INFLAMATÓRIO RESIDUAL: PREDITORES GENÉTICOS PARA EVENTOS E MORTE CARDIOVASCULARES

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Introdução: A aterogénese é um processo imunometabólico complexo onde há uma interação de fatores genéticos, epigenéticos, ambientais e endógenos. Os fatores hereditários contribuem para 30 a 60% da variabilidade interindividual no risco de doença coronária (DC).
Objetivos: Caracterizar o perfil genético dos doentes com risco inflamatório residual, avaliado pela PCR de alta sensibilidade (PCR-as) com doença coronária significativa confirmada por angiografia na nossa população.
Métodos: Estudo retrospetivo de 1607 indivíduos com doença coronária significativa (> 70%) por angiografia, com idade média de 53,3 ± 7,9 anos, 78,9% masculino, em *follow-up* médio de 4,6 ± 3,7 anos na população GENEMACOR. Deste grupo foram selecionados os com LDL < 100 mg/dL (54,3 ± 7,6 anos, 76,4% masculino), posteriormente divididos em 2 grupos: PCR-as < 3mg/dL e PCR-as > 3mg/dL. Foram incluídas características basais, clínicas, laboratoriais, antropométricas e angiográficas. Analisamos as 33 variantes genéticas de GWAs associadas a DC. A genotipagem foi realizada pelo método de PCR em Tempo-Real em sistema TaqMan®. As variantes genéticas foram analisadas, com recurso ao teste de Qui-quadrado e teste Exacto de Fisher para identificar diferenças estatisticamente significativas entre os dois grupos de estudo para os eventos e morte cardiovasculares.
Resultados: A idade média dos doentes com PCR-as < 3 mg/dL (n = 467, 66,3%) é de 54,0 ± 7,7 anos, 79,7% masculino; e com PCR > 3 mg/dL (n = 237, 33,7%) é de 54,9 ± 7,5 anos, 70,0% masculino. Verificaram-se diferenças estatisticamente significativas entre PCR-as > 3mg/dL e PRC-as < 3mg/dL para a variante genética TCF21 (p = 0,043), bem como para a do LPA-1 (p = 0,041), relativamente à ocorrência de eventos cardiovasculares adversos. Para a morte cardiovascular observou-se diferenças estatisticamente significativa para a variante genética do MIA3 (p = 0,034). Nos restantes genes não foram observadas diferenças relevantes.
Conclusões: As variantes genéticas do TCF21 e do LPA associaram-se ao grupo com um risco inflamatório residual para eventos cardiovasculares, e a do MIA3 para morte cardiovascular. Os mecanismos pelo qual estes loci afetam a aterogénese abre novos caminhos para uma melhoria potencial na prevenção como no tratamento da doença coronária.

P 10. INVASIVE CORONARY ANGIOGRAPHY AFTER COMPUTED TOMOGRAPHY CORONARY ANGIOGRAPHY: IS IT INFLUENCED BY CARDIOLOGIST SUBSPECIALTY?

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Introduction: 2016 update of NICE guidelines, from the United Kingdom (UK), on stable chest pain, suggests that patients with new onset chest pain with atypical or typical anginal features, as well as those with non-cardiac chest pain and an abnormal resting ECG, should be offered computed tomography coronary angiography (CTCA). Although CTCA has a high sensitivity (95-99%) and specificity (64-83%) to diagnose coronary artery disease (CAD), previous studies suggest that a non-negligible portion of patients are being submitted to invasive coronary angiography (ICA) after CTCA, either to confirm the presence of obstructive CAD or to confirm the absence of CAD and further reassure the patients that his/her chest pain is not cardiac.
Objectives: Authors aim to investigate if the scepticism on CTCA results and the request for ICA to confirm CTCA findings are influenced by the Consultant Cardiologist subspecialty (Interventional *versus* Non-interventional).

Table P 8. Variables in the equation

							95% IC for OR	
	B	SE	Wald	df	Sig	OR	Lower	Upper
CAD	1.479	0.476	9.028	1	0.003	4.173	1.643	10.598
ZNF259			5.966	2	0.051			
CG	0.848	0.280	2.980	1	0.084	1.623	0.937	2.811
GG	1.109	0.538	4.255	1	0.039	3.033	1.057	8.702
Constant	-3.795	0.470	65.154	1	0.000			

Methods: Single centre prospective audit study, including 400 consecutive patients with stable chest pain who were referred to CTCA. Demographic, CTCA and downstream testing data were collected. Statistical analysis was performed using STATA v14. $p < 0.05$ was considered statistically significant.
Results: 400 patients were included, with mean age of 61 ± 12.2 years, 202 (52.6%) men, with a mean BMI of 28.9 ± 6.4. 387 (96.8%) CTCAs were diagnostic. Coronary artery disease (CAD) was diagnosed in 229 (57.3%) patients, and the mean CAD-RADS was 1.38 ± 1.6. 67 (16.8%) patients had ICA after the CTCA. Patients whose CTCA was requested by a consultant interventional cardiologist, rather than a consultant non-interventional cardiologist, had a higher probability of being submitted to ICA after CTCA (23.4% *versus* 13.3%, $p = 0.049$). When adjusting for CAD-RADS, although the fact that the CTCA was requested by a consultant interventional cardiologist was associated with a two-fold increase in the chance of having ICA, that difference became non-statistically significant (OR: 2.1, 95%CI: 0.8-5.7, $p = 0.153$).
Conclusions: In our study, a trend (not statistically significant) was found with respect to increased likelihood of ICA requested as a downstream test by consultant interventional cardiologists.

P 11. EARLY PROCEDURAL RESULTS AND OUTCOMES AFTER CHRONIC TOTAL OCCLUSION ANGIOPLASTY: EXPERIENCE OF A TREATMENT PROGRAM

Ana Marinho[1], Joana Ribeiro[2], Luís Miguel Santos[3], Célia Domingues[1], Patrícia Alves[1], Manuel Santos[2], Luís Leite[1], Luís Paiva[1], Hilário Oliveira[4], Francisco Gonçalves[1], Elisabete Jorge[4], Joana Silva[4], Vítor Matos[4], Marco Costa[4], Lino Gonçalves[1]

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Introduction: Coronary chronic total occlusions (CTOs) are routinely found in patients undergoing coronary angiography. In recent years, the success rate of CTO intervention have increased, driven by advances in material and interventional techniques, without compromising patent safety. We aimed to describe the characteristics, procedural aspects and clinical outcomes of a structured CTO program.
Methods: We conducted a prospective, cohort study including all consecutive patients enrolled in our CTO program from December, 2013 to November, 2018. Angiographic data included the number of diseased vessels, the SYNTAX score and the Japanese CTO (J-CTO) score. We defined a co-primary safety outcome (procedure-related complications) and a co-primary efficacy outcome (procedural success). A follow-up with a mean duration of 470 ± 420 days was conducted. Secondary, exploratory endpoints included death, myocardial infarction (MI) and target lesion revascularization (TVR); CCS and NYHA class assessment; and impact on left ventricular ejection fraction (LVEF) on follow-up.
Results: A total of 195 patients (mean age 66 ± 10 years, 81% male) with 202 CTO lesions were included. Most patients were hypertensive (79.3%), had dyslipidemia (82.4%) and a BMI > 25 kg/m^{-2} (87.1%); 35.6% were diabetic, 32.6% were smokers and a third had a prior history of MI. The indication for a CTO procedure was angina in 78.0%, viable heart failure in 9.2% and ventricular arrhythmias in 1.2%. The mean J-CTO score was 2.0 ± 0.8 and 54.5% of patients had multivessel disease. Regarding the technical procedure, 89.7% were performed via the anterograde wire-escalation technique and 10.3% performed as variants of the retrograde technique. Bilateral injection was used in 51.3% of patients. The primary efficacy co-endpoint (procedure success rate) occurred in 92.8% of patients (in 91.7% at the first 1 attempt). The primary safety co-endpoint occurred in (n = 9) 4.0% of patients and included: stroke in peri procedural period in 1 patient, perforation in 3 pts (these 1 needed of pericardiocentesis), local heamatoma in 2 pts and distal embolization/important side branch occlusion in 3 pts in 1 patient. Secondary endpoints incidence during follow-up included 7 (4.6%) mortality events, 2 of them cardiovascular deaths (not-procedure related). Admissions for ACS occurred in 1.5% (3 pts). TVR occurred in 5 patients (2.6%). CCS class decreased following a successful CTO treatment in 90.3% of patients (2.1 ± 0.9 *versus* 0.6 ± 0.6, $p < 0.01$). Regarding LVEF variation after a successful CTO intervention, we found a significant increase (48% *versus* 52%, $p = 0.01$).
Conclusions: In this large cohort of CTO patients, we found a high success rate (93%) with a low complication rate. A successful CTO PCI was associated with important symptomatic relief and a significant increase in LVEF.

P 12. CLINICAL IMPACT OF MYOCARDIAL ISCHEMIA AND VIABILITY AFTER TREATMENT OF PROXIMAL LEFT ANTERIOR DESCENDING ARTERY CHRONIC TOTAL OCCLUSIONS

Wilson Albino Pimentel Filho, Fernando Augusto Alves Costa, Milton Macedo Soares, Jorge Büchler

British Hospital.

Introduction: Evaluation of myocardial ischemia and viability is recommended prior to percutaneous coronary intervention (PCI) for chronic total occlusions. We evaluated late adverse cardiovascular events of patients with PCI for proximal left anterior descending artery occlusions, comparing patients with or without myocardial ischemia or viability.
Methods: Patients were allocated to groups with myocardial ischemia/viability (G1, n = 91) and without myocardial ischemia/viability (G2, n = 65) and adverse cardiovascular events (death, myocardial infarction, target-vessel revascularization and congestive heart failure) were compared.
Results: Most patients were male (68.1% *versus* 69.2%; $p = 0.56$), with a mean age of 65.4 ± 10 years *versus* 63.5 ± 8.7 years ($p = 0.61$) and almost one third were diabetics (33% *versus* 29.2%; $p = 0.76$). No differences regarding the clinical and angiographic profile were observed, except for the left ventricular ejection fraction (48.6 ± 13.7% *versus* 39.5 ± 11.8%; $p = 0.04$) and the degree of angiographic collateral flow grade to the left anterior descending artery, which was more evident in G1 ($p = 0.03$). The 3-year follow-up incidence of composite adverse cardiovascular events was lower in patients with myocardial ischemia/viability (12.5% *versus* 31.1%; $p < 0.01$). The factors that contributed the most for this difference were the incidence of congestive heart failure (3.3% *versus* 15.3%; $p = 0.02$) and death (2.2% *versus* 7.7%; $p = 0.13$).
Conclusions: Treatment of proximal left anterior descending artery chronic total occlusions in patients with evidence of myocardial ischemia or viability reduces the incidence of adverse cardiovascular events in the long term.

Sábado, 27 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 1 - ÉCRAN 3 - ARRITMOLOGIA

P 13. BRUGADA SYNDROME: GENETIC PROFILE AND PREDICTORS OF POSITIVE GENETIC TEST

Bebiana Faria[1], Sílvia Ribeiro[2], Lucy Calvo[2], Gabriel Miltenberger-Miltenyi[2], Margarida Oliveira[3], Pedro von Hafe[3], Geraldo Dias[3], Ana Filipa Cardoso[2], Victor Sanfins[2], António Lourenço[3]

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Introduction: Brugada syndrome (BS) is a channelopathy with autosomal dominant transmission, incomplete penetrance and variable expression.

There are 18 different gene mutations described in association with this syndrome, however 70% of patients remain without identifiable genetic cause. Genetic testing is appropriated for patients with clinical diagnosis but it is also a very important tool in familiar screening.
Objectives: We aim to characterize genetic profile of patients with clinical diagnosis of BS and identify differences between patients with and without causative mutation.
Methods: We included patients followed by the arrhythmology department of our hospital with diagnosis of BS and that have performed genetic test (or patients who were identified through familiar screening and with negative genetic test in the index case). Patients identified through familiar screening with positive genetic test but no spontaneous electrocardiographic pattern, still awaiting pharmacologic provocative test at the time of enrolment - no clinical diagnosis - were excluded. Genetic test was considered positive when we found a pathogenic or probably pathogenic mutation. Mutations in PKP, SLMAP, CACNA, CACNB, SCN10A and CLASP genes considered of uncertain clinical relevance were not included as positive genetic test. We analysed differences between subset of patients with and without causative mutation regarding clinical and electrocardiographic variables. We performed multivariate analysis to find predictors of positive genetic test.
Results: From our 173 patients, 140 met the inclusion criteria and none exclusion criteria so they were enrolled. Patients were 61% male with mean age of 50 ± 15 years old. Mean follow-up was 26 ± 28 months; 24.4% of index cases were positive for causative mutation, 6.8% patients with pathogenic mutation in SCN5A gene and 17.6% with probably pathogenic mutation in SCN5A. We haven't found significant differences between the 2 groups (negative and positive genetic test) in any clinical variable included. Regarding electrocardiographic variables, patients in whom a mutation was identified had longer PR interval (192 ± 36 *versus* 170 ± 28, p = 0.001), longer QRS (121 ± 19 *versus* 111 ± 18, p = 0.017), particularly when QRS > 110 ms (p = 0,002), and longer QT (398 ± 25 *versus* 370 ± 45, p = 0.015). In multivariate analysis, PR interval (p = 0.032) and QRS > 110 ms (p = 0,041) were independent predictors for positive genetic test.
Conclusions: In our BS population, there were no clinical differences between patients with and without causative mutation, also concerning events rate. Patients with positive genetic test have significantly longer PR interval and QRS > 110ms than in patients with genetic test negative. Those results can be interpreted in relation to sodium channel disfunction in patients with SCN5A mutation.

P 14. DILATED CARDIOMYOPATHY - A GROUP THAT DOES NOT BENEFIT FROM ICD?

Pedro Silvério António[1], Afonso Nunes-Ferreira[2], João R. Agostinho[2], Inês Aguiar-Ricardo[2], Joana Rigueira[2], Rafael Santos[2], Tiago Rodrigues[2], Nelson Cunha[2], Pedro S. Morais[2], Fausto J Pinto[2], João de Sousa[2], Pedro Marques[2]

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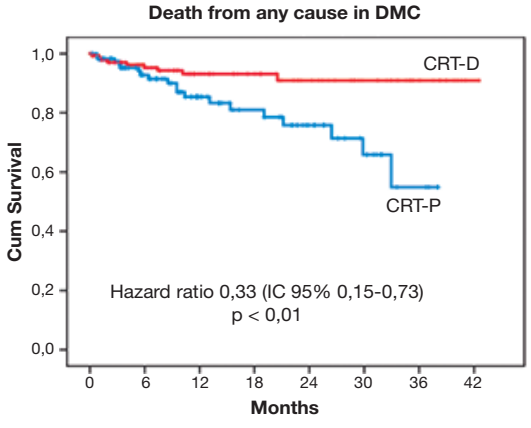
Introduction: The prevalence of sudden death in patients with heart failure with reduced ejection fraction has been declining in the last decade, not only due to better optimization of pharmacological therapy, but also due to the high rate of cardiac resynchronization responders. Overall, based on recent studies demonstrating a lack of improvement in mortality in some patients with dilated cardiomyopathy, the CRT-P/CRT-D implantation ratio has been increasing across Europe.
Objectives: To evaluate the evolution of the CRT-P/CRT-D implantation ratio and to evaluate the impact on mortality of dilated cardiomyopathy (DCM) patients who underwent resynchronization therapy.
Methods: A single-center prospective study of non-randomized patients who underwent CRT implantation since 2015. Demographic and clinical data from patients with dilated cardiomyopathy were assessed. The mortality of these patients and the predictors of mortality by the Cox and Kaplan-Meier regression method were evaluated.
Results: 486 CRTs were implanted since 2015 (male 73.9%, age 72.06 ± 9.9 years, median follow-up time of 487 days IIQ [175, 749].) During the last 3 years, occurred an increased in CRT-P/CRT-D ratio with the CRT-P implant rate increasing from 36% of the total devices in 2015 to 47% in 2018. Of the patients submitted to CRT implantation, 256 (55%) had dilated cardiomyopathy as the etiology of heart failure. In this population, by multivariate Cox analysis, age (HR: 1.1, 95%CI: 1.0-1.1, p = 0.003) and GFR < 60 ml/min/1.73 m² (HR: 1.8, 95%CI: 1.2-2.6, p = 0.01) were independent predictors of mortality. In addition, CRT-D implantation in these patients was associated with a significant reduction in all-cause mortality (HR: 0.33, 95%CI: 0.15-0.73, p < 0.01) with a required number to treat only 10 patients. Similar results were obtained in the subgroup of patients aged ≥ 9 years.



Characteristics	CRT-P (n = 116)	CRT-D (n = 141)	Population with DMC (n = 257)
Median Age (IIQ) - years	78 (71-83)	68 (62-73)	72 (64-78)
Male - N (%)	76 (66)	97 (69)	174 (68)
LVEF < 30%	55 (56)	106 (80)	161 (69)
First CRT implantation - N (%)	97 (85)	126 (89)	223 (87)
Pacemaker upgrade - N (%)	18 (15)	15 (11)	33 (13)
Comorbidities			
HTN - N (%)	99 (88)	119 (89)	218 (88)
Dyslipidemia - N (%)	55 (50)	79 (60)	134 (55)
Diabetes - N {%)	36 (32)	50 (38)	86 (36)
GFR < 60ml/min/1.73m² - N (%)	27 (24)	18 (4)	45 (18)
CPOD - N (%)	8 (7)	13 (10)	21 (9)
Smoker- N (%)	4 (4)	10 (8)	14 (6)
Ex-smoker- N {%)	20 (18)	29 (22)	49 (20)
AF - N (%)	42 (37)	34 (26)	76 (31)
NYHA classification			
I	2 (3)	3 (3)	5 (3)
II	36 (57)	58 (60)	93 (59)
III	24 (39)	36 (37)	60 (38)
IV	1 (1)	0	1 (0)
ECG			
LBBB - N (%)	27 (51)	40 (60)	67 (56)
Median QRS duration (IIQ) - N (%)	157 (138-165)	165 (150-177)	161 (146-172)

P 14 Figure

Conclusions: The CRT-P implant rate has been increasing at the expense of the CRT-D implant after some studies suggest no benefit in the population aged ≥ 59 years. However, in our population of patients with DCM, CRT-D implantation demonstrated a 67% mortality reduction. These results may demonstrate a good selection of patients for this therapy, but should also motivate further studies in the evaluation of mortality in this subgroup of patients.

P 15. IBOX-CRT - OPTIMIZING CRT IMPLANT WITHOUT COMPROMISING PROCEDURE DURATION

Inês Aguiar Ricardo, Joana Rigueira, João Agostinho, Rafael Santos, Afonso Nunes-Ferreira, Tiago Rodrigues, Nelson Cunha, Susana Gonçalves, Ana Bernardes, Pedro Marques, Fausto J. Pinto, João de Sousa

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Introduction: Cardiac resynchronization therapy (CRT) involves electrical stimulation of the left ventricle (LV) in patients with heart failure, severely compromised left ventricular ejection fraction and intraventricular conduction delay. The left ventricular pacing site optimization guided by the highest electrical delay increases the response rate (RR) to cardiac resynchronization therapy. Nonetheless, the development of technology is necessary to simplify its use.
Objectives: The aim was to automatically, and operator-independent, assess the conduction delay between the right ventricular (RV) pacing stimulus and the LV veins in order to select the optimal LV pacing site. It was further intended to evaluate the impact of this tecnique on RR and to compare the total procedure and fluoroscopy times in relation to a control group.
Methods: Prospective, single-center study that included patients undergoing CRT implant according to the current ESC guidelines indications. To evaluate conduction delays between the RV lead and the LV available veins (RV-LV delay), an external interface - intelligent Box for CRT (iBox-CRT) was used. Four measurements in at least two different tributary veins were made. The implant of the LV leads was guided by the longest RV-LV delay. A positive response to CRT was defined as an improvement of > 10% in LVEF or a reduction of end-systolic volume (ESV) > 15%. The results were compared to a control group (GC) of pts submitted to CRT implantation in the conventional way.

Clinical Characteristics of patients before CRT implant

	Study group N = 60	Control group N = 51	P value
Age	67 ± 10	66 ± 12	0.9*
Male sex	41 (68,3%)	35 (68.6%)	
Ethiology			0.6**
Ischemic disease	23 (38%)	24 (41%)	
Dilated miocardiopathy	37 (62%)	34 (59%)	
Echocardiographic characteristics			
LVEF (%)	28 ± 7	26 ± 9	0.1*
LVEDV (ml)	200 ± 73	215 ± 74	0.3*
LVESV (ml)	145 ± 64	160 ± 72	0.2*
Device implant			0.7**
CRT-D	62%	66%	
CRT-P	38%	34%	
Fluoroscopic time	15 ± 16	18 ± 16	0.3*
Procedure time	65 ± 34	108 ± 83	<0.001*

*Student' T test; **Chi square test.

Results: 60 dts were included in the study group (SG) (68.3% male, mean age 67.4 ± 10.2 years, 38% ischemic disease). Baseline assessment: mean LVEF 28 ± 7%; end-diastolic volume (EDV) 200 ± 73 mL and ESV 145 ± 64 mL. GC (n = 51) had similar clinical and echocardiographic characteristics (Table). SG pts were submitted to CRT implant (37 CRT-P; 23 CRT-D) using the iBox-CRT. There were no immediate complications in the procedure. At 6 months, mean ESV in the EG was 89 ± 44 mL *versus* 132 ± 75 mL in the CG (p = 0.002) and the EDV 136 ± 51 *versus* 190 ± 78 (p = 0.007). The RR according to the composite outcome was 85.7% in the SG, which was significantly higher compared to the CG (55.9%, p = 0.003). In a sub-analysis with only the responder pts, the LV presented a significantly higher mean LVEF at follow-up (39 ± 11% [SG] *versus* 37 ± 7% [CG], p = 0.032). Compared with CG, the automatic assessment of acVD-VE with iBox-CRT did not increase fluoroscopy time (15 ± 16 min *versus* 18 ± 16; p = ns) and shortened procedure time (65 ± 34 *versus* 108 ± 83 min, p < 0.005).
Conclusions: The iBox-CRT use enabled the systematic measurement of the RV-LV delays, in automatic and operator-independent fashion, in order to implant the LV lead at the most delayed site. This technique translated into a major increase in CTR response rate, not compromising the procedure duration nor increasing the radiation exposure.

P 16. PROGNOSTIC IMPORTANCE OF INAPPROPRIATE SHOCKS IN PATIENTS WITH SUBCUTANEOUS IMPLANTABLE DEFIBRILLATOR

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Introduction: It has been previously reported that inappropriate transvenous implantable cardioverter-defibrillator shocks are correlated with an impaired prognosis. Subcutaneous implantable cardioverter-defibrillator (S-ICD), besides avoiding risks and complications associated with transvenous leads, could also circumvent the possibly injury of an endovascular shock. We aimed to access if inappropriate shocks are linked to an impaired prognosis in a population of S-ICD patients.
Methods and results: In a real world prospective registry of 100 patients who underwent S-ICD implant between 2009 and 2018, we evaluated the rate and cause of inappropriate shocks and its correlation with prognosis (total death), during a median follow-up of 32 (9;57) months. Most of the patients were male (79%), with a median age of 41 (24;56) years, 25% had atrial fibrillation (AF), 9% chronic kidney disease (GFR < 60 ml/min/1.73 m^2) and half have systolic dysfunction (left ventricle ejection fraction < 55%). S-ICD was implanted on primary prevention on most cases (71%), and hypertrophic cardiomyopathy was the main reason for implant (Table1). There were a total of 19 patients with appropriate shocks and 19 patients with inappropriate shocks (29 inappropriate shocks in total). The main reasons for inappropriate shocks were supraventricular tachycardia (63%, 33% of those due to AF) and T wave oversensing (37%). Patients with inappropriate shocks are similar to the remaining population. Patients with non-compacted left ventricle or dilated cardiomyopathy had the highest relative incidence of inappropriate shocks (50% and 25%, respectively). Total mortality during follow up was 7% and inappropriate shocks didn't correlate with total death (p = 0.37).
Conclusions: In our population of patients with an S-ICD, inappropriate shocks were mainly caused by supra-ventricular tachycardia, without correlation with an impaired prognosis. This finding highlights a possible advantage of this innovative system, needing further validation in a larger cohort.

P 17. MID-TERM PERFORMANCE OF THE MICRA TRANSCATHETER PACEMAKER IN PATIENTS ON CHRONIC HEMODIALYSIS

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

Introduction: Bradyarrhythmias are frequently encountered in hemodialysis patients (P) and treated with implantable transvenous pacemakers. However, this population presents a higher risk of infection and central venous stenosis/occlusion with conventional trasnvenous devices. The technological advancement of a leadless pacemaker (LPM) provides an opportunity to

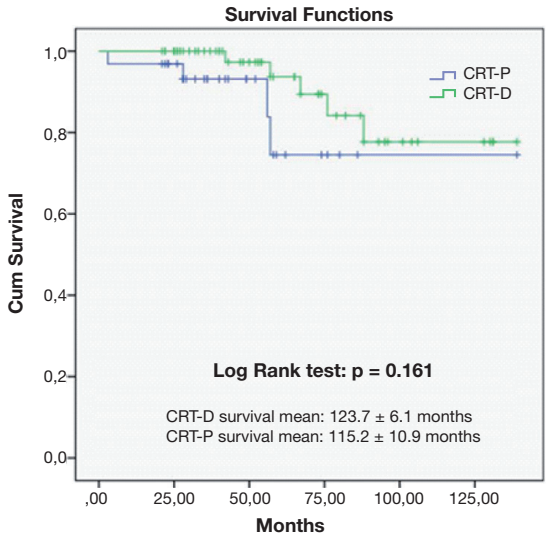
implement a strategy to prevent these complications. Weather the electrical performance of LPM differ upon these P has not been examined.
Objectives: To evaluate the acute and chronic performance of the Micra transcatheter LPM from a group of P with end stage renal disease (ESRD) and chronic hemodialysis (CH).
Methods: ConsecutiveP treated, undergoing a Micra LPM implant, with at least 6 months follow-up. Electrical performance in the acute setting at implantation and during follow-up was characterized. Data was analyzed at implant, before discharge, 6 weeks and 6 months after implant, and yearly, thereafter.
Results: A total of 14 P were considered; 8 of these had ESRD and chronic hemodialysis. 8 patients (1 female), with 75.6 ± 7.9 years old. All had indications for a ventricular demand (VVI) pacemaker, and normal ejection fraction. One P were under immunosupressive therapy due to heart transplant and 3 P with previous CABG, 1 P had amputation of right inferior limb. The average creatinine value was 5.6 ± 1.29 mg/dL. All LPM were implanted via the right femoral vein, and deployed either at the right ventricular apex (4) or at the interventricular septum (4). At implantation, average pacing threshold was 1.05 ± 0.59 V (range: 0.25-2.38) at 0.24 ms, and R wave was 8.4 ± 3.6 mV. Successful pacing sites were reached at a median of 2 attempts (range: 1-4), There were no acute complications, including groin hematoma or hemorrhage. Pacing threshold improved at 1 month compared to acute implant values (0.78 ± 0.37 V). Between 6 and 9 months follow-up, there were no changes in pacing or sensing parameters. At a follow-up of 21.1 ± 10.8 months, there were 3 deaths (37.5%), 2 related to pneumonia, and 1 gastrointestinal bleeding due to chronic hepatic disease.
Conclusions: This initial experience in candidates for ventricular pacing on chronic hemodialysis and with a particularly high-risk for complications, documents an excellent implantation success of the Micra™ LPM with stable pacing and sensing and no acute or short-term follow-up complications related to the pacing system. This population of patients has a high mortality rate, probably related to the advanced age and presence of co-morbidities.

P 18. CARDIAC RESYNCHRONIZATION THERAPY: IN RESPONDERS, DO DEFIBRILLATION MATTERS?

Fernando Montenegro Sá[1], João Gonçalves Almeida[2], Paulo Fonseca[2], Marco Oliveira[3], Helena Gonçalves[2], Filipa Rosas[2], José Ribeiro[2], Elisabeth Santos[2], João Primo[2], Pedro Braga[2]

[1]Centro Hospitalar de Leiria / Hospital de Santo André. [2]Centro Hospitalar de Vila Nova de Gaia / Espinho. [3]Centro de Medicina Desportiva do Porto.

Introduction: Regarding device therapy for primary prevention heart failure (HF) patients (and particularly in non-ischemic cardiomyopathy - NICM), there is no consensus if cardiac resynchronization therapy-defibrillation (CRT-D) is superior to CRT-pacing (CRT-P). After successful resynchronization, responders often improve cardiac function to levels in which defibrillation would no longer be recommended.
Objectives: We aim to determine the impact of device choice on survival of CRT responders, in primary prevention NICM patients.
Methods: We retrospectively analyzed 127 consecutive NICM patients referred for primary prevention CRT implantation between 2007 and 2016, selecting those who were classified as responders to CRT: both 1 year improvement in ≥ 1 NYHA functional class and left ventricle ejection fraction (LVEF) improvement by 25% from baseline to an absolute value ≥ 35%. Device indication was governed by current European Society of Cardiology guidelines and decision between CRT-P and CRT-D was based on clinical judgment. All included patients (n = 96) were evaluated with device interrogation and transthoracic echo every 6 months during a mean follow-up time of 54.6 ± 32.2 months. Patients were stratified according to the device implanted, and to compare survival a Kaplan-Meier curve with log rank test was performed. In order to determine if CRT-D increased survival, we used a Cox-regression survival analysis to determine all independent mortality predictors, including device type and all baseline clinical, echo and electrocardiographic data.
Results: The included population presented a mean age at implant of 66.1 ± 9.7 years and 86.1% (n = 83) males. A CRT-D was implanted in 60 (62.5%) patients. Device therapies occurred in 21.7% (n = 13): 10 patients had only antitachycardia pacing therapies and 3 had also defibrillation therapies, with all events first occurring during the first cycle of device battery life. Mean baseline LVEF was 26.3 ± 5.8%. Regarding baseline differences between groups, CRT-P patients were older (73.6 ± 6.2 *versus* 61.6 ± 8.6 years, p < 0.01), had more hypertension (86.1% *versus* 52.5%, p = 0.001), chronic pulmonary (30.6% *versus* 13.3%, p = 0.04) and renal disease (36.1% *versus* 16.7%, p = 0.04). Death occurred in 9 patients (10.2%), with 4 in the CRT-P and 5 in the CRT-D group. Kaplan-Meier analysis showed no differences in mortality between CRT type (Fig.). On multivariate analysis (Table), CRT-D (p = 0.82) was not a survival independent predictor.



Mortality independent predictors	OR	95CI	p-value
Atrial fibrillation	3,28	1,38 - 7,81	0,007
Chronic Kidney disease	5,18	2,09 - 9,32	0,001
Baseline NYHA class ≥ III	3,51	4,79 - 6,98	0,001
Previous stroke	6,65	10,7 - 7,54	0,043

Conclusions: Our study shows that CRT responders have no long-term survival benefit with the addition of defibrillation therapies. This may raise cost-management questions regarding which CRT type should be chosen when replacing devices in primary prevention NICM responders.

Sábado, 27 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 1 - ÉCRAN 4 - DOENÇAS DO MIOCÁRDIO

P 19. RIGHT VENTRICULAR INVOLVEMENT IN HYPERTROPHIC CARDIOMYOPATHY: INSIGHTS FROM A TERTIARY CENTRE

Ana Pereira[1], Inês Cruz[1], Ana Rita Almeida[1], Ana Marques[1], Ana Catarina Gomes[1], Sofia Alegria[1], Alexandra Briosa[1], Daniel Sebaiti[1], Luís R. Lopes[2], Miguel Ramalho[1], Hélder Pereira[1]

[1]Hospital Garcia de Orta, EPE. [2]Barts Heart Centre, Barts Health NHS Trust, Londres.

Introduction: Hypertrophic cardiomyopathy (HCM) is the main cause of sudden cardiac death in the young and a cause of heart failure (HF) and death at any age. Nevertheless, adverse long-term outcomes are not easy to predict.
Objectives: To assess the prevalence and prognostic value of right ventricular (RV) involvement in patients (pts) with HCM.

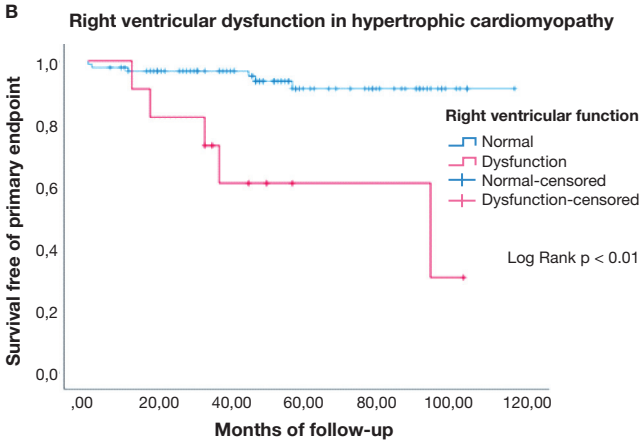
Methods: Retrospective single-centre study of consecutive pts with HCM evaluated in a specialized consultation. Selected those submitted to cardiac magnetic resonance imaging (CMR) as the gold-standard for RV assessment. The primary endpoint (PE) was a composite of cardiovascular death, nonfatal myocardial infarction, nonfatal stroke, ventricular arrhythmias with hemodynamic instability and unplanned HF admission.

A

Cardiac Magnetic Resonance Imaging		
Morphofunctional Parameters	**Left Cavities**	**Right Cavities**
Atrial area (cm2/m2)	16.5 ± 6.9	10.6 ± 3.5
Ventricle end-diastolic volume (ml/m2)	87.3 ± 24.0	66.2 ± 10.3
Ventricle end-systolic volume (ml/m2)	32.8 (IQR 19.5)	24.2 ± 9.6
Ejection fraction (%)	59.6 ± 13.1	65.0 ± 9.4

IQR: interquartil range.

B



Results: 104 pts were included (mean age at first consultation 62.1 ± 9.7 years, 63.5% male). Septal asymmetric phenotype was the most frequent (73.1%), maximum wall thickness 18.8 ± 4.6 mm. Regarding CMR parameters (Fig. A), 5.8% had RV dysfunction and 2.9% RV free wall hypertrophy; no patient presented RV dilation. Late gadolinium enhancement of joint points was observed in 47.1%.During follow-up (FU, mean 56.6 ± 29.5 months), survival free of RV dysfunction was 94.3%. Only 5 pts developed RV compromise assessed by echocardiographic parameters: TAPSE 12.0 ± 3.4 mm and tricuspid S' wave 7.3 ± 0.9 cm/s. These pts were significantly older and had higher values of average tissue Doppler E/E' ratio at diagnosis. In multivariate logistic regression, left atrial enlargement was the only independent predictor of global (at diagnosis and during FU) RV dysfunction (OR: 1.9, 95%CI: 1.1-3.2, p = 0.01) and average E/E' ratio an independent predictor of RV dysfunction during FU (OR: 1.3, 95%CI: 1.1-1.5, p < 0.01). PE rate was 10.6%. It was significantly higher in pts with global RV involvement and there was a significant difference in survival analysis (Fig. B). Average E/E' ratio (OR: 1.5, 95%CI: 1.1-1.9, p = 0.01) and RV ejection fraction (OR: 0.8, 95%CI: 0.7-0.9, p = 0.01) were independent predictors of the outcome.
Conclusions: Although not common, RV dysfunction was associated with a higher rate of cardiovascular events. Average E/E' ratio, as a measure of left ventricular filling pressure, was a risk factor for both RV dysfunction and PE. Higher values of RV ejection fraction were protective of adverse events occurrence. Together, these results support a potential role of RV function in the risk stratification of HCM pts.

P 20. REGIONAL ANALYSIS OF 3D-DERIVED SPECKLE TRACKING FOR THE ASSESSMENT OF MYOCARDIAL DEFORMATION IN BREAST CANCER PATIENTS SUBMITTED TO ANTHRACYCLINE CHEMOTHERAPY

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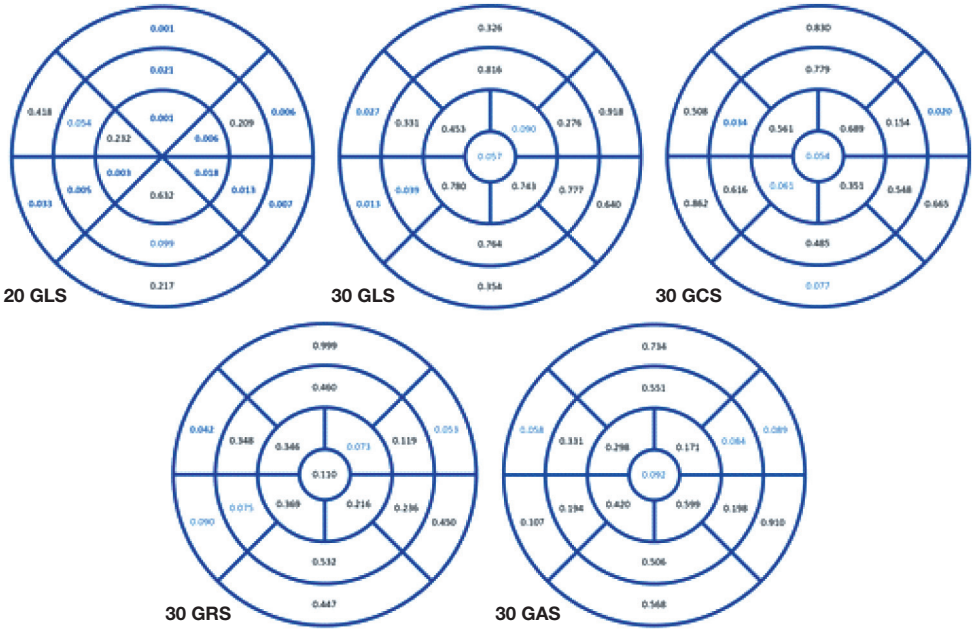
Introduction: Serial echocardiographic assessment of left ventricular ejection fraction (LVEF) and 2D left ventricular global longitudinal strain (GLS) is the gold standard in screening for cancer therapeutics-related cardiac dysfunction (CTRCD). Myocardial deformation assessed with 3D speckle tracking is not currently used in this setting, because of the lack of standardization and cut-off values, in spite of a potential for a greater reliability.
Methods: Prospective study of female breast cancer patients submitted to anthracycline chemotherapy with or without adjuvant immunotherapy and/or radiotherapy who underwent serial monitoring by 2D and 3D transthoracic echocardiography (ETT). Standard ETT measures and 3D-derived volumetric measures were assessed. Speckle tracking was used to estimate 2D-derived GLS - average and 18 segments - and 3D-derived GLS, global circumferential strain (GCS), global area strain (GAS) and global radial strain (GRS) - average and 17 segments. CTRCD was defined as an absolute decrease in 2D or 3D LVEF > 10% to a value < 54% or a relative decrease in 2D GLS > 15%. Variables



P 20 Figure

were compared using the *t*-student paired test and the Wilcoxon sign-rank test, when appropriate.
Results: 106 patients (mean age 54.6 ± 12.9 years, 33.0% immunotherapy, 16.5% radiotherapy, baseline LVEF 64.5% ± 8.5%, baseline 2D GLS -21.0 ± 2.8) were included. During a mean follow-up of 16.5 ± 9.6 months, an average of 3.9 echocardiographic examinations were performed per patient and 28 patients (26.4%) developed CTRCD. Overall, 3D regional longitudinal strain was determined in 88.9% of the segments analyzed, with lower success rates in the inferobasal (75.0%), the posterobasal (77.7%) and the laterobasal (82.4%) walls. When comparing variables before and during treatment, there was a significant difference in 2D-derived LVEF (64.5 *versus* 57.6, p < 0.001), 3D-derived LVEF (60.1 *versus* 55.7, p = 0.002), 2D-derived GLS (-20.6 *versus* -18.2 p < 0.001), 3D-derived GLS (-13.8 *versus* -12.9, p = 0.035), 3D-derived GRS (31.9 *versus* 33.4, p = 0.024), but not in GCS (-14.5 *versus* -13.2, p = 0.656) and GAS (-21.5 *versus* -22.1, p = 0.640). Figure shows the segmental analysis of 2D and 3D strain parameters. In 2D GLS, 11 out of 18 segments showed decreased contractility during follow-up (mainly anterior septum and anterior, lateral and inferior walls). In 3D-derived strain parameters, only 3 out 17 for GLS, 2 out of 17 for GCS, 1 out 17 for GRS and none for GAS showed decreased contractility during follow-up.
Conclusions: In this population, there was worsening of 3D GLS and GRS, besides conventional values, such as LVEF and 2D GLS, during anthracycline-based cancer treatment. 3D-derived myocardial deformation parameters show promise in the setting of CTRCD, since 2D and 3D regional strain parameters might shed a light onto the mechanisms of CTRCD, such that subendocardial myocardial fibers seem to be more affected than medial and subepicardial fibers.

P 21. TAKOTSUBO CARDIOMYOPATHY: CHRONOBIOLOGICAL VARIATION

Pedro von Hafe[1], Bebiana Faria[1], Geraldo Dias[1], Filipa Cardoso[1], Dina Bento[2], Nuno Marques[2], Sílvia Ribeiro[1], Olga Azevedo[1], António Lourenço[1]

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Introduction: Takotsubo cardiomyopathy (TTC) is a stress-induced syndrome, characterized by transient systolic dysfunction due to akinesia of the left-ventricular (LV) mid-apical segments. There have been few data to review and analyze the temporal preference of the onset of TTC in detail.
Objectives: Aim of this study was to investigate chronobiological variations in the occurrence of TTC.
Methods: Multicentric, retrospective study with a sample of 101 patients diagnosed with TTC from January 2004 to December 2017. These patients were grouped according to the time of day, day of the week, month and season in which the symptoms appeared. Subanalyses were performed for gender, age and precipitating factor.
Results: In this study, TTC patients were predominantly female (92%, n = 93) and had a mean age of 76 ± 12 years. Precipitating factor was present in 56 patients (55.4%). The onset of TTC had the peak in summer (n = 46, 45,5%) and the nadir in winter (n = 9, 8.9%, p < 0.001). Events were most frequent in August and June (n = 16, 15.8 p < 0.001). TTC was most frequent in the morning (n = 22, 34.4%) compared to night (n = 6, 9.4%, p = 0.018), and most frequent on Wednesday (n = 21, 20.8%) and least on Friday (n = 6, 5.9%, p = 0.041). In men, there were no differences in temporal distribution. Women had more events in summer (n = 43, 46.2%, p < 0,001), in June (n = 16, 17.2%, p < 0,001), on Wednesday (n = 20, 21.5%, p = 0.016). There wasn't a statistically significant difference in circadian rhythm. Patients were split by age (± 75 years). In older patients, season and time of day showed a statistically difference, with more events in summer (n = 26, 46.4%, p = 0.001) and morning (n = 14, 25%, p = 0.016). In younger patients just season had a statistically difference, with more frequency in summer (n = 22, p = 0.001). Patients presenting with documented stress event had more events on Thursday and at evening (n = 16, 28.6%, p = 0.017 and n = 15, 28.8%, p = 0.040).
Conclusions: TTC seems to exhibit a temporal variation of occurrence with preferred peaks during morning, Wednesday and summer. Age, gender and stressor pattern do not influence these temporal patterns of the occurrence of TTC, except in patients with precipitating factor that demonstrate a higher frequency of events on Thursday and at evening. Further studies are needed to investigate the potential link between chronobiological variations of TTC onset and underlying pathophysiologic mechanisms.

P 22. THE DILATED PHENOTYPE IN LEFT VENTRICULAR NON-COMPACTION CARDIOMIOPATHY

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Introduction: Patients with left ventricular non-compaction cardiomyopathy (LVNC) have a higher prevalence of heart failure, ventricular arrhythmias and thromboembolic events leading to increased mortality and morbidity. The clinical presentation varies widely and it's often difficult to differentiate LVNC from other severe forms of hypertrophic or dilated cardiomyopathy.
Objectives: To evaluate and characterize a population of patients with LVNC comparing the dilated with the non-dilated phenotype.
Methods: Multicenter retrospective study involving 12 hospital centers including 119 patients diagnosed with LVNC. Two groups were formed: Group DL (n = 66; 55,5%) with a left ventricle end-diastolic diameter (LVED) > 58 mm (men) or > 52 mm (women), and a group NDL (n = 53; 44,5%) with LVED in the normal range. We evaluated demographic, clinical, electrocardiographic, echocardiographic, cardiac magnetic resonance imaging and follow-up data.
Results: The patients in DL group were predominantly of the male gender (74,2%, p < 0,001) with less familial history of LVNC (p = 0,013) and presented with more symptomatic (NYHA class III/IV p = 0,005) heart failure symptoms (p < 0,001), mainly dyspnea (p = 0,04). The echocardiogram showed depressed left ventricular function as assessed by ejection fraction (EF) (p < 0,001) and mitral S wave velocity (septal p = 0,005; lateral p < 0,001) as well as more diffuse wall motion abnormalities (p < 0,003) and elevated left atrial volume (p = 0,007). In this population cardiac MRI was consistent with a higher LV Mass (p = 0,04) with reduced EF (p < 0,001) and with the presence of late gadolinium enhancement at the LV apex (p = 0,033) when compared with the NDL group. LBBB was more frequent as assessed by ECG (p = 0,01) as well as non-sustained ventricular tachycardia assessed by Holter (p = 0,05). There were no differences related to thromboembolic events or prognostic variables between groups.
Conclusions: LVNC patients with dilated phenotype are a special subgroup: more symptomatic and with worse LV function, however prognosis seems not be different when compared to LVNC patients with non-dilated left ventricle as assessed by LVED.

P 23. ANTERIOR MITRAL VALVE LEAFLET ELONGATION PREDICTS LEFT VENTRICULAR OUTFLOW TRACT OBSTRUCTION IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY

Sofia Torres, Paulo Maia Araújo, Carla Sousa, C.X. Resende, Mariana Vasconcelos, Maria Júlia Maciel, Filipe Macedo

Centro Hospitalar de S. João, EPE.

Introduction: Hypertrophic cardiomyopathy (HCM) is a hereditary cardiac disease with heterogeneous anatomical and clinical phenotypes. Dynamic left ventricular outflow tract obstruction (LVOTO) is frequently present and plays a central role in the development of symptoms in these patients. Structural abnormalities of the mitral valve are common in HCM, but their contributing role in the development of LVOTO has not been completely established.
Objectives: To assess the dimension of mitral valve leaflets in HCM patients and to evaluate its relationship with LVOTO.

Methods: HCM patients and healthy volunteers were studied with a comprehensive echocardiographic examination. Besides regular parameters, septal wall thickness (SWT), anterior and posterior mitral valve leaflet length (AMVLL; PMVLL) were measured using parasternal long axis view. The product of SWT and AMVLL was described as the Septal Anterior Leaflet Product (SALP). Peak LVOT pressure gradient was determined by Doppler evaluation and defined as «obstructive» if it was ≥ 30 mmHg, whether in resting conditions or during a sustained Valsalva maneuver.
Results: A total of 43 patients with HCM (62.8% male, mean age 56 years) and 18 controls (50% male, mean age 41 years) were included in our study. Among HCM patients, 55.8% had the septal asymmetric HCM type. Mean LV mass was 335 g and 30% presented LVOTO. Compared with controls, patients with HCM presented increased anterior (31.1 ± 4.8mm *versus* 26.2 ± 3.7mm, p < 0.001) and posterior (21.0 ± 4.8 mm *versus* 17.0 ± 2.7mm, p < 0.001) mitral leaflet lengths.AMVLL and SALP were the only parameters that significantly correlated with LVOT pressure gradient (r = 0.483 and r = 0.608, respectively). This correlation was not found between LVOT gradient and LV mass or SWT (p > 0.05). Accordingly, patients with LVOTO presented higher SALP than those without obstruction (621.3 *versus* 499.4; p = 0.043).In fact, AMVLL (p = 0.042) and especially SALP (p = 0.007) were significant predictors of the maximum LVOT pressure gradient.
Conclusions: In our study, HCM patients presented abnormally long mitral valve leaflets comparing with controls. Anterior mitral valve leaflet length and the combined descriptor SALP were both predictors of the maximum LVOT pressure gradient. Therefore, it may be valuable to report mitral valve leaflets length as well as SALP on routine echocardiographic evaluation of HCM patients.

P 24. HYPERTROPHIC CARDIOMYOPATHY AND HYPERTENSIVE CARDIOPATHY - ONE OR THE OTHER OR BOTH, THAT IS THE QUESTION

José Pedro Sousa[1], Luís Puga[1], Joana Ribeiro[1], Liliana Reis[1], Carolina Négrier[1], Lino Gonçalves[2]

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Introduction: Hypertension (HTN) is highly prevalent in general population, and patients with hypertrophic cardiomyopathy (HCM) are no exception. However, in this setting, coexisting HTN introduces diagnostic and therapeutic dilemmas. Moreover, the natural history of this disease combination is yet to be comprehensively described.
Objectives: To typify the subgroup of HCM patients who also suffer from HTN.
Methods: Retrospective single-center study comprising patients regularly attending cardiology consultation for HCM. Meeting HCM diagnostic definition as described in European Society of Cardiology (ESC) 2014 specific guidelines was deemed mandatory for study inclusion. Demographic, familial, genetic, clinical, electrocardiographic, imaging, therapeutic and prognostic data were assessed. Follow-up, by means of electronic health record checking and telephone calling, was performed targeting all-cause mortality and non-fatal but clinically significant ventricular arrhythmias.
Results: 115 patients were included between May 2008 and September 2016. Median age was 65 (53-74) years and 54.5% were female. 40.5% had a positive genetic test, 52.6% had obstructive HCM, 34.9% had a typical pattern of late gadolinium enhancement (LGE) on cardiac magnetic resonance imaging (MRI) and 21.4% were managed with cardioverter-defibrillator implantation (ICD). Median follow-up was 16 (2-103) months, with mortality occurring in 9% and non-fatal but clinically significant ventricular arrhythmias in 21.9%. 69.6% had comorbid HTN. Hypertensive HCM patients were older (p < 0.001) and exhibited less positive genetic testing (ZRES -2.7, p = 0.011) and higher risk of mitral regurgitation (ZRES 3, p = 0.004), systolic anterior motion of the mitral valve (ZRES 2.8, p = 0.01) and atrial fibrillation (ZRES 2.1, p = 0.047), as well as a greater left atrium volume, as assessed by both echocardiography and MRI (p = 0.009). Conversely, presence of family history of sudden cardiac death (SCD), syncope, heart failure, EKG left ventricular hypertrophy criteria, conduction disease, LV outflow tract obstruction, right ventricular hypertrophy, LGE and ICD did not differ significantly. The same applies to diastolic dysfunction severity, median IVS thickness, as well as to ESC HCM Risk-SCD score and death and ventricular arrhythmia risk.
Conclusions: In addition to age, genetic testing appears to be the most valuable resource for avoiding misdiagnosis between HCM and hypertensive cardiopathy, thus proving HCM classic pure structural/loading diagnostic definition to be inappropriate in this setting. In spite of displaying a higher burden of mitral regurgitation and atrial fibrillation, prognosis of the hypertensive subset of HCM patients remains predominantly driven by the primary myocardial disease.

Sábado, 27 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 1 - ÉCRAN 5 - CONGÉNITOS

P 25. POPULATION-BASED SINGLE-CENTRE OUTCOME FOR CATHETER ABLATION OF PAEDIATRIC CARDIAC ARRHTYHMIAS

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Introduction: Catheter ablation is an effective alternative in the treatment of a variety of arrhythmias. However, in children and adolescents, arrhythmias and their causes have particular characteristics and long-term follow-up data are still inconsistent. The aim of the present study is to analyse the long-term results of percutaneous catheter ablation in a paediatric population.
Methods: Retrospective, observational, single-centre study of patients (P) aged < 18 years submitted to electrophysiological study and ablation between January 2000 and September 2018. Demographic data, presence of structural heart disease, type of energy used, immediate and long-term success rate and late complications were collected.
Results: 285 ablations were performed in 241 P with 13.0 ± 3.3 years (4-17 years), 56.8% were male. The most frequent indications were: atrioventricular re-entrant tachycardia (AVRT) in 60% (48% with right accessory pathways (AP)), 20.6% with nodal reentrant tachycardia (AVNRT), 10% atrial tachycardia (AT) and ventricular extrasystoles/ventricular tachycardia in 4%. Ten P (4%) had lone paroxysmal AF. 34P (16%) had congenital heart disease, mainly Ebstein's disease and surgically corrected tetralogy of Fallot. Immediate success rate for AP was 94% (90% in the right AP and 99% in the left-sided AP), and it was necessary to repeat the procedure in 15% of the cases (maximum of 3 procedures/P), mostly in P with right-sided AP, with a long-term success rate of 96% after repeat procedure. For AVNRT, immediate success was 96.1%, and long-term of 98% after repeat procedure. For AT, 86% of long-term success was obtained. The ablation was performed through transeptal puncture in 25% of cases. Cryoenergy was used in 12 cases with parahisian AP (immediate success rate of 95%, long term 78%). A total of 82 RF procedures were performed using a limited fluoroscopic approach based on 3D mapping system. Procedural and mean fluoroscopy times decreased in this group as compared to the historical cohort: 82.5 ± 49 min *versus* 170.3 ± 66.7 min (p < 0.001) and 1.8 ± 2.1 min *versus* 11.8 ± 14 min (p < 0.001), respectively, with a significant reduction of the mean fluoroscopy time occurring in the last quartile of the limited fluoroscopy cohort (3.5 ± 2.9 to 1.0 ± 0.8 min, p < 0.05), mainly for transeptal puncture. Acute success rate was 98% in the limited fluoroscopy group and 95% in the historical cohort (p = ns). In AP ablation, the comparison between strategies showed an increase from 90% to 98.7% (after 2015, limited fluoroscopy) (p < 0.05). There were no major complications, namely AV block, pacemaker need or cardiac tamponade.
Conclusions: Percutaneous ablation is an effective and safe procedure and is an eligible treatment for most paediatric tachyarrhythmias that are refractory to medical therapy. SVT based on a 3D mapping system using very

limited fluoroscopy can be safe and highly successful in children, without any complication.

P 26. PREDICTORS OF ARRHYTHMIAS DURING LONG-TERM FOLLOW-UP OF ADULTS WITH FONTAN CIRCULATION

Madalena Coutinho Cruz, Ana Agapito, José Alberto Oliveira, Lídia de Sousa, Sérgio Laranjo, André Viveiros Monteiro, António Valentim Gonçalves, Tiago Mendonça, Fátima Pinto, Mário Martins Oliveira, Rui Cruz Ferreira

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

Introduction: The Fontan operation has increased the survival of thousands of patients (pts) with complex congenital heart disease (CHD). However, physicians are faced with dealing with long-term complications of the disease and its treatment. Arrhythmias are prevalent in this population, but information about the long-term follow-up (FU) is scarce. We aimed to characterize the arrhythmic events in a population of pts with Fontan circulation.
Methods: All consecutive pts with Fontan circulation referred to a centerâ €™s adult CHD outpatient clinic were included. Sustained atrial fibrillation (AF), intra-atrial reentry tachycardia (IART), and ventricular tachyarrhythmias, as well as sinus node disease (SND) and second degree (or higher) heart block (AVB) arising during FU were noted. Predictors of arrhythmias were assessed with logistic regression analysis. Receiver operating curve analysis was used to assess the discrimination of parameters for predicting arrhythmias.
Results: 28 pts (42.9% female, mean age at first visit 21.6 ± 2.9 years) were included. The most common heart defects were univentricular heart (15), tricuspid atresia (6) and double outlet right ventricle (4). All pts had additional heart defects, the most common being pulmonary stenosis, malposition of the great arteries and shunts. 28.6% of pts had cyanosis, 7.2% pulmonary hypertension and 3.6% Eisenmenger syndrome. All pts were submitted to surgery during childhood. Mean age at completion of the Fontan circulation was 8.8 ± 5.9 years and the mean number of surgeries per pt was 2.6 ± 1.0. During a mean FU of 8.8 ± 7.5 years, 46.4% of pts experienced arrhythmias (9 IART, 8 AF, 4 SND, 3 AVB), with 10 pts having = 1 type of arrhythmia. Mean age at first arrhythmia was 22.4 ± 7.6 years. 14.3% of pts implanted a permanent pacemaker and 3.6% an implantable cardioverter defibrillator. The presence of arrhythmias was significantly associated with hospitalization for cardiac causes (OR: 9.6, 95%CI: 1.5-62.1, p = 0.018). Variables that were associated with the appearance of arrhythmias were: malposition of the great arteries (OR: 7.3, 95%CI: 1.4-38.9, p = 0.019), peak exercise double product (DP) (OR: 1.0, 95%CI: 0.9-1.0, p = 0.049), recovery DP (OR: 1.0, 95%CI: 0.9-1.0, p = 0.049), maximal oxygen uptake (VO_2) (OR: 0.9, 95% CI: 0.6-0.9, p = 0.030), VO_2 at anaerobic threshold (OR: 0.6, 95%CI: 0.4-0.9, p = 0.044) and type of Fontan circulation (OR: 6.0, 95%CI: 1.0-35.4, p = 0.048 for lateral tunnel-type Fontan). Optimal cut-off values to predict the occurrence of arrythmias were 23,430 for peak exercise DP, 14880 for recovery DP, 19.5 for maximal VO_2 and 15.3 for VO_2 at anaerobic threshold.
Conclusions: In this population of pts with Fontan circulation, arrhythmias were a highly prevalent event and were associated with hospitalization for cardiac causes. This study highlights the importance of exercise testing, as well as type of Fontan circulation to predict the occurrence of arrhythmias.

P 27. PROGNOSTIC POWER OF CARDIOPULMONARY EXERCISE TEST IN TRANSPOSITION OF THE GREAT ARTERIES PATIENTS

António Valentim Gonçalves, Tânia Mano, Sílvia Aguiar Rosa, Ana Agapito, Lídia de Sousa, José Oliveira, André Monteiro, Pedro Rio, Tiago Mendonça, João Reis, Pedro Modas Daniel, Pedro Brás, Vera Ferreira, Alexandra Castelo, Rui Cruz Ferreira

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

Introduction: Both transposition of the great arteries (TGA) previously submitted to a Senning or Mustard procedure and congenitally corrected TGA (cc-TGA) have the systemic circulation supported by the morphological right ventricle, thereby rendering these patients to a risk for Heart Failure (HF) events. Whether this risk can be stratified by cardiopulmonary exercise test (CPET) is not established. The aim of this study was to compare different CPET parameters for stratifying the risk of TGA patients.
Methods: Retrospective evaluation of adult TGA patients with systemic circulation supported by the morphological right ventricle submitted to CPET in a tertiary centre who were followed for at least one year for the primary endpoint of death from any cause or HF hospitalization. Several CPET parameters were analysed as potential predictors of the combined endpoint (Cox analysis) and their predictive power was compared (area under the curve [AUC] analysis).
Results: CPET was performed in 43 TGA patients (36 patients with atrial-switch TGA correction and 7 patients with cc-TGA), with a mean age of 35.0 ± 8.6 years and 31 males (72.1%). There were 8 (18.6%) cyanotic patients. Pacemaker implantation was previously performed in 8 patients (18.6%), with only 1 patient not on sinus rhythm during CPET (atrial fibrillation rhythm). There were 10 (23.3%) patients reaching the primary endpoint in the follow-up (3.2 ± 2.4 years). Table 1 represents the AUC and Cox analysis of each parameter. Optimal point of ventilation and end-tidal CO_2 at anaerobic threshold (AT) were the only CPET parameters who did not achieve a significant risk prediction. Heart rate in anaerobic AT had the highest AUC value (0.864), followed by peak oxygen consumption (pVO_2) (0.852). A heart rate at AT ≤ 94 bpm had a sensitivity of 87.5% and a specificity of 84.5% for the primary outcome, while a pVO_2 ≤ 20 mL/kg/min had a sensitivity of 80.0% and a specificity of 78.8% for the primary outcome.

Table P 27

	AUC[1] analysis		Cox analysis			
CPET[2] parameter	AUC	95% CI[3]	Wald	HR[4]	p	95% CI
Peak VO_2[5]	0.852	0.712-0.991	11.440	0.782	0.001	0.678-0.902
Peak VO_2 (%) predicted	0.759	0.568-0.951	6.172	0.933	0.013	0.884-0.986
VE/VCO_2 slope	0.712	0.509-0.916	6.486	1.085	0.011	1.019-1.156
Optimal point of ventilation	0.721	0.541-0.906	2.663	1.088	0.103	0.983-1.203
End-tidal CO_2 at AT[6]	0.686	0.511-0.866	1.656	0.927	0.198	0.826-1.041
End-tidal CO_2 at peak	0.737	0.572-0.902	4.385	0.895	0.036	0.807-0.993
AT time	0.839	0.651-1.000	10.264	0.994	0.001	0.990-0.998
Heart rate at AT	0.864	0.717-1.000	8.766	0.947	0.003	0.914-0.982
VO_2 at AT	0.816	0.638-0.994	10.456	0.738	0.001	0.614-0.887
HHR1[7]	0.678	0.462-0.894	3.981	0.928	0.046	0.863-0.999
O_2 saturation at peak	0.805	0.665-0.944	4.644	0.943	0.031	0.895-0.995
Chronotropic index	0.799	0.642-0.956	10.965	0.958	0.001	0.935-0.983

1, area under the curve; 2, cardiopulmonary exercise test; 3, confidence interval; 4, hazard ratio; 5, oxygen consumption; 6, anaerobic threshold; 7, heart rate recovery in the first minute after stopping exercise.

Conclusions: CPET can be used to stratify which TGA patients with systemic circulation supported by the morphological right ventricle are in higher risk for HF events, with a heart rate at AT ≤ 94 bpm with the highest predictive power of all parameters analysed.

P 28. CARDIOPULMONARY EXERCISE TESTING IN CONGENITAL HEART DISEASE: COMPARING THE CYANOTIC AND NON CYANOTIC ADULTS

Tânia Branco Mano[1], António Valentim Gonçalves[1], Sílvia Aguiar Rosa[1], Ana Agapito[1], Lídia de Sousa[1], José Alberto Oliveira[1], André Monteiro[1], Ana Sofia Silva[1], Sandra Alves[2], Fátima F. Pinto[1], José Fragata[1], Rui Cruz Ferreira[1]

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Introduction: Cardiopulmonary exercise testing (CPET) has emerged as an important tool for risk stratification, assessing prognosis and planning interventions. However, it remains uncertain how to best apply each parameter in clinical practice, namely in Adult Congenital Heart Disease (ACHD). The aim was to compare functional capacity in Cyanotic (C) and Non-Cyanotic (NC) ACHD patients and to investigate an association between CPET parameters and outcome.
Methods: Retrospective analysis of consecutive ACHD who underwent CPET in a tertiary centre, followed up for at least one year. Primary endpoint: death from any cause. Combined secondary endpoint: death from any cause and cardiac hospitalization. CPET parameters were evaluated and determined endpoints predictors in each group.
Results: 286 patients were enrolled (50.3% males, mean age of 35.6 ± 9.4 years). 21% (n = 60) were cyanotic. There were significant differences in CPET parameters between the study groups: C-ACHD subgroup had lower values for peak oxygen consumption (pVO_2) (17.3 ± 4.7 mL/kg/min *versus* 24.2 ± 6.4 mL/kg/min; p < 0.001), rest End-Tidal Carbon Dioxide (ETCO2) (30.6 ± 9.4 mmHg *versus* 49.1 ± 110.5 mmHg; p = 0,014), Heart rate reserve at 1st minute (HHR1) (19.4 ± 14 *versus* 27 ± 15,1; p < 0,001), chronotropic index (55,3 ± 21,9 *versus* 74,9 ± 21; p < 0,001) and higher minute ventilation (VE)/carbon dioxide production (VCO_2) slope (48.7 ± 20.4 *versus* 31.6 ± 10;p < 0.001) and optimal point of ventilation (VE/VO_2) (34.8 ± 9.3 *versus* 24.1 ± 6.4; p < 0.001). During a mean follow up of 3.89 ± 2.3 years, the primary endpoint was achieved in 8.5% and 1.8% (p = 0.021) and the secondary endpoint in 49.1% and 22.9% (p < 0.0001) in C-ACHD and NC-ACHD, respectively. The survival curves for primary and secondary endpoints are represented in Figure. The mean survival rate for primary endpoint were 8.5 ± 0.3 years *versus* 9.2 ± 0.01 years (log rank 0.028) and for secundary endpoint were 5.2 ± 0.5 years *versus* 6.8 ± 0.3 years (lo-rank: 0.010), in C-ACHD and NC-ACHD, respectively. Regarding the secondary endpoint, in the C-ACHD subgroup, we found an association with male gender (OR: 3.5, p = 0.015) and previous palliative surgery was a predictor in univariate analysis (OR: 3.487, CI95%: 1.354-8.980, p = 0.010;). In NC-ACHD patients, age (HR; 1.039, CI95%: 1.011-1.067, p = 0.004), male gender (OR: 2.262, 95%CI: 1.229-4.166, p = 0.009;) and pVO_2 (HR: 0.053, CI95%: 0.914-0.945, p = 0.028,) were predictors of secondary endpoint in univariate analysis.
Conclusions: The C-ACHD population had greater impairment in CPET parameters and worse prognosis with higher mortality and cardiac hospitalizations. However, only in NC-ACHD the CPET parameters were predictors of outcomes.

P 29. THE ROLE OF REGULAR PHYSICAL ACTIVITY IN FONTAN CIRCULATION

João Pedro Rato, Ana Filipa Nunes de Almeida Rodrigues de Sousa, Susana Cordeiro Mendes, Miguel Mendes, Rui Anjos

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

Introduction: Functional capacity in Fontan circulation is commonly impaired. Cardiopulmonary exercise test (CPET) variables are prognostic in these patients. We sought to undertake a regular CPET evaluation of Fontan patients followed in outpatient clinic at a tertiary hospital and find predictors of functional capacity.
Methods: Forty-four Fontan patients followed in outpatient clinic were prospectively evaluated with CPET and transthoracic echocardiogram (TTE). Regular physical activity was defined as extracurricular organized sports participation or at least two 45-min periods of physical activity each week. Regarding atrioventricular (AV) dominant valve regurgitation on TTE, patients were classified by two experienced operators in 2 groups: those without significant regurgitation (none or mild) and those with significant regurgitation (moderate or severe). Statistical inference was performed using R CRAN version 3.5.0. Linear regression and ANOVA were used for continuous variable correlation, Chi-squared test and logistic regression were used for binomial variable correlation.
Results: Median age at Fontan completion was 6 years (SD 3) and median age at current evaluation was 19 years (SD 7). Sixteen patients (36%) had regular physical activity. Mean peak oxygen uptake (peak VO_2) was 27.6 ml/kg/min (SD 6), peak VO_2 as percentage of predicted value was 67% (SD 15), VO_2 at ventilatory threshold was 16 ml/kg/min (SD 3), VE/VCO_2 slope was 36.7 (SD 7), respiratory exchange ratio (RER) was 1.06 (SD 0.08), maximal heart rate (HR_{max}) was 164 bpm (SD 26) and peak oxygen saturation was 87% (SD 8). Peak VO_2 was inversely correlated with age (p = 0.006) and significant AV regurgitation (p = 0.003) and had a strong positive relation with the practice

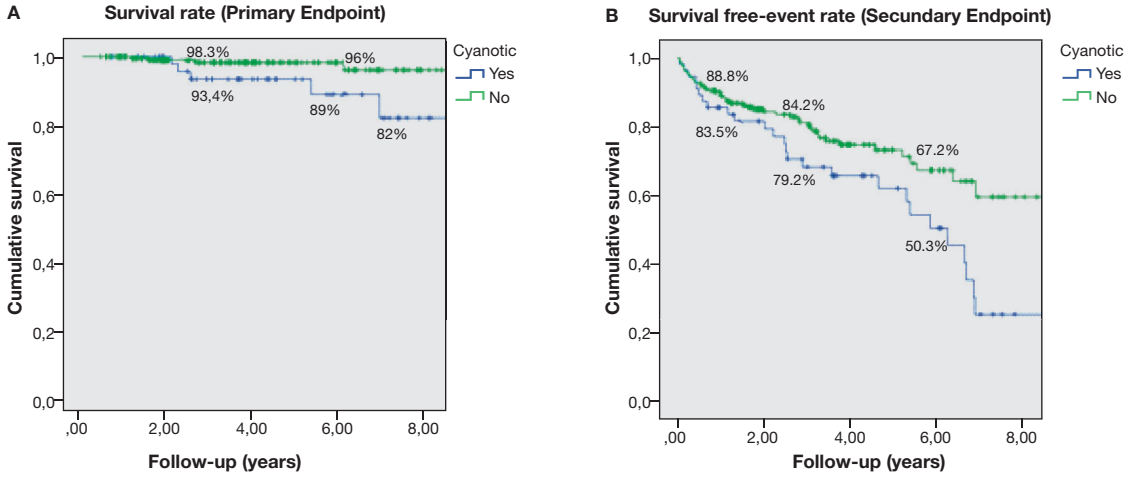


Figure 1. Kaplan-Meier curves for survival for primary endpoint (A) and secundary endpoints (B).

P 28 Figure

of regular physical activity (p = 0.001). Multivariate analysis showed that higher peak VO_2 was independently associated with regular physical activity and absence of significant AV regurgitation (R^2 = 0.327, F test with p = 0.001). **Conclusions:** Peak VO_2 is a marker of functional capacity and prognosis in Fontan patients, usually impaired. Lower peak VO_2 was related with significant AV regurgitation. We identified a strong positive relation between peak VO_2 and regular physical activity, which is relevant for patient guidance and recommendations.

P 30. MECHANICAL CIRCULATORY SUPPORT IN PEDIATRIC AGE: EXPERIENCE, OUTCOMES AND MORBIDITY

Susana Martins Abreu, Catarina Brandão, Conceição Trigo, Rui Rodrigues, Fátima Pinto, José Fragata

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

Introduction: Concerning mechanical circulatory support (MCS) in pediatric age, device choice and timing of implantation rely on the patient's characteristics and device's risk profile. The aim of this study is to analyze patient's characteristics, outcomes and morbidity associated to different MCS modalities.
Methods: retrospective patient data analysis, who needed MCS between 2002 and 2018.
Results: Between 2002 and 2018, 20 patients needed MCS and 22 devices were used. Eleven were on ECMO, eight on pulsatile paracorporeal ventricular assist device (PPVAD) and three on paracorporeal continuous flow ventricular assist device (PCFVAD) with magnetic levitated pump system. Group A (ECMO): medium age of 4 years and weight between 3.2 to 47 kg. ECMO was initiated for failure to leave bypass after cardiac surgery (4), refractory postoperative arrhythmia (3), cardiogenic shock (4) in dilated cardiomyopathies (DCM) (2) and congenital heart disease (2). Left ventricular decompression was needed in 2. During a mean of 7.5 days in MCS, 36% experienced major bleeding demanding surgical revision, 9% cannula associated thrombus and 9% neurological events. Renal substitution therapy (RST) was needed in 4. Death occurred in 3 patients (27%), upgrading to another form of MCS in 2 and 5 were weaned off (45%). Group B (PPVAD): 8 DCM patients (pedimacs 1 and 2), medium age 1,4 years and weight between 3,5 and 12.7 kg. PPVAD was used as «bridge to transplant» in all. Mean support time was 71,7 days (7 to 125 days) during which 75% experienced major infection, 37.5% major bleeding, 12.5% device malfunction and 37.5% neurological events. Two needed RST. Death occurred in 50% and 50% were successfully transplanted. Group C (PCFVAD): 3 DCM patients (pedimacs 1 and 2), medium age 11.3 years, and weight between 17.7 and 59 kg. PCFVAD was used as «bridge to transplant» in all. Mean support time was 14.6 days (11 to 20 days) during which 66,6% had major bleeding and 33.3% had neurologic events. One patient needed RST. All patients were successfully transplanted.
Conclusions: MCS defined as short term, can be used for longer periods with an acceptable risk profile. The main complications are bleeding and thrombosis related events. The outcomes and prognosis are highly influenced by patient's characteristics and status at time of implantation.

Sábado, 27 Abril de 2019 | 10H30-11H30

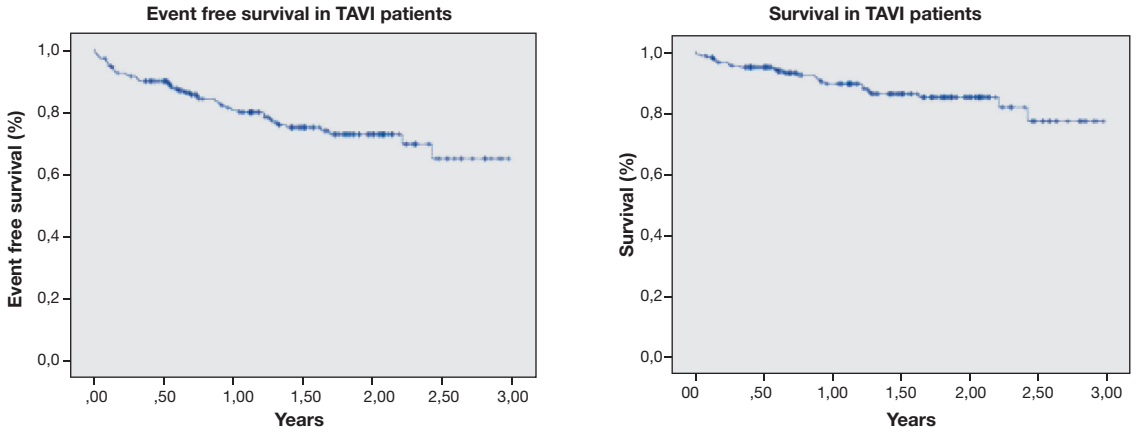
JARDIM INVERNO | POSTERS 1 - ÉCRAN 6 - CARDIOLOGIA DE INTERVENÇÃO

P 31. EVENT FREE SURVIVAL AFTER TAVI: A STUDY ON CLINICAL AND CT PRE-PROCEDURAL CHARACTERISTICS

Afonso Félix De Oliveira, Rui Campante Teles, António Ferreira, João Brito, Henrique Mesquita Gabriel, Pedro Araújo Gonçalves, Luís Raposo, Tiago Nolasco, Gonçalo Cunha, João Abecassis, Carla Saraiva, Manuel S. Almeida, Miguel Mendes

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

Introduction: Predictors of short-term mortality and morbidity in patients with severe aortic stenosis have been described in both TAVI and surgical cohorts. In contrast, the characteristics associated with favorable response and long-term survival free of adverse events are not fully characterized.
Methods: We performed a retrospective cohort analysis of TAVI patients between Jan/2016 and Ago-2018 in a single center, including 194 consecutive patients (105 women, mean age 83 ± 6 years, mean euroscore II 6.1 ± 4.2). The most common diagnosis was degenerative aortic valve disease (90.7%) and the main access route was transfemoral (93.8%). CT images were studied with dedicated software to evaluate fat composition at L3 level. The Total Vascular Calcium score (TCS) quantified the calcification in the aorta and ileofemoral vessels using a modified Agatston score adjusted for luminal attenuation in contrasted-CT images. Our primary endpoint was event free survival defined as time to heart failure hospitalization, myocardial infarction, stroke, bleeding or death.
Results: Mortality was 9.3% at 1st year, 11.9% at 2 years and 12.9% at follow-up (16.2 ± 9.3 months). Event free survival was 83.5% at 1 year and 79.4% at 2 years. By univariate analysis, the ESII (HR: 1.09; 1.03-1.15), glomerular filtration rate (HR: 0.97; 0.059-0.096), plasma albumin (HR: 0.6; 0.37-1.00), NT-proBNP (HR: 1.05; 1.02-1.09) and the TCS (HR: 1.015; 1.001-1.030) were associated with event free survival. Differently, the body mass index, haemoglobin, age and fat composition analysis at vertebral L3 level - body circumference and area of visceral and subcutaneous fat - were not associated with event free survival. By multivariate analysis, only ESII remained as an independent predictor of event free survival (p < 0.05).



P 31 Figure

Conclusions: Contemporary TAVI patients present a favorable prognosis after intervention and euroscore II emerges as the only independent predictor of event free survival.

P 32. MITRACLIP: IMPACT ON SYMPTOMS AND QUALITY OF LIFE

Tiago Rodrigues, Eduardo Infante-Oliveira, Ana Rita Francisco, Pedro Carrilho-Ferreira, Miguel Nobre-Menezes, Joana Rigueira, Inês Aguiar-Ricardo, Nelson Cunha, Rafael Santos, Afonso Nunes-Ferreira, Fausto J. Pinto, Pedro Canas da Silva

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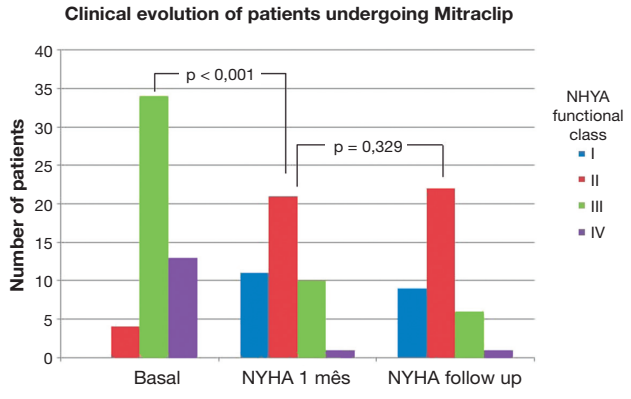
Introduction: In patients with severe mitral regurgitation (MR) and prohibitive surgical risk, percutaneous mitral valve repair seems to be associated with symptomatic and functional improvement.
Objectives: To assess the impact on quality of life and symptoms of percutaneous mitral repair in «real world» patients.
Methods: A prospective unicentric record registry of consecutive patients undergoing percutaneous MR repair with MitraClip from 2013 to 2018. Demographic, clinical (including functional class (NYHA) and Minnesota Quality of Life (QoL) questionnaire), and echocardiographic were evaluated. Clinical, face-to-face or telephpne follow-up with reassessment of functional class and QoL score was performed. For statistical analysis, the chi-square and Student's T tests were used.
Results: 51 procedures (mean age 71.8 ± 13.5 years, 30 men) were performed in patients with symptomatic MR grade III or IV. 14 patients (27.5%) had primary MR and 37 (72.5%) had secondary MR. The success rate per patient was 92.0%. The complication rate was 7.7% (n = 4, 2 procedural failures, 1 stroke and 1 vascular complication). During an average follow-up (FUP) of 615 ± 613 days, there were 17 deaths (33.3%). Most patients were in NYHA III functional class (34 patients, 66.7%) or IV (13 patients, 25.5%), with a statistically significant improvement of the functional class in the short-term postoperative period (3.2 ± 0.6 *versus* 2.0 ± 0.7, p < 0.001), which was maintained throughout the FUP (2.1 ± 1.0 *versus* 2.0 ± 0.7, p = 0.329). At the end of the FUP, most patients were in NYHA II functional class (22 patients, 43.1%) or I (9 patients, 17.6%), with only one NYHA IV class. There was also a significant improvement in quality of life, maintained during the long-term FUP (43.7 ± 19.1 *versus* 22.6 ± 16.6, p < 0.001), as measured by the QoL-Minnesota score.The symptomatic improvement was associated with lower regurgitant volume (69.7 ± 25.8 mL *versus* 113.3 ± 71.5 mL, p = 0.031) and EROA (0.4 ± 0.2 cm^2 *versus* 0.6 ± 0, 4 cm^2, p = 0.036). No other clinical or echocardiographic predictors of symptomatic improvement were identified.



Conclusions: The implementation of MitraClip for treatment of severe MR has led to symptomatic improvement and quality of life in real-world patients. As opposed to LVEF, the lower MR severity was a predictor of symptomatic improvement. Thus, it is important to reaffirm percutaneous repair as a complementary treatment to optimized medical therapy in patients with severe MR and surgical contraindication.

P 33. SEVERE MITRAL REGURGITATION: MORTALITY AND MORBIDITY PREDICTORS AFTER PERCUTANEOUS MITRAL VALVE REPAIR WITH THE MITRACLIP SYSTEM

Rafael Santos[1], Eduardo Infante-Oliveira[2], Pedro Carrilho-Ferreira[2], Miguel Nobre-Menezes[2], Ana Rita Francisco[2], Joana Rigueira[2], Inês Aguiar-Ricardo[2], Pedro Morais[2], Nelson Cunha[2], Tiago Rodrigues[2], Fausto J. Pinto[2], Pedro Canas da Silva

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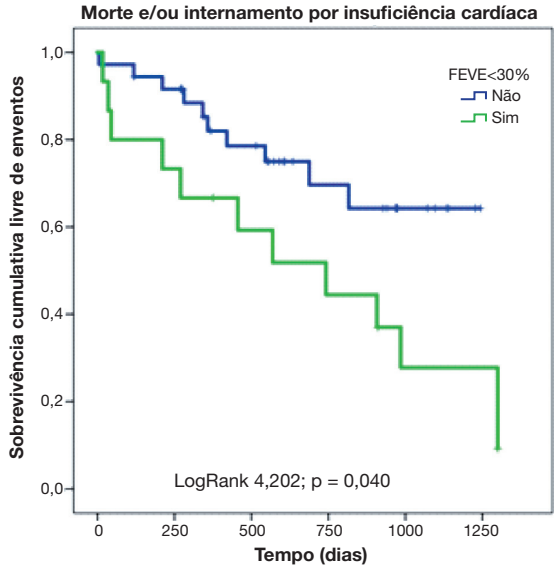
Introduction: Percutaneous mitral valve repair with the MitraClip system is an alternative in cases of severe mitral regurgitation (MR) with prohibitive surgical risk. Therefore, it's relevant to analyse factors that impact prognosis after percutaneous valve repair, and select patients that can most benefit from the procedure.
Objectives: To identify predictors of bad prognosis after MitraClip implantation.
Methods: Single centre, prospective registry of consecutive patients (pts) submited to percutaneous mitral valve repair with the MitraClip system from 2013 to 2018. Clinical, echocardiographic and demographic parameters were analysed. Follow up was presential or by phone call. For statistical analysis a primary compound endpoint of global mortality and/or admission from cardiac cause was used. Qui-square(x2) test, T-student test, ROC analysis and Kaplan-Meier survival analysis were applied.
Results: The analysis included 51 procedures (average age was 71,8 ± 13,5 years; 30 were male pts) performed in grade III or IV symptomatic MR pts. 14 pts (27.5%) had primary MR and 37 (72.5%) had secondary MR. Left ventricular ejection fraction (LVEF) averaged 39.0 ± 14.1%. Success rate per patient was 92,0%. Complication rate was 7.7% (n = 4; 2 procedure failures, 1 pericardial effusion and 1 vascular complication). 14 admissions from cardiac cause (27.5%) and 17 deaths (33.3%) were verified during an average follow up of 615 ± 13 days. The compound endpoint of global mortality and/or admission from cardiac cause was verified in 43.1% of pts. During the abovementioned follow up, functional class (NYHA) was higher in pts that reached primary endpoint (2.4 ± 0.9 *versus* 1.7 ± 0.5; p = 0.045), the same was true for MR grade (grade III/IV 17.7% *versus* 8.8%, p = 0.041) and LVEF was lower in those pts (35.2 ± 12.3% *versus* 40.9 ± 17.2%; p = 0.033). Using ROC analysis a LVEF < 30% was identified as the cut-off assotiated with mortality or admission from cardiac cause (AUC: 0.67; sensitivity: 55.0%; specificity: 90.0%, PPV: 80%, NPV: 72%). Pre-procedural NHYA class (OR: 7.065, p = 0.014), atrial fibrillation (OR: 0.039, p = 0.039) and immediate complications (OR: 720.6 p = 0.024) were identified as predictors of the compound endpoint. In the Kaplan-Meier survival analysis a pre-procedural LVEF < 30% was associated with the primary endpoint. There were no other identified mortality and/or admission predictors.



Conclusions: Percutaneous mitral valve repair in cases of severe mitral regurgitation showed an elevated success rate with a reduced complication rate. The primary compound endpoint of mortality and/or admission from cardiac cause occurred in patients with higher NHYA functional class, higher mitral regurgitation grade, immediate complications, atriall fibrillation and LVEF < 30%.

P 34. PERCUTANEOUS PATENT DUCTUS ARTERIOSUS CLOSURE: A 12-YEAR EXPERIENCE

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Centro Hospitalar de S. João, EPE.

Introduction: A patent *ductus arteriosus*(PDA), one of the most common congenital heart defects, results from a failure of normal physiologic closure of the fetal ductus, with a persistent communication between the descending thoracic aorta and the pulmonary artery. Transcatheter occlusion is an effective alternative to surgical intervention and is currently the treatment of choice for most cases of PDA in children and adults. The authors wanted to review the results obtained during a 12-year experience with this technique.
Methods: Medical record data of all patients referred for percutaneous PDA closure in a reference center from January 2006 until September 2018 was collected and reviewed retrospectively. Indications for closure were presence of cardiac murmur, left-sided volume overload or heart failure signs.
Results: A total of 221 patients were referred for percutaneous PDA closure, with a mean age of 5.5 years-old (16 patients had less than 1 year of life, with the youngest being 4 months-old). A Nit-Occlud® coil was used 139 times (62.9%), an AMPLATZER™ duct occluder (ADO) was used 79 times (35.75%), and other devices (vascular plugs) were used 3 times. PDA closure was achieved in every treated patient, with residual shunting found in 1.4% of cases. Even though there was higher overall coil device implantation, a higher prevalence of ADO usage was noted since 2011. Of all coil devices used, 55% were either 4 × 4 or 5 × 4 mm in size, and of all ADO devices used, 73% were either ADO I 6 × 4 or 8 × 6 mm in size, which correlates to the fact that most patients who were referred had small to moderate sized PDA. No complications were noted during the procedure. A post-procedure complication rate of 1,8% was noted, with one case of device embolization 48 hours after the procedure and 3 cases consisting of loss of arterial pulse, being treated successfully with fibrinolytics. No significant differences in complication rates between different devices were noted.
Conclusions: Percutaneous PDA closure was safe and effective in this setting, with a low global complication rate and similar outcomes to most equivalent centers.

P 35. FEMORAL ACCESS FOR CORONAROGRAPHY AS PREDICTOR OF WORSE IN-HOSPITAL OUTCOME IN ACUTE CORONARY EVENTS

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[1]Centro Hospitalar de Leiria / Hospital de Santo André. [2]CNCDC - Centro Nacional de Coleção de Dados em Cardiologia.

Introduction: Higher rates of thirty-day mortality, major bleeding and adverse cardiac events are well-established among patients subjected to femoral access use for coronary angiography (CA) after Acute Coronary Syndrome (ACS). However, multicentric data is lacking regarding in-hospital (IH) outcomes.
Objectives: To evaluate whether IH outcomes are influenced by the type of vascular access used for CA in a ACS population.
Methods: A retrospective analysis of data from consecutive ACS patients enrolled in a multicenter national registry from January 2013 to December 2015 was conducted, identifying 6074 who underwent CA. Baseline characteristics, type of ACS, coronary anatomy, therapeutic strategy, IH medication, IH adverse events, left ventricular function evaluation, mortality and length of stay were evaluated. Two groups were defined according to the site of vascular access: Group A - femoral (FA); Group B - radial (RA). Logistic regression analysis were performed, looking for independent predictors of IH mortality, length of stay over 72 h, and complications (defined as a composite of re-infarction, new onset of heart failure, atrial fibrillation, high degree atrioventricular block, sustained ventricular tachycardia, resuscitated cardiac arrest, ischemic stroke or major bleeding).
Results: Overall, mean age was 65 ± 13 years, 1510 (24.9%) were female, and 2603 (42.9%) presented with ST segment elevation ACS, which was more frequent among FA patients (49.2% *versus* 41.6%, p = 0.001). Group A included 986 patients (16.2%) and Group B 5088 (83.8%). There were no differences regarding the rate of percutaneous coronary intervention (76.1% *versus* 76.4%; p = 0.796). All outcomes evaluated were more frequent among Group A (IH mortality: 6.7% *versus* 1.2%, p = 0.001; length of stay over 72 h: 66.2 *versus* 52.4%, p = 0.001; IH complications: 38.7% *versus* 18.6%, p = 0.001). Multivariate regression showed that FA was independently associated with higher rates of IH complications and longer IH stay but did not predict IH mortality. Left ventricular systolic dysfunction was the only variable that predicted all the outcomes (Table).
Conclusions: In the present series of ACS patients who underwent CA, FA was used solely in 16.2% of the cases and was associated with IH complications and longer hospitalization. Our results support the evidence that RA should be performed in ACS patients, whenever possible, in order to reduce morbidity and costs related to complications and higher lengths of stay.

Table P 35. Multivariate analysis

	IH Mortality (2.1%; n=128/6073)	IH Complications (21.9%; n=1323/6064)	Length of stay > 72h (54.6%; 3313/6064)
Age ≥ 75 years	OR 1.06; 95%CI: 1.03-1.10; p = 0.001	OR 1.02; 95%CI: 1.01-1.103; p = 0.004	
Heart valve disease (history of)	OR 4.12; 95%CI: 1.42-11.90; p = 0.009	OR 2.46; 95%CI: 1.39-4.34; p = 0.002	
ST elevation MI vs. Non-ST elevation MI		OR 1.78; 95%CI: 1.43-2.27; p = 0.001	OR 0.70; 95%CI: 0.57-0.85; p = 0.001
Killip-Kimball > 1 (presenting with)		OR 9.64; 95%CI: 7.35-12.64; p = 0.001	OR 1.54; 95%CI: 1.09-2.18; p = 0.015
Inotropic drugs (in-hospital)	OR 26.51; 95%CI: 12.65-55.57; p = 0.001	OR 19.90; 95%CI: 9.39-42.20; p = 0.001	
Unfractionated heparin (in-hospital)		OR 1.44; 95%CI: 1.14-1.81; p = 0.002	OR 1.56; 95%CI: 1.27-1.92; p = 0.001
Vitamin K antagonists (in-hospital)		OR 2.37; 95%CI: 1.31-4.29; p = 0.004	OR 2.30; 95%CI: 1.09-4.88; p = 0.030
Amiodarone (in-hospital)		OR 11.98; 95%CI: 8.15-17.60; p = 0.001	OR 1.65; 95%CI: 1.07-2.56; p = 0.024
Femoral access for coronary angiography	OR 3.59; 95%CI: 1.64-7.84; p = 0.554	OR 2.07; 95%CI: 1.59-2.71; p = 0.001	OR 1.68; 95%CI: 1.29-2.19; p = 0.001
Multivessel coronary artery disease	OR 2.69; 95%CI: 1.24-5.85; p = 0.012		OR 1.41; 95%CI: 1.19-1.68; p = 0.001
Left ventricular ejection fraction < 50%	OR 3.59; 95%CI: 1.64-7.84; p = 0.001	OR 2.29; 95%CI: 1.87-2.81; p = 0.001	OR 1.41; 95%CI: 1.17-1.70; p = 0.001

IH, in-hospital.

P 36. PERCUTANEOUS PARAVALVULAR LEAK PERCUTANEOUS OCCLUSION - A SMALL GAP TO A BIG PROBLEM

Luís Puga, Rogério Teixeira, Joana Ribeiro, Luís Paiva, João Gameiro, José Pedro Sousa, Diana Campos, Carolina Saleiro, Alexandrina Siserman, Liliana Reis, Marco Paulo Alves da Costa, Lino Goncalves

Centro Hospitalar e Universitário de Coimbra, EPE / Hospital Geral.

Introduction: Paravalvular leak following heart valve replacement surgery often cause significant morbidity and mortality. Anaemia and heart failure (HF) are the most frequent indications for percutaneous paravalvular leak occlusion (PPVLO), although anaemia has a multifactorial aetiology (hemolysis, chronic kidney failure, iron depletion, chronic disease, etc.).
Objectives: To study the clinical outcome of percutaneous paravalvular leak closure focusing on anaemia and HF functional status.
Methods: Single-centre retrospective cohort study consisting of consecutive patients submitted to PPVLO from 2012 to 2018. Haemoglobin levels, NYHA class, and haemolysis were compared before and after procedure. The sample was further divided in groups A (with procedural success) and B (without procedural success) to compare improvement in NYHA class and haemoglobin levels. Haemoglobin improvement was defined as at least 1 g/dL of haemoglobin improvement at least 90 days after the procedure.
Results: 26 PPVLO were performed in our centre from 2012 to 2018. The sample consisted of 20 (77%) females and had a mean age of 67 ± 8 years old. Anaemia was present in 23 (88%) patients with intravascular haemolysis in 13 (50%). Baseline mean haemoglobin level was 10.5 ± 1.9 g/dl. Median NYHA class was 3. NYHA classes 2, 3 and 4 were observed in 6 (23%), 14 (54%) and 6 (23%) respectively. Procedural success was achieved in 65%. Median NYHA class improvement was higher in patients with procedural success (A 10/14, 71% *versus* B 0/7 0%, $p < 0.01$). Increases in haemoglobin levels were seen in 14 (54%) patients, although no significant rise in mean haemoglobin levels after the procedure was recorded (10.7 ± 2 *versus* 11.0 ± 2 g/dL, $p = 0.345$). Change in haemoglobin was not associated with procedural success (A 9/14 [64%] *versus* B 5/6 [83%], $p = 0.394$). Moreover, haemoglobin improvement was not predictor of HF functional recovery assessed a logistic regression method (OR: 0.833, 95%CI: 0.09-7.675).
Conclusions: In our sample HF functional recovery was observed following a successful PPVLO. Although it is a frequent referral indication, anaemia status was not associated with procedural success in contrast to HF.

Sábado, 27 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 1 - ÉCRAN 7 - HIPERTENSÃO ARTERIAL

P 37. SYNERGISM OF SODIUM AND WATER BALANCE POLYMORPHISMS IN THE RISK OF ONSET OF ESSENTIAL HYPERTENSION IN INDIVIDUALS WITH LOWER SALT INTAKE

Ana Célia Sousa[1], Maria Isabel Mendonça[1], Sara Gouveia[1], Sofia Gonçalves[1], Teresa Goes[1], Stilyani Karamanou[1], Andreia Pereira[2], Mariana Rodrigues[2], Eva Henriques[2], Sónia Freitas[2], Ana Isabel Freitas[1], Ilídio Ornelas[2], Décio Pereira[1], Roberto Palma dos Reis[3]

[1]Hospital Dr. Nélio Mendonça - Hospital Central do Funchal. [2]Hospital Dr. Nélio Mendonça. [3]Centro Hospitalar de Lisboa Norte, EPE / Hospital Pulido Valente.

Introduction: Salt sensitivity, described as an exaggerated pressor response to a saline diet, is associated with a higher risk of Essential Hypertension (EH). The mechanisms underlying salt sensitivity are complex and poorly understood. Genetic studies may help us understand this phenomenon. Polymorphisms that interfere with sodium and water balance at the kidney level have been described in the literature as being associated with an increased risk of EH. However it is not known if there are synergistic effects among them that induce a higher risk of salt-sensitive EH.
Objectives: To evaluate the synergism of *ADD1* G460W and *SNN1G* A173G polymorphisms in the risk of salt-sensitive EH.
Methods: With a population of 1712 participants (860 with EH and 852 controls), we evaluated the renal sodium excretion in the 24-hour urine within the hypertensive group, which is related to sodium intake. We divided the renal sodium excretion values into tertiles, comparing the frequency of the studied polymorphisms in the 1st tertile (with lower sodium ingestion (minor SI, n = 285) with the frequency of the same polymorphisms, in controls (n = 285). We calculated the synergistic effect of these two genes in relation to the appearance of EH in individuals with higher and lower SI. Statistical analysis: we used the chi-square test, statistical software SPSS version 19.0 and the significance level $p < 0.05$.
Results: None of the genetic polymorphisms was associated with hypertension in the group of hypertensive patients with higher SI (3rd tertile) when compared to the control group. The 460WW genotype of alpha aducin was more frequent in the group of hypertensive individuals with less SI than in controls (OR: 3.06, p = 0.006). Genotype *SNN1G* 173GG was not associated with EH in this group. When we associate the two genetic variants in order to calculate the risk of having EH in individuals with lower SI, the risk of EH increases with an OR of 10.8 (p = 0.0002).
Conclusions: In the group of individuals with higher SI, no polymorphism was associated with the occurrence of EH, nor was there a synergistic effect of the two studied polymorphisms in the onset of EH. However, in the group of those with low SI the *ADD1* 460WW polymorphism alone increased the risk of EH, which did not occur with *SNN1G* A173G. By combining these two polymorphisms the risk of EH increases (OR 10.8), leading us to conclude that salt-sensitive EH results not only from the effect of a single gene but from synergistic effects between genes.

P 38. NOCTURNAL ARRHYTHMIAS IN HYPERTENSIVE PATIENTS: WHICH WAY TO GO?

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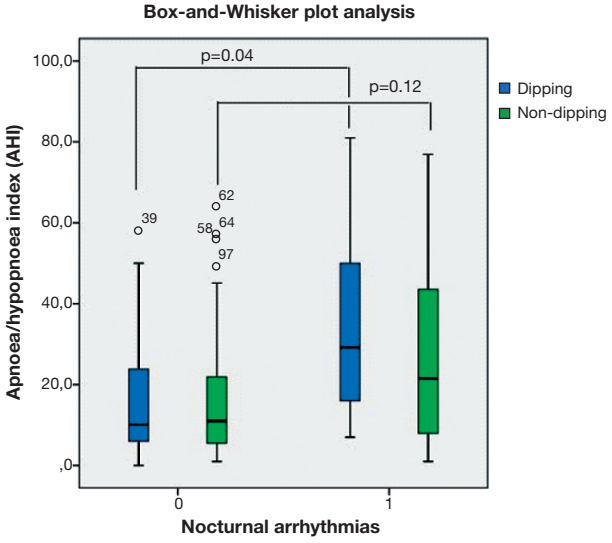
Introduction: There is growing evidence suggesting hypertension is related to the occurrence of arrhythmias. When occurring predominantly during the night, two potential entities commonly present in hypertensive patients could be related with increased arrhythmogenesis: (1) the lack of normal nocturnal dipping of blood pressure (BP) (non-dipping pattern of hypertension) or (2) obstructive sleep apnea (OSA). Thus, nocturnal arrhythmias (NAs) can identify hypertensive patients with OSA and/or non-dipping pattern, both related with adverse outcomes.
Objectives: To determine if NAs are related with non-dipping hypertension, OSA or both.
Methods: We studied hypertensive patients who performed ambulatory blood pressure monitoring (ABPM) and also polysomnography and 24-h Holter monitoring in the same year. Non-dipping pattern was considered when nocturnal BP reduction was inferior to 10%. Based on Holter monitoring, NAs were present when atrial fibrillation, frequent premature atrial contractions (PACs) (> 30 PACs/h), runs of > 4 consecutive PACs, frequent premature ventricular contractions (PVCs) (> 30 PVCs/h) or runs of > 4 consecutive PVCs were present predominantly during sleeping hours. During polyssonography, apnoea/hypopnoea index (AHI) and oxygen saturation (SaO_2) were analysed. Moderate to severe OSA was considered when AHI > 15.
Results: We studied 104 patients (median age 62 [54-70] years, 65% male): 42 (40%) had moderate to severe OSA (median AHI = 11 (6-26), mean SaO2 = 94% (92-95) and 64 (61%) were non-dippers. NAs occurred in 18 patients (17%) and they were independently associated with AHI (Odds Ratio (OR) for a one unit increase: 1.04, 95% confidence interval (CI): 1.01-1.07, p = 0.03) but not with SaO_2 (OR: 0.96, CI: 0.78-1.19, p = 0.73) nor non-dipping pattern (OR: 1.23, CI: 0.38-3.98, p = 0.72). No interaction was found between OSA and non-dipping hypertension (p = 0.35). In patients with dipping pattern (n = 40), AHI was higher in NAs patients comparing with no NAs patients (median AHI 29 *versus* 10, p = 0.04), while in those with non-dipping pattern (n = 64), AHI was not statistically different between patients with and without NAs (21 *versus* 11, p = 0.12) (Fig.).



Conclusions: In this population of hypertensive patients, the presence of NAs was associated with OSA severity (i.e. AHI), but not with the non-dipping pattern of hypertension. The importance of obstructive events in arrhythmogenesis seemed to be more pronounced in dipping patients, suggesting the abnormal high blood pressure during the night may also have some impact on NAs. Overall, our results suggest that OSA screening should be considered when nocturnal arrhythmias are detected in hypertensive patients, but ABPM should not be forgotten since multiple mechanisms can be involved in arrhythmogenesis.

P 39. IMPACT OF RENAL DENERVATION IN DAYTIME AND NIGHTTIME DISTRIBUTION OF AMBULATORY BLOOD PRESSURE AT 1 YEAR FOLLOW-UP

Catarina Brízido, Manuel de Sousa Almeida, Pedro de Araújo Gonçalves, Patrícia Branco, Augusta Gaspar, Rita Veríssimo, Gonçalo Cunha, Mariana Gonçalves, Miguel Mendes

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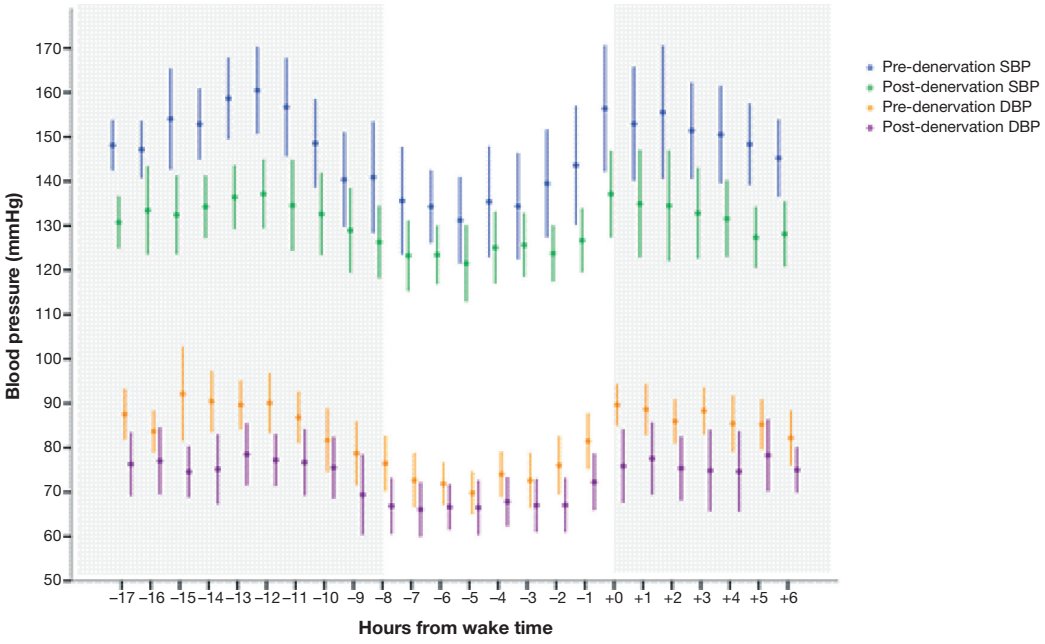

P 39 Figure

Introduction: Renal denervation (RDN) exerts its effects through sympathetic drive reduction and 24-hour ambulatory blood pressure measurement (ABPM) is currently considered the most accurate measurement of its effect. However, little is known about the impact of RDN on 24-h distribution of blood pressure. Our aim was to evaluate the effect of RDN on daytime/nighttime blood pressure at 1 year follow up.
Methods: From a single center prospective registry including 65 consecutive patients with resistant hypertension undergoing RDN between July/2011 and April/2015, 31 patients with baseline and 1- year follow-up 24-hour ABPM were included in this analysis. Mean hourly systolic and diastolic blood pressure (SBP and DPB) were compared before and after RDN. Nighttime was defined as the previous 8 hours before awakening.
Results: Mean age was 65 ± 7 years, 48% were males, 71% had type 2 diabetes. Most had hypertension lasting for more than 10 years (90%) and were being treated with a median number of 6 anti-hypertensive drugs, including 74% on spironolactone. At 1 year, there was a significant reduction in mean 24-hour ABPM systolic and diastolic blood pressure (146 ± 17 mmHg *versus* 131 ± 16 mmHg, p = 0.001 and 82 ± 8 mmHg *versus* 73 ± 9 mmHg, p = 0.001). This difference was more pronounced during daytime (151 ± 16 mmHg *versus* 133 ± 15 mmHg for SBP, p = 0.001), while blood pressure differences were attenuated but still significant during nighttime (138 ± 20 mmHg *versus* 127 ± 21 mmHg for SBP, p = 0.069) (Fig.).
Conclusions: The evaluation of RDN impact on 24-hour ABPM demonstrated a significant drop in both SBP and DBP at 1-year follow-up. In addition, the reduction was present both for daytime and nighttime (more pronounced in the former), suggesting an «always-on» effect over the 24-h period.

P 40. EFFECTS OF EXERCISE TRAINING ON AORTIC BLOOD PRESSURE AND AEROBIC FITNESS IN RESISTANT HYPERTENSION

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Introduction and objectives: To assess whether aerobic exercise training improves blood pressure (BP) and cardiorespiratory fitness in patients with resistant hypertension.
Methods: Seventeen patients with resistant hypertension (age: 61.1 ± 6.5 years, weight: 78.5 ± 10.6 kg, body mass index: 28.9 ± 2.6 kg/m^2, 10 men) were randomized to either the exercise training (EG, n = 10) or control group (CG, n = 7). Exercise training consisted of 3 months of aerobic exercise composed by 3 sessions of 40 min per week at 50-70% of VO_2peak. Both groups received usual care. Outcome measures included cardiorespiratory fitness (VO_2peak) evaluated with submaximal Chester step test, brachial BP measured with a validated digital BP monitor, and aortic BP measured by applanation tonometry (ClinicalTrials.gov: NCT03090529).
Results: The number of antihypertensive drugs was similar between EG and CG (5.0 ± 1.0 *versus* 4.4 ± 0.5, p = 0.209). There were no differences between groups at baseline in aortic systolic BP (141.0 ± 19.3 *versus* 122.8 ± 15.0 mmHg, p = 0.054), aortic diastolic BP (85.9 ± 9.1 *versus* 79.1 ± 9.8 mmHg, p = 0.166), brachial systolic BP (145.8 ± 18.9 *versus* 131.5 ± 14.6 mmHg, p = 0.114) and brachial diastolic BP (85.6 ± 8.7 *versus* 78.9 ± 9.5 mmHg, p = 0.153). VO_2peak was also similar among groups at baseline (37.5 ± 5.2 *versus* 32.5 ± 5.7 $mLO_2.kg^{-1}.min^{-1}$, p = 0.081). Conversely, the response to treatment was significant different among groups in aortic systolic BP (-17.6 ± 25.9 *versus* 8.3 ± 11.3 mmHg, p = 0.024), aortic diastolic BP (-11.9 ± 13.8 *versus* 3.8 ± 7.3 mmHg, p = 0.015), brachial diastolic BP (-12.0 ± 13.5 *versus* 3.8 ± 7.3 mmHg, p = 0.015) and VO_2peak (5.6 ± 3.6 *versus* -0.7 ± 3.7 $mLO_2.kg^{-1}.min^{-1}$, p = 0.003). No differences were found in brachial systolic BP (-15.6 ± 27.2 *versus* 7.7 ± 12.5 mmHg, p = 0.053). Exercise training showed a tendency to decrease aortic systolic BP (141.0 ± 19.3 to 123.4 ± 22.5 mmHg, p = 0.056), and significantly reduced aortic (85.9 ± 9.0 to 73.9 ± 9.9 mmHg, p = 0.023) and brachial diastolic BP (82.8 ± 9.4 to 77.3 ± 12.4 mmHg, p = 0.002). No changes were observed in the control group. VO_2peak also increased after exercise training (37.5 ± 5.2 to 43.1 ± 6.1 $mLO_2.kg^{-1}.min^{-1}$, p = 0.001), while it remained unchanged in the CG (32.5 ± 5.7 to 31.8 ± 8.4 $mLO_2.kg^{-1}.min^{-1}$, p = 0.658).
Conclusions: Exercise training seems to decrease aortic and brachial blood pressure and increases cardiorespiratory fitness in resistant hypertension patients.

P. 41. NON-GENETIC AND GENETIC FACTORS THAT PREDICT TARGET ORGAN DAMAGE IN HYPERTENSIVE PATIENTS

Ana Célia Sousa[1], Roberto Palma dos Reis[2], Joel Monteiro[3], Paula Faria[1], Susana Gomes[1], Andreia Pereira[3], Mariana Rodrigues[3], Eva Henriques[3], Sónia Freitas[3], Ana Isabel Freitas[1], Graça Guerra[1], Ilídio Ornelas[3], António Drumond[1], Maria Isabel Mendonça[1]

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Introduction: Essential Hypertension (EH) is a risk factor for cardiovascular disease. Target organ damage (TOD) influences the prognosis of a hypertensive population, since it is an independent determinant of overall cardiovascular risk. Predicting these complications is of high interest regarding that they are associated with a prognostic implication. In addition, the detection of TOD risk factors may help to define prevention and/or treatment strategies, either individually or as a group.
Objectives: To evaluate the non-genetic and genetic factors that are associated with the advent of TOD in hypertensive individuals.
Methods: In a group of 600 hypertensive patients, the presence of TOD, namely, hypertensive retinopathy, renal insufficiency/microalbuminuria, hypertensive cardiopathy and cerebrovascular disease were evaluated. We separated and compared two groups according to whether or not they had at least one TOD. The group of cases (with TOD) had 308 individuals and 292 were considered controls. We evaluated the factors associated with the appearance of TOD in both groups: age, gender, time of evolution of EH and controlled hypertension, and the following genetic variants associated with EH: rs4340, rs4343, rs4762, rs699, rs5186, rs1799998, rs1801253, rs1042713, rs4961, rs5718, rs5443, rs2681472 and rs11191548. Logistic regression analysis was performed to estimate which variables were significantly and independently associated with the appearance of TOD. Data analysis was done using SPSS version 19.0.
Results: Variables associated with the appearance of TOD in hypertensive patients were the male gender with OR 1.44 (p = 0.033), the time of evolution of EH with OR 1.03 (p = 0.026) and the genetic variants *ADRB1* with OR 1.66 (p = 0.003) and *ATP2B1* with OR 1.49 (p = 0.036) (Table).

Table I - Non-genetic and genetic predictors of TOD in EH

Variables	B	S.E.	Wald	df	Odds ratio (95% CI)	p-value
Male sex	0.364	0.170	4.559	1	1.439 (1.030 – 2.010)	**0.033**
Time since diagnosis	0.026	0.012	4.971	1	1.026 (1.003 – 1.050)	**0.026**
ADRB1 RR	0.505	0.168	9.027	1	1.656 (1.192 – 2.302)	**0.003**
ATP2B1 AG+GG	0.396	0.189	4.415	1	1.486 (1.027 – 2.151)	**0.036**
Constant	-0.540	0.198	7.435	1	0.583	**0.006**

Conclusions: We may conclude that the variables that were associated with the appearance of TOD in hypertensive patients were the male sex, the time of evolution of AH and the genetic variants *ADRB1* and *ATP2B1*. We highlight the importance of studying the influence of genetic variants and non-genetic factors in the appearance of TOD in hypertensive patients in order to institute therapies as early and sustainable as possible.

P 42. ABPM FOR ARTERIAL HYPERTENSION'S DIAGNOSIS - THE EXPERIENCE OF A PRIMARY CARE CENTRE

João Dias, Maria Eduarda Lima

USF Arca D'Água - ACES Porto Oriental.

Introduction: Stroke is the main mortality cause in Portugal. Hypertension (HTN) is mostly an asymptomatic and silent condition and increases the risk for this cardiovascular complication. Preventing and diagnosing HTN in a timely manner is vital to avoid morbimortality. Diagnosing HTN can be done by out-of-office BP measurements - ambulatory blood pressure monitoring (ABPM) or home blood pressure monitoring. In Portugal, ABPM is expensive, not reimbursed and not widely available.
Objectives: To describe the patients in whom ABPM was performed and assess the number of new HTN diagnosis with the use of ABPM.
Methods: Descriptive, cross-sectional study. Data collection: December 2018, on all the ABPM exams performed at the authors' centre from January 2017 until December 2018. Exams with less than 70% of usable measurements were excluded. Variables: sex, age, smoking status, previous HTN diagnosis, previous antihypertensive therapy, new HTN diagnosis, HTN control and circadian profile. Data confidentiality was ensured.
Results: A total of 126 exams were performed, 52% on female patients, with an average age of 61.93 years old (minimum 23, maximum 92, median 64,5). 23.81% were smokers and 57.14% (n = 72) were not previously diagnosed with HTN. From the latter group, 20 (27.78%) were newly diagnosed with HTN. All the already hypertensive patients (n = 54) were on antihypertensive therapy, mostly triple therapy (31.48%); 38.89% did not have their HTN controlled. Most patients had dipper profile (40.48%); around 16% manifested extreme or reverse dipping and 10% were non-dippers. The examined patients were mostly female, in average 62 years old and not previously diagnosed with HTN. The encountered average and median age is in line with the fact that HTN is more common with advancing age. Almost 24% were smokers, an important risk factor for HTN. The ABPM consult made possible the new diagnosis of 20 hypertensive patients, whom will need a specific follow-up from their physicians, now aware of a new clinical condition. In the already hypertensive patients, around 40% showed BP values on ABPM compatible with bad-controlled HTN, which in turn will also guide their physicians in their follow-up.
Conclusions: Despite the dipping status is still a matter of debate in terms of clinical utility, the authors found that around 40% of patients were dippers and 26% were part of the groups linked to increased mortality - extreme, reverse and non-dippers.

Sábado, 27 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 1 - ÉCRAN 8 - ENFERMAGEM/TÉCNICOS

P 43. PHYSICAL ACTIVITY PREDICTS ARTERIAL STIFFNESS IN RESISTANT HYPERTENSION

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Introduction: Arterial stiffness has been inversely associated with physical activity (PA) and cardiorespiratory fitness (CRF) among healthy and clinical

populations. However, little is known about this relationship among patients with resistant hypertension. Therefore, we aimed to understand if arterial stiffness is associated with PA levels and CRF among resistant hypertension patients.
Methods: In this cross-sectional study, 24 patients (10 men, 14 women; age, 57.9 ± 8.2 years; weight, 77.0 ± 10.7 kg; body mass index, 29.0 ± 3.5 kg/m^2) with resistant hypertension were recruited. Outcome measures included VO_2peak, which was evaluated with a submaximal step test; carotid-femoral pulse wave velocity (cf-PWV), which was measured by applanation tonometry; and weekly PA evaluated by triaxial accelerometry. Participants used the accelerometer in 6.5 ± 0.8 days, accumulating a total time of 5569.2±953.5 minutes. Correlation and linear regression analyses were conducted to examine the relationship between variables and potential predictors.
Results: A significant negative correlation was found between light PA (2461.7 ± 819.2 minutes per week) and cf-PWV (9.6 ± 3.0 m/s, r = -0.551, p = 0.005). cf-PWV was also inversely correlated with total PA (2656.9 ± 841.6 min per week, r = -0.565, p = 0.004). In contrast, there was no association of cf-PWV with MVPA (195.3 ± 127.3 minutes per week, r = -0.192, p = 0.369), sedentary time (2912.3 ± 796.4 min, r = 0.295, p = 0.192) and CRF (34.0 ± 6.3 $mLO_2.kg^{-1}.min^{-1}$, r = -0.026, p = 0.905). Total PA per week was the only significant predictor of cf-PWV among this clinical population (β = -0.565, p = 0.004).
Conclusions: In resistant hypertension patients, arterial stiffness was associated with light PA and total PA, but not CRF. Moreover, total PA was a predictor of arterial stiffness.

P 44. VARIABILIDADE DA FREQUÊNCIA CARDÍACA EM ATLETAS E NÃO ATLETAS

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Introdução: A variabilidade da frequência cardíaca consiste na medição do intervalo de tempo entre batimentos. Esta descreve as oscilações no intervalo entre batimentos cardíacos consecutivos (intervalos R-R) que refletem as modificações na frequência cardíaca em função do sistema simpático e parassimpático. A prática regular de atividade física é um fator responsável pelo incremento do tónus vagal devido ao aumento do trabalho cardíaco, uma vez que há uma redução da sensibilidade dos recetores beta. A análise da VFC pode ser executada no domínio de tempo e domínio de frequência.
Objetivos: O objetivo deste estudo é comparar a variabilidade da frequência obtida em repouso durante 6 minutos, entre um grupo de desportistas e um grupo de não desportistas, com recurso a um cardiofrequencímetro Polar RS800CX e um eletrocardiógrafo ECG NORAV 1200, e analisar a variabilidade da frequência cardíaca em simultânea no domínio do tempo e da frequência.
Métodos: Um total de 26 indivíduos do sexo feminino desportistas e não desportistas com idades compreendidas entre os 18 e os 33 anos, realizaram estudo da variabilidade da frequência cardíaca em repouso, sendo avaliados em simultâneo, com recurso a dois métodos, nomeadamente, um cardiofrequencímetro e um registo electrocardiográfico.
Resultados: Foram observadas diferenças significativas em alguns parâmetros de VFC obtidos entre o grupo de desportistas com o grupo de controlo de não desportistas, no domínio do tempo e no domínio da frequência. O incremento da FC provocou a diminuição conjunta das variáveis de domínio de tempo, SDNN, RMSSD, pNN50 e NN50. As variáveis UFL, VFL e TP aumentaram e a HF diminuiu, o que nos leva a concluir que o SNP assumiu um papel importante na modulação da FC nesta mudança postural. A variável LF manteve-se estável, traduzindo fraca influência do SNS.
Conclusões: A prática regular de atividade física proporciona um aumento da variabilidade da frequência cardíaca, indicando assim que os atletas têm um menor risco de vir a sofrer de alterações cardiovasculares e de ritmo, ao contrário dos indivíduos não atletas, pois nestes o risco será significativamente maior.

P 45. O IMPACTO DE UM PROGRAMA DE REABILITAÇÃO CARDÍACA PLURIDISCIPLINAR NOS DIAS DE HOJE

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A reabilitação cardíaca (RC) é uma intervenção multifatorial e abrangente na prevenção secundária, concebida para limitar os efeitos fisiológicos e psicológicos da doença cardiovascular. O programa de reabilitação cardíaca (PRC) do nosso centro engloba uma equipa constituída por enfermeiro especialista em reabilitação, médico, técnico de cardiopneumologia e fisioterapeuta. Os dados recolhidos para este trabalho são referentes desde o seu início (novembro de 2017) até 15 de dezembro de 2018. Todos os doentes que ingressaram no programa realizaram consulta médica e de enfermagem, prova de esforço (PE), colheita de dados antropométricos, avaliação de força e prova de marcha de 6 minutos (6MW), repetindo no final do programa. A população é de 63 doentes (10 mulheres e 53 homens) com idades entre 38 e 89 anos. Deste total, 51 doentes sofrem de patologia coronária e 12 de insuficiência cardíaca; 11 são portadores de cardiodesfibrilhador implantável e 1 de terapia de ressincronização cardíaca. O índice de massa corporal médio do grupo é de 27,8. Cerca de 19 doentes apresentam fração de ejeção inferior a 50% e 44 superior a 50%. Na PE inicial, com uma duração mínima de 1 minuto e 26 s, 22 doentes apresentam um valor pré-METs inferior a 10 e os restantes 41 superior a 10. No teste de 6MW, a distância mínima percorrida foi de 200 m e a máxima de 600 m. O PRC aplicado consiste num treino aeróbio e de resistência inicial gradualmente adaptado, com um mínimo de 18 sessões (doentes de baixo risco) e máximo de 48 sessões (doentes de moderado-alto risco), realizado no nosso ginásio sob supervisão da equipa pluridisciplinar. Cerca de 32 doentes concluíram o PRC, tendo 12 doentes desistido por vários fatores a merecer posterior avaliação. Os restantes doentes ainda se encontram em PRC. Conclui-se que os doentes que finalizaram o PRC melhoraram em 90% o pós-METs, o tempo de duração da PE, aumentaram em 70% a flexibilidade global e a força dos membros, avaliada através do dinamómetro. Houve ainda diminuição da ansiedade através da avaliação da escala Euro Qol. A execução de um PRC apresenta benefícios, não só na melhoria da condição do exercício mas também na qualidade de vida, que traduz ganhos em saúde. Existe ainda dificuldade no acesso dos utentes a ao PRC quer por questões geográficas, quer por lacunas na sua referenciação. O papel do enfermeiro no PRC é determinante desde a referenciação inicial ao reingresso na comunidade.

P 46. CAN PHYSICAL EXERCISE PREVENT CARDIOTOXICITY IN BREAST CANCER PATIENTS? RATIONALE OF A RANDOMIZED CONTROLLED TRIAL

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Introduction: Cardiac dysfunction induced from conventional cardiotoxic drugs in breast cancer treatment, such as anthracyclines, has been recognized as a major concern in clinical practice, interfering with optimal cancer management and patients' quality of life. As such, the implementation of adequate supportive strategies is needed. Physical exercise (PE) has been proposed as a potential approach to mitigate anthracycline-related cardiotoxicity. However, due to the scarcity of available evidence, the full scope of this hypothesis is yet to be fully ascertained. Clinical trials that address this literature gap are of pivotal importance.
Objectives: To analyse the effects of a supervised PE program on cardiotoxicity markers in women who will be treated with anthracycline-based chemotherapy (AB-CT).
Methods and results: This is a study protocol for a two-arm prospective randomized controlled trial, registered on International Standard Randomised Controlled Trial Number: ISRCTN32617901. Nineteen adult women with

early breast cancer and with a therapeutic decision to receive AB-CT, will be randomly assigned (1:1 ratio) to an intervention group or to a control group. Patients allocated to the intervention group will perform a 3-weekly supervised PE program combining resistance and aerobic training with progressive intensity (light-to-high), during treatment. The control group will receive usual cancer care. Resting left ventricular (LV) global longitudinal strain (GLS) and resting LV ejection fraction (LVEF) will be assessed at three time-points: 1-14 days prior to start of the AB-CT (M1); 1-5 days after the end of the AB-CT (M2) and 3 months after M2 (M3). For resting LV GLS assessment, two-dimensional grey-scale images will be acquired in the apical four-, two- and three-chamber views. Resting LVEF will be calculated using the biplane method of disks (modified Simpson's rule) from the apical four- and two- chamber view. To analyse N-terminal pro-B-type natriuretic peptide, blood samples will be collected at M1, M2, M3 and 24 hours before each anthracycline cycle. Cardiorespiratory fitness will also be assessed at M1, M2, M3, by a symptom-limited cardiopulmonary exercise test on a treadmill.
Conclusions: We expect this study will contribute to better understand the role of PE at counteracting anthracycline-related cardiotoxicity and to further facilitate the integration of policies, which aim to balance the negative cardiac effects from the use of cardiotoxic drugs in cancer care.

P 47. EVALUATION OF SELF-CARE IMPROVEMENT AFTER ADMISSION IN A HEART FAILURE CLINIC

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Introduction: Heart failure (HF) is a highly prevalent syndrome with significant morbimortality and great impact on patients (pts) and their family's quality of life. HF-related self-care behaviour reflects the actions that an HF patient undertakes to maintain life, healthy functioning, and well-being. The European Heart Failure Self-Care Behaviour Scale (EHFScB scale)is a validated scale considered easy to administer and practical to use. The scale is based on international guidelines for HF management and has been found to measure change in behaviour over time.
Objectives: To evaluate the self-care capacity and its improvement over time in pts with chronic HF and reduced ejection fraction (HFrEF) in a HF Clinic (HFC).
Methods: Unicentric, retrospective analysis of pts followed in a HFC since 3/2011. Included pts with reduced ejection fraction (EF) (< 50%) and previous diagnosis of HF for at least 6 months, who had completed the EHFScB scale in two different moments: the first moment (T1) before the nursing teaching session and the other (T2) 6 to 12 months after this intervention. This 12-item scale measures self-care behaviors on a 5-point likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). A total score is calculated by summing responses from each item and lower score indicates better self-care.
Results: The sample consists of 58 pts with mean age of 63 ± 12.4 years and male predominance (74%). 65% had ischemic etiology with median EF of 29.9 ± 6.3% at admission in HFC. 62% had a prior HF hospitalization. Mean EHFScB scores in T1 and T2 was 37 ± 11 and 19 ± 5.8, respectively. All behaviours had a positive evolution in self-care capacity. The largest improvement was in the «asking for help» factor with a mean decrease of 1.8 points. The factor with the lowest evolution was «adapting activities» with a mean increase of 1 point.
Conclusions: In this cohort, we concluded that pts adopts non-pharmacological measures in an easier way and follow the guidelines given by the professionals when properly instructed. The EHFScB scale can be used to assess self-care behaviours and as a baseline for the mutual decision between the patient and nurse or physician regarding self-care. It can also be used to improve patient compliance and empower nursing education sessions to address specific problems of heart failure patients.

P 48. HEART FAILURE CLINIC - OUR REALITY

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Introduction: Heart Failure (HF) is a syndrome associated with high morbidity and mortality. HF hospitalizations (HFH) correlate with the severity of the disease and its prognosis, highlighting the need to develop tools to avoid hospital admissions. According to the European Society of Cardiology (ESC), multidisciplinary teams are more effective in achieving this purpose. Nursing team has a major role on the development of a close relationship with HF pts, and is a determinant factor for compliance achievement.
Objectives: Describe the purpose and the organization of a Heart Failure Clinic (HFC) nursing team approach in a multidisciplinary program to support pts with HF.
Methods and results: Since the development of our HFC in january 2011, nursing intervention has evolved over the years in order to better support HF pts and to answer to their needs. The main purpose is to improve health status, pts compliance and knowledge about the disease. Nursing intervention focuses on 3 main fields according to ESC recommendations: hospital discharge planning, lifestyle advice and exercise training. During hospital admission, nursing team provides information about pts illness, lifestyle modifications and self-care education. During HFH, pts are submitted to a medical assessment by a HF specialist to decide which pts would benefit to be included in the HFC. At 3rd-5th day after discharge, there is a phone-call appointment that consists in a symptomatic evaluation and confirmation of the prescribed therapy. Before the 15th day, both medical and nurse appointment takes place, focusing on clinical status, pts knowledge about the disease, therapy adjustments and a teaching session about cardiac rehabilitation and exercise training. According to the pts needs, new appointments at 1 month and every 6 months are scheduled. A phone number is available for pts to contact the HFC directly. Nursing intervention is assessed by using validated scores and questionnaires, such as the European Heart Failure Self-Care Behaviour Scale, the European Quality of Life Index and the Kansas City Cardiomyopathy Questionnaire, before and after nursing teaching sessions.
Conclusions: According to the ESC guidelines, multidisciplinary team programs are a Class IA recommendation. Therefore, nurse intervention in a HFC provides a way to better acomplish pts needs, invest in their compliance, improve prognosis and reduce HFH.

Sábado, 27 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 1 - ÉCRAN 9 - INSUFICIÊNCIA CARDÍACA

P 49. ANGIOTENSIN RECEPTOR-NEPRILYSIN INHIBITION IMPROVES PEAK OXYGEN CONSUMPTION IN REDUCED HEART FAILURE

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Introduction and objectives: The addition of Angiotensin Receptor-Neprilysin Inhibitors (ARNI) to standard therapy of heart failure with reduced ejection fraction (HFrEF) has proved to improve outcomes. Cardiopulmonary exercise testing (CPET)-derived ergometric variables, as peak oxygen consumption (VO_2), are used to determine heart transplant (HTx) eligibility. We aimed to analyse the impact of ARNI therapy in CPET variables.
Methods: We conducted a retrospective, observational cohort study, including 19 patients with symptomatic HFrEF with a left ventricular (LV) ejection fraction (LVEF) < 35% and whose functional capacity was evaluated by CPET less than 6 months before initiating ARNI. We excluded patients who had implanted a cardiac resynchronization therapy device (CRT) or were submitted to heart surgery less than 6 months before the first CPET. A follow-up CPET was conducted 7±4 months after starting ARNI.

Table 1. Baseline characteristics

Age – years	54.8 ± 12.2
Male – no. (%)	17 (89.5)
LVEF - %	25.9 ± 5.6
LVEF <35% for longer than 1 year	19 (100)
NYHA – no. (%)	
II	10 (52.6)
III	6 (31.6)
IV	3 (15.8)
Aetiology – no. (%)	
Ischemic heart disease	11 (57.9)
Dilated cardiomyopathy	6 (31.6)
Corrected transposition of great arteries	1 (5.3)
LV-non compaction	1 (5.3)
Devices	
ICD	9 (47.4)
CRT-D	9 (47.4)
Previous medication – no. (%)	
ACEIs/ARBs	19 (100)
Beta blockers	18 (94.7)
MRA	17 (89.5)
Diuretics	19 (100)
Amiodarone	6 (31.6)
Digoxin	6 (31.6)
Ivabradine	5 (26.3)
Oral anticoagulation	12 (63.2)
ARNI	
Intermediate dose (97/103mg bid)	5 (26.3)
Maximum dose (49/51mg bid)	14 (73.7)

Abbreviations: LVEF, left ventricular ejection fraction; NYHA, New York Heart Association; LV, left ventricular; ICD, implantable cardioverter defibrillator; CRT-D, cardiac resynchronization therapy defibrillator; ACEIs, angiotensin-converting enzyme inhibitors; ARBs, angiotensin receptor blockers; MRA, mineralocorticoid receptor antagonists; ARNI, angiotensin receptor-neprilysin Inhibitor.

Table 2. Effect of ARNI on Exercise Performance

	Before ARNI (n = 19)	After ARNI (n = 19)	P value
Time – min	12:45 ± 04:43	13:27 ± 03:37	0.40
RER – $VCO_2 \cdot VO_2^{-1}$	1.08 ± 0.11	1.12 ± 0.08	0.14
Peak VO_2 – $mL.kg^{-1} \cdot min^{-1}$	15.4 ± 5.2	17.0 ± 4.0	0.03
Percentage of predicted VO_2 (%)	53.3 ± 15.7	60.5 ± 14.2	0.009
VE/VCO_2 slope ($L \cdot min^{-1}$)	35.3 ± 6.9	35.3 ± 6.8	0.95
Resting $PETCO_2$ – mmHg	30.0 ± 3.5	30.8 ± 3.9	0.40
Maximum $PETCO_2$ – mmHg	33.5 ± 4.4	34.6 ± 4.5	0.28
VE/MVV	0.68 ± 0.23	0.68 ± 0.36	0.97
Peak oxygen pulse ($mL \cdot beat^{-1}$)	9.9 ± 2.7	10.6 ± 2.6	0.14
Percentage of maximum HR (%)	70.3 ± 15.1	73.9 ± 13.8	0.21
Chronotropic competence – no. (%)	8 (42)	9 (47)	0.99

Abbreviations: RER, respiratory exchange ratio; VCO2, carbon dioxide output; VO2, oxygen consumption; VE, ventilation; PETCO2, end-tidal CO2; MVV, maximum voluntary ventilation; HR, heart rate.

Results: Mean age was 55 ± 12 years and 90% were male. Mean LVEF was 26 ± 6% and before initiating ARNI, all patients were on optimal medical therapy, including angiotensin-converting enzyme inhibitors/angiotensin receptor blockers (100%), ß-blockers (94.7%) and mineralocorticoid receptor antagonists (89.5%). Moreover, 9 patients had an implantable cardioverter defibrillator (D) and 9 patients had a CRT-D.Regarding aetiology, 11 had ischemic heart disease, 6 had dilated cardiomyopathy, 1 had corrected transposition of great arteries and 1 had LV non-compaction. The majority of the patients (73.7%) were on maximal doses of ARNI (97/103 mg bid); the remaining were on intermediate dose (49/51 bid). Following ARNI, peak VO_2 significantly increased from 15.4 ± 5.2 to 17.0 ± 4.0 $mL.kg^{-1}.min^{-1}$ (mean absolute increase of +1.5 $mL.kg^{-1}.min^{-1}$, p = 0.03). Among the 7 patients with peak VO_2 < 14 $mL.kg^{-1}.min^{-1}$, 3 (43%) improved peak VO_2 to values > 14 $mL.kg^{-1}.min^{-1}$, pulling the patients out of one of the classical HTx eligibility markers. Regarding other ergometric variables, a numerically increase was observed in mean total exercise duration (12:45 to 13:27 min), in respiratory exchange ratio (RER) (1.08 ± 0.11 to 1.12 ± 0.08) and in peak oxygen pulse (9.9 ± 2.7 to 10.6 ± 2.6 $mL.beat^{-1}$). Conversely, the mean respiratory efficiency index (VE/VCO_2) following ARNI remained similar.
Conclusions: In this cohort of HFrEF patients, ARNI significantly improved peak VO_2, a major prognostic predictor. Importantly, 3 out of 7 patients with a peak VO_2 within the HTx threshold recovered to ineligibility values.

P 50. VASODILATOR CHALLENGE WITH LEVOSIMENDAN AS ALTERNATIVE TO NITRIC OXIDE IN ADVANCED HEART FAILURE HEART TRANSPLANT CANDIDATES

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Introduction: Vasodilator challenge (VC) during right heart catheterization in heart transplant (HTx) candidates is warranted whenever pulmonary artery (PA) systolic pressure ≥ 50 mmHg and either transpulmonary gradient (TPG) ≥ 15 mmHg or pulmonary vascular resistance (PVR) > 3 WU as long as systolic arterial blood pressure > 85 mmHg. Nitric oxide (NO) remains the mainstay but in doubtful cases a 24-48 h course of diuretics, inotropes and vasoactive agents may be required. Our aim is to report our centre's experience with levosimendan (LEVO) as alternative to NO in VC in HTx candidates due to advanced heart failure (HF).
Methods: VC records with either NO (20 ppm for 5-10 min) or within 72h of LEVO infusion (12 mg/kg/min for 24-48 h) carried out between 2009 and September 2018 were retrieved from the centre's database. Analysis was carried out with Fisher's exact test or Student's t-test for categorical and

continuous variables, respectively, or the equivalent non-parametric test for non-normal distribution variables. Data are presented as counts and percentage, or mean ± standard deviation and median, percentile 25-75, for categorical and continuous variables, respectively.
Results: Baseline demographic and clinical characteristics from 26 patients (NO = 13; LEVO = 13) were similar between groups (12% female; 54 ± 10 years of age; left ventricular ejection fraction 20 ± 7%; BNP 1550 ± 1090 pg/mL; 88% on NYHA III-IV). Although no differences were observed in baseline cardiac index (CI: 1.6 ± 0.3 *versus* 1.4 ± 0.4 L/min.m^{-2}, in NO and LEVO, respectively), LEVO patients showed higher right ventricular systolic (70 ± 10 *versus* 60 ± 13 mmHg; p = 0.036) and diastolic pressures (16 ± 4 *versus* 11 ± 5 mmHg; p = 0.009) and lower PA compliance (0.9 ± 0.2 *versus* 1.3 ± 0.4 ml/mmHg; p = 0.007) as well as a trend for increased PA wedge pressure (26 ± 4 *versus* 21 ± 4 mmHg; p = 0.09), translating worse hemodynamics. Upon VC only LEVO decreased PA pressure and the increase in CI was higher compared with NO (2.5 ± 0.8 *versus* 1.9 ± 0.5 L/min.m^{-2}, p = 0.004) thus PVR reduction was comparable between groups (7.8 ± 2.7 to 4.7 ± 1.8 *versus* 6.3 ± 2.3 to 3.6 ± 2.1 WU, respectively). Also, only LEVO increased right (497, 387-837 to 791, 570-946 mmHg.mL.m^{-2}; p = 0.006) and left ventricular stroke work index (895, 807-1364 to 1257, 1107-2957 mmHg.mL.m^{-2}; p = 0.005), and cardiac power output (0.4 ± 0.1 to 0.6 ± 0.1 W; p < 0.001). Increase in PA compliance was also higher in LEVO (89 ± 98 *versus* 22 ± 30 %, p = 0.04). On the other hand, NO increased wedge pressure whereas LEVO had no effect thus TPG reduction was higher with NO (42 ± 24% *versus* 17 ± 27% drops, respectively; p = 0.022). After HTx (NO = 4; LEVO = 10) mortality was similar in both groups (25% *versus* 30%; p = 1.000).
Conclusions: LEVO is a safe and effective alternative in PVR reduction for VC. Its positive inotropic effect and long-lasting hemodynamic improvement may improve clinical status before HTx and allow better scrutiny of suitable candidates.

P 51. DECONGESTION THERAPHY - DOES IT DIFFER FROM DISCHARGE TO USUAL LIFE CONDITIONS AND AMONG HEART FAILURE PATIENTS?

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Introduction: Most decompensations of heart failure (HF) are due to congestion. At discharge from hospitalization patients are supposed to be in their dry weight, as congestive signs at this time are a predictor of rehospitalizations and mortality. Although most times euvolemic state is obtained during hospitalization, ambulatory habits and lifestyle diverge from hospital conditions, and medication might need to be adjusted.
Objectives: To evaluate the adequacy of the prescribed diuretic dose at discharge on ambulatory conditions at reassessment after 2 weeks (average), and if there are differences on the diuretic dose among ejection fraction groups.
Methods: Retrospective study of consecutive hospitalizations due to decompensated HF in an Acute Heart Failure Unit (AHFU) over one year, between November 2017 and October 2018, examining hospital databases. Patients who were reassessed in a period of 30 days in Day Hospital (DH) were selected, and diuretic therapy changes were assessed.
Results: Of 162 patients discharged directly from the AHFU, 142 (87.7%) were referred to DH revaluation; of these, 29 didn't attend to the booked appointment, with a final population of 113 patients. The mean time to reassessment was 12 days, with 37 (32.7%) patients needing to increase diuretic dose at this time due to congestion (average of 3.6 kg weight increase) – 81.0% needed to increase loop diuretic dose, 45.9% thiazidic-like and 8.1% mineralocorticoid receptor antagonists (MRA). 70.2% of them were with sequential nephron blockage. 51.4% patients needed endovenous diuretic administration in the first evaluation and 3 were rehospitalized before 30 days after discharge due to decompensated HF. Out of 76 patients that didn't need diuretic adjustment in their visit, only 2 were readmitted in 30 days due to decompensated HF. 31% of non-reduced ejection fraction (non-HFrEF) needed diuretic adjustment and 34.5% of reduced ejection fraction (HFrEF) needed it as well (Table).

Therapy adjustments at first visit after discharge, on HFrEF and HFrEF population

	HFrEF	Non-HFrEF
Revaluated at DH	55 (48,7%)	58 (51,3%)
Diuretic Adjustment	19 (34,5%)	18 (31,0%)
Loop diuretic	14 (73,7%)	16 (88,9%)
Thiazidic-like	8 (42,1%)	9 (50%)
MRA	3 (15,8%)	0
IV diuretic	9 (47,2%)	10 (55,6%)

Conclusions: Nearly a third of patients revaluated at DH needed diuretic adjustment at the first visit, with no difference between HFrEFand non-HFrEF. This supports the importance of early revaluation after discharge for therapy readjustment, preventing future readmissions. In our experience, revaluation at 12 days allowed not only adjustment of oral diuretic dose but also administration of IV diuretic, preventing 84,2% rehospitalizations. Diuretic doses at discharge might be appropriate for in-hospital setting, but commonly not enough at ambulatory environment. Future studies should be directed to the increase of diuretic dosage at discharge in order to prevent early readmissions and mortality.

P 52. COGNITIVE PERFORMANCE PREDICTS MAJOR ADVERSE CARDIOVASCULAR EVENTS IN PATIENTS WITH HEART FAILURE WITH REDUCED EJECTION FRACTION

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Introduction: Heart Failure (HF) is a complex clinical syndrome with multiple comorbidities. Cognitive impairment, stress, anxiety, depression and lower quality of life (QoL) are prevalent in HF, but their ability to predict major adverse cardiovascular events (MACE) is not known. Herein, we explore the value of these parameters in the prediction of MACE in patients with HF with reduced Ejection Fraction (HFrEF).
Methods: A longitudinal study was conducted using a sample of 65 patients from the hospitals of Guimarães and Barcelos. A battery of tests was performed to assess cognition (Montreal Cognitive Assesment (MoCA) and Mini-Mental State Examination), QoL (Kansas City Cardiomyopathy Questionnaire - KCCQ), stress (Perceived Stress Scale-10), anxiety and depression (Hospital Anxiety and Depression Scale). During a 2-year follow-up period (July 2016 to June 2018) MACE were registered using clinical records of these hospitals. A descriptive statistical analysis was conducted, as well as multiple linear and Cox regression models to determine the predictive value of neurocognitive parameters and QoL in MACE.
Results: Both MoCA (hazard ratio [HR]: 0,904; 95% confidence interval [CI]: 0,817-1,001; p < 0,05) and KCCQ (HR: 0,983; 95%CI: 0,970-0,997; p = 0,015) scores were statistically significant in predicting MACE but not overall mortality. Anxiety, depression and stress were not predictors of MACE. However, anxiety (β = 0,326; p = 0,012)and depression levels (β = 0,309; p = 0,014)were independent predictors of the KCCQ score.
Conclusions: In patients with HFrEF, cognition and QoL are predictors of future MACE. Therefore, in the future, it will be important to evaluate these dimensions to foresee and prevent upcoming MACE.

P 53. SÍNDROME MIA NA INSUFICIÊNCIA CARDÍACA - UM FACTOR DE MAU PROGNÓSTICO

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Introdução: A associação forte entre malnutrição (M), inflamação (I) e aterosclerose (A) sugere a presença da síndrome MIA, que se associa a

alta mortalidade em doentes (D) com doença renal crónica. A doença cardiovascular relaciona-se, para além dos factores de risco tradicionais, aos 3 componentes (C) da síndrome MIA (SMIA). Pretende-se avaliar a prevalência e prognóstico do SMIA em D com IC agudizada (ICA).
Métodos: Seleccionados D internados num serviço de Cardiologia por ICA entre 2007 e 2013. *Follow-up* de 24 meses (m). Os níveis séricos de proteína C reactiva ultrassensível (> 0,50 mg/dL), albumina (< 3,5 g/dL) e a presença de dislipidemia serviram como marcadores de I, M e A respectivamente. A presença do SMIA foi validada pela presença concomitante dos 3 C (3-MIA), mas a avaliação isolada e poder aditivo dos C também foi verificada. Divisão em grupos: 3-MIA, dois C (2-MIA), um C (1-MIA) e zero C (0-MIA).
Resultados: Amostra de 793 D, 50,7% sexo masculino, idade média de 77,1 ± 10,2 anos. 1-MIA em 42,4% (n = 336), 2-MIA em 39,3% (n = 312), 0-MIA em 11,7% (n = 93) e 3-MIA em 6,6% (n = 52). I em 78,7% (n = 624), A em 40,7% (n = 232) e M em 21,3% (n = 160). Sem diferenças em relação ao género ou idade entre D com 3-MIA e D sem SMIA (0, 1 ou 2 C). Os D com 0 ou 1-MIA tinham maior predomínio de antecedentes de HTA, enquanto que os D com 2 ou 3-MIA tinham maior predomínio de D com HTA e DM2 (X2 = 17,7, p = 0,04). Os D com número crescente de C do SMIA, estavam mais frequentemente medicados com diurético de ansa (X2 = 10,3, p = 0,016) e estatina (X2 = 95,3, p = 0,0001). Os D com 3-MIA tinham menor probabilidade de diagnóstico de IC previamente ao internamento (X2 = 6,4, p = 0,01) e PA sistólica e diastólica mais baixas (139,1 ± 30,9 *versus* 130,1 ± 26,0 mmHg, p = 0,02 e 81,3 ± 43,9 *versus* 76,5 ± 12,9 mmHg, p = 0,05, respectivamente), com valores médios de GGT (243,9 ± 316,9 *versus* 95,3 ± 110,7 Ul/L, p = 0,005), AST (292,3 ± 859,3 *versus* 49,1 ± 76,3 Ul/L, p = 0,011) e ALT (227,4 ± 597,4 *versus* 53,8 ± 144,5 Ul/L, p = 0,023) mais altos. A presença de 3-MIA relacionava-se com maior espessura do septo interventricular (11,7 ± 3,2 *versus* 13,0 ± 6,6 mm, p = 0,018) e maior número de dias de internamento (11,3 ± 6,9 *versus* 8,7 ± 6,7 dias, p = 0,012). O SMIA não se relacionava com o reinternamento por IC, mas a análise de sobrevivência revelou que a maior taxa de mortalidade aos 3 e 6 m se verificava nos D com 3-MIA, seguidos pelos D 2-MIA, e por fim surgiam os D com 0 ou 1-MIA (Kaplan-Meier: X2 = 9,99, p = 0,019 e X2 = 9,52, p = 0,023, respectivamente). A análise multivariada verificou que esta era independente das características diferenciadoras entre os grupos.
Conclusões: A presença do SMIA na ICA é frequente e constitui um factor independente de mau prognóstico. A avaliação da presença de SMIA na prática clínica permitirá uma abordagem mais individualizada, com um seguimento mais rigoroso e pesquisa de novos alvos terapêuticos.

P 54. CAN ALBUMIN PREDICT OUTCOMES IN PATIENTS WITH CHRONIC HEART FAILURE AND REDUCED EJECTION FRACTION?

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Introduction: Heart Failure with reduced ejection fraction (HFrEF) is a major public health concern. HFrEF patients are frequently reassessed during the course of their illness, which instigated the search for biomarkers for serial evaluations. Hypoalbuminemia is common in the presence of certain chronic diseases, usually associated with a worse prognosis. Although low levels of albumin are commonly found in patients with HFrEF, the relationship between them isn't totally defined.
Objectives: To determine the prognostic value of hypoalbuminemia in patients with HFrEF.
Methods: We retrospectively evaluated patients with HFrEF, followed in a heart failure centre. Patients whose value of albumin was not determined initially were excluded. The population was characterized according to their clinical, laboratorial and echocardiographic characteristics. Patients were divided in two groups, based on the presence of hypoalbuminemia (≤ 3,4 g/dL). The adverse events considered were the occurrence of HF hospitalizations or death.
Results: We studied 167 patients (61% were males) with a mean age of 68 ± 11 years and a median left ventricle ejection fraction (LVEF) of 31 ± 8%. The mean value of albumin was 3.5 ± 0.6 g/dL and 41% of the patients presented with hypoalbuminemia. Body mass index (BMI) was lower (19 kg/m^2 *versus* 24 kg/m^2, p = 0.01) and brain natriuretic peptides (BNP) values were higher in patients with lower values of albumin (255 [109-1020] pg/ml *versus* 152 (42-356) pg/ml, p = 0.01). Also, patients with hypoalbuminemia were less often treated with mineralocorticoid receptor antagonists (18% *versus* 46%, p < 0.001). In multivariable Cox regression analysis, hypoalbuminemia was independently associated with HF hospitalizations and showed a tendency towards the occurrence of death (Tables 1 and 2).

Table 1. HF hospitalizations – multivariate analysis

	HF hospitalizations	
	OR (CI 95%)	P
Hypoalbuminemia (g/dl)	2,37 (1,12-5,0)	0,02
Age (years)	1,03 (0,99-1,07)	0,11
BMI (kg/m2)	1,02 (0,98-1,05)	0,35
Hemoglobin (g/dl)	0,95 (0,81-1,10)	0,47
Urea (g/dl)	1,0 (0,99-1,0)	0,75
NYHA ≥ III	0,85 (0,29-2,4)	0,76
LVEF (%)	1,02 (0,98-1,06)	0,34

Table 2. Death – multivariate analysis

	Death	
	OR (CI 95%)	P
Hypoalbuminemia (g/dl)	9,55 (1,94-47,8)	0,06
Age (years)	1,01 (0,94-1,01)	0,77
BMI (kg/m2)	1,0 (0,94-1,07)	0,92
Hemoglobin (g/dl)	0,51 (0,33-0,81)	0,04
Urea (g/dl)	1,0 (0,99-1,02)	0,58
NYHA ≥ III	0,21 (0,04-1,06)	0,06
LVEF (%)	0,92 (0,84-1,0)	0,06

Conclusions: In this group of patients, hypoalbuminemia was independently associated with HF hospitalizations and showed a tendency towards the occurrence of death. These findings suggest that albumin may predict outcomes in HFrEF patients with incremental value besides BMI and cachexia states.

Sábado, 27 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 1 - ÉCRAN 10 - ARRITMOLOGIA

P 55. ACCURACY OF A NON-INVASIVE EPICARDIAL AND ENDOCARDIAL ELECTROPHYSIOLOGY SYSTEM TO ASSESS THE MECHANISM AND SITE OF ORIGIN OF DIFFERENT TYPES OF SUPRAVENTRICULAR AND VENTRICULAR ARRHYTHMIAS

Leonor Parreira[1], Pedro Adragão[2], Pedro Carmo[2], Joana Pinho[3], Rafael Jerónimo[3], Diogo Cavaco[2], João Carmo[2], Pedro Gonçalves[3], Hugo Marques[3], Francisco Costa[4], Margarita Budanova[3], Stepan Zubarev[3]

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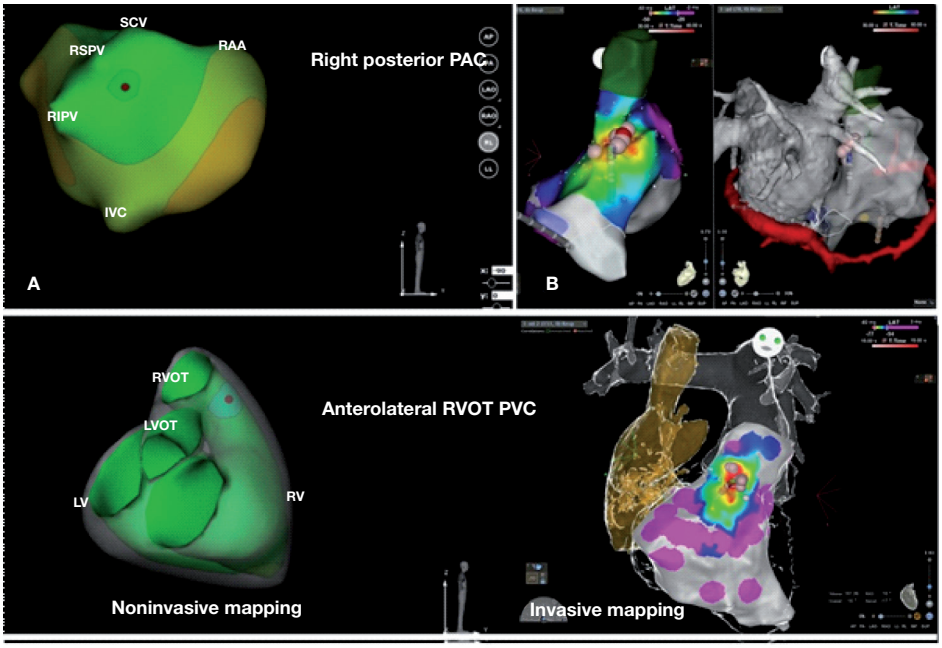
Introduction: Recently a novel non-invasive epicardial and endocardial electrophysiology system (NEES) based on electrocardiographic recording has proven effective in assessing the origin of premature ventricular contractions (PVC).



P 55 Figure

Objectives: Assess the accuracy of this system, for mapping different arrhythmic substrates.
Methods: The study enrolled patients with different types of arrhythmias referred to our center for catheter ablation. Non-invasive mapping was performed with the NEES, based on body surface electrocardiograms of a maximum of 224 electrodes and computed tomography imaging data. Unipolar electrograms were reconstructed on the epicardial and endocardial surfaces. All patients underwent mapping and ablation with the Carto™ system and the magnetic navigation system Stereotaxis™. The mechanism of the arrhythmia, the origin in case of focal arrhythmias, the critical isthmus in cases of macroreentry were compared.
Results: We enrolled 19 patients. Twelve with PVCs, 3 with premature atrial contractions and 4 with atrial flutter. The mapping was possible even in the presence of rare PVCs or PACs. We found a mechanism concordance in all patients. In patients with PVCs there was concordance in relation to the origin in 10 patients and no concordance in two patients, however the RF applications in these two patientes in accordance with Carto were unsuccessful. There was concordance in all supraventricular arrhythmias in relation to origin and mechanism.
Conclusions: The NEES correctly identified the mechanism and origin of the arrhythmia in patients that were successfully ablated whether due to a focal or macroreentry mechanism. The accuracy even with a small number of arrhythmia beats renders it especially useful for non-sustained or non-tolerated arrhythmias.

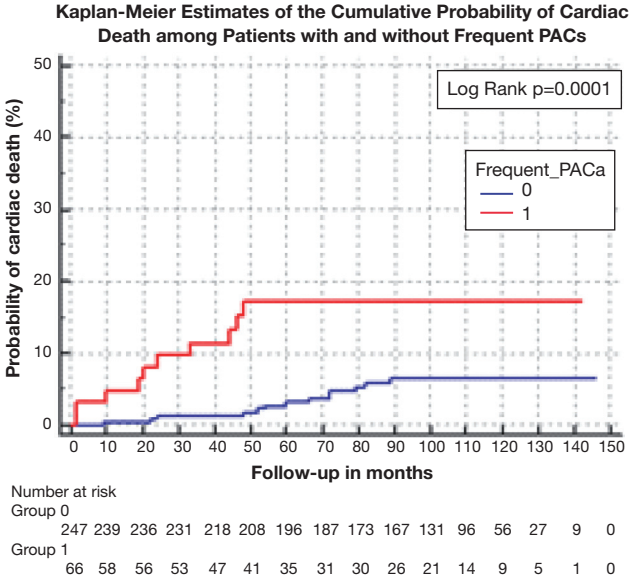
P 56. FREQUENT SUPRAVENTRICULAR ECTOPY AS AN INDEPENDENT RISK MARKER OF ADVERSE OUTCOME IN PATIENTS WITH FREQUENT PREMATURE VENTRICULAR CONTRACTIONS

Leonor Parreira, Rita Marinheiro, Dinis Mesquita, Pedro Amador, José Maria Farinha, Marta Fonseca, Ana Fátima Esteves, António Candjondjo, Artur Lopes, Duarte Chambel, Cláudia Lopes, Rui Caria

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

Introduction: Frequent premature ventricular contractions (PVCs) have been associated with an adverse prognosis in patients with heart disease, especially if non-sustained ventricular tachycardias (NSVT) are present.
Objectives: The aim of this study was to evaluate if the presence of excessive supraventricular ectopy adds an additional risk of adverse outcome in patients with frequent PVCs.
Methods: We retrospectively evaluated 1967 consecutive 24-h Holter monitoring performed between 2006 and 2010 in a single center. We selected patients with frequent PVCs defined as more than 40 PVCs/h. Patients with atrial fibrillation were excluded. We studied two groups according to the

	Univariable Analysis			Multivariable Analysis		
	OR	95% CI	P value	OR	95% CI	P value
Age	1.028	0.988-1.069	0.168	—		
Male gender	1.294	0.534-3.149	0.570	—		
Frequente PACs	3.273	1.364-7.852	0.008	3.416	1.218-9584	0.020
LV fractional shortening	0.924	0.883-0.966	0.001	0.967	0.917-1.019	0.059
Left atrium diameter	1.120	1.055-1.189	<0.0001	1.051	0.973-1.136	0.205
SHD	4.106	1.572-10.721	0.004	2.210	0.641-7.626	0.209
Anti-arrhythmic drugs	0.702	0.280-1.750	0.450	—		
Number of PVCs/1000	0.943	0.856-1.038	0.228	—		
NSVT	1.861	0.730-4.744	0.193	—		
ICD	0.211	0.69-0.641	0.006	0.316	0.089-1.124	0.075



further presence of frequent premature atrial contractions (PACs) defined as more than 40 PACs /h. We evaluated the clinical, echocardiographic and Holter variables. The primary endpoint was cardiac death defined as death due to heart failure, sudden death, or acute coronary syndrome.
Results: We studied 312 patients with more than 40 PVCs/h. 65 patients had also frequent PACs. Those patients were older (75 [67-80] *versus* 67 [58-75] years, p < 0.0001) and had larger left atrium diameter (45 [40-48] mm *versus* 38 [35-43], p < 0.0001). The two groups did not differ in relation to the presence of structural heart disease (SHD) and left ventricular function, or other Holter and echocardiographic parameters. During a median follow-up of 46 (20-72) months, 23 patients died of cardiac causes. The presence of frequent PACs was independently associated with the occurrence of cardiac death (the univariable and multivariable analysis are displayed in the Table). Kaplan-Meier estimates of cardiac death during the period of follow-up in both groups are shown in the Figure.
Conclusions: In this group of patients with frequent PVCs, the presence of frequent PACs was independently associated with increased cardiac mortality, thus identifying a subgroup of patients with a worse prognosis.

P 57. SUBCLINICAL CORONARY ARTERY DISEASE IN ATRIAL FIBRILLATION PATIENTS SUBMITTED TO PULMONARY VEIN ISOLATION

Mariana Gonçalves, Francisco Costa, António Ferreira, Pedro Adragão, Pedro Carmo, Diogo Cavaco, Francisco Morgado, João Abecasis, Carla Saraiva, Daniel Matos, António Tralhão, Miguel Mendes

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

Introduction: Coronary artery disease (CAD) has relevant implications for atrial fibrillation (AF) therapy both for oral anticoagulation (a significant risk factor in the CHADSVASC score) and for antiarrhythmic drugs eligibility. AngioCT is frequently performed before ablation to exclude intracardiac thrombus and collect left atrium anatomy.
Objectives: To evaluate the incidence of previously unknown coronary artery disease in a cohort of patients referred to AF ablation.
Methods: 516 consecutive patients, admitted for AF ablation from October 2015 to October 2018, underwent angioCT to exclude intracardiac thrombus and were further evaluated for CAD. Obstructive CAD was defined by lesions > 50%. Average age was 64 years old (± 0,54), 39% were female, 61% hypertensive, 49% with dyslipidemia, 44% had previous or active smoking habits and 10% were diabetic. 10% of patients had previously known CAD (prior acute coronary syndrome or angioplasty). 121 (23%) were on AF during the exam. Coronary segments were not evaluated in 60 patients (12%) by technical reasons.
Results: Among patients without known CAD, 45% had no coronary disease. With the evaluation of the segments that was possible to achieve, 33% had non obstructive coronary disease, 10% had obstructive disease, and 20% (n = 9) of these had a > 70% coronary stenosis by angioCT. In this group of patients, CHA_2DS_2-VASc changed in 9,6% of patients (n = 44), from which 31,8% (n = 14) had a CHA_2DS_2-VASc of 0 or 1. When analyzing patients with every segment evaluable and obstructive coronary disease (n = 33), angioCT allowed to identify CAD in the left main (12% of patients), left descending artery (73%), circumflex artery (24%) and right coronary artery (39%).
Conclusions: In this cohort of patients undergoing AF ablation, the prevalence of unknown significant coronary disease was in accordance with previous reported studies for the general asymptomatic population, similar in patients with or without AF (11%), of whom 20% had one stenosis > 70%. Identification of higher risk patients by angioCT, may allow for more accurate classification of embolic risk with repercussion in anticoagulation decision and contraindication in class IC antiarrhythmic drugs.

P 58. ISOLATION OF PULMONARY VEINS WITH DUTY-CYCLED CIRCULAR MULTI-POLAR CATHETER: RANDOMIZED CONTROLLED CLINICAL TRIAL

João Sousa[1], Nuno Cortez-Dias[2], Luís Carpinteiro[2], Gustavo Lima da Silva[2], Inês Gonçalves[2], Afonso Nunes-Ferreira[2], Joana Quaresma[2], Ana Bernardes[2], Sílvia Sobral[2], Sara Neto[2], Céu Barreiros[2], Fausto J Pinto[2],

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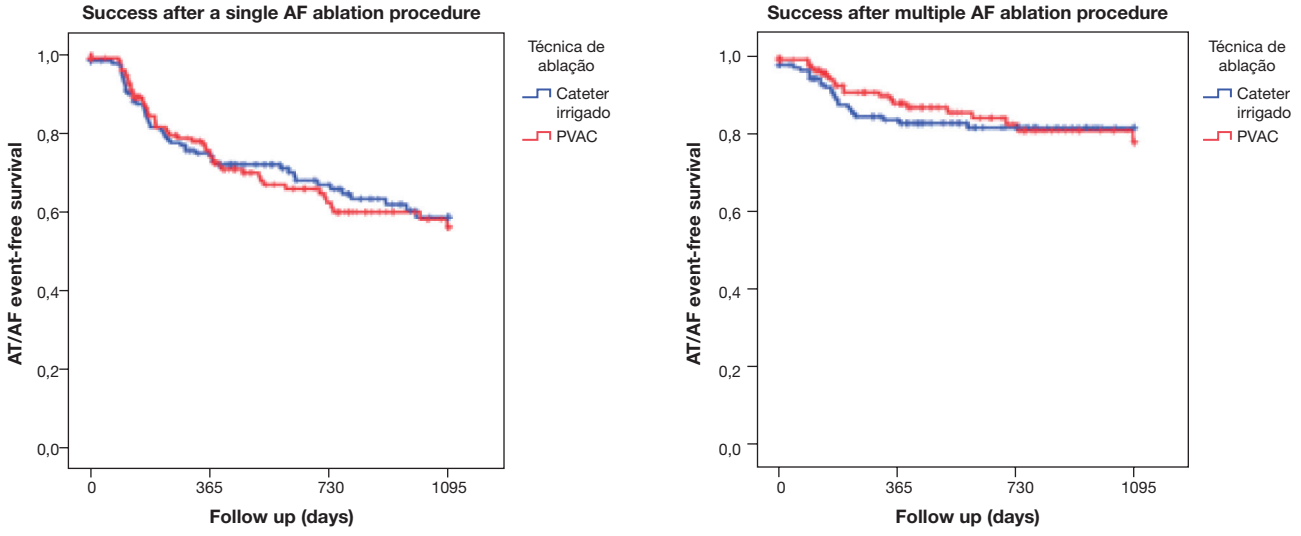
Introduction: The isolation of the pulmonary veins (PVI) is the central element in the ablation of atrial fibrillation (AF), and can be obtained with different ablation modalities. The *duty-cycled* circular multi-pole catheter PVAC® (Medtronic) allows linear application of radiofrequency energy, with the production of circumferential lesions. Conceptually, it can make ablation simpler and faster in patients with favorable anatomy.
Objectives: To evaluate the safety and efficacy of ablation with a PVAC® catheter and to compare it with the conventional technique (TCv, point-to-point, with irrigated catheter).
Methods: Clinical trial with single-blinded patients with AF refractory to antiarrhythmic therapy, randomized (1:1) for ablation with PVAC® or TCv. The ablation strategy consisted of PVI, complemented with ablation of the cavo-tricuspid isthmus in patients with history of concomitant flutter. Monitoring was performed with a 7-day event loop recorder at 3, 6 and 12 months and annually from the 2nd year. Success was defined by AF-free survival or any maintained supraventricular tachycardia (duration > 30 s).
Results: 354 patients (67.5% males, 58 ± 12 years, TCv: 175, PVAC: 179) were included, of which 26.2% had persistent AF and 14.7% had long-standing persistent AF, without differences between groups. Among the PVAC treated



P 58 Figure

patients, 98.3% of the pulmonary veins were isolated (620/666), similar to that of the TCv group (697/709, 93.1%). Although the complication rate was similar in both groups (PVAC: 4.9% *versus* TCv: 7.8%; p = ns), the risk of hemopericardium was lower with PVAC (0% *versus* 4.6%; p = 0.013). Two patients treated with PVAC developed stroke (1.13% *versus* 0%; p = ns). The duration of the procedure was lower among the patients treated with PVAC (136 [100-180] *versus* 230 [188-270] min; p < 0.001), with no difference in fluoroscopy time (24.4 [14.5-36.8] *versus* 27.1 [17.0-45.0] min). The success rate after 1st ablation at 36 months was 68%, with no differences between groups. The success rate after multiple ablations increased to 85.8%, with no differences between groups.
Conclusions: The multipolar PVAC catheter can represent an added value in AF ablation, making the procedure simpler and faster, ensuring similar efficacy to the conventional technique and with a lower risk of cardiac tamponade. The present trial suggests the need for clinically manifested stroke risk surveillance, which may be increased with this technique.

P 59. INCREASED PLASMA HOMOCYSTEINE PREDICTS EARLY ATRIAL FIBRILLATION RECURRENCE AFTER ELECTRICAL CARDIOVERSION

Daniel Faria[1], David Roque[1], João Ferreira[1], Hilaryano Ferreira[2], Marco Beringuilho[1], Miguel Santos[1], Francisco Madeira[1], Nuno Cabanelas[1], Mariana Faustino[1], João Augusto[3]

[1]Hospital Prof. Doutor Fernando Fonseca. [2]Hospital Fernando Fonseca, EPE. [3]Barts Heart Centre, Barts Health NHS Trust, Londres.

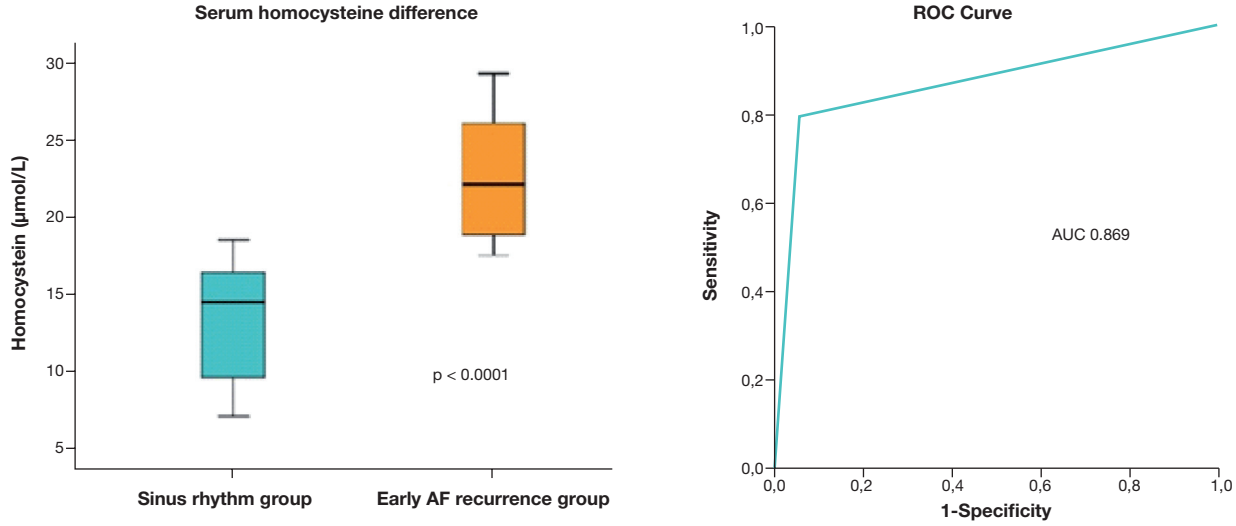
Introduction: Previous studies suggest that inflammatory markers are elevated in patients with atrial fibrillation (AF). The methionine-homocysteine cycle that regulates both methylation reactions and redox balance, known as methoxistasis, is disturbed in various inflammatory states and correlates with poorer outcomes. Plasma homocysteine levels can be used as a general gauge of deviation from methoxistasis and abnormally high levels are related with oxidative stress, inflammation, atrial remodeling and fibrosis.
Objectives: To evaluate if elevated plasma homocysteine is a predictor of early AF recurrence after electric cardioversion (EC).
Methods: We prospectively enrolled 57 patients who were submitted to EC for non-permanent AF. Data collected included demographics, clinical characteristics, inflammatory biochemical markers before EC as well as ECG before and after EC. Both transthoracic and transoesophageal echocardiograms were performed prior to EC in all patients. Patients with known chronic systemic inflammatory disease, active infection, cancer, heart failure and coronary artery disease were excluded. The choice of the antiarrhythmic drug after EC was left at the discretion of the attending physician. After EC, patients were routinely monitored with electrocardiogram and 24-h Holter for AF recurrence for 12 months. Early AF recurrence was defined if occurring until 30 days after EC.
Results: A total of 48 patients were included in the final analysis. Mean age was 63.8 ± 13.2 years, 54.2% were males. Follow-up was achieved in 93.8% of our population. AF recurred in 46.6% (n = 21) and mortality rate was 8.9% (n = 4). Serum homocysteine levels were significantly higher in patients with early AF recurrence (22.84 *versus* 12.82 µmol/L, p < 0.0001; Figure 1). Serum homocysteine yielded a good diagnostic performance in predicting early AF recurrence using receiver operating characteristic analysis (area under the curve of 0.869; Figure 2). Using the cut-off of 17.65 µmol/L, sensitivity for early AF recurrence was 80% and specificity was 94%. Kaplan-Meier analysis showed a significantly higher early AF recurrence rate in patients with serum homocysteine levels > 17.65 µmol/L (75% *versus* 10% in patients with homocysteine ≤ 17.65 µmol/L, log-rank p = 0.001).
Conclusions: A higher oxidative stress and pro-inflammatory state as reflected by homocysteine levels is associated with early recurrence of AF after electric cardioversion.

P 60. INTRACARDIAC ECHOCARDIOGRAPHY FOR GUIDANCE OF PERCUTANEOUS LEFT ATRIAL APPENDIX OCCLUSION - A META-ANALYSIS

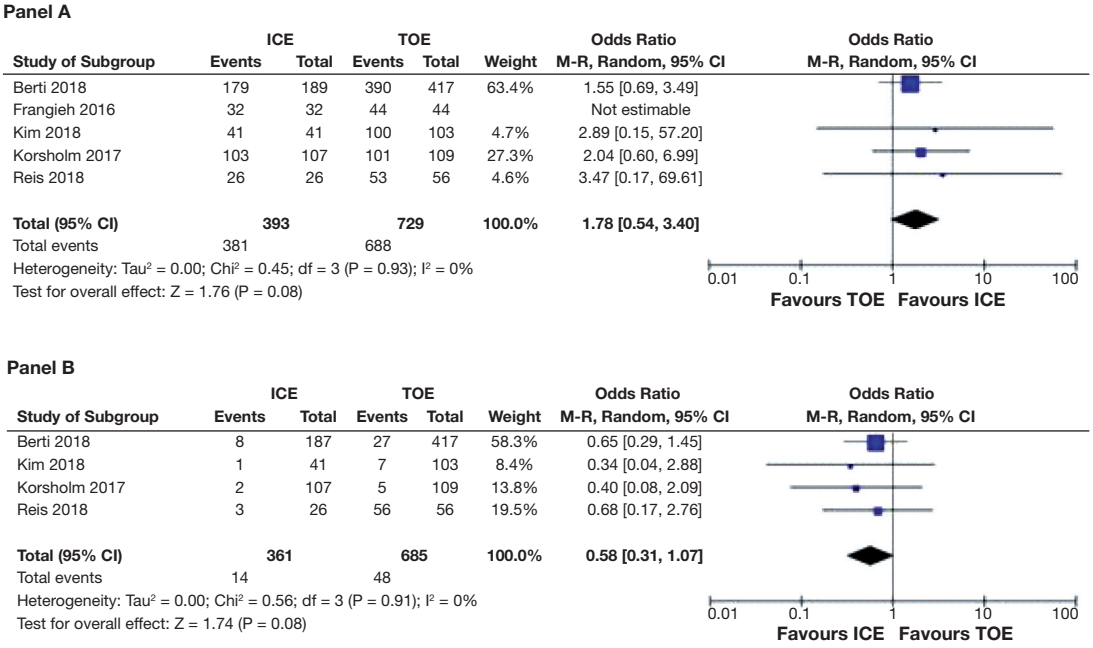
Joana M. Ribeiro, Rogério Teixeira, Luís Puga, João Lopes, José Pedro Sousa, Carolina Saleiro, Diana Campos, Alexandrina Siserman, Marco Costa, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra, EPE / Hospital Geral.

Introduction: Intracardiac echocardiography (ICE) use during percutaneous structural interventions has been growing. The most obvious advantage of ICE is that it obviates the need for general anaesthesia. Patients referred for percutaneous left atrial appendix occlusion (LAAO) often have multiple comorbidities and a high anaesthetic risk, and an ICE guided approach is particularly attractive in this setting.
Objectives: To assess the efficacy and safety of an ICE *versus* transoesophageal (TOE) guidance for percutaneous LAAO.
Methods: We searched the MEDLINE for all articles comparing ICE and TOE for guidance of percutaneous LAAO. Our primary endpoint was procedural success and secondary endpoints included procedural complications, procedural time and fluoroscopy time. Data was aggregated at time using random-effects meta-analysis models
Results: Five studies were included in the analysis, providing a total of 1122 patients - 393 patients in the ICE group and 729 patients in the TOE group. Procedural success was numerically higher in the ICE group, although statistical significance was not reached (pooled OR: 1,78; CI: 0.94-3.40, p = 0.08, I^2: 0%). Likewise, periprocedural complications tended to be lower in the ICE group, although this difference was also not significant (pooled OR:



P 59 Figure



P 60 Figure

0.58, CI: 0.31-1.07, p = 0.08, I²: 0%) —Figure 1, panel A and B, respectively. Procedural and fluoroscopy time were similar for both imaging strategies (mean difference -6.2 minutes, CI: -18.8 to 6.4, p = 0.33 for procedural time and mean difference 0.4 min, CI: -2.5 to 3.3, p = 0.77 for fluoroscopy time). **Conclusions**: To the best of our knowledge, this is the first meta-analysis to report that an ICE based approach can provide a similar efficacy and safety, compared to a TOE strategy, for guidance of percutaneous LAAO.

Sábado, 27 Abril de 2019 | 15H30-16H30

JARDIM INVERNO | POSTERS 2 - ÉCRAN 1 - DOENÇA CORONÁRIA

P 61. COMPARISON OF THE PRECISE-DAPT AND CRUSADE SCORES IN ACS PATIENTS FOR THE RISK OF MAJOR BLEEDING

José Guimarães[1], F.M. Gonçalves[1], S. Borges[1], M. Moz[1], J. Trigo[1], P.S. Mateus[1], J.I. Moreira[2]

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

Introduction: In Acute Coronary Syndrome (ACS) patients, major bleeding is a marker of worse short and long term prognosis and its risk should be assessed for therapeutic decisions. The PRECISE-DAPT score (PD) has been recently proposed as a bleeding risk score for decision-making in prolonged dual antiplatelet therapy and CRUSADE (CR) is an established score for the prediction of the in-hospital bleeding risk.
Objectives: Compare the predictive capacity of both scores in the risk of in-hospital and follow-up major bleeding in patients with ACS.
Methods: Retrospective study of patients with ACS periodically included in our center registry between October/2012 and November/2017. The CR and PD scores were calculated for each patient. The ISTH definition for major bleeding was the primary endpoint for in hospital and at 1 year. Their predictive capacity was assessed by ROC curve analysis and net reclassification improvement.
Results: We included 618 patients (67 ± 13 years; 74% males; 44% STEMI patients). The average CR was 26.4 ± 16.8 and the median PD was 17.9 (IQR: 9.7-28.7). The CR score classified 134 (21.7%) patients as high and very high risk (CR > 40) and PD 213 (34.5%) as high risk (PD > 25). During hospitalization 16 (2.6%) patients died and 30 (4.9%) had major bleeding. Both scores had a good predictive capability: CR AUC: 0.82 (95%CI: 0.79-0.85) and PD AUC: 0.80 (95%CI: 0.77-0.86) and there were no differences in reclassification analysis (p = 0.99).At 1 year, 32 (5.4%) patients died (3.4% from cardiovascular causes) and 30 (5.1%) had major bleeding. There were 2 intracranial bleedings. Major bleeding rate was increasingly higher in each category of the PD score (0%, 3.1%, 2.2%, 12.2%, p for trend < 0.001) and CR score (1.6%, 3.3%, 10.2%, 5.0%, 16.4% p for trend < 0.001). The PD and CR AUC were similar (PD: AUC: 0.79, 95%CI: 0.75-0.82 *versus* CR: AUC: 0.76, 95%CI: 0.72-0.79; p = 0.27), however 25% of patients were appropriately reclassified with PD's high risk category *versus* CR very high risk (NRI: 0.25; p = 0.049). PD high risk category had 80% sensibility and 71% specificity for major bleeding at 1 year and CR very high risk category 33% sensibility and 90% specificity.
Conclusions: The high incidence of major bleeding in the high risk groups should be regarded in the therapeutic strategy. The predictive power of both scores was similar for in-hospital bleeding, however, PRECISE-DAPT had a better performance in the follow-up by detecting a higher number of patients with major bleeding.

P 62. ANTITHROMBOTIC TREATMENT IN PATIENTS WITH NEW-ONSET ATRIAL FIBRILLATION AFTER ACUTE CORONARY SYNDROME

Ana Marques[1], Sofia Alegria[2], Ana Rita Pereira[2], Alexandra Briosa[2], Daniel Sebaiti[2], Cristina Martins[2], Inês Rangel[2], Rita Calé[2], Isabel João[2], Hélder Pereira[2], em nome dos investigadores do Registo Nacional de Síndromes Coronárias Agudas[3]

[1]Hospital Garcia de Orta, EPE. [2]Hospital Garcia de Orta. [3]CNCDC.

Introduction: ESC guidelines recommend an oral anticoagulant (OAC) after an Acute Coronary Syndrome (ACS) in Atrial Fibrillation (AF) patients (pts) at risk of stroke.

Objectives: To analyse the proportion of anticoagulated pts with new-onset AF during hospital stay due to ACS. To analyse predictors of OAC therapy prescription at discharge.
Methods: A multicentre, retrospective study was performed during 10/2010-3/1/2018 period. Were excluded pts with previous AF, AF in the electrocardiogram (EKG) at admission or pts without information regarding OAC at discharge. Univariate analysis and posteriorly multivariate analysis were performed to identify predictors of OAC prescription at discharge.
Results: Of 17.834 pts selected, were included 617 pts that fulfil our criteria (65% male, mean age 73 ± 12 years). At discharge, 161 (26.1%) pts were anticoagulated: 55% with a vitamin K antagonist, 45% with a direct oral anticoagulant. Age between 65-74 years, previous pacemaker (PCM)/ implantable cardioverter defibrillator implantation, non-ST segment elevation myocardial infarction (STEMI) or anterior STEMI occurrence, PCM rhythm in the EKG at admission, higher haemoglobin and lower left ventricular ejection fraction levels were positively associated with OAC prescription at discharge. Pts with ≥ 75 years, kidney disease, STEMI, particularly inferior STEMI, those submitted to coronary angioplasty or blood transfusion during hospital stay and those that evolved with cardiorespiratory arrest were significantly less anticoagulated at discharged. After multivariate analysis, the predictors of OAC prescription at discharge were non-STEMI (OR: 1.6, CI: 1,04-2.4, p = 0.03) occurrence and PCM rhythm in the EKG at admission (OR: 11, CI: 1.2-99.4, p = 0.04). Age ≥ 75 years (OR: 0.6, CI: 0.4-0.9, p = 0.02), kidney disease (OR: 0.4, CI: 0.2-0.8, p = 0.02), coronary angioplasty (OR: 0.6, CI: 0.4-0.95, p = 0.03) or cardiorespiratory arrest during hospitalization (OR: 0.3, CI: 0.13-0.86, p = 0.02) were factors that decreased the odd of OAC prescription at discharge.
Conclusions: In our cohort, the proportion of pts with ACS and new-onset AF during hospitalization that were anticoagulated at discharge was 26.1%, being the predictors of OAC prescription non-STEMI occurrence and PCM rhythm in the EKG at admission. Age ≥ 75 years, kidney disease, coronary angioplasty performance or cardiorespiratory arrest during hospital stay were factors that decreased the odd of OAC prescription at discharge.

P 63. TEMPO ENTRE INÍCIO DE SINTOMAS E PRIMEIRO CONTACTO MÉDICO NO ENFARTE AGUDO DO MIOCÁRDIO COM SUPRA-ST: QUEM SÃO OS ATRASADOS?

Hugo da Silva Antunes[1], Luísa Gonçalves[1], Júlio Pereira[1], Luís Abreu[1], Miguel Correia[1], Inês Almeida[1], Luís Nunes[1], em nome dos investigadores do Registo Nacional de Síndromes Coronárias Agudas[2]

[1]Centro Hospitalar Tondela-Viseu, EPE / Hospital de São Teotónio, EPE. [2]CNCDC - Centro Nacional de Coleção de Dados em Cardiologia.

Introdução: O diagnóstico e a instituição da terapêutica de reperfusão atempada constituem a chave do sucesso na abordagem do enfarte agudo do miocárdio com supradesnivelamento do segmento ST (EAMcST). A minimização do tempo total de isquemia tem impacto prognóstico e constitui um índice de qualidade dos cuidados de saúde. Apesar de todos os programas de sensibilização para o reconhecimento de sintomas pela população, é ainda grande o atraso na procura dos serviços médicos.
Objetivos: Caracterizar o subgrupo de doentes (D) admitidos por EAMcST com maior atraso na ativação dos serviços de emergência médica.
Métodos: De uma população de D por EAMcST englobados num registo nacional multicêntrico, foram incluídos todos os D em que foi possível calcular o tempo entre o início dos sintomas e o primeiro contacto médico (PCM). De acordo com esse tempo, os D foram divididos em 2 grupos (G): GA se tempo < 2 h; e GB se tempo ≥ 2 h. Avaliados parâmetros demográficos e clínicos assim como as complicações no internamento. Realizada regressão logística para identificar preditores de atraso entre o início dos sintomas e o PCM.
Resultados: De um total de 16237 D, foram incluídos 5855 D (75,6% sexo masculino; 63 ± 14 anos). A maioria dos doentes (n = 3141, 53,6%) pertence ao GB, com um significativo atraso entre sintomas e PCM (média de 460 minutos *versus* 63 min, p < 0,001). O GB caracteriza-se por D mais velhos (65 ± 13 *versus* 61 ± 13, p < 0,001), maioritariamente do sexo feminino (26,8% *versus* 21,6%, p < 0,001), e mais frequentemente com antecedentes de hipertensão arterial (63,5% *versus* 56,9%, p < 0,001), diabetes (26,5% *versus* 21,6%, p < 0,001), demência (2,5% *versus* 1,4%, p = 0,005) e queixas prévias de angor (15,0% *versus* 11,3%, p < 0,001). Os D do GB apresentaram mais frequentemente queixas atípicas - fadiga/cansaço (0,5% *versus* 0,1%, p = 0,011) e deslocaram-se mais vezes ao hospital por meios próprios (42,5% *versus* 37,4%, p < 0,001). Os D com tempo de PCM ≥ 2 h evoluíram mais frequentemente com insuficiência cardíaca (18,5% *versus* 15,7%, p = 0,005) e morte no internamento (5,9% *versus* 4,0%, p = 0,001). Realizada regressão logística, identificando-se como preditores de atraso entre o início dos sintomas e o PCM o facto dos D apresentarem idade ≥ 65 anos (OR: 1,66, IC95%: 1,47-1,87), diabetes (OR: 1,22, IC95%: 1,07-1,40), angor prévio (OR: 1,42, IC95%: 1,18-1,70) e presença de demência (OR: 1,61, IC95%: 1,01-2,54).
Conclusões: Este estudo identifica um subgrupo de D (idosos, diabéticos, angina prévia e demência) que se atrasam significativamente no reconhecimento de sintomas e procura de ajuda médica, deslocando-se por meios próprios numa elevada percentagem, com impacto prognóstico demonstrado. Deste modo, são estes os D que precisam de maior sensibilização e educação para a saúde de forma a atingir uma redução no tempo até ao tratamento e, consequentemente, reduzir sua a morbi-mortalidade.

P 64. REVASCULARIZATION STRATEGIES IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION AND CARDIOGENIC SHOCK - RESULTS FROM THE PORTUGUESE REGISTRY ON ACUTE CORONARY SYNDROMES (PROACS)

Sofia Alegria[1], Ana Marques[1], Ana Rita Pereira[1], Alexandra Briosa[1], Daniel Sebaiti[1], Ana Catarina Gomes[2],Gonçalo Jácome Morgado[1], Rita Calé[1], Cristina Martins[1], Inês Rangel[1], Hélder Pereira[1], Investigadores do Registo Nacional de Síndromes Coronárias Agudas[3]

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Introduction: In patients with acute myocardial infarction (MI) and cardiogenic shock (CS), revascularization of the culprit artery is associated with an improvement in prognosis. However, a significant proportion of patients present with multivessel disease (MVD). Although the previous guidelines recommended complete revascularization during the index procedure, recent data challenged this strategy, so the more recent guidelines favour the revascularization of the culprit artery only.
Objectives: To compare outcomes associated with different revascularization strategies in patients with MI and CS.
Methods: Observational retrospective study of patients admitted with acute MI, CS, and MVD, included in the ProACS between October 2010 and January 2018. Three revascularization strategies were considered: complete during the index procedure - group 1; complete staged during the index hospitalization - group 2; and incomplete during the index hospitalization - group 3. Considering the small number of patients in group 2, the comparison was performed between groups 1-2 and group 3 (complete *versus* incomplete revascularization during the index hospitalization). The primary endpoint was a composite of in-hospital death or reinfarction.
Results: Of 16.634 patients with acute MI included, 329 presented with CS, of which 127 were submitted to coronary angiography and had MVD, and were considered in this analysis (21% in group 1-2 and 79% in group 3). Most patients were male (69%), with a mean age of 70±12 years and 36% were admitted to non-percutaneous coronary intervention centres. The most common diagnosis was STEMI (93%). The primary endpoint occurred in 36.9% of patients and in-hospital mortality was 34.2%.
Patients in groups 1-2 were younger (62 ± 10 *versus* 73 ± 11 years), had a higher prevalence of smoking habits (46 *versus* 17%) and family history of premature coronary artery disease (13 *versus* 1%, p < 0.05 in all). On admission patients in groups 1-2 were more often in sinus rhythm (96 *versus* 75%) and presented a lower median value of BNP (100 *versus* 471, p < 0.02 in both). The primary endpoint occurred in 36% of the patients in groups 1-2 and 38% of the patients in group 3 (p = 0.712). The rates of in-hospital mortality, stroke, and major bleeding were also similar between groups, while there was a higher rate of reinfarction in patients submitted to complete revascularization (7 *versus* 0%, p = 0.044). The predictors of in-hospital mortality were the presence of left ventricle systolic dysfunction on admission (OR: 40.52), while therapy with angiotensin-converting enzyme inhibitors during hospitalization had a protective effect (OR: 0.11).

Conclusions: Among patients with acute MI, CS and MVD included in the ProACS, there was no significant difference between complete and incomplete revascularization during the index hospitalization, regarding the occurrence of the composite endpoint of in-hospital death or reinfarction.

P 65. THE TIMING OF NEW-ONSET ATRIAL FIBRILLATION DURING HOSPITALIZATION AND ITS PROGNOSTIC RELEVANCE IN ACS PATIENTS

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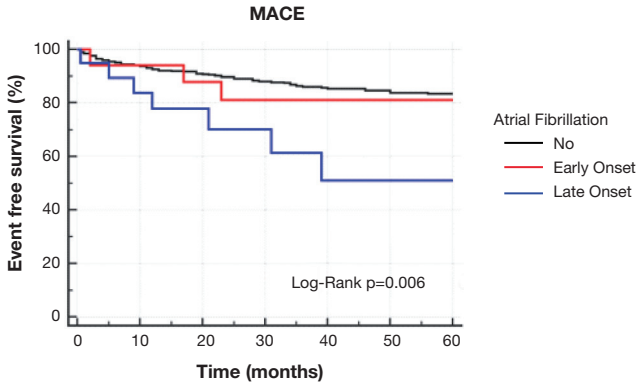
Introduction: New-onset (New) atrial fibrillation (AF) in Acute Coronary Syndrome (ACS) patients (pts) is a well-established marker of worse prognosis. The impact of the timing where AF occurs during hospitalization isn't well studied and it could provide valuable information for prognostic and treatment decisions.
Objectives: Compare the presence of early-onset AF (EAF), late-onset AF (LAF) and no AF in ACS pts and evaluate its long term prognostic impact.
Methods: Retrospective study of pts with ACS periodically included in our center registry between October/2012 and November/2017. Pts with AF present at hospital admission and pts who died in the first 24 h were excluded. Pts were classified as having no AF; EAF (first 24 hours of hospitalization) and LAF (after 24 h). The primary endpoint was a composite of cardiovascular (CV) death, infarction and stroke (MACE) in the follow-up.
Results: We included 571 pts (66 ± 13 years; 74% males; 45% STEMI) and 39 (6.9%) had New AF, 18 (3.2%) with EAF and 21 (3.7%) with LAF. Pts with New AF, particularly LAF, were older (LAF: 75 ± 9; EAF: 73 ± 13; No AF: 65 ± 13; p < 0.001), had more hypertension (86%, 78%, 63%; p = 0.046), dyslipidemia (91%, 33%, 55%; p = 0.001), cerebrovascular disease (38%, 17%, 37%; p < 0.001) and COPD (24%, 6%, 4%; p = 0.002). At admission, pts with New AF had a higher GRACE risk score (high risk GRACE: 71%, 89%, 36%; p < 0.001) with no differences between EAF and LAF (p = 0.247). During hospitalization New AF pts had a higher Killip class (≥ 2: 71%, 56%, 20%; p < 0.001) and lower ejection fraction (EF) (44 ± 15%, 49 ± 13% 51 ± 11%; p = 0.05). In New AF patients, the most frequent culprit artery was the right coronary in EAF (50%) and the anterior descending in LAF (60%; p = 0.043) and there were no differences in discharge hypocoagulation (p = 0.141). During a median follow-up of 44 months (IQR: 24-60), 78 (14.2%) pts died (7.5% from CV causes) and 87 (15.2%) had MACE. Pts with LAF had a higher risk of MACE than those with no AF (p = 0.001) but not those with EAF (p = 0.78).
In multivariate analysis, after adjusting for GRACE and EF, only the presence of LAF was an independent predictor of MACE (LAF: HR: 2.54, CI95%: 1.15-5.59, p = 0.021; EAF: HR: 0.74, 95%CI: 0.24-2.50, p = 0.67).



Conclusions: In this study, pts with EAF and LAF were clearly different. LAF pts had more comorbidities and a significantly worse long term prognosis. This information could be considered when deciding hypocoagulation, however, randomized clinical trials are lacking.

P 66. SPONTANEOUS CORONARY ARTERY DISEASE: A SINGLE CENTER EXPERIENCE

Cátia Costa Oliveira[1], Glória Abreu[2], Isabel Campos[1], Paulo Medeiros[1], Carla Pires Rodrigues[1], João Costa[1], Carlos Galvão Braga[1], Jorge Marques[1]

[1]Hospital de Braga. [2]Centro Hospitalar do Tâmega e Sousa, EPE / Hospital Padre Américo, Vale do Sousa.

Introduction: Though underestimated, myocardial infarction due to spontaneous coronary artery disease (SCAD) is an increasingly prevalent entity. Nevertheless, there is still a lack of evidence regarding treatment.
Objectives: To investigate the characteristics and prognosis of patients with SCAD.
Methods: Single-center, retrospective study performed in patients hospitalized from January 2010 to December 2018 with diagnosis of SCAD (n = 52), regarding patient characteristics and outcomes (death, myocardial infarction, SCAD recurrence and stroke at discharge and during follow-up).
Results: Patients with SCAD were mainly female (78.8%) with median age of 55.6 years. Predisposing factors were identified in 36.5% of patients and precipitating factors in 23.1%. Non-ST elevation myocardial infarction (NSTEMI) was the main form of presentation (65.4%). The left anterior descending artery (LAD) was the most commonly involved (34.5%) and 5 patients had compromise of 2 or more non-contiguous arteries. Type 2 dissection was the most prevalent angiographic pattern (73.1%). Ejection fraction was reduced in 30.8%. The majority of patients (69.2%) were managed medically and the remaining patients underwent percutaneous coronary intervention (PCI) with second generation drug-eluting stents. PCI were mainly due to re-infarction during hospitalization (n = 4) or due to the nature of the territories involved (Left main or proximal LAD, n = 4). Eight patients re-infarcted while in the hospital and 5 during follow-up (SCAD was present in 4 patients: in 3 patients the event occurred in a coronary territory other than that of the index case, and in 1 patient it occurred in the previously affected territory). At discharge, 75% of patients were medicated with dual antithrombotic therapy. Over the period of follow-up, 3 patients develop heart failure and there were no registries of death or stroke. Fibromuscular dysplasia and inflammatory/connective tissue diseases were not investigated in our population. We are currently implementing a protocol with Rheumatology to rule-out these predisposing factors for SCAD. Ten patients were already involved and, in at least 1 patient, an inflammatory disease was diagnosed.
Conclusions: SCAD is mostly associated with young women with low cardiovascular risk. It is important to investigate predisposing factors since SCAD recurrence was not rare. Nevertheless, the prognosis of the disease in our population was good.

Sábado, 27 Abril de 2019 | 15H30-16H30

JARDIM INVERNO | POSTERS 2 - ÉCRAN 2 - DOENÇA VALVULAR

P 67. TRANSCATHETER AORTIC VALVE REPLACEMENT: A DURABLE ALTERNATIVE TO SURGICAL AORTIC VALVE APPROACH?

Francisco Fernandes Gama[1], Rui Campante Teles[1], Maria João Andrade[1], João Brito[1], Pedro Gonçalves[1], Gustavo Mendes[1], José Farinha[2], Luís Oliveira[3], Eduarda Horta[1], Carla Reis[1], Manuel Almeida[1], Jorge Ferreira[1], Miguel Mendes[1]

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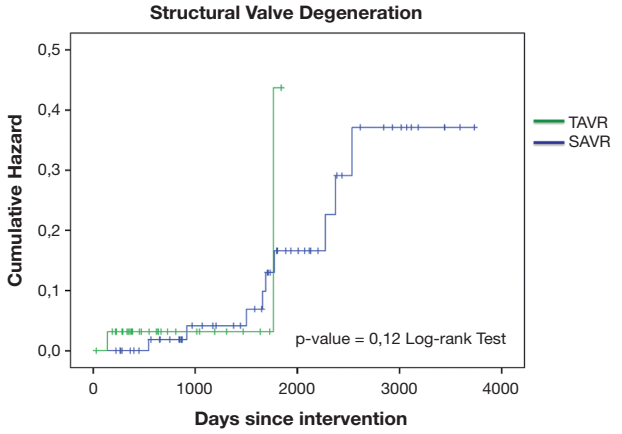
Introduction: Several trials are currently evaluating transcatheter aortic valve replacement for treating patients with low surgical risk and longer

life expectancies. The potential rapid progression of structural valve degeneration (SVD) in patients with renal failure can be used as a surrogate to compare transcatheter (TAVR) *versus* surgical (SAVR) bioprostheses durability.
Methods: Single-centre retrospective cohort study of consecutive severely depressed renal function patients (glomerular filtration rate ≤ 30 mL/min) that underwent surgical or trancatheter aortic valve replacement between September 2007 and October 2017, including 103 patients (37 TAVR *versus* 66 SAVR). At least one-year follow up was needed for study inclusion. SVD was accessed through echocardiographic criteria defined by Eltchaninoff et al. as a mean transvalvular gradient > 20 mmHg in combination with an increase of at least 10 mmHg from the 30-day echocardiography and/or regurgitation grade ≥ 3 that was not initially present. Kaplen-Meier analysis was performed to access superiority between strategies.
Results: Total follow up was available in 92% of overall patients (32 TAVR/62 SAVR). TAVR patients tended to have higher prevalence of diabetes, dyslipidemia, peripheral artery disease, previous myocardial infarction and previous cardiac surgery. Twelve pats revealed echocardiographic criteria of SVD, 3 within TAVR group (9.1%). SVD incidence by Kaplan-Meier analysis did not differ (p = 0,12 log-rank test; see Figure).



Conclusions: In renal failure patients, TAVR was as durable as SAVR.

P 68. PERCUTANEOUS MITRAL VALVE REPAIR WITH THE MITRACLIP SYSTEM - META-ANALYSIS *VERSUS* MEDICAL THERAPY

José Pedro Sousa[1], Rogério Teixeira[1], Joana Ribeiro[1], Luís Puga[1], João Gameiro[1], Carolina Négrier[1], Lino Gonçalves[2]

[1]*Centro Hospitalar e Universitário de Coimbra, EPE / Hospital Geral.* [2]*Centro Hospitalar e Universitário de Coimbra / Hospitais da Universidade de Coimbra.*

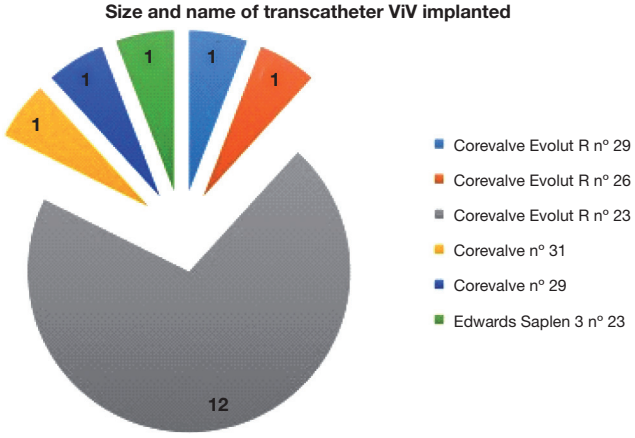
Introduction: Functional mitral regurgitation is a common finding in heart failure, increasing morbidity and mortality. Its management, either with pharmacotherapy or surgical correction, is controversial, with no consistent survival benefit. Percutaneous mitral valve repair (PMVR) with the MitraClip system provides an attractive option, but its impact on outcomes is not well established.
Objectives: To compare hard outcomes of a combination strategy of PMVR with MitraClip and medical therapy with those of medical therapy alone in patients with functional mitral regurgitation complicating myocardial dysfunction.
Methods: MEDLINE, Pubmed Central and Google Scholar databases were comprehensively searched for published studies enrolling patients with predominantly functional (≥ 80%) moderate-to-severe mitral regurgitation, while evaluating PMVR with MitraClip plus medical therapy *versus* medical therapy alone. A random-effects meta-analysis was performed. The primary efficacy endpoint was total mortality on follow-up, whereas cardiovascular mortality and hospital admission (compound measure of all-cause, cardiovascular and heart failure-specific hospitalizations) were regarded as secondary efficacy outcomes. 30-day mortality was the primary safety endpoint. Major bleeding demanding red blood cell transfusion, as a marker of vascular complications of the PMVR procedure, was also considered.
Results: Seven eligible studies were identified. Of these, two were randomized controlled trials and the others were observational. Overall, 3.015 patients were included, of whom 1.286 were treated with MitraClip plus medical therapy and 1.729 with medical therapy alone. The prototype patient was an elderly men with highly symptomatic (NYHA Class III-IV) heart failure, left ventricular systolic dysfunction of ischemic etiology, high estimated surgical risk and a pronounced burden of comorbidities, namely atrial fibrillation (nearly one half), chronic kidney disease and chronic obstructive pulmonary disease (about one fourth). Around one third had received resynchronization therapy. Clinical follow-up was documented at a median of 626 days. The addition of PMVR with MitraClip to medical therapy markedly reduced all-cause mortality (pooled OR: 0.51, p = 0.004, i^2 = 81%). An analogous impact was seen on cardiovascular mortality (pooled OR: 0.38, p = 0.02, i^2 = 89%) and hospitalization rates (pooled OR: 0.31, p = 0.01, i^2 = 94%). 30-day mortality was similar between groups (pooled OR: 0.91, p = 0.07) and major bleeding complicating the PMVR procedure was rare (5.6%).
Conclusions: In a high-risk sample of patients with functional moderate-to-severe mitral regurgitation, the addition of PMVR with MitraClip to medical therapy was associated with a significantly lower risk of all-cause and cardiovascular-specific death and hospital admission, while proving itself to be a safe procedure.

P 69. VALVE-IN-VALVE IMPLANTATION IN DEGENERATIVE AORTIC BIOPROSTHESIS. THE CURRENT STANDARD?

Mariana Gonçalves, Rui Campante Teles, Bruno Rocha, Afonso Oliveira, Catarina Brízido, João Brito, Tiago Nolasco, Pedro Araújo Gonçalves, Luís Raposo, Henrique Mesquita Gabriel, Manuel Almeida, José Pedro Neves, Miguel Mendes

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

Introduction: Valve-in-valve (VinV) procedural success usually requires a different approach compared to regular transcatether aortic valvular implants (TAVI).
Objectives: To evaluate the contemporary safety and efficacy of V-in-V procedures.
Methods: Longitudinal prospective registry including 17 consecutive patients with failing bioprosthesis since 2010 to 2018, mean age 80.4 ± 7.1 years, median LVEF 60% ± 6 IQR, median STS 4.7% ± 2.2 IQR. Failed valves were 8 Mitroflow (4 nº 19 and 3 nº 21 and 1 nº 23), 4 Epic (1 nº 21 and 3 nº 23), 3 homografts, 1 mosaic nº 23 and 1 perimount nº 25. The failure mechanism was mainly stenosis in 47%, mixed in 29% and regurgitation in 24%. VinV was performed with Corevalve in 94% of the cases, all by transfemoral route. Median length of stay was 7 days ± 16 IQR. The primary objective was the VARC-2 device success definition and the secondary endpoints were 1-year mortality and VARC-2 events.



Results: Procedural success was 71% (12/17): no mortality, 3 procedures with residual gradients > 20 mmHg (Mitroflow 19 and 21), 3 VinV with regurgitation ≥ moderate (2 homografts and 1 Epic 23). At 30 days, mortality occurred in 5.9% (1/17), successful PCI with preventive guidewire for acute coronary occlusion in 5.9% (1/17), new pacemaker insertion in 8.3% (1/12) and type 2 BARC criteria hemorrhage in 5.9% (1/17). At 1-year total mortality was 11.8% (2/17) and improvement in NYHA grade occurred in 80% (12/15) patients.
Conclusions: Transcatheter aortic valve-in-valve implantation was feasible and safe, albeit the rate of moderate paravalvular leak. This technique might become the first line therapy in a large range of degenerative aortic bioprosthesis.

P 70. TRIFECTA™ *VERSUS* PERCEVAL™ COMPARISON IN THE APPROACH OF THE SMALL AORTIC ANNULUS

Tiago Jürgen Millner, João Pedro Monteiro, Sara Simões Costa, Paulo Neves, Daniel Martins, Miguel Guerra, Paulo Ponce, Luís Vouga

Centro Hospitalar de Vila Nova de Gaia / Espinho.

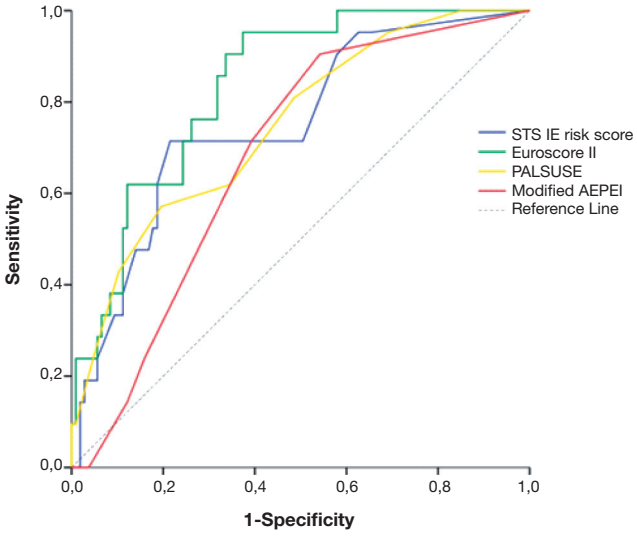
Introduction and objectives: Comparing the hemodynamic profiles of the Trifecta™ aortic bioprosthesis with glide technology (Trifecta GT™) sizes 19 and 21 with the Perceval™ aortic bio prosthesis (Perceval™) sizes S and M in their hemodynamic performance in patients who underwent surgical aortic valve replacement.
Methods: Data of patients that underwent aortic valve substitution using Perceval™ #S, Perceval™ #M, Trifecta GT™ #19 and Trifecta GT™ #21 between July 2016 and July 2018 in our surgical department where retrospectively compared in regard to their hemodynamic performance variables: peak transvalvular gradient and indexed aortic valve area. We excluded many patients using only echocardiographic data from our institution to guarantee for more precision of the hemodynamic data, and choose a 1 Perceval™ to 2 Trifecta GT™ analysis approach. The independent variables T test was used to search for statistical significance.
Results: Data of 54 patients were analyzed: 18 Perceval™ (13 size M and 5 size S) and 36 Trifecta GT™ (7 size 19 and 19 size 21). The hemodynamic data and post-operative clinical status were evaluated by transthoracic echocardiography and follow up visit respectively, in the frame of 3 to 12 months post-surgery. The mean peak transvalvular gradient and the indexed aortic valve area were 33.80 mmHg and 0.92 cm^2/m^2 for Perceval™ #S, 25.71 mmHg and 1.00 cm^2/m^2 for Perceval™ #M, 20.40 mmHg and 0.92 cm^2/m^2 for Trifecta GT™ #19, 21.90 mmHg and 1.00 cm^2/m^2 for Trifecta GT™ #21. There was no statistically significant difference in body surface area and left ventricular ejection fraction between groups. The difference in the peak transvalvular gradient was statistically significant for comparison of Perceval™ #S and Trifecta GT™ #19 ($p < 0.01$). No statistic significant differences were found in the peak transvalvular gradients between Perceval™ #M and Trifecta GT™ #21. No statistically significant differences were found concerning the indexed aortic valve area.
Conclusions: The hemodynamic performance of the Trifecta GT™ #19 seems superior to that of Perceval™ #S in this small population. The clinical relevance of this finding should be confirmed in a study with a bigger population, ideally randomized and prospective.

P 71. ASSESSMENT OF PERIOPERATIVE MORTALITY RISK IN PATIENTS WITH INFECTIVE ENDOCARDITIS UNDERGOING CARDIAC SURGERY: PERFORMANCE OF THE EUROSCORE II, PALSUSE, STS RISK SCORE FOR IE AND MODIFIED AEPEI SCORE

Catarina Brízido, Sérgio Madeira, Paulo Oliveira, Cláudia Silva, Pedro Lopes, Francisco Gama, Marta Marques, José Pedro Neves, Miguel Mendes

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

Introduction and objectives: Recently, several perioperative risk predictive tools in the setting of infective endocarditis (IE) have emerged. We aimed to validate the recently developed PALSUSE, STS risk score for IE and modified AEPEI score and to compare their performances with the established euroscore II.
Methods: We retrospectively accessed 128 patients from a single center registry who underwent heart surgery for active infective endocarditis between January 2007 and November 2014. Discrimination and calibration of models were assessed by receiver operating characteristic curve analysis and Hosmer-Lemeshow test.
Results: Perioperative mortality was 16.4% (n = 21). The median euroscore II, PALSUSE, STS risk score for IE and modified AEPEI score were 6.6% IQ [3.5-18.2], 5 IQ [3-7], 25 IQ [16-32] and 1 IQ [0-1.8], respectively. Discriminative power was numerically higher for euroscore II (AUC of 0.83, 95%CI: 0.75-0.91) followed by STS risk score for IE (AUC of 0.75, 95%CI: 0.64-0.86), PALSUSE (AUC of 0.74, 95%CI: 0.64-0.86) and modified AEPEI (AUC of 0.68, 95%CI: 0.57-0.788) - Figure. The Hosmer-Lemeshow test showed good calibration for euroscore II ($p = 0.08$) and STS risk score for IE ($p = 0.03$) but not for PALSUSE ($p = 0.65$), modified AEPEI ($p = 0.12$).



Conclusions: All scores adequately stratified peri-operative risk in active infective endocarditis, however euroscore II in the overall comparison performed better in this population. Heterogeneity of performance of risk scores in different cohorts of infective endocarditis highlights the complexity of this disease.

P 72. A RISK PREDICTION SCORE FOR EARLY-MEDIUM TERM ADVERSE EVENTS IN PATIENTS WITH INFECTIVE ENDOCARDITIS

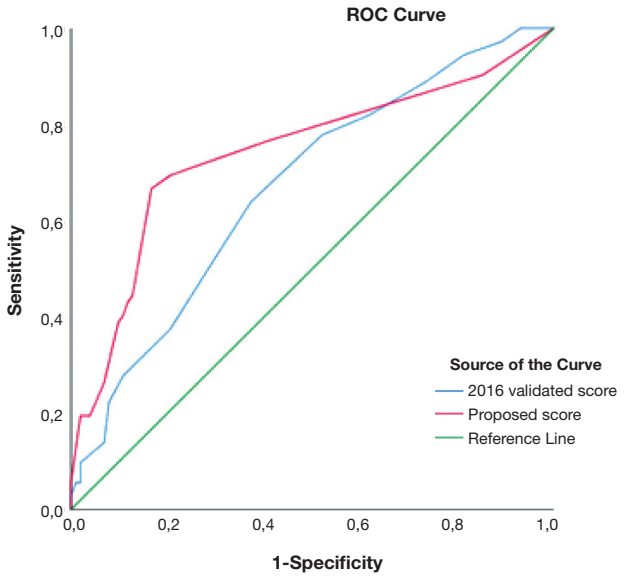
Ana Pereira, Alexandra Briosa, Inês Cruz, Ana Marques, Sofia Alegria, Ana Luísa Broa, Daniel Sebaiti, Ana Catarina Gomes, Ana Rita Almeida, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Host factors and complications have been associated with higher mortality and morbidity rates in infective endocarditis (IE). In 2016, a validated risk score for predicting 6-month mortality was published, based on 2 prospective multinational registries; not including Portugal as a participating country (*J Am Heart Assoc*. 2016;5:e2003016).
Objectives: To identify independent predictors of early-medium term adverse events on a Portuguese population with IE and to develop a score system for risk stratification. To assess the predictive value of the 2016 risk score in that population and compare the accuracy of both models.
Methods: Retrospective study including consecutive patients (pts) admitted to a tertiary center with the diagnosis of IE from 2006 to 2017. Clinical, echocardiographic and follow-up data were evaluated. Early-medium term

adverse events were a composite of 6-month mortality (including in-hospital death) and reinfection (≤ 6 months from the initial diagnosis). The proposed score was developed from the entire data set using the Cox proportional hazards model. The 2016 validated score, consisting of 14 variables, was applied to each case. Receiver operating characteristic (ROC) curves and area under curve (AUC) were calculated for both scores and used for comparison.

Results: 174 episodes of IE were included in a total of 167 pts (mean age 62.2 ± 16.2 years, 75.3% male). Native valve infection occurred in 73.6%. Aortic valve was the most affected and *Staphylococcus aureus* the mainly isolated agent. The adverse events occurred in 41.4% of cases: 6-month mortality rate was 40.2% (n = 70, 50 pts died during hospital stay) and reinfection rate 1.2% (n = 2). Multivariate Cox regression identified 4 independent predictors (only 1 protector): paravalvular abscess (HR: 2.1, 95%CI: 1.1-4.2, p = 0.03); heart failure development (HR: 1.9, 95%CI: 1.2-3.4, p = 0.01); progression to septic shock (HR: 3.6, 95%CI: 1.9-6.4, p < 0.01); cardiac surgery (HR: 0.6, 95%CI: 0.3-0.9, p = 0.04). The AUC was 0.74 (95%CI: 0.7-0.8, p < 0.01) for the proposed score which performed similarly to the 2016 validated risk score (AUC: 0.67, 95%CI: 0.6-0.8, p < 0.01).



Conclusions: In this population, IE was associated with a high rate of early-medium term adverse events. Comparing with the 2016 validated score, the proposed model seemed to have at least similarly accuracy for risk stratification of pts with IE and it included only 4 independent predictors, making it easier to apply.

Sábado, 27 Abril de 2019 | 15H30-16H30

JARDIM INVERNO | POSTERS 2 - ÉCRAN 3 - IMAGIOLOGIA CARDIOVASCULAR

P 73. AGREEMENT IN LEFT VENTRICULAR EJECTION FRACTION MEASURED BY ECHOCARDIOGRAPHY, GATED SPECT AND CARDIAC MAGNETIC RESONANCE - A REAL-WORLD ANALYSIS

Christopher Strong, António Miguel Ferreira, João Abecasis, Sara Guerreiro, Pedro Freitas, Carla Saraiva, Maria João Andrade, Regina Ribeiras, Manuel Canada, António Ventosa, João Calqueiro, Miguel Mendes

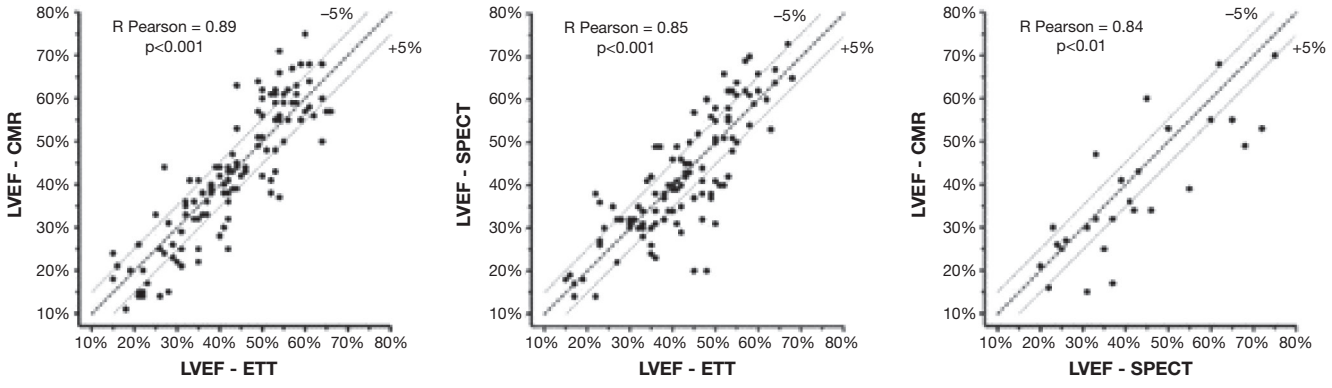
Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de Santa Cruz.

Introduction: Left ventricular ejection fraction (LVEF) plays a decisive role in many important clinical decisions. The purpose of this study was to assess the agreement in LVEF measured by commonly used imaging modalities in a real-world setting.

Methods: Single-center retrospective study including patients with and without known coronary artery disease, undergoing any two of the following imaging modalities where LVEF was measured: non-contrast enhanced transthoracic echocardiography (TTE), gated single-photon emission computed tomography (SPECT), and cardiac magnetic resonance (CMR). Exclusion criteria were: time interval between tests > 90 days, measurements taken within the 1st month from a cardiac event, and the occurrence of any cardiac event between tests. A separate analysis was conducted excluding patients with LVEF > 55% by all modalities and those with > 30 days between tests.

Results: A total of 260 patients were included: 117 patients underwent both TTE and CMR, 115 TTE and SPECT, and 28 SPECT and CMR, with a median time interval between exams of 20 days (IQR: 5-50). The mean absolute difference of LVEF between tests was 65%. Bland-Altman analysis showed no systematic overestimation or underestimation of LVEF by any of the modalities. Overall, the correlation between different methods was good (Pearson's r > 0.8) - Figure. Nevertheless, the proportion of cases where the absolute LVEF difference was > 10% ranged from 15-30%. Among patients with LVEF < 55% by any modality, there was disagreement in the categorization LVEF ≤ 35% *versus* > 35% in 13% of the cases (n = 34). Subgroup analyses including only those patients with < 30 days between tests and those with LVEF < 55% yielded similar results.

Conclusions: Among patients assessed in a «real world» setting with all types of cardiac disease, the agreement between LVEF measurements using different imaging modalities was relatively good. Nevertheless, clinically meaningful discordance subsists in a small but significant proportion of patients.



P 73 Figure

P 74. RIGHT VENTRICULAR LONGITUDINAL STRAIN IN AECHOCARDIOGRAPHIC EVALUATION OF PATIENTS WITH PULMONARY HYPERTENSION

Marta Fontes Oliveira, Maria Trêpa, Raquel Santos, Ricardo Costa, Inês Silveira, Sofia Cabral, Abílio Reis, Mário Santos, Severo Torres

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

Introduction: Noninvasive echocardiography evaluation of the right ventricle (RV) has been shown to have prognostic value in patients with pulmonary hypertension (PH). Recently, speckle-tracking echocardiography has emerged as a new tool in the RV assessment. In this study, we aimed to study the value of global longitudinal strain in the RV evaluation of these patients.
Methods: We collected clinical, laboratory, echocardiographic and right heart catheterization (RHC) data from consecutive patients with PH followed in our department from 12/2016 to 11/2018. Global RV systolic peak longitudinal strain (RVS) and RV free wall peak longitudinal strain (RVFWS) (mean of the basal, mid- and apical-segments) were measured by speckle-tracking technique with Echo-Pac software from GE Healthcare®.
Results: Of the 93 included patients, 68 (73%) were female. The mean age was 60 ± 16 years. Group 2 PH was the most frequent etiology of HP (28%), followed by group 1 (25%), group 4 (24%), group 5 (4%) and group 3 (2%). The echocardiographic evaluation of this population showed borderline parameters of RV dysfunction (tricuspid annular plane systolic excursion (TAPSE) 17.2 ± 4.3 mm, fractional area change (FAC) 33 ± 11% and S' tricuspid wave 9.9 ± 2.7 cm/s). Mean RVS was –14.6 ± 4.9 and mean RVFRS was –15.8 ± 6.8. Both strain parameters significantly correlated with other echocardiographic parameters such as TAPSE, FAC, RV diameter, eccentricity index (EI), systolic pulmonary artery pressure (SPAP), pulmonary acceleration time, presence of pericardial effusion and RV outflow tract notching. Strain parameters were also associated with mean pulmonary artery pressure (MPAP) and SPAP measured by RHC. In multivariate analysis, RV global longitudinal strain predicted invasive MPAP better (β = 1.18, p = 0.004) than other traditional measures such as TAPSE (β = 0.46, p = 0.47), S' tricuspid wave (β = 0.76, p = 0.37) and FAC (β –0.33, p = 0.10). RV global strain was significantly associated with pulmonary vascular resistance (PVR) in PH group 4 (r = 0.52, p = 0.039), but not in other groups.
Conclusions: RV global and free wall longitudinal strain significantly correlate with other echocardiographic parameters of RV structure and function and with invasive pulmonary artery pressures. Larger studies are needed to better characterize its value on the RV assessment in each PH group.

P 75. 18F-FDG UPTAKE IN THE WALL OF THE ATRIA: CAN WE FIND A SIMPLE EXPLANATION?

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The purpose of this study was to evaluate 18F-FDG activity in the atria in a group of patients with ischemic cardiomyopathy, scheduled for viability assessment and find clinical variables related with this finding.41 patients were evaluated according to the viability protocol with 13N-NH3 and 18F-FDG. 39 men and 2 women were included with a mean age of 65.1 ± 9.6 years. Left ventricular ejection fraction (LVEF) was of 33.9 ± 10.0. The activity in the atria wall was corrected for blood-pool activity registered in the lumen of the right atrium (RA). The tracer activity was compared in patients with diabetes (53.7%), in those with an IMC above 25 (70.7%) and in those with atrial fibrillation (19.5%). We also compare the uptake in those patients in a NYHA class equal or above 3 (39.0%). According to Table the atria uptake of 18F-FDG doesn't seem to be related with the clinical factors considered in this study. Further studies should be performed to evaluate 18F-FDG uptake in the wall of the atria and its value concerning disease evaluation.

Table P 74. Clinical, echocardiographic and invasive characteristics of the studied population

	Overall (n = 94)	Global RV strain Q1 (n = 30)	Global RV strain Q2 (n = 29)	Global RV strain Q3 (n = 29)	*p* value
Age	60.2 ± 15.9	60,7 ± 17.7	64.3 ± 13.6	55.4 ± 17.0	0.16
Female	68 (73%)	25 (83%)	18 (62%)	21 (72%)	0.19
Smoking status	8 (11%)	1 (4%)	4 (18%)	3 (12%)	0.33
Sinus rythm	69 (74%)	20 (66%)	19 (65%)	25 (86%)	0.14
Echocardiographic features					
LVEF (%)	57.4 ± 7.0	57.0 ± 5.4	56.7 ± 7.8	58.0 ± 7.9	0.80
E/A	1.0 ± 0.5	1.2 ± 0.6	0.94 ± 0.38	0.96 ± 0.46	0.43
E/E'	9.2 ± 6.7	8.6 ± 4.7	10.3 ± 10.1	8.7 ± 4.5	0.66
E deceleration time (ms)	142 ± 53	141 ± 39	154 ± 49	132 ± 68	0.34
Left atria volume (cm/m2)	37.3 ± 21.8	40.2 ± 22.7	45.2 ± 23.8	22.8 + 11.0	0.003
TAPSE (mm)	17.2 ± 4.3	19.9 ± 4.3	16.4 ± 3.3	15.1 ± 4.1	0.0001
S tricuspid wave (cm/sec)	9.9 ± 2.7	11.0 ± 2.7	9.1 ± 2.4	8.8 ± 2.4	0.002
FAC (%)	33.16 ± 10.6	38.3 ± 11.4	33.3 ± 11.6	27.6 ± 8.9	0.0005
RV diameter (mm)	45.0 ± 8.9	42.1 ± 7.2	44.4 ± 9.4	49.4 ± 8.3	0.008
Eccentricity index	1.36 ± 0.43	1.23 ± 0.39	1.20 ± 0.27	1.60 ± 0.49	0.002
SPAP (mmHg)	61.3 ± 25.3	45.2 ± 14.9	63.3 ± 27.8	72.1 ± 23.6	0.001
Pulmonary acceleration time (ms)	79.3 ± 25.1	93.3 ± 26.8	72.0 ± 19.0	69.3 ± 22.1	0.0005
RV area (cm2/m2)	17.4 ± 12.7	14.4 ± 7.3	20.1 ± 19.6	17.6 ± 5.2	0.26
Right atria (cm2)	21.7 ± 8.3	19.3 ± 9.6	22.6 ± 7.2	23.6 ± 7.7	0.13
Global RV strain	–14.6 ± 4.9	–20.3 ± 2.6	–14.0 ± 1.3	–9.5 ± 2.0	<0.0001
RV free wall strain	–15.8 ± 6.8	–23.1 ± 4.1	–15.6 ± 2.4	–9.0 ± 3.5	0.03
Pericardial fluid	18 (19%)	6 (20%)	2 (6%)	10 (34%)	0.002
RV outflow tract notching	36 (39%)	7 (23%)	10 (34%)	19 (65%)	
Right heart catheterization					0.001
MPAP (mmHg)	42.6 ± 13.9	33.9 ± 11.9	41.3 ± 10.9	48.7 ± 11.8	0.0004
SPAP (mmHg)	69.5 ± 23.2	54.1 ± 20.4	67.6 ± 18.2	81.5 ± 20.3	0.01
DPAP (mmHg)	26.6 ± 10.9	21.6 ± 8.6	24.9 ± 7.9	30.6 ± 10.2	0.13
Pulmonary vascular resistance (wood)	6.5 ± 4.8	5.5 ± 6.7	5.2 ± 2.3	8.3 ± 4.6	0.16

Table P 75

	RA uptake	LA uptake
IMC (< 25 vs ≥ 25)	1.3 ± 0.4 vs 1.3 ± 0.6; p = 0.9	1.6 ± 0.5 vs 1.5 ± 0.7; p = 0.7
AF (with vs without)	1.4 ± 0.8 vs 1.3 ± 0.5; p = 0.6	1.3 ± 0.4 vs 1.6 ± 0.7; p = 0.2
Diabetes (with vs without)	1.3 ± 0.4 vs 1.4 ± 0.7; p = 0.7	1.5 ± 0.7 vs 1.6 ± 0.7; p = 0.6
NYHA class (< 3 vs ≥ 3)	1.2 ± 0.4 vs 1.5 ± 0.7; p = 0.2	1.6 ± 0.8 vs 1.6 ± 0.6; p = 0.8

P 76. AORTIC STENOSIS QUANTIFICATION: IS ECHOCARDIOGRAM GOOD ENOUGH FOR EVERYONE?

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Hospital Prof. Doutor Fernando Fonseca.

Introduction: Aortic stenosis treatment is currently mainly dictated by the symptomatic status of the patient and aortic stenosis severity. The most widely used method for stenosis severity quantification is transthoracic echocardiogram (TTE), based on transaortic gradients and assessment of aortic valve area (AVA) through continuity equation. Nevertheless, frequent discrepancies between aortic stenosis severity evaluated with transaortic gradients and AVA occur. We aimed to investigate whether echocardiographic image quality can play a role in those cases.
Methods: We retrospectively analysed 121 consecutive TTEs of patients with severe aortic stenosis, with AVA < 1.0 cm^2 as assessed by continuity equation. Patients with low-flow status were excluded (stroke volume (SV) < 35 $mL/min/m^2$). We therefore included 64 patients (females 42.2%, mean age 77.1 ± 9.4 years). Echocardiographic image quality was assessed by the operator as poor quality or good/average quality. We then compared the relationship of echocardiographic image quality with the parameters evaluated for aortic stenosis quantification.
Results: 30 patients had transaortic Doppler parameters discordant from AVA. 18 patients had poor echocardiographic image quality. There was a significant association between discordant transaortic Doppler parameters (maximum velocity and mean gradient) from aortic stenosis severity and poor echocardiographic image quality (p = 0.001, OR: 7.5, 95%CI: 2.1-26.6). In patients with poor echocardiographic image quality, there were significantly lower values of aortic maximum velocity (3.81 *versus* 4.25 m/s, p = 0.01), aortic mean gradient (35.4 *versus* 46.8 mmHg, p = 0.007) and aortic VTI (91 *versus* 106 cm, p = 0.017) but not with left ventricle outflow tract (LVOT) VTI (21.4 *versus* 23.8 cm, p = 0.08) and LVOT diameter (20.29 *versus* 20.32 mm, p = 0.92).
Conclusions: In our study, given that the major differences were lower gradients and VTI of transaortic flow, it probably led to an overestimation of AVA in patients with poor image quality. However, these patients were already classified as having severe aortic stenosis by AVA and so, probably, image quality did not influence the treatment strategy. Meanwhile, this might be a problem in patients with aortic stenosis classified as moderate by AVA, especially because in those cases gradients might be concordant to AVA. So, when echocardiographic image quality is poor, it might be worthy to further assess aortic stenosis severity through other methods.

P 77. DEFORMAÇÃO MIOCÁRDICA POR RESSONÂNCIA MAGNÉTICA CARDÍACA *TISSUE-TRACKING* E ECOCARDIOGRAFIA TRANSTORÁCICA 2D NA MIOCARDIOPATIA HIPERTRÓFICA

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Introdução: A miocardiopatia hipertrófica (MCH) é uma doença hereditária caraterizada por hipertrofia ventricular devido ao desarranjo da fibra miocárdica e fibrose intersticial. A deformação miocárdica, nomeadamente o *strain* longitudinal global (GLS), avaliado por ecocardiografia transtorácica (ETT), pode estar alterado nos doentes com MCH e correlaciona-se com eventos arrítmicos. Recentemente surgiu a possibilidade de cálculo de GLS por ressonância magnética cardíaca *tissue-tracking* (RMC-TT), com a vantagem de não depender da janela acústica. Contudo esta técnica carece de estudos de validação nas diversas patologias antes de ser implementada na prática clínica.
Objetivos: Comparar a deformação miocárdica por RMC-TT e ETT numa amostra de doentes com MCH.
Métodos: Estudo observacional retrospetivo incluindo todos os doentes com MCH seguidos num Hospital terciário que tenham realizado ETT e RMC. Foram recolhidos do processo clínico dados demográficos, clínicos, da ETT e da RMC. A ETT 2D foi analisada com software GE© e a RMC com software Segment da Medviso (http://segment.heiberg.se) para cálculo do GLS (média do pico sistólico de 18 segmentos do ventrículo esquerdo, 6 de cada incidência apical). Comparou-se o GLS de cada técnica com os valores normais e a capacidade da RMC-TT em detetar GLS inferior ao normal na ETT. A análise estatística foi realizada utilizando STATA v14 e incluiu teste t de Student emparelhado e cálculo da área sob a curva com determinação da sensibilidade e especificidade utilizando o índice Youden. p < 0,05 foi considerado estatisticamente significativo.
Resultados: 41 doentes foram incluídos, com idade média de 51,2 ± 16,1 anos, 61% homens, espessura média do septo interventricular de 16.6 ± 4.8 mm e fração de ejeção ventricular esquerda (FEVE) média de 64,9 ± 11,4%. Apenas 2 (4,9%) doentes apresentaram FEVE < 50%. A diferença média entre a realização da ETT e da RMC foi de 659 ± 673 dias. Relativamente à ETT, o GLS médio foi -15,5 ± 4,5% e 25 (61%) doentes tiverem valores de GLS inferiores ao normal. Relativamente à RMC-TT, o GLS médio foi de -11,9 ± 5,9% e 18 (44%) doentes tiveram valores de GLS inferiores ao normal. A diferença da percentagem de GLS inferior ao normal entre as duas técnicas não foi estatisticamente significativa (p = 0.051). A sensibilidade e especificidade da RMC-TT em detetar GLS inferior ao normal na ETT foi de 60% e 81,25%, respetivamente, com uma área sob a curva de 0,7063. O coeficiente de determinação (R^2) entre o GLS das duas técnicas foi de 0.2338 (fig.).

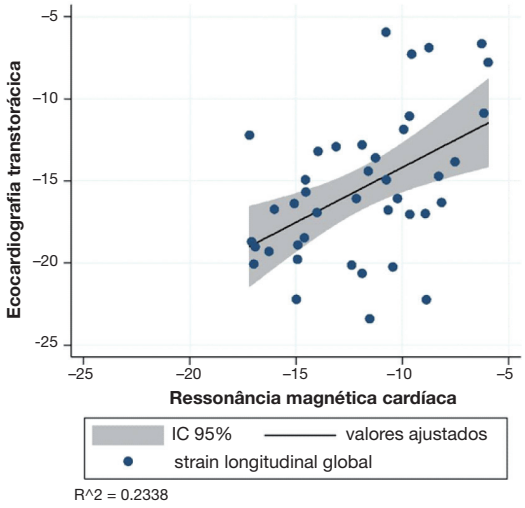

Figura 1. Gráfico comparativo entre os valores de *strain* longitudinal global avalidos por ecocardiografia transtorácica e por ressonância magnética cardíaca.

Conclusões: Os valores de GLS por RMC-TT na população estudada com MCH obtiveram fraca correlação com os valores de GLS por ETT. Tal pode dever-se ao intervalo de tempo entre a realização da RMC e da ETT, a particularidades do *software* utilizado especificamente neste estudo, ou ao facto de poder não estar adaptado a paredes ventriculares esquerdas severamente espessadas, como as presentes nos doentes com MCH.

P 78. LEFT ATRIAL ENLARGEMENT IS A PREDICTOR OF HEART FAILURE AND CARDIOVASCULAR EVENTS AFTER ACUTE CORONARY SYNDROMES

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Introduction: Echocardiography remains a central tool in prognosis prediction after an acute coronary syndrome. Left ventricular ejection fraction is an established parameter for risk stratification of this group of patients. On the other hand, there is limited data about the impact of diastolic disfunction echocardiographic parameters in the prognosis of this population.
Objectives: To evaluate echocardiographic parameters of diastolic disfunction as predictors of major cardiovascular events in patients with ACS during a 2-year follow-up.
Methods: We retrospectively evaluated 92 consecutive pts admitted to our center due to ACS, with a mean follow up of 2 years. Echocardiographic parameters of diastolic function (performed during the first 48h after admission) and clinical data were evaluated. Left atrial (LA) enlargement (LAE) was defined as a body surface area indexed LA volume (LAVi) > 34 mL/m^2. MACCE was defined as the composite of death, ACS, stroke, repeat revascularization (RR) and congestive heart failure requiring hospitalization (CHF) after hospital discharge.
Results: A total of 92 pts with a mean age of 64.6 ± 12.3 years, of whom 73.9% were male, were included in our study. At the end of follow-up, 44.9% of pts were at NYHA class ≥ II. These pts had significantly higher LAVi (35.60 *versus* 29.46 mL/m^2; p = 0.040), and on univariate analysis LAE was the only significant predictor of this outcome (OR: 4.22; 95%CI: 1.67-10.66; p = 0.002), while other classic echocardiographic parameters of diastolic function were not (E wave; A wave; e' wave; E/A ratio or E/e' ratio). During follow-up MACCE occurred in 18 pts (19.6%): death in 6 (6.5%), ACS in 7 (7.6%), RR in 5 (5.4%) and CHF in 4 (4.3%). LAE was associated with a significantly higher risk for MACCE (29.3% *versus* 6.7%; p = 0.006; OR: 5.79) and on univariate analysis it was a significant predictor of these events (OR: 5.79.; 95%CI: 1.50-22.36; p = 0.011), with an area under the ROC curve of 0.70 (95%CI: 0.56-0.84; p = 0.018).
Conclusions: In our study, left atrial enlargement was the only diastolic echocardiographic parameter which predicted cardiovascular events and heart failure development in ACS patients. While the other diastolic function parameters can be more variable depending on hemodynamic status, left atrial size reflects a continuous relation with chronic cardiac loading conditions, which may be an explanation for our findings.

Sábado, 27 Abril de 2019 | 15H30-16H30

JARDIM INVERNO | POSTERS 2 - ÉCRAN 4 - INTERVENÇÃO / CIRURGIA CARDÍACA

P 79. CHRONIC TOTAL OCCLUSION PERCUTANEOUS TREATMENT IN PATIENTS WITH DIABETES. SAME OUTCOMES?

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Introduction: Diabetes is common among patients who present with coronary chronic total occlusions (CTOs), and is often associated with diffuse and more severe disease. Although CTOs are more common in diabetic patients, percutaneous coronary intervention (PCI) is performed less frequently in these patients. Prior studies have showed conflicting results regarding technical success, periprocedural complications and long-term major adverse cardiac event rates among those with diabetes. We aim to evaluate the association between diabetes and technical success, peri procedural complications and long-term outcomes.
Methods: We conducted a prospective, cohort study including all consecutive patients enrolled in our CTO program from December, 2013 to November, 2018. Angiographic data included the number of diseased vessels, the SYNTAX score and the Japanese CTO (J-CTO) score. Two groups were considered: patients with previous diagnostic of type 1/2 diabetes (group 1) and the group without diabetes (group 2). We defined a co-primary safety outcome (procedure-related complications) and a co-primary efficacy outcome (procedural success). A follow-up with a mean duration of 470 ± 420 days was conducted. Secondary endpoints included death, myocardial infarction (MI) and target lesion revascularization (TVR); CCS class assessment and impact on left ventricular ejection fraction (LVEF) on follow-up.
Results: A total of 195 patients (mean age 66 ± 10 years, 81% male) with 202 CTO lesions were included. Diabetic patients were older 68 ± 8 *versus* 65 ±10 years, p = 0.002) and more frequently had hypertension (58% *versus* 42%, p = 0.01), excessive weight (mean BMI 28 ± 3 *versus* 26 ± 2, p = 0.04) and chronic renal disease (56 *versus* 44%, p = 0.04). Group 1 pts had higher J score values (2.8 *versus* 1.9, p = 0.04). The procedural success was similar between groups (90.3% *versus* 94.3%, p = 0.39) and both groups did not differ in rate of procedural complications (4.2% *versus* 3.3%, p = 0.90). In follow up period 5pts died in group 1 and 2 pts in group 2 (5.3% *versus* 3.5%, p = 0.71).The groups did not differ in admission for MI or rate of TVRs (6.5% *versus* 4.5%, p = 0.60). CCS class decreased following a successful CTO treatment in both groups (90.3% *versus* 92.3%, p = 0.01). Regarding LVEF variation after a successful CTO intervention, we found a significant increase in both groups (86.0% *versus* 77% *versus* 52%, p = 0.61).
Conclusions: In this study, although diabetic patients had more comorbilities and more severe disease, these patients had received similar benefits without increase in rate of complications.

P 80. PERCUTANEOUS *VERSUS* SURGICAL PARAVALVULAR LEAK: A TEN YEARS TERTIARY CENTRE EXPERIENCE

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Introduction: Paravalvular leak (PVL) presents an incidence ranging from 2-17%. Open heart surgery is considered the standard treatment and there is no consensus regarding the role of percutaneous closure of non-endocarditis PVL.
Methods: Single-centre retrospective study including consecutive patients that had their PVL closed percutaneously [P] or by surgery [S], after heart team agreement, between 2007 and 2018. The primary objective was analysing mortality and rehospitalizations. The secondary goals were evaluating a) the technical success, defined as reduction in regurgitation [at least 1 degree]; b) the clinic-laboratorial improvement, regarding the worst result between 1 month and 1 year after the procedure.
Results: In the whole of 48 procedures, 12 patients underwent percutaneous closure and 36 surgery. The mean age was 66 ± 13 years (74 ± 12 [P] *versus* 65 ± 13 [S] years, p = 0.026) and 56% were male. Clinical indications were heart failure in 91%, haemolytic anaemia in 42%, with a combination of both more prevalent in P group (67% *versus* 22%, p = 0.010). The leak was moderate to severe in 61%, and there was no difference in regurgitation degree between P and S groups (83% *versus* 56%, p = 0.163). Group P had more comorbidities and higher risk (euroscore II (13.1% [7.1-19.0 CI95%] *versus* 4,1 [2.9-6.5 CI 95%], p = 0.003). (Table 1) Despite an lower hospital stay in P group (6.5 [3-13] *versus* 22 [13-38] days, p = 0.001), there were no significant differences between groups in respect to total mortality at 6

	P Group	Surgical PVL Closure	p-value
Male	50%	42%)	p= 0,746
Age	76 ± 12 years	65 ± 13 years	**p= 0,026**
AF (atrial fibrillation)	92%	42%	**p= 0,002**
COPD (chronic obstructive pulmonary disease)	33%	3%	**p= 0,023**
PAD (peripheral artery disease)	58%	22%	**p= 0,031**
CAD (coronary artery disease)	33%	33%	p =1.000
CKD (chronic kidney disease)	50%	20%	p = 0,061
Previous cardiac surgeries	1,75 ± 0,75	1,52 ± 0,77	p = 0,390
LVEF (ejection fraction)	49,8 ± 7,5%	52,1 ± 11,3	p = 0,446
NYHA≥ III	92%	56%	**p = 0,035**

Table 1- Baseline characteristics of patients with percutaneous PVL closure vs surgery closure.

	Percutaneous PVL closure	Surgical PVL Closure	p-value
Mortality @ 6 M	16,7%	25,0%	**p= 0,987**
CV Mortality @ 12 M	25,0%	30,6%	**p= 0,954**
Rehospitalization @ 12 M	18,2%	21,4%	**p= 0,694**
Technical success (a)	75,0%	97%	**p= 0,043**
Clinic-Laboratorial success (b)			
NYHA improvement	70,0%	71,4%	**p= 0.171**
Hb improvement	90,0% (mean∆: 1,17 ± 1,11 g/dl)	65,4% (mean∆ 1,26 ± 2,47 g/dl)	**p= 0,446** (p=0,733)
LDH reduction	80,0% (mean∆: -682 ± 828 U/L)	68,2% (mean∆: - 493 ± 1215 U/L)	**p= 0,471** (p= 0,577)

Table 2- Endpoints of percutaneous vs surgery paravalvular leak closure.

P 80 Figure

months, cardiovascular (CV) mortality and CV rehospitalization at 1 year. The technical success was inferior in group P (75% *versus* 97%) but clinic-laboratorial results did not differ (Table 2).

Conclusions: In this high-risk population a clinical improvement can be achieved by both methods. The percutaneous technique seems more appropriate for patients with higher risk, despite the greater success of PVL closure by surgical approach.

P 81. TAVI: IS IT POSSIBLE TO PREDICT COMPLICATIONS?

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Introduction: Transcatheter aortic valve implantation (TAVI) is an established approach in patients (pts) with severe aortic stenosis and moderate and high surgical risk. The need for pacing, vascular complications, cerebrovascular and haemorrhage are the most frequent complications. The aim of this study was to evaluate the rate of complications and look for their predictors.

Methods: A retrospective unicentric study of consecutive pts submitted to TAVI from September 2012 to October 2018. Demographic and clinical data on the population and procedures were analyzed. It was verified the occurrence of early complications (30 days after TAVI). The chi-square test and the student T-test were used in the statistical analysis. For identification of independent predictors of complications, logistic regression analysis was performed.

Results: 440 patients (mean age 81 ± 7.1 years, 55% women) were included. 35.2% had coronary heart disease, 29% diabetes, 27.9% chronic kidney disease, 13.1% peripheral arterial disease (PAD) and 8.7% stroke / TIA. The most frequently implanted valves were Sapien® (60.2%) and CoreValve® (36.1%). The most frequent early complications were: bradydhythmia requiring definitive pacing (18.9%, n = 83); stroke/ TIA (3.6%, n = 16), of this, 8 patients with major stroke; haemorrhage (18.7%, n = 82) with major bleeding in 25 patients; vascular complications (17.5%, n = 77), in which 22 were major. The presence of diabetes (χ^2 = 4.5, p = 0.035) and PAD (χ^2 = 4.3, p = 0.039) showed to be associated with major stroke but not with minor stroke. Independent predictors of vascular complications were the presence of CAD (χ^2 = 5.9, p = 0.015) or previous CABG (χ^2 = 4.5, p = 0.034). Only the history of previous CABG (χ^2 = 8.7, p = 0.003) was a predictor of major vascular complication. The presence of ≥ 2 angulations at the level of the femoro-inguinal arterial segment (χ^2 = 4.0; p = 0.045) was associated with major vascular complication. Independent predictors of haemorrhagic complications (major or minor) were female sex (OR: 2.34, p = 0.002) as well as the use of CoreValve (OR: 1.676, p = 0.04) (vs Sapien).

Conclusions: In this population, independent predictors of vascular complications were the presence of CAD or CABG and of hemorrhagic complications the use of self-expanding valves (CoreValve). There was no relationship between vessel characteristics in angioCT and vascular complications.

P 82.

COMUNICAÇÃO RETIRADA

P 83. OUTCOMES OF AORTIC VALVE SURGERY IN NON-STENOTIC VALVES: MECHANICAL REPLACEMENT *VERSUS* REPAIR

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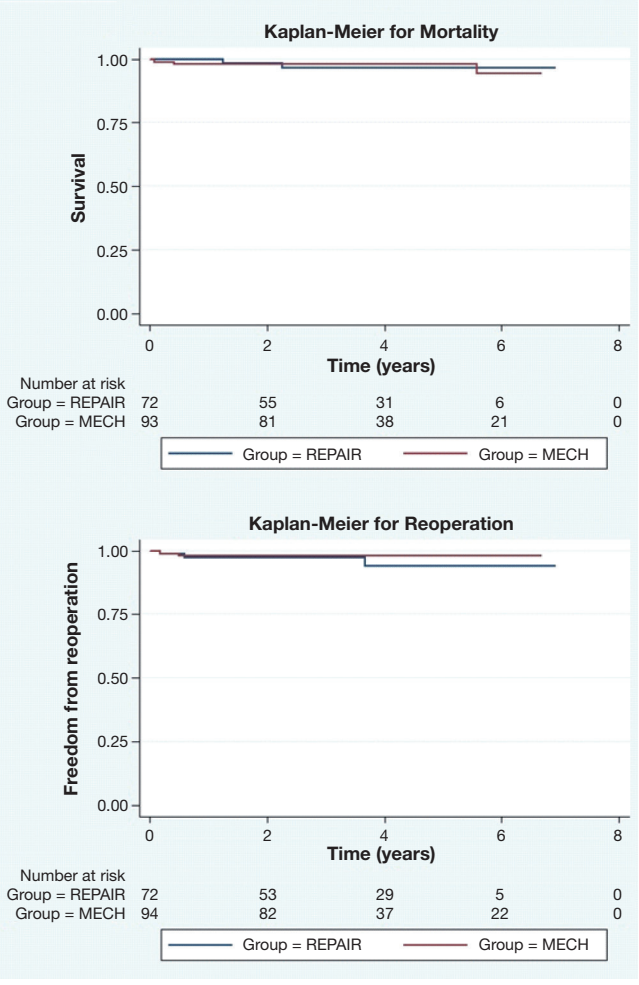
Introduction: Considering selected patients and the expertise of the surgical team, aortic valve repair (REPAIR) has been recognized as an alternative to aortic valve replacement.

Objectives: To compare mid-term survival, need of reoperation and hemodynamic results after mechanical replacement (MECH) or REPAIR in non-stenotic aortic valve disease.
Methods: Retrospective single-center cohort study including consecutive patients younger than 70 years-old, with non-stenotic aortic valve disease, who underwent 1st aortic valve surgery with MECH or REPAIR (2 experienced surgeons), during a 6-year period. Concomitant procedures were not excluded. First follow-up echocardiogram was performed within 3 months after surgery (median). Mean follow-up time was 4 years, maximum 7. According to the data distribution appropriate statistical tests to compare independent samples were used. Mid-term survival and need of reoperation were studied through Kaplan-Meier curves and Cox regression.
Results: MECH was performed in 94 (56.6%) and REPAIR in 72 patients. Individuals in MECH group were older and presented higher NYHA functional class than REPAIR group (51 ± 11 *versus* 47 ± 13 years, p = 0.048; 30% *versus* 4%, p < 0.001). MECH group presented higher prevalence of rheumatic etiology (17% *versus* 3%, p < 0.001). Although aortic root intervention was more frequent in MECH group (41% *versus* 17%, p < 0.001), there were no differences in cardiopulmonary bypass and cross clamping aortic times (166 *versus* 148 min, p = 0.16; and 121 *versus* 108 min, p = 0.15 in MECH and REPAIR group, respectively). Left ventricle mass regression was similar (18% *versus* 21%, p = 0.450, in MECH and REPAIR group, respectively). Mid-term survival (REPAIR cumulative survival 97% and MECH 93%, log-rank test p = 0.752) and reoperation rates were similar between the two groups. REPAIR procedure failed in 3 patients: 2 months (new aortic regurgitation, AR), 7 months (infective endocarditis, IE) and 4 years (AR). MECH failed in 2 patients: 6 months (IE) and 2 months after surgery (prosthesis thrombosis) (Fig.).



Conclusions: Aortic valve repair seems to be safe and effective in this single-center study showing similar results comparing with mechanical aortic valve replacement. We should reinforce the need of judiciously select patients for this complex surgical technique and the specialized training of the surgical team. Further studies are needed to provide reliable recommendations on this theme.

P 84. TRANSAPICAL OFF-PUMP MITRAL VALVE REPAIR WITH NEOCHORDOPLASTY - INITIAL EXPERIENCE IN PORTUGAL

Sara Simões Costa[1], João Pedro Monteiro[1], Tiago Millner[1], Paulo Neves[1], Daniel Martins[2], Nelson Santos[1], José Ribeiro[1], Pedro Braga[1], Luís Vouga[1]

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Transapical off-pump neochordoplasty repair is a minimally invasive surgical procedure, to treat degenerative mitral valve regurgitation of increasing interest. It has been demonstrated to be safe and effective in selected patients. The procedure is performed using the NeoChord DS1000™ system under 2D and 3D transesophageal echocardiographic (TEE) guidance on a beating heart. The aim is to demonstrate the safety and feasibility of the surgical technique and our short-term results for mitral valve repair using the NeoChord DS1000™ system. Between December 2017 and August 2018, 8 patients underwent transapical off-pump mitral valve repair with neochordoplasty. The procedure was performed by left minithoracotomy, under general anaesthesia, using 2D and 3D TEE guidance. All patients presented with severe primary mitral regurgitation due to flail/prolapse of 1 leaflet (anterior or posterior). Primary end points were freedom from mortality, myocardial infarction, stroke, reintervention and recurrence of severe mitral regurgitation. Also, we analyzed baseline and postoperative transthoracic or transesophageal echocardiography, comparing grading of mitral regurgitation, left ventricle indexed end diastolic volume and ejection fraction. The average age was 61 years, 6 patients were male and their mean euroscore II was 1.1. Median ICU and hospital stay was 1 and 3 days, respectively. All procedures were uneventful and there were no major complications. Successful repair, resulting in trace or mild mitral regurgitation, was achieved in all 8 patients, by implantation of 2 to 4 neochordae. At 3 to 5 months follow-up, 7patients presented trace to mild mitral regurgitation, while 1 patient had moderate mitral regurgitation due to extreme left ventricular volume reduction. There was a trend towards left ventricular reverse remodeling in all patients, with reduction of indexed left ventricle end diastolic volume. All patients were in NYHA class I or II and there was no need of reintervention, so far. In select patients, mitral valve repair using the NeoChord DS1000™ system, which allows both implantation and later lenght adjustment of artificial chordae, is safe, effective and reproducible.

Sábado, 27 Abril de 2019 | 15H30-16H30

JARDIM INVERNO | POSTERS 2 - ÉCRAN 5 - PREVENÇÃO

P 85. THE IMPACT OF THE POLYMORPHISM BUD13-ZNF259 RS964184 ON CORONARY DISEASE ACCORDING TO AGE

João Adriano Sousa[1], Maria Isabel Mendonça[1], Andreia Pereira[1], Flávio Mendonça[1], Micaela Neto[1], Joel Monteiro[1], Ana Célia Sousa[2], Sónia Freitas[1], Mariana Rodrigues[1], Sofia Borges[2], Ilídio Ornelas[1], António Drumond[2], Roberto Palma dos Reis[3]

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Introduction: A recent GWAS study found a significant association between the BUD13-ZNF259 rs964184 polymorphism, dyslipidemia and the onset of

coronary disease (CAD). This variant encoding zinc finger protein (ZPR1) interacts with the receptor tyrosine kinase at cellular level, increasing oxidative stress, inflammatory response and atherogenesis. There are no studies of the effect of this variant on the Portuguese population.
Objectives: Investigate the association of BUD13-ZNF259 rs964184 with dyslipidemia and its impact on CAD risk. Evaluate its impact in different age groups of our population.
Methods: A case-control study was performed with 3050 subjects (1619 coronary patients with 53.3 ± 8 years; 78.9% male and 1431 controls with 52.8 ± 8 years; 76.6% male) from the GENEMACOR study population. Traditional risk factors (smoking, dyslipidemia, diabetes, family history, hypertension, body mass index, alcohol consumption, physical inactivity) and others considered new, such as creatinine clearance, pulse wave velocity, homocysteine, fibrinogen, lipoprotein (a), APOB and PCR (hs) were investigated. BUD13-ZNF259 variant was genotyped and analyzed using the dominant model (CG + GG *versus* CC). Bivariate and multivariate analyzes (logistic regression) were used to estimate the ORs and 95% CI, after adjusting for potential confounding factors, in 3 different age groups (< 45; 45-55; > 55).
Results: BUD13-ZNF259 polymorphism presented an independent and significant risk of CAD (OR: 1.58; 95%CI: 1.07-2.32; p = 0.019) only in the group of young coronary patients < 45 years (n = 482 patients). In this age group, a significant association with dyslipidemia (OR: 2.04; 95%CI: 1.26-3.31; p = 0.003) was shown, although a more significant association was seen in the group of patients > 55 years (OR: 1.59; 95%: 1.14-2.19; p = 0.005).
Conclusions: BUD13-ZNF259 rs964184 variant showed a significant risk for the onset of CAD in the young population (< 45 years). The impact of the interaction of ZPR1 protein with tyrosine kinase (Syk) at the cellular level seems to be more relevant in young patients. This aspect may represent a possible prophylactic and therapeutic target, especially in coronary disease in young people.

P 86. TRANSCRIPTION FACTOR 21 AND CORONARY ARTERY DISEASE IN A PORTUGUESE POPULATION

Andreia Pereira[1], Roberto Palma dos Reis[2], João Adriano Sousa[1], Flávio Mendonça[1], Joel Monteiro[1], Ana Célia Sousa[3], Mariana Rodrigues[1], Sónia Freitas[1], Sofia Borges[3], Ilídio Ornelas[1], Graça Guerra[3], António Drumond[3], Maria Isabel Mendonça[3]

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Introduction: TCF21 is a member of the basic- helix-loop-helix (bHLH) transcriptor factor family, being critical for embryogenesis of the heart, kidney and spleen. TCF21 also regulates epicardium-derived cells differentiation into smooth muscle and fibroblast lineages.
Objectives: Investigate the impact of TCF21 rs12190287 in the prediction and discrimination of CAD risk, individually or into a genetic risk score (GRS) formed by a set of 13 genetic variants.
Methods: We performed a case-control study with 3050 subjects (1619 coronary patients with 53.3 ± 8 years; 78.9% male and 1431 controls with 52.8 ± 8 years; 76.6% male) from GENEMACOR study. We investigated all traditional risk factors (TRF), as well as 13 genetic variants from GWAS, including TCF21 (rs12190287), ZC3HC1 (rs11556924), PSRC1/SORTI (rs599839), PHACTR1 (rs1332844), MIA3 (rs17465637), SMAD3 (rs17228212), ZNF259 (rs964184), ADAMTS7 (rs3825807), CDKN2B (rs4977574), 9p21.3 (rs1333049), KIF6 (rs20455), PCSK9 (rs2114580) and GJA4 (rs618675). A multiplicative genetic risk score with these 13 genetic variants (m13GRS), was calculated. Subsequently, two logistic regressions were performed; primarily with all the TRF and all the genes individually and the second with TRF and 13GRS.
Results: The first multivariate analysis shows that, besides the strong association of the TRF with CAD risk (with smoking status on the top of the list, with an OR of 3.2; p < 0.0001), TCF21 rs12190287 was the most significant variant from all the studied genetic set with a CAD risk of 1.5 (95%CI: 1.1-1.9; p = 0.004), followed by the well-known genetic determinant CDKN2B rs4977574 (OR: 1.4; 95%CI: 1.1-1.7; p < 0.002) and ZC3HC1 rs11556924 (OR: 1.3; 95%CI: 1.0-1.7; p < 0.034). When GRS is included to the model, all the TRF remain in the equation by the same order, and the GRS persisted as an independent predictor for CAD risk (OR: 1.7; 95%CI: 1.4-2.0; p < 0.0001).
Conclusions: TCF21 rs12190287 is a risk factor for CAD in the Portuguese population, either individually or incorporated in a GRS. TCF21 risk is independent from TRF. In the future, TCF21 can provide a new clues to identify patients at high cardiovascular risk and become a potential target for gene therapy.

P 87. IMPLICATIONS OF THE REDUCE-IT TRIAL OUTCOMES IN A REAL-WORLD POPULATION OF ISCHEMIC HEART DISEASE PATIENTS

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Introduction: Despite intensive statin treatment, some patients remain at high risk of cardiovascular events. The REDUCE-IT trial showed that a high dose of the omega-3 ethyl eicosapentaenoic acid (EPA) in addition to statin treatment significantly reduced cardiovascular death and events during a mean follow-up period of 4.9 years, in a high cardiovascular risk population with elevated triglyceride (TG) levels.
Objectives: To assess the proportion of patients in a real-world population with established coronary artery disease (CAD) undergoing percutaneous coronary intervention (PCI) who might benefit from this therapy.
Methods: We performed a cross-sectional study of patients with established CAD undergoing PCI in a single tertiary center from January to December 2017. Patients were included if laboratory data required by the trial were available at local site. The inclusion and exclusion criteria were applied according to the trial protocol.
Results: A total of 802 patients underwent PCI in 2017, of whom 310 were included in the analysis. Median age was 66.5 (IQR: 53.2-74.8) years, and 74.8% were male (other baseline characteristics and cardiovascular risk factors are listed in Table 1). 268 of these patients were statin treated, and 133 of these (49.6%) had low-density lipoprotein cholesterol (LDL-C) levels within the trial admitted range (> 40 mg/dL and ≤ 100 mg/dL). After applying the trial TG inclusion criteria (≥ 150 mg/dL and < 500 mg/dL), we were left with 51 patients (38.3%). Based on the trial NNT of 21, an expected two to three cardiovascular events will be avoided by treating the group of 51 patients with EPA for approximately 5 years.

Table P 86. Variables in the Equation

							95 % C.I. for EXP(B)	
	B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Smoking status	1,184	0,089	177,863	1	0,000	3,267	2,745	3,887
CAD family history	0,732	0,108	45,781	1	0,000	2,080	1,682	2,571
Physical inactivity	0,623	0,082	57,066	1	0,000	1,865	1,586	2,192
Dyslipidemia	1,014	0,109	86,832	1	0,000	2,756	2,227	3,411
Diabetes	1,030	0,103	99,473	1	0,000	2,801	2,288	3,430
Hypertension	0,636	0,088	52,780	1	0,000	1,889	1,591	2,242
GRS	0,549	0,086	40,516	1	0,000	1,731	1,462	2,050
Constant	-2,810	0,161	303,719	1	0,000	0,060		

Table P 87 1. Baseline characteristics of the study population

	Established CAD patients undergoing PCI (n = 310)	Eligible patients (n = 44)	REDUCE-IT Trial (n = 8179)
Median age, years	66.5 (56.0-75.0)	66.5 (53.2-74.8)	64.0 (57.0-69.0)
Male sex	232 (74.8%)	37 (84.0%)	5822 (71.2%)
Statin use	268 (86.5%)	44 (100%)	8179 (100%)
Ezetimibe use	14 (4.5%)	2 (4.5%)	524 (6.4%)
Diabetes	95 (30.6%)	18 (40.9%)	4787 (58.5%)
Median LDL-cholesterol level, mg/dL	**98.0 (71.0-126.2)**	80.5 (65.5-92.0)	75.0 (62.2-88.5)
Median HDL-cholesterol level, mg/dL	41.0 (34.0-50.0)	35.0 (29.0-42.5)	40.0 (34.8-46.0)
Median Total LDL-cholesterol level, mg/dL	171.0 (140.0-202.2)	160.0 (141.0-174.8)	NA
Median TG level, mg/dL	**138.0 (101.8-197.0)**	223.5 (179.8-276.5)	216.0 (176.0-273.0)
Distribution of TG levels			
< 150 mg/dL	**182 (58.7%)**	**0**	**841 (10.3%)**
≥ 150 to < 200 mg/dL	55 (17.7%)	16 (36.4%)	2384 (29.2%)
≥ 200 mg/dL	**73 (23.6%)**	**28 (63.6%)**	**4950 (60.5%)**

Table P 87 2. REDUCE-IT inclusion and exclusion criteria in the study population

	Established CAD patients undergoing PCI (n = 310)
Inclusion criteria missing	
Men or women age ≥ 45 years	16 (5.2%)
LDL-C > 40 mg/dL and ≤ 100 mg/dL	**155 (50%)**
Fasting TG levels ≥ 150 mg/dL and < 500 mg/dL	**186 (60%)**
Stable statin therapy	42 (13.5%)
Exclusion criteria present	
Severe (NYHA class IV) HF	3 (0.97%)
Life expectancy < 2 years	9 (2.9%)
HbA1c > 10.0%	3 (0.97%)
CrCl < 30 ml/min or on peritoneal dialysis/hemodialysis	**12 (3.9%)**
Active severe liver disease	0
Fibrate therapy	9 (2.9%)

Conclusions: In this real-world population with established coronary artery disease, only 50% of statin treated patients have LDL-C levels within the trial admitted range. About 40% of these are expected to benefit from EPA therapy.

P 88. PCR DE ALTA SENSIBILIDADE E O RISCO CARDIOVASCULAR REVISITADO - ÁREA DE CONTROVÉRSIA

Flávio Mendonça[1], Roberto Palma Dos Reis[2], Andreia Pereira[3], João Adriano[1], Joel Monteiro[3], Micaela Neto[3], Ana Célia Sousa[1], Graça Guerra[1], Ilídio Ornelas[1], Mariana Rodrigues[3], Eva Henriques[3], Sónia Freitas[3], Sofia Borges[1], António Drumond[1], Maria Isabel Mendonça[3]

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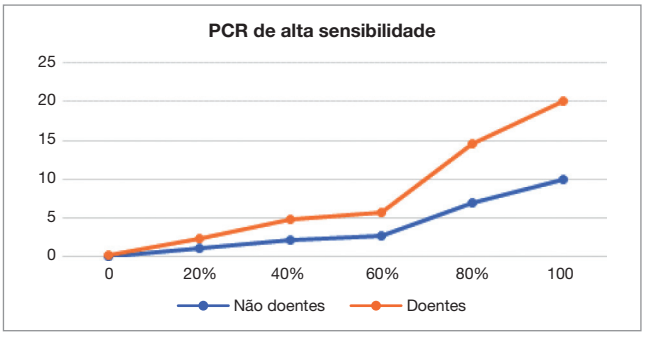
Introdução: A PCR de alta sensibilidade (PCR-as) associada à doença cardiovascular tem sido descrita em vários estudos, mas a PCR é apenas um marcador do risco inflamatório ou tem um papel direto no processo aterosclerótica, mantêm-se controverso.
Objetivos: Verificar se há associação entre o valor de PCR-as e o risco para doença coronária na nossa população.
Métodos: Estudo caso-controlo de 3050 indivíduos da população GENEMACOR, emparelhados por sexo e idade; 1619 com doença coronária considerada significativa (> 70%) por angiografia e 1431 controlos. A idade média dos casos é de 53,3±8,0 anos, 78,9% masculino; nos controlos a idade média é de 52,8 ± 7,8 anos, 76,6% masculino. Os indivíduos foram divididos em quintis de acordo com o valor de PCR-as e comparados através de um teste de Qui-quadrado. Os intervalos definidos para o valor de PCR-as de acordo com esta metodologia foram os seguintes: < 1,3 mg/dL; 1,3 to < 2,7 mg/dL; 2,7 to < 3,0 mg/dL; 3,0 to < 7,6 mg/dL; ≥ 7,6 mg/dL. Os quintis da PCR-as foram incluídos num modelo de regressão logística enquanto fator de risco para doença coronária. Foi estimado o valor de OR e Intervalo de Confiança a 95% tendo como referência o quintil 1. As estimativas foram consideradas significativas com um p < 0,05.
Resultados: A PCR-as mediana nos indivíduos com doença coronária e nos controlos é igual (2,7 mg/dL com um valor mínimo e máximo de 0,1 e 694 mg/dL, respetivamente). A distribuição dos indivíduos de acordo com os quintis criados com base no valor de PCR-as mostra uma distribuição diferente dos valores com maior proporção indivíduos com doença coronária nos quintis a partir do limiar de 2,7 mg/dL (68,8%) comparativamente aos controlos (59,5%) (p < 0,001). No modelo de regressão a variável de PCR-as é estatisticamente significativa com um valor de OR de 1,44 no quintil 3 (IC95%: 1,16-1,79, p = 0,001), 1,54 no quintil 4 (IC95%: 1,22-1,95, p = 0,000), e 1,39 no quintil 5 (IC95%: 1,11-1,74, p = 0,004).



Conclusões: Na nossa população, existe uma associação significativa entre a PCR-as e a doença coronária. Quanto maior o valor da PCR-as, maior foi a probabilidade de ter doença coronária. Novas terapêuticas ou aprofundamento das conhecidas, dirigidas pelo componente inflamatório, poderão revelar-se de elevado sucesso na redução do *burden* cardiovascular, bem como melhorar a prevenção secundária destes doentes.

P 89. EFFECT OF LPA GENE ON CAD RISK AMONG DIABETIC PATIENTS

Sofia Borges[1], Roberto Palma dos Reis[2], Andreia Pereira[3], João Adriano[1], Micaela Neto[3], Flávio Mendonça[3], Joel Monteiro[3], Eva Henriques[1], Ana Isabel Freitas[1], Ilídio Ornelas[3], Isabel Mendonça[3]

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Introduction: Previous research reported that LPA gene is a strong and independent predictor of CAD in non-diabetic patients but not in patients

Table P 89. Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Total population								
Smoking status	1,169	0,088	175,339	1	0,000	3,219	2,707	3,327
CAD family history	0,728	0,108	45,488	1	0,000	2,071	1,676	2,559
Physical inactivity	0,607	0,082	54,628	1	0,000	1,835	1,562	2,156
Hypertension	0,629	0,087	52,268	1	0,000	1,876	1,582	2,226
Dyslipidemia	1,010	0,108	87,321	1	0,000	2,745	2,221	3,393
Diabetes	1,033	0,103	100,462	1	0,000	2,809	2,295	3,438
LPACT	0,852	0,221	14,803	1	0,000	2,344	1,519	3,617
Diabetics								
Smoking status	1,076	0,214	25,251	1	0,000	2,932	1,927	4,461
Dyslipidemia	1,013	0,268	14,257	1	0,000	2,755	1,628	4,661
Hypertension	0,817	0,221	13,672	1	0,000	2,264	1,468	3,492
CAD family history	0,915	0,251	13,289	1	0,000	2,497	1,527	4,085
Physical inactivity	0,910	0,184	24,576	1	0,000	2,485	1,734	3,561

with type 2 diabetes. These results suggest that LPA gene might contribute less to CAD risk in patients with T2DM than in general population.
Objectives: Investigate, in our population, the association between LPA gene CT variant and CAD risk among diabetic patients.
Methods: 3050 individuals (1619 coronary patients and 1431 controls) were genotyped for LPA rs3798220 TT/CT. Pearson's chi-squared test was applied to evaluate the association between LPA variants and CAD, firstly, in the general population and, secondly, in the group of patients with T2DM (n = 735). Multivariate logistic regression was performed with LPA CT variant and 6 traditional risk factors (TRF) (smoking, dyslipidemia, diabetes, hypertension, family history of CAD and physical inactivity) in both general and diabetic population.
Results: In total population, LPA CT variant was found to be strongly and significantly associated with CAD with an OR of 2.32 (95%CI: 1.56-3.45; p < 0.0001). However, this association was less pronounced in the diabetic population with a CAD risk of 1.38 (95%CI: 0.56-3.43) without statistical significance (p = 0.485). In the presence of 6 major TRF, multivariate analysis showed that LPA CT remained a strong and independent predictor of CAD risk (OR: 2.34; 95%CI: 1.52-3.62; p < 0.0001). In diabetic population, LPA was no longer an independent predictor for CAD by multivariate analysis.
Conclusions: Our results show that the effect of LPA gene on CAD risk among diabetic patients might be different from that in the general population. Diabetes status is such a strong risk factor that may attenuate the genetic effects of LPA on CAD risk. This may indicate a complex role of Lp (a) and diabetes interaction in cardiometabolic diseases.

P 90. PREDICTORS OF PATHOLOGICAL ECG FINDINGS IN MILITARY: RELEVANCE OF DEMOGRAPHIC AND EXERCISE-RELATED CHARACTERISTICS

Pedro M. Lopes[1], Hélder Dores[2], Rita Fernandes[2], Conceição Silveira[2], Sara Ferreira[2], José Monge[2]

[1]*Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de Santa Cruz.*
[2]*Hospital das Forças Armadas - Polo de Lisboa.*

Introduction: Screening individuals exposed to regular exercise training, as athletes and military, can lead to early identification of cardiac conditions associated with higher risk for sudden cardiac death. The methodology of this pre-participation evaluation has some limitations, namely due to the false positive cases of electrocardiogram (ECG), influenced by several factors.
Objectives: To identify the independent predictors of pathological ECG findings in a population of male healthy military.
Methods and results: Prospective study of 1384 consecutive male healthy military (30 ± 8 years-old, 95% Caucasian). The median hours of exercise training per week (h/w) was 5 (3; 7), 218 training (15.8%) ≥ 10h/w; 249 (18.0%) individuals were also involved in competitive sport. All the individuals performed a resting 12-lead ECG, interpreted according to the «International Recommendations for ECG Interpretation in Athletes»: normal traces - 431 (31.1%); physiological findings - 815 (58.9%); borderline findings - 75 (5.4%); pathological findings - 63 (4.6%). Individuals with pathological ECGs were younger (27.2 ± 8.6 *versus* 30.3 ± 8.3 years-old; p = 0.004), while black ethnicity (13.7% *versus* 4.0%; p < 0.001), concomitant competitive sport (8.4% *versus* 3.7%; p = 0.001) and training ≥ 10 h/w (7.3% *versus* 4.0%; p = 0.031) were also associated with a higher rate of pathological ECGs. By multivariate analysis, age (OR: 0,96; 95%CI: 0.92-0.99; p = 0.030); black ethnicity (OR: 3.9; 95%CI: 1.80-8.44; p = 0.001) and competitive sport (OR: 1.95; 95%CI: 1.10-3.45; p = 0.022) remained independent predictors. Only four military with pathological ECG were diagnosed with pathology.
Conclusions: In the military population studied, demographic (age, ethnicity) and exercise-related (level of competition) characteristics were associated with higher rate of pathological ECGs. Although these cases mostly correspond to false positive results, knowledge of these characteristics can improve the accuracy of pre-participation evaluation.

Sábado, 27 Abril de 2019 | 15H30-16H30

JARDIM INVERNO | POSTERS 2 - ÉCRAN 6 - ARRITMOLOGIA

P 91. SURGICAL ABLATION OF ATRIAL FIBRILLATION BY A TOTALLY VIDEOTHORACOSCOPIC APPROACH- NEW PARADIGM?

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Maze surgery is still a time-consuming invasive procedure, that requires extra-corporeal circulation. Catheter ablation presents highly variable rates of success. Surgical ablation of atrial fibrillation by a totally videothoracoscopic approach, using radiofrequency, is a recent alternative, that we performed for the first time at November of 2017. We performed a descriptive analyses of the 13 patients that have been submitted to surgical ablation of atrial fibrillation and occlusion of the left appendage by a totally thoracoscopic approach. We describe the surgical technique and our results, including duration of surgery, hospital stay, complications and conversion to sinus rhythm immediately after surgery, at one month, 6 and 12 months of follow-up. Of the 13 patients, with ages between 39 and 75 years old, 46%

(n = 6) are male. The mean time since the diagnosis of atrial fibrillation was 5.75 years. Almost all (n = 12) had been submitted to prior catheter ablation (mean of 2 attempts). The mean diameter and volume of left atrium was 42 mm and 70 mL (43 mL/m^2). The mean duration of surgery was 2 h and 22 min. In only one patient we had to convert to a median sternotomy. The procedure was not possible to perform in one patient. Conversion to sinus rhythm and left atrial occlusion was obtained in all patients. Pacemaker implantation was needed in one patient. The mean hospital stay was 5 days. Mean time of follow-up is 8 months. All patients were maintained on anti-coagulation after the surgery. Patients under anti-arrhythmic drugs pre-operatively, were maintained on anti-arrhythmic after the surgery. At one month follow-up, 91% (n = 10) were in sinus rhythm. At 6 months follow-up, 90% (n = 9) were in sinus rhythm. At November 2018, 4 patients complete 1 year of follow-up. Of those, one has already been evaluated, maintaining sinus rhythm. We are aware of the small dimensions of this population ant short period of follow up. However, these results seem to represent a real benefit for those patients with multiple attempts of catheter ablation without success. This approach needs to be supported by a multidisciplinary team- the so called arrythmia team- before, during and after the surgery.

P 92. SINGLE-PROCEDURE OUTCOMES 12 MONTHS POST-CRYOBALLOON ABLATION IN PAROXYSMAL AND PERSISTENT ATRIAL FIBRILLATION

Pedro Garcia Brás, Pedro Silva Cunha, Guilherme Portugal, Bruno Valente, Nogueira da Silva, Ana Lousinha, André Monteiro, Ana Sofia Delgado, Nuno Monteiro, Manuel Brás, Rui C. Ferreira, Mário Oliveira

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Introduction: Cryoballoon ablation (CBA) is emerging as an alternative to radiofrequency ablation and is used in both paroxysmal and persistent atrial fibrillation (AF) with promising results. The aim of this study is to characterize patients (P) submitted to CBA of AF in a tertiary center, and verify AF recurrence rates between P with persistent and paroxysmal AF in a 12-month follow-up period after CBA.
Methods: Retrospective analysis of 99 consecutive P submitted to AF using CBA. AF recurrence was documented with EKG, 24-h Holter monitoring, cardiac event recorder or pacemaker analysis in a 12-month follow-up period.
Results: 60,6% of the P were male, with a mean age of 54 ± 15 years and a body mass index (BMI) of 28 ± 4. The mean left auricular (LA) volume (in cardiac computed tomography scan) was 104 ± 39 mL, with structural heart disease in 13.1% of the cases. AF was paroxysmal in 78 P (78.8%) and persistent in 21 P (21.2%). There were no statistically significant differences in the baseline characteristics of both groups (age: 53 ± 15 years *versus* 59 ± 11 years, p = 0,088; LA volume: 101 ± 37 mL *versus* 114 ± 46 mL, p = 0.486; structural heart disease: 15.4% *versus* 5%, p = 0,201; BMI: 28 ± 5 *versus* 28 ± 3, p = 0.378; gender: 59% *versus* 66% male, p = 0.522, for paroxysmal and persistent AF, respectively). In a 12-month follow-up there was a 13% AF recurrence rate in all population, with persistent AF P showing a higher recurrence rate: 33.3% *versus* 7.9% (OR: 5.833, p = 0,005).
Conclusions: In P who underwent CBA of AF, there was a total recurrence rate of AF of 13% in a 12-month follow up, with a higher risk of recurrence in persistent AF.

P 93. IMPACT OF LEFT VENTRICULAR DIASTOLIC FUNCTION ON THE OUTCOMES OF PATIENTS WITH ATRIAL FIBRILLATION

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Introduction: Atrial fibrillation (AF) is associated with an increased risk of stroke, all-cause mortality and heart failure (HF). Left ventricular (LV) diastolic impairment is associated with a poor prognosis and in patients (pts) with AF, may also contribute to the formation of left atrial appendage thrombus (LAAT), the usual source of embolic events.
Objectives: To investigate the impact of transthoracic echocardiographic parameters of LV diastolic function (DF) on the prognosis of patients with AF.
Methods: Retrospective case-control study of pts with permanent AF and no more than mild valvular heart disease, who were examined in our echo lab between January 2015 and December 2016 and had an evaluation of diastolic function (mitral inflow E velocity and tissue Doppler septal and lateral mitral annulus velocities (e') and E/e' ratios). Follow-up (FU) was 2.7 ± 0.8 years: The outcome was a composite of thromboembolic events (TE), presence of a left atrial appendage thrombus (LAAT) or spontaneous echo contrast (SEC) in transoesophageal echocardiography (TEE) and/or all-cause mortality.
Results: 120 pts were included (mean age 73,4 ± 9.4years; 60,0% male; CHA_2DS_2-VASc 4.0 ± 1.5). During FU, 65 pts had at least one event corresponding to outcome. Twenty-two (14.7%) had LAAT or SEC in a TEE, 29 (24.2%) had at least one TE and 34 (28.3%) died. Pts were older (75.3 ± 9.3 *versus* 71,1 ± 9.2, p = 0.015), had higher CHA_2DS_2-VASc score (4.4 ± 1.2 *versus* 3.5 ± 1.6, p = 0.001), more HF (70.8% *versus* 45.5%, p = 0.005) and more coronary disease (29.2% *versus* 9.1%, p = 0.006), bigger left atrium (70.0 ± 26.5 *versus* 62.1 ± 22.5 mL/m^2, p = 0.08), lower LVEF (47.9 ± 15.7% *versus* 50.5 ± 13.2%, p = 0.476), lateral e' velocity (8.1 ± 2.8 *versus* 10.4 ± 3.1 cm/s, p < 0.0001) and average e' velocity (7.6 ± 2.1 *versus* 9.1 ± 2.5 cm/s, p = 0.010) and higher lateral E/e' ratio (13.5 ± 6.3 *versus* 10.7 ± 4.4 cm/s, p = 0.033) and average E/e' ratio (15.1 ± 6.5 *versus* 12.3 ± 4.7 cm/s, p = 0,032). In the multivariate analysis, only the lateral e' velocity was an independent predictor of adverse events (OR: 0.749, CI: 0.568-0.989 p = 0.041). ROC curve showed an acceptable discriminative capacity for lateral e' velocity (AUC: 0.699, p = 0.001).
Conclusions: Lateral e' velocity is a predictor of adverse events in patients with AF, independent of other clinical and echocardiographic data. Echocardiographic assessment of LV DF is a simple step of the routine evaluation of any patient. If prospectively validated, this finding may help physicians in the risk stratification of pts with AF, alone or integrated in a model of risk prediction.

94. PULMONARY VEIN CT EVALUATION FOR ATRIAL FIBRILLATION CRYOBALLOON ABLATION: WHEN ANATOMY MATTERS

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Introduction: Cryoballoon ablation is a widely accepted method for pulmonary vein (PV) isolation in atrial fibrillation (AF) therapy. Its results depend on achieving total PV occlusion with a balloon that has a standard predefined size and shape that needs to adapt to the different PV anatomy.
Objectives: To evaluate the impact of PV anatomy (number of veins, presence of common trunks, ostial area and ovality) during cryoballoon PV isolation and AF recurrence rate.
Methods: Retrospective analysis of 162 consecutive patients undergoing cryoballoon ablation that were previously submitted to a multi-slice cardiac computed tomography. We analyzed 599 PV with dimension measurement through Syngo dynamics® software. As in previous trials, the ovality index (OI) was calculated as: 2 × (a – b) / (a + b) - being «a» the longer and «b» the shorter diameter, - and an OI > 0,30 was the defined cut-off for ovality. A temperature of –40 ºC was determined as goal temperature. With a mean follow-up of 16.0 ± 8.4 months, AF recurrence was evaluated through 24 h holter monitoring. In order to determine if the OI had an impact in AF recurrence, a multivariate binary logistic regression was performed.
Results: The population included 69.1% (n = 112) males, 85.8% (n = 139) paroxystic AF, mean age 54.9 ± 11.0 years, and median CHA_2DS_2VASc = 1. Immediate procedural success rate was obtained in 94.8% (568/599 veins). During follow-up, AF recurrence occurred in 19.8% (n = 32) of patients. Left common trunk was present in 14.2% (n = 23) and a right common trunk in 2.5% (n = 4). The right superior PV (RSPV) ostium was the largest (mean area 297 mm^2), and the left inferior PV (LIPV) was the smallest (mean area 172 mm^2). The most oval veins were usually the left superior PV (LSPV, mean

OI: 0.47) and the most round were the right inferior PV (RIPV, mean OI: 0,16). The cut-off temperature was achieved in a total of 87.3% of veins. An OI > 0.30 was identified in 52.4% (n = 314) of total veins. After multivariate analysis, the presence of an OI > 0.30 was an independent predictor for AF recurrence (OR: 2,18, 95%CI, 1.42-3.20, p = 0.002).
Conclusions: Pulmonary vein ostial area and the presence of common trunks did not influence cryoballon isolation long-term success. However, the presence of oval veins (defined by an OI > 0.30) was an independent predictor for AF recurrence. Thus, this trial demonstrates the impact of CT-evaluation of ostial PV morphology on clinical outcomes, and therefore this evaluation should be considered before cryoballoon PV isolation for AF treatment.

P 95. IMPACT OF THE SUBSTRATE ON THE SUCCESS OF ATYPICAL ATRIAL FLUTTER CATHETER ABLATION

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Introduction: Structural heart disease, cardiac surgery and the widespread use of radiofrequency (RF) ablation for atrial fibrillation (AF) had led to the emergence of a large number of regular atrial tachycardias (frequently presenting as atypical atrial flutters (AAFs)). Electrophysiologic mapping enables us to understand and ablate different substrate of the arrhythmia although long term success is frequently related to the extent of left atrium remodeling.
Objectives: Our goal was to evaluate the impact of the underlying substrate in ablation success.
Methods: We evaluated consecutive patients referred for ablation due to AAF from October 2007 to July 2018. Patients with prior history of AF ablation (PVI[+]) were compared to a subgroup of patients without prior history of left atrium ablation (PVI[-]). Clinical characteristics and electrophysiology study (EPS) data were compared between the 2 groups. The endpoints were defined as recurrence of AAF or recurrence of any supraventricular tachycardia (AF, AAF or atrial tachycardia).
Results: A total of 90 AAF patients were included in the analysis, 34% without prior AF ablation (PVI[-] group).The PVI[-] subgroup had higher prevalence of heart failure (54% *versus* 19%, p < 0.0001), cardiomyopathy and congenital heart diseases (26% *versus* 6.8%, p = 0.012), CHA2DS2-VASc score (2.84 ± 1.64 *versus* 2.03 ± 1.35, p = 0.014), EHRA score (2.7 ± 0.9 *versus* 2.05 ± 0.71, p = 0.001) and left atrium volume (64 [52.5-94.0] *versus* 57.5 [44.4-70] mL/m^2, p = 0.026). During EPS, PVI[-] group presented more frequently in sinus rhythm at the begging of the study (48% *versus* 25%, p = 0.023) and different flutter circuits were more often inducible after RF applications (42% *versus* 27%, p = 0.048). During a median follow-up of 43 (13.5-80.5) months, AAF recurrence was more frequently observed in the PVI[-] group (52% *versus* 26%, p = 0.015), although no significant differences in recurrence of all supraventricular tachycardias were observed between groups.
Conclusions: In our series of patients submitted to AAF ablation, more than half of patients had prior history of AF ablation. AAF recurrence after ablation was less frequent in this subgroup although, no differences were observed regarding recurrence of all supraventricular tachycardias.

P 96. LONG-TERM EFFICACY OF TILT TRAINING IN THE TREATMENT OF REFLEX SYNCOPE

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Introduction: Reflex syncope (rS) is a common clinical entity resulting from an excessive reflex autonomic response, particularly during orthostatism. Treatment options are controversial and of limited effectiveness. Tilt training (TTr) is a form of therapy proposed to patients with recurrent forms of rS. The aim of our study was to assess the effectiveness of TTr and to characterize hemodynamic and autonomic responses during a TTr program in patients (P) with rS refractory to conventional measures.
Methods: Between 2005 and May 2018 we enrolled 102 P (57.8% female, age 46.13 ± 18.28 yrs). All had orthostatic induced rS, refractory to conventional measures and documented by head-up tilt test. All P met the following inclusion criteria: 1) at least 2 syncopal episodes within the last 6 months or 1 syncope and 3 pre-syncopal episodes/year; 2) absence of known structural and/or electrical heart disease; 3) absence of other evident etiologies for syncope. The TTr program included 9 tilt sessions (3 times a week, 30 min; 60° - 6 sessions, 70° - 3 sessions), under ECG and blood pressure (BP) monitoring, combined with home orthostatic self-training (gradually extending time to 30 mn) and 10° head-up during sleep. Stroke volume (SV), cardiac output (CO), total peripheral resistance (TPR), baroreflex sensitivity (BEI) and heart-rate variability were computed. P were examined at 1 month and every 6 months thereafter. Treatment effects were assessed using telephone survey. Quality of life («Impact of Syncope on Quality of Life» questionnaire) was evaluated before beginning the TTr program and at 6 months follow-up.
Results: The average follow-up after TTr was 66.79 ± 41.30 months. Most of the P did not present recurrent episodes of syncope (n = 89; 86.3%) or pre-syncope (n = 82, 80%). In the remaining P (14%), there was a significant decrease in the number of syncopes (5.1 ± 2.7/patient/year 12 months before *versus* 1.4 ± 0.8/patient post-TTr; p = 0.0059) and pre-syncope (11.4 ± 6.2/patient/year 12 months before TTr *versus* 4.5 ± 2.6/patient post-TTr, p = 0.0175). The TTr program was associated with a QoL improvement in the ISQL items, related to worry, fear and frustration with the difficulties experienced (p < 0.05). Over the course of the TT program there was a significant increase in mean systolic BP, SV, TPR and CO. Simultaneously, a shift in autonomic nervous system response pattern was seen, associated with an increase of the baroreflex effectiveness index. There was a trend for a global increase in heart rate variability, with a significant decrease of the sympathovagal balance (LF/HF) índex.
Conclusions: In refractory rS, TTr may be an effective therapeutic option with long-term benefits and a significant impact in QOL. These results are associated with a significant modulation of autonomic nervous system function, leading to a more homeostatic response and a better baroreflex function.

Sábado, 27 Abril de 2019 | 15H30-16H30

JARDIM INVERNO | POSTERS 2 - ÉCRAN 7 - INSUFICIÊNCIA CARDÍACA

P 97. REAL-WORLD EXPERIENCE WITH ARNI: REVERSE REMODELLING IS THE NORM

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Introduction: The randomized clinical trial PARADIGM-HF proved that compared with enalapril, Angiotensin II Receptor Blocker Neprilysin Inhibitor (ARNI), sacubitril-valsartan, reduced the risk of hospitalization for heart failure (HF) by 21%, decreased cardiovascular (CV) and all cause of death and reduced the symptoms and physical limitations of heart failure, in patients with reduced left ventricular ejection fraction (LVEF). In Portugal, this drug has only 1-year approval. We considered that analysing the application and

performance of this drug in our Portuguese population was fundamental, through a real-word study.
Methods: We conducted a retrospective, observational study of 200 patients with HF treated with sacubitril-valsartan, in a single-centre. Patients were selected whether they were at 97/103 mg dose, twice a day (bid) (n = 100). Then primary co-endpoints were: improvement of LVEF, New YorK Heart Association functional class (NYHA) and N-terminal pro B-type natriuretic peptide (NT-proBNP) from baseline (start ARNI) until 3 months after initiating 97/103mg (bid) dose. We also analysed events after tolerating the studied dose: CV Death, HF first hospitalization, emergency visits for Acute HF (AHF), de novo atrial fibrillation (AF) and appropriate defibrillator shocks. Baseline clinical and demographic characteristics were evaluated, as well as the time until maximum dose was reached.
Results: In our cohort, mean age was 59 ± 12.6, and 86% were male. 51.5% of patients had HF of non-ischemic etiology. Median time between initiation of the drug and reaching the 97/103 mg dose was 11 weeks. Regarding our primary endpoints: LVFE improved on average 3.7% ± 8.9, with statistical significance (95%CI: 1.641-5.924; p = 0.001). This was verified in 46% (n = 32) of the subpopulation studied and in 16.7% of these, LVFEF increased to > 35%. NT-proBNP had a mild mean increase of 15.7 pg/mL, but without statistical significance; NYHA functional class had a significant improvement (95%CI: 0.008-0.012; p = 0.005), 47% of patients with baseline NYHA II changed to I; 81% III to II and 66% IV to II. After 3 months on the 97/103 mg bid dose, CV Death occurred in 1%, de novo AF in 1%, first HF hospitalization in 2%, appropriate ICD shock in 3% and emergency visits for AHF in 9%.
Conclusions: as we expect there was a significant improvement in LVEF and symptoms of HF with this drug. Similarly to previous studies, 16.7% improve LVEF above 35%, and no longer have guideline-derived indication for prophylactic implantable cardioverter defibrillator.

98. DOES CHRONIC KIDNEY DISEASE ALTER HEART FAILURE WITH REDUCED EJECTION FRACTION CLINICAL COURSE?

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Introduction: Heart failure (HF) and chronic kidney disease (CKD) share several risk factors and often coexist with multiple interactions between both entities. Renal impairment may have an impact on the percentage of patients on maximal doses of disease-modifying therapies and consequently negatively affect HF hospitalizations and cardiovascular death. Although this seems reasonable, the majority of HF patients with severe renal impairment are excluded from studies, making management and prediction of outcomes difficult in this population.
Objectives: To determine the prevalence of renal dysfunction in a population with HF with reduced ejection fraction and to determine its impact on clinical outcomes.
Methods: We retrospectively evaluated consecutive patients from a HF outpatient's clinic. Creatinine clearance was calculated according to the Cockcroft-Gault equation and patients were divided into 5 groups according to the degree of renal dysfunction: Group 1: GFR ≥ 90; Group 2: < 90 and ≥ 60; Group 3: < 60 and ≥ 30; Group 4: < 30 and ≥ 15; Group 5: < 15 ml/min/1.73 m^2. The population was characterized according to clinical, laboratorial and echocardiographic characteristics. The adverse events considered were the occurrence of HF hospitalizations and cardiovascular death.
Results: We studied 178 patients (71% were male), with a mean age of 67 ± 11 years. Ninety-four patients (53%) had a GFR < 60 ml/min/1.73 m^2. Patients with renal dysfunction were significantly older, but without predominance of gender or ischemic etiology (Table). The majority of patients with renal impairment were on ACE inhibitors therapy, but not on spironolactone. HF hospitalizations were significantly higher in patients with renal dysfunction (GFR < 60 ml/min/1.73 m^2: 34% *versus* 17%; p = 0.019), however, the same was not found for cardiovascular death (10% *versus* 4%, p = 0.146).
Conclusions: In this group of patients, renal impairment was frequent and was associated with HF hospitalizations, but not cardiovascular death. Its presence limited the use of some of the disease-modifying therapies, namely spironolactone, although it did not impact therapy with ACE inhibitors.

P 99. HEART FAILURE PATIENT WITH MID RANGE EJECTION FRACTION: WHO ARE THEY?

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Introduction: The most recent ESC guidelines redefined heart failure classification, introducing a new type according ejection fraction: the heart failure with mid range ejection fraction (HFmrEF) were the ejection fraction ranges from 40 to 50%. No clear recommendations exist on how to treat these patients as few is known about there characteristics.
Objectives: To characterize hospitalized heart failure patients with mid range ejection fraction. To evaluate the proportion of this type of heart failure among hospitalized heart failure patients.
Methods: Medical records of all heart failure patients consecutively admitted, between January and December 2017, to a private university hospital were assessed. Demographic data, heart failure type and aetiology, comorbidities, causes of decompensation were evaluated. Ejection fraction was evaluated using echocardiography performed during hospitalization. Patients were classified according ESC guidelines on preserved ejection fraction (> 50%), mid range ejection fraction (40-50%) and reduced ejection fraction (< 40%).
Results: In the study period, 172 patients were admitted for decompensate heart failure. 36 (21%) patients had heart failure with reduced ejection fraction, 100 (58%) with preserved ejection fraction and 36 (21%) with mid range ejection fraction. HFmrEF patients were younger than HFpEF patients (79 ± 11 *versus* 82 ± 11 years) but with no difference compared to reduced ejection fraction patients (79 ± 11 *versus* 79 ± 9 years). Regarding genre distribution (male *versus* female), there was no difference among HFmrEF patients (18 *versus* 18), while in HFpEF patients there were more women (35 *versus* 65) and in HFrEF patients more men (27 *versus* 9). Regarding comorbidities patients with HFmrHF had more atrial fibrillation than HFpEF and HFrEF patients (20 [56%] *versus* 52 [52%] 13 [36%]), less diabetes (5 [14%]

Table P 98

Variable	Group 1 (GFR ≥ 90) (N = 22)	Group 2 (GFR 89-60) (N = 69)	Group 3 (GFR 99-30) (N = 58)	Group 4 (GFR 29-15) (N = 18)	Group 5 (GFR < 15) (N = 11)	p-value
Male (n)	19	51	38	11	8	0,3
Age (years)	54 ± 9	67 ± 11	70 ± 10	74 ± 5	65 ± 10	< 0,001
Ischemic etiology (n)	7	34	26	3	6	0,65
HF hospitalizations (n)	4	16	14	10	7	0,006
Cardiovascular death (n)	2	2	4	3	3	0,146
ACEi (n)	20	56	42	8	8	0,11
Betablocker (n)	21	56	56	14	11	0,17
Spironolactone (n)	12	33	18	0	0	0,013

versus 27 [27%] *versus* 17 [47%]), less ischaemic heart disease (11 [31%] *versus* 25 [25%] *versus* 18 [50%]), less hypertension (23 [64%] *versus* 73 [73%] *versus* 27 [75%]) and less COPD (7 [19%] *versus* 12 [12%] *versus* 9 [25%]). HFmrEF had also a lower NTproBNP (7279 ± 8211 *versus* 7178 ± 10,071 *versus* 11,086 ± 16,373 pg/mL) and a lower eGFR MDRD (52.1 *versus* 61.0 *versus* 57.0 ml/min/m^2) in comparison to HFpEF and HFrEF.
Conclusions: In our real-world hospitalized heart failure population, the prevalence of HFmrHF was 21%. These patients are expected to be younger, with more atrial fibrillation but less other comorbidities than HFpEF and HFrEF patients.

P 100. PERCEPTION OF SYMPTOMS, CONCERNS AND GLOBAL DISEASE EXPERIENCE IN PATIENTS WITH HEART FAILURE

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Introduction: Knowledge of subjective perception of symptoms, concerns and global insight of the disease by patients with heart failure (HF) is key for nurse assessment and management. Although not being widely used in this setting, patient-reported outcome measures like the Integrated Palliative Outcome Scale (IPOS) can help nurses to identify and manage the more troublesome symptoms and palliative concerns in HF patients.
Objectives: To evaluate symptoms, concerns and disease perception in patients followed in a multidisciplinary HF Unit using a personal translated version of the IPOS.
Methods: The IPOS is a widely used tool to measure palliative care needs of patients and their families, capturing their most important concerns in relation to symptoms, information needs, patients and family anxieties and overall feeling. We applied IPOS to a set of patients followed in a HF Unit, independently of age, etiology, NYHA functional class and left ventricular ejection fraction (LVEF).
Results: The scale was applied to 595 patients (mean age: 69 ± 11.8 years; 72.1% men; median time from symptoms onset: 77.5 months (IQR: 22-112); mean LVEF: 44 ± 13.1%, NYHA class I: 9.2%, II: 79.3%, III: 11.1% and IV: 0.3%). Two hundred and seventy three patients (45.9%) reported concerns 3 days prior to evaluation. The sources of concern most frequently reported were health status (18%), familiar problems (14%), pain (5.9%) and economic problems (5.2%). When perception of symptoms was assessed, weakness was the most frequently reported troublesome symptom (55.1%) being reported as overwhelming or severe in 9.4% of patients. It was followed by mouth dryness (46.2%), lack of mobility (44.5%), pain (43%) and dyspnoea (33.8%). The majority of patients reported depression or anxious (62% and 66.4%, respectively) and 88 patients (14.8%) highlight that rarely or never feel at peace. Most patients considered themselves as a source of anxiety to relatives/carers (85.7%), although generally recognize they share their feelings with family members (72.3%). Four hundred and ninety patients (82.4%) reported having received all the information they needed about their disease.
Conclusions: Patients with HF frequently present concerns related to their disease and these are important sources of depression and anxiety. Importantly, disease related concerns may have a negative role in familiar dynamics, entailing an increased burden of anxiety for patients and family members. Weakness was the most frequently reported troublesome symptom.

P 101. SACUBITRIL/VALSARTAN: FOR ALL PATIENTS?

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Heart failure (HF) presents high morbimortality and high consumption of care resources conditioned by acute exacerbations. Therefore, it is defensible to approach these patients by differentiated teams in the treatment of HF with experience in the management of prognostic modifying factors, including immunomodulatory drugs. Sacubitril/valsartan (ARNI) was shown a significant reduction of cardiovascular events and mortality without worsening renal function or hyperkalaemia but higher proportions of patients with hypotension and angioedema. The objective of this study is to characterize a population of patients oriented in consultation of HF and to evaluate limiting factors of the use of sacubitril/valsartan (ARNI). A retrospective cohort study that included all patients observed at the IC consultation between January 2 and December 5, 2018. Clinical and analytical data were collected.A total of 128 patients were observed, 82.8% males, mean age 64 years; 82% of patients had HF with reduced FE, FE intermediate 15% and FE preserved 3%. The mean value of LVEF was 30.4 ± 9.9%. The most frequent HF etiology was dilated cardiomyopathy (44.5%) followed by ischemic heart disease (43.8%). 38% of patients were in NYHA class II, 29% in NYHA III and 4% in NYHA IV. Regarding immunomodulatory drugs, 93% of patients had ACEI/ARA (prior to ARNI), 95.3% beta-blocker (BB), 88.3% mineralocorticoid receptor antagonists (ARM) and 15.6% ivabradine. However, only 23% of the patients under ACEI/ARA, 25% of the patients under BB and 16% of the patients under MRA were at the recommended maximum dose of drugs. Of the total of patients evaluated with LVEF ≤ 35% and symptomatic (n = 69), 35% were medicated with ARNI (n = 24). It was possible to titrate ARNI to a higher dose than ACEI/ARA in 44% of patients and 45% maintained equipotent dose, with titration mean time up to the maximum tolerated dose of 48 days. During follow-up 2 patients discontinued ARNI due to itch and 3 reduced dose (1 for symptomatic hypotension, 1 for worsening renal function, and 1 due to hyperkalemia). No patient had angioedema or cough. After onset ARNI there was a significant increase in creatinine (p = 0.031), however, only 5 patients had increase of more than 25% of the baseline value. No significant increase was observed in the serum levels of potassium, only 2 patients presented hyperkalaemia, 1 of the cases requiring hospitalization. With regard to the 45 patients who would have indicated, but did not initiate ARNI the main reasons were: 34% for economic failure, 27% for hemodynamic profile and 15% for severe chronic kidney disease. In conclusion, there is also a low prevalence of ARNI use (35%) and one of the main reasons is its high cost. The majority of patients tolerated the drug and in 44% of cases it was possible to titrate to a dose higher than the dose of ACEI/ARA.

P 102. ELIGIBILITY FOR SACUBITRIL-VALSARTAN IN A REAL-WORLD HEART FAILURE POPULATION: AN HOSPITAL-BASED SINGLE-CENTRE EVALUATION

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Introduction: The most recent ESC guidelines in heart failure recommend the use of sacubitrilvalsartan in patients with heart failure and reduced ejection fraction (HFrEF) that remain symptomatic regardless of ACE inhibitor, betablocker and mineralocorticoid receptor antagonist optimized treatment. The hospitalized heart failure patient is the paradigm of such a patient that regardless of the NYHA Class before and after discharge fulfils this criterion.
Objectives: To identify the proportion of hospitalized patients with heart failure and reduced ejection fraction eligible for sacubitril-valsartan at the time of discharge in clinical practice. To characterize de differences between patients accordingly to the eligibility.
Methods: Medical records of all heart failure patients consecutively admitted, between January and December 2017, to a private university hospital were assessed. Demographic data, heart failure type and aetiology, comorbidities, causes of decompensation and ongoing treatment at admission were evaluated. Patients with reduced ejection fraction (≤ 35%), under current treatment with or withoutntarget doses of ACE inhibitors or ARBs and betablocker at admission, with eGFR > 30 ml/min and systolic blood pressure > 100 mmHg were considered eligible for sacubitril-valsartan at discharge. Ejection fraction was evaluated for all patients without an echocardiography confirming EF ≤ 35% in the previous 3 months.

Results: In the study period, 172 patients were admitted for decompensate heart failure, 36 (21%) with reduced ejection fraction, 27 (75%) male, mean age 79 ± 9 years. 13 patients fulfilled all enrolment criteria for sacubitril-valsartan eligibility. This corresponds to 28% of the overall heart failure population with ejection fraction ≤ 35%. The eligible patients were younger (78 ± 10 *versus* 80 ± 9 years), were less frequently men (69% *versus* 78%), had higher systolic blood pressure (127 ± 13 *versus* 119 ± 22 mmHg), had a significantly higher eGFR (64.2 ± 18.0 *versus* 52.6 ± 28.1 ml/min/m^2), had more atrial fibrillation (46.2% *versus* 30.4%) and more COPD (38.5% *versus* 17.4%), were less frequently diabetic (46.2% *versus* 47.8%%), had less ischemic heart disease (38.5% *versus* 56.5%) and less hypertension (69.2% *versus* 78.3%) and had lower NT-proBNP (8574 ± 6636 *versus* 12571 ± 19,863 pg/mL). Heart failure therapy was better optimized among eligible patients at admission: ACE inhibitor/ARB (100% *versus* 52.2%), betablockers (100% *versus* 65,2%), MRA (46.2% *versus* 30.4%) and ivabradine (7.7% *versus* 4.3%).
Conclusions: Only 28% of our real-world heart failure and reduced ejection fraction population was eligible for sacubitril-valsartan. The eligible patient is expected to be a younger man, with higher blood pressure, better renal function, less ischemic heart disease, better optimized heart failure drug therapy and lower NTproBNP levels at admission. The proportion of eligible patients rises to 50% if background medication is ignored.

Sábado, 27 Abril de 2019 | 15H30-16H30

JARDIM INVERNO | POSTERS 2 - ÉCRAN 8 - DOENÇA CORONÁRIA

P 103. DEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF A POPULATION SUBMITED TO CHRONIC TOTAL OCCLUSION ANGIOPLASTY

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Introduction: Chronic total occlusion (CTO) angioplasty is one of the most complex techniques performed in the catheterisation laboratory. Thus, experience of the dedicated teams plays a central role in the success of the procedure.
Objectives: We aimed to evaluate the results of CTO angioplasties performed at a high-volume center by multiple operators in the last years, and to emphasize the impact of establishing a CTO angioplasty protocol.
Methods: We examined demographic and clinical characteristics of the population, technical aspects of the procedure and outcome variables (namely success and complication rates). Data obtained were analysed using Chi-square and T-student tests.
Results: CTO angioplasty was performed in 334 patients (mean age 68 ± 11 years, 75% men), with a prevalence of risk factors/comorbidities as follows: diabetes *mellitus* 64%, hypertension 81%, dyslipidemia 70%, smoking 76%, chronic kidney disease (creatinine clearance 60 mL/m^2) 28% and peripheral arterial disease 9.2%; 36% of the patients had history of previous acute myocardial infarction with 9.5% submited to coronary artery bypass grafting. A total of 377 procedures were performed, with an average 1.1 procedures per patient. Fourty-three patients were submitted to more than 1 procedure, among which 2 patients were submitted to 3 and 1 patient to 4 CTO angioplasties. Femoral artery was the most preferred access site (61,5%). Large-caliber catheters (≥ 7 Fr) were necessary in 33% of the cases and contralateral injection in 29%. Thirteen percent of the procedures were performed via a retrograde approach. The success rate per patient was 65% and significantly differed depending on whether the procedure was performed in the scope of the CTO protocol or not (74% *versus* 56%, p = 0.001). No differences were observed between the baseline clinical characteristics between patients successfully revascularised and the remainder. The mean category of difficulty of the procedures, as assessed by the J-CTO score, was high (1.9 ± 1.1). One half of the lesions were deemed difficult or very difficult (J-CTO ≥ 2) and only 13% were reported as easy. We observed a strong association between the category of difficulty and the success rate, particularly in difficult or very difficult cases J-CTO ≥ 2 (χ^2: 72.3 p = 0,001). Major complications occurred in 1.9% of the cases/procedures, resulting in 2 deaths peri-procedure (0.5% of the total).
Conclusions: Success and complications rate in CTO angioplasty in our center was similar to the described in literature, in spite of the significant number of difficult and very difficult lesions. The establishment of a CTO protocol resulted in a significant improvement in the success rate of these interventions.

P 104. PHARMACOLOGIC STRESS TEST: STILL AN IMPORTANT PROGNOSTIC FACTOR? A FOLLOW-UP STUDY

Vera Vaz Ferreira, Luísa Moura Branco, Ana Galrinho, Pedro Rio, Sílvia Aguiar Rosa, Fernanda Gameiro, Duarte Cacela, Alexandra Castelo, Pedro Garcia Brás, Tânia Branco Mano, João Pedro Reis, Rui Cruz Ferreira

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Introduction: Dobutamine stress echocardiography (DSE) is an established technique for evaluation of extent and severity of coronary artery disease.
Objectives: To analyse the results and complications of DSE and identify prognostic predictors in patients (P) who underwent DSE for myocardial ischemia detection.
Methods: 220 P who underwent consecutive DSE from 2013 to 2017. P with significant valvular disease were excluded. Clinical data, echocardiographic parameters and data from follow up regarding all-cause mortality and MACEs, consisting of all-cause mortality, acute myocardial infarction (MI), hospital admissions for decompensated heart failure (HF), unstable angina or new arrhythmias were registered. The mean age of our cohort was 64.8 ± 12.0 years, with 143 men (65%).
Results: 88 P (40%) had positive, 102 (46.4%) had negative and 30 (13.6%) had inconclusive DSE; complications rate of 15%. The prevalence of hypertension, diabetes *mellitus* (DM) and dyslipidemia was 82.7%, 42.3% and 67.7%, respectively. 35.9% had history of a prior myocardial infarction, 31.8% of percutaneous coronary intervention (PCI), 10.9% of coronary artery bypass graft (CABG) and 9.5% had heart failure (HF). Mean left ventricular end-systolic (LVSD) and end-diastolic dimensions were 33.7 ± 8.9 and 52.8 ± 7.1 mm. In DSE, there were resting wall motions abnormalities in 90 P (40.9%). Mean resting wall motion score index (rWMSI) and peak (pWMSI) were 1.16 ± 0.28 and 1.24 ± 0.34. Mean resting GLS (rGLS) and peak GLS (pGLS) were -16.3 ± 4.3 and -16.6 ± 4.3. Mean number of ischemic segments was 1.7 ± 2.4 and 16.8% P had ischemia of more than 3 segments. There was ischemia in left anterior descending (LAD) coronary in 53 P and in circumflex and right coronary territories in 18 and 68 P. 22.6% had more than one ischemic territory. 43 P (49.4%) underwent intervention, 38 with PCI and 5 with CABG. During a mean FU of 38.8 ± 16.8 months, 47 MACEs were observed, including 32 deaths (14.5%). Positive DSE (p = 0.012), no. of ischemic segments (p = 0.019), ischemia in the LAD p = 0.003), rGLS (p = 0.038) and pGLS (p = 0.038) were related to the occurrence of MACEs. In Cox regression analysis, age (p = 0.005), DM (p = 0.005), HF (p = 0.006), prior CABG (p = 0.015), LVSD (p = 0.026), rWMSI (p = 0.029), pWMSI (p = 0.013) and pGLS (p = 0.038) were associated with increased all-cause mortality. Kaplan-Meier survival analysis showed that survival was significantly worse for ischemia of more than 3 segments (log-rank 0.005), ischemia of more than one territory (log-rank 0.025) and pWMSI > 1.5 (log-rank < 0.0005). With multivariate Cox regression analysis, age > 65 Y (HR: 4.22, p = 0.004), DM (HR: 2.49, p = 0.038) and pWMSI > 1.5 (HR: 9.73, p = 0.007) were independently associated with all-cause mortality.

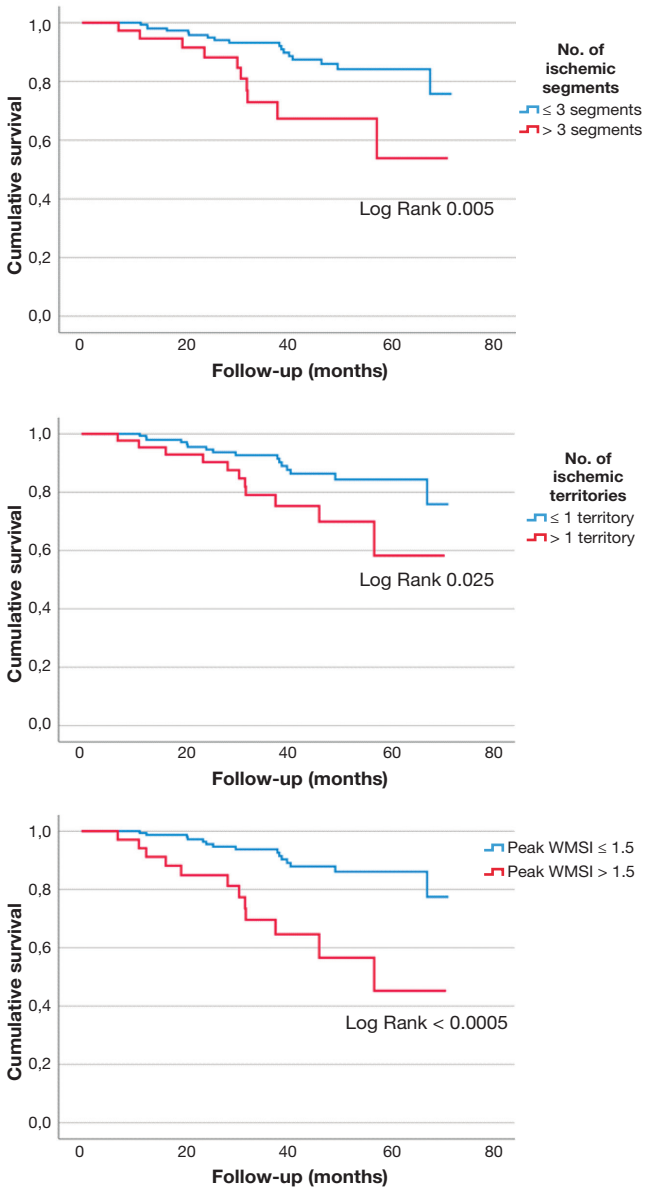

Figura 1. Kaplan -Meier curves for long term survival in patients stratified according the no. of ischemic segments, no. of ischemic territories and peak WMSI > 1.5.

Conclusions: In patients who underwent DSE there were some baseline and DSE-related independent predictors of long term prognosis: age, DM and peak WMSI.

P 105. POSITIVE PREDICTIVE VALUE OF COMPUTED TOMOGRAPHY CORONARY ANGIOGRAPHY *VERSUS* EXERCISE STRESS TEST IN THE DIAGNOSE OF OBSTRUCTIVE CORONARY ARTERY DISEASE

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Introduction: European Society of Cardiology (ESC) guidelines on the management of stable coronary artery disease (2013) suggests a stress test, either treadmill exercise stress test (EST) or, preferably, stress imaging test for the di agnosis of stable coronary artery disease. Computed tomography coronary angiography (CTCA), according to ESC, is reserved as an alternative or after a non-conclusive stress imaging test in a very specific group of patients within the lower range of intermediate pre-test probability. On the other hand, NICE guidelines, from United Kingdom (UK), suggests that new onset stable chest pain patients, as well as those with non-cardiac chest pain and an abnormal resting electrocardiogram, may be offered CTCA, as a diagnostic test.

Objectives: Authors aim to compare the positive predictive value of these two very different approaches to diagnose obstructive coronary artery disease: CTCA *versus* EST.

Methods: Audit study including two centres: one in the UK whose patients with stable chest pain are investigated with CTCA and one centre in Portugal whose patients with stable chest pain are investigated preferably with EST. The inclusions criteria were the following: for the UK centre, consecutive patients with stable chest pain referred to CTCA; for the Portuguese centre, consecutive patients with stable chest pain, a positive EST and referred to invasive coronary angiography (ICA). Obstructive CAD was defined as ≥ 50% stenosis in any epicardial coronary artery. Demographic, CTCA, EST and ICA data were collected. Statistical analysis was performed using STATA v14. $p < 0.05$ was considered statistically significant.

Results: 800 patients were included in total, 400 from each centre. Patients from the UK centre were slightly younger (61 *versus* 63.7 years, $p < 0.001$) but with similar sex distribution (men: 52.6% *versus* 58%, $p > 0.05$) and similar BMI (28.9 *versus* 28.4 kg/m^2, $p > 0.05$). In the UK centre, 387 (96.8%) CTCAs were diagnostic. Positive CTCA, defined by obstructive CAD (CAD-RADS 3-5), was present in 92 (23.8%) patients. From these 92 patients with positive CTCA, 67 (72.8%) patients were referred to ICA and from these latter, 61 (91%) patients had obstructive CAD on ICA. The positive predictive value for CTCA in our sample was 91%. In the Portuguese centre, obstructive CAD on ICA was present in 205 (51.3%) patients, giving a positive predictive value in our sample for EST of 51.3%. The difference between positive predictive value of CTCA (91%) *versus* positive predictive value of EST (51.3%) is statistically significant ($p < 0.0001$).

Conclusions: In our study, CTCA had a higher positive predictive value than EST (91% *versus* 51.3%). The strategy to use CTCA as first line test to investigate patients with stable chest pain can potentially avoid an important number of unnecessary ICA, driven by the higher positive predictive value of CTCA, when compared to the modest positive predictive value of EST.

P 106. PACEMAKER RHYTHM IN ACUTE CORONARY SYNDROME - DOES IT INFLUENCE OUR APPROACH AND PROGNOSIS?

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Introduction and objectives: To determine wether the presence of pacemaker rhythm in patients admited with Acute Coronary Syndrome influences the in-hospital treatment and long-term prognosis.

Methods: Retrospective study of a data base of patients with ACS from our Centre from 2010 to 2017. We evaluated baseline characteristics, therapeutic strategy, and 1 year mortality rates and complications from patients with pacemaker rhythm compared with other patients. A univariate and multivariate analysis was performed using SPS 24.0.

Results: Of a total of 3300 ACS, 26 had pacemaker rhythm on presentation. 14 (53.8%) were male, and average age was 79,9 ± 10,4 years. Admission diagnosis was ACS of undetermined location in 15, Non-ST Segment Elevation Acute Myocardial Infarction (AMI) in 7, and ST Segment Elevation AMI in 4. On Univariate analyses, patients presenting with pacemaker rhythm tended to be older ($p < 0.001$), smoked less ($p = 0.003$), had more frequently hypertension ($p = 0.001$), diabetes ($p = 0.049$), previos history of ACS ($p = 0.04$), coronary by-pass surgery ($p = 0.001$), valve disease ($p = 0.024$), stroke ($p < 0.001$) and peripheral artery disease ($p < 0.001$). During hospital stay, they received less frequently treatment with aspirin ($p = 0.009$), glycoprotein inhibitors ($p = 0.014$), and were more medicated

with nitrates (p = 0.001), aldosterone antagonists (p = 0.003), diuretics (p < 0.001), and amiodarone (p = 0.001). These patients underwent coronary angiography less frequently (p < 0.001) as well as angioplasty (p = 0.005). Left ventricle ejection fraction was lower in these patients (FEVE = 47.0 ± 15.0%, p = 0.005). There was no difference in hospital mortality between groups. Upon discharge, they were less medicated with aspirin (p = 0.001), clopidogrel (p = 0.028), and more medicated with warfarin (p = 0.04), other anticoagulants (p = 0.024), nitrates (p = 0.027), aldosterone antagonists (p = 0.009), diuretics (p < 0.001), amiodarone (p < 0.001). 1-Year mortality was higher in these patients (p = 0.029) and showed a non-significant trend towards higher 1-year hospital admissions (p = 0.05). However, on multivariate analysis, pacemaker rhythm on admission was not an independent predictor of 1-year mortality or hospital admissions.
Conclusions: ACS patients with pacemaker rhythm on admission had a worse prognosis during follow-up in our population. Several factors can have contributed to this, since these patients were older and had more previous comorbidities and underwent less frequently coronary angiography and intervention. During hospital stay and post-discharge, they are less medicated with platelet inhibitors, which may also contribute to the worse prognosis.

P 107. MINOCA AND CMR: ARE THERE ANY GENDER-SPECIFIC FEATURES?

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Introduction: Etiologies of acute coronary syndromes (ACS) in women expand beyond the traditional paradigm of obstructive epicardial atherosclerotic disease. Myocardial infarction with non-obstructive coronary arteries (MINOCA) is a syndrome with different causes, characterised by clinical evidence of myocardial infarction with normal or near-normal coronary arteries on angiography. The key principle in the management of MINOCA is to clarify the underlying etiology to achieve patient-specific treatments.
Objectives: Characterize a cohort of patients (pts) admitted with MINOCA who underwent cardiac magnetic ressonance (CMR) and identify clinical, analytical, electrical (ECG) and imaging differences between genders.
Methods: Unicentric, retrospective analysis of pts who underwent CMR after a diagnose of MINOCA, between 1/2013 and 9/2018. Divided in two groups: female (G1) and male gender (G2). Clinical, analytical, ECG, imagiological features and cardiovascular (CV) events (CVE) - ACS, heart failure (HF), stroke and peripheral embolism - were analysed.
Results: Included 124 pts with a mean age of 52.3 ± 14.8 years (G1: 51 pts; 41%). G1 mean age was higher (56.9 *versus* 49.1 ± 14.8 years, p = 0.003). No statistic differences were found on atrial fibrillation (AF) (17.6% *versus* 9.6%, p = 0.188) nor CV risk factors prevalence, except for hypertension (49% *versus* 30%, p = 0.033) and tabagism (16% *versus* 43%, p = 0.002). No differences on cardiac or inflammatory biomarkers. G1 presented less frequently with ST elevation (19.6% *versus* 39.7%, p = 0.018) but had longer QTc (424.4 *versus* 402.1 ± 37.8 ms, p = 0.001). No differences were found on left ventricle ejection fraction (LVEF) assessed by echocardiogram, although CMR showed higher LVEF (61% *versus* 56 ± 9.6%, p = 0.023) in G1. Regarding discharge prescription, G1 had more prescription of single antiplatelet therapy (66.7% v s47.9%, p = 0.039), beta-blocker (82% *versus* 63%, p = 0.02) and ACE inhibitor (82% *versus* 62%, p = 0.013). G1 performed CMR later than G2 (2.9 *versus* 1.3 months, p = 0.05). Concerning final diagnosis, myocarditis was more frequent in G2 (12% *versus* 43%, p < 0.001) and G1 had more takotsubo syndrome (22% *versus* 0%, p < 0.001). No differences were found in CVE or mortality.
Conclusions: In our cohort, women were younger and had more hypertension. G1 usually presented with nonspecific ECG changes with less ST elevation at admission. Women tend to preform CMR later than man, which may justify the asymmetries in prescription at hospital discharge. There were no significant differences concerning CVE during follow-up.

P 108. CORONARY CT TO DISTINGUISH ACUTE CORONARY SYNDROME FROM MYOCARDIAL INJURY - EMERGENCY DEPARTMENT

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Introduction: It is not known whether a diagnostic strategy supplemented by early coronary computed tomography angiography (CTA) is superior to troponin, to diagnose acute chest pain (ACP) in emergency department (ED). The aim of this retrospective study was to compare the accuracy of CTA, in distinguishing patients (PTs) with acute coronary syndrome (ACS) from PTs with myocardial injury (MI), in terms of sensitivity, specificity, and negative predictive value (NPV).
Methods: N = 90 PTs presenting to the ED (february 2014 and march 2018) with ACP but without clinical or ECG profile for immediate catheter angiography, underwent CTA. N = 20 PTs had MI (22.2%; age 52.7 ± 14.9; 60% male) defined as an elevated initial cTn values that do not changes in time or serial changes were < 20%; 16 PTs had ACS (unstable angina [(UA] n = 6 and NSTEMI n = 10, 17.8%; age 54.3 ± 12.0 years) Coronary CT showed: no stenosis or coronary stenosis (CS) < 50% in 5 PTs (only 11 did CTA because coronary calcium - CC) (45.4%) with ACS and in 12 PTs (4 no CTA because CC) (75.0%) with MI, CS > 50% and < 70%, in one PTs with ACS and none in PTs with MI; CS > 70% in 5 PTs (45.4%) with ACS and in 4 with MI (25.0%). The presence of CS > 50% identified by CTA had accuracy values in PTs with ACS *versus* MI: sensitivity: 45.5% (95%CI: 21.3-72.0%), specificity: 75.0% (95%CI: 50.5-89.8%), NPV: 66.7% (95%CI: 43.8-83.7%). In ACS group, 11 PTs underwent coronary catheterization and 7 (63.6%) had severe obstructive coronary disease as well MI group, 5 of 7 had severe obstructive coronary disease (unknown history of coronary disease in 6). Comparison between the results of CTA and invasive catheterization (gold-standard) showed a diagnostic accuracy of CTA (n = 8 for PTs with significant coronary disease by catheterization *versus* n = 8 for PTs without disease): for CS > 50%: sensitivity 100% (95%CI: 67.5-100), negative predictive value 100% (95%CI: 43.9-100); for CS > 70%: sensitivity 100% (95%CI: 67.5-100), negative predictive value 100% (95%CI: 56.6-100). Follow-up at 6 months revealed no major adverse cardiovascular events in all PTs of MI group and in the ACS group, there was 1 intra-stent thrombosis, 1 PCI performed and 1 coronary stenosis < 50% diagnosed.
Conclusions: In PTs with ACP with elevated initial cTn values and with MI, CTA for detecting CS stenosis > 50%, have low sensitivity and specificity and a NPV of 66.7%, which is not enough to rule out significant coronary disease at ED.

Sábado, 27 Abril de 2019 | 15H30-16H30

JARDIM INVERNO | POSTERS 2 - ÉCRAN 9 - DOENÇA CORONÁRIA

P 109. THE ASSOCIATION OF LIPOPROTEIN-ASSOCIATED PHOSPHOLIPASE A2 WITH INFLAMMATION AND SYNTAX SCORE IN ACS

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Introduction: The occurrence of an acute coronary syndrome (ACS) reflects several pathophysiological mechanisms, including the

anatomical severity of pre-existing coronary artery disease (CAD) and the inflammatory component of atherosclerosis. Reflecting the latter, lipoprotein-associated phospholipase A2 (Lp-PLA2) levels are an independent risk factor for plaque rupture. We aimed to assess the association between Lp-PLA2 levels and the type of ACS, the thrombotic burden and the severity of CAD.

Methods: We conducted a prospective, observational cohort study, including 97 consecutive patients with ACS admitted to a Cardiac Care Unit. Two groups were created: group 1 (G1) with Lp-PLA2 < 200 ng/mL (n = 80) and group 2 (G2) with Lp-PLA2 ≥ 200 ng/ml (n = 17). This cut-off was predefined, considering Lp-PLA2 ≥ 200 ng/mL portend a moderate- to high- risk of cardiovascular disease. Coronary angiograms were blindly reviewed to assess blood flow pre- and post- percutaneous coronary intervention (PCI) (thrombolysis in myocardial infarction (TIMI) flow grade (TFG)); the thrombus burden (thrombus burden score, TBS) and the myocardial perfusion after PCI (TIMI myocardial perfusion grade, TMPG).

Results: Demographic data was similar between the groups except for age (G1: 68 ± 13 *versus* G2: 59 ± 12 years, p = 0.01), LDL cholesterol (G1: 111 ± 34 *versus* G2: 163 ± 42 mg/dL, p < 0.001), smoking habits (20% *versus* 47%, p = 0.03) and history of CAD (23% *versus* 0%, p = 0.04). Regarding the thrombotic burden, we found a non-significant higher TBS in G2 (3.3 ± 2.1 *versus* 2.1 ± 2.1, p = 0.06), in line with a higher probability of G2 patients presenting with a ST-segment elevation myocardial infarction (STEMI) *versus* non-STEMI (70.6% *versus* 40%, p = 0.02). Even though a higher TBS could also be manifest by with a lower post-PCI TFG or TMPG, we found no interaction between Lp-PLA2 levels and TFG (r^2: 0.09, p = 0.46) or TMPG (r^2: 0.005, p = 0.97). Additionally, we found that patients with higher levels of Lp-PLA2 (G2) had a lower number of diseased vessels (1.2 ± 0.5 *versus* 1.8 ± 1.1, p = 0.001) and a lower SYNTAX score (9.6 ± 7.0 *versus* 14.6 ± 12.2, p = 0.03), globally reflecting less severe CAD. No differences in in-hospital mortality were found.

Table 1. Baseline characteristics

	<200 ng/dl (n = 80)	≥200 ng/ml (n = 17)	P value
Age - years	68.2 ± 13.0	59.1 ± 12.3	0.01
Male - no. (%)	62 (77.5)	13 (76.5)	0.93
BMI - kg/m2	28.5 ± 4.5	27.8 ± 3.6	0.55
Hypertension - no. (%)	60 (75.9)	10 (58.8)	0.23
DM - no. (%)	22 (27.8)	5 (29.4)	0.90
Total cholesterol - mg/dL	165.4 ± 43.1	214.5 ± 57.2	<0.001
HDL cholesterol - mg/dL	40.7 ± 11.9	38.5 ± 12.3	0.50
LDL cholesterol - mg/dL	111.3 ± 34.4	163.2 ± 42.2	<0.001
Triglycerides - mg/dL	152.2 ± 139.2	166.1 ± 67.4	0.70
Glucose at admission - mg/dL	162.9 ± 111.7	137.8 ± 44.5	0.37
HbA1c - mmols/mol	6.1 ± 1.1	5.7 ± 0.4	0.39
Creatinine - mg/dL	1.4 ± 1.4	0.9 ± 0.3	0.21
GFR - mL/min	74.8 ± 32.3	88.6 ± 24.4	0.10
CRP - mg/dL	3.1 ± 6.8	5.4 ± 10.5	0.25
Leucocytes - x109/L	12.7 ± 10.9	13.0 ± 4.7	0.90
Troponin at admission - ng/mL	29330 ± 79799	30895 ± 66315	0.93
Peak Troponin - ng/mL	57353 ± 204530	50873 ± 66392	0.81
Current smokers - no. (%)	16 (20.3)	8 (47.1)	0.03
Previous CHD - no. (%)	18 (22.8)	0 (0)	0.04
Previous MI - no. (%)	9 (11.4)	0 (0)	0.35
Previous CABG - no. (%)	5 (6.4)	0 (0)	0.58
FEVE - %	47.8 ± 10.4	50.3 ± 8.8	0.38

Table 2. Diagnostic at admission

	< 200 ng/dl (n = 80)	≥ 200 ng/ml (n = 17)	P value
STEMI - no. (%)	32 (40.0)	12 (70.6)	
NSTEMI - no. (%)	48 (60.0)	5 (29.4)	0.02

Table 3. Analysis of angiographic characteristics

	< 200 ng/dl (n = 80)	≥ 200 ng/ml (n = 17)	P value
Number of diseased vessels - no.	1.8 ± 1.1	1.2 ± 0.5	0.001
LAD - no. (%)	49 (66.2)	9 (52.9)	0.31
LCX - no. (%)	37 (50.0)	6 (35.3)	0.27
RCA - no. (%)	41 (55.4)	5 (29.4)	0.06
Number of stents - no.	1.1 ± 1.0	1.2 ± 0.8	0.75
TIMI before PCI	1.8 ± 1.3	1.3 ± 1.4	0.16
TIMI after PCI	2.7 ± 0.7	2.8 ± 0.4	0.68
TIMPG after PCI	1.8 ± 0.9	1.7 ± 0.8	0.66
Thrombus burden score	2.1 ± 2.1	3.3 ± 2.1	0.06
SYNTAX score	14.6 ± 12.2	9.6 ± 7.0	0.03
In-hospital death - no. (%)	5 (5)	0 (0)	0.35

Conclusions: We found that higher Lp-PLA2 levels were associated with a higher probability of a STEMI and a numerically higher thrombotic burden; conversely, there was an association with a lower SYNTAX score, supporting its role as a marker of the inflammatory component of an ACS, but not its anatomical severity.

P 110. OBESITY AND ACUTE CORONARY SYNDROME: PARADOX OR MISPERCEPTION?

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Introduction: A better prognosis in obese patients (pts) has been described in acute coronary syndromes (ACS), leading to the concept of obesity paradox. However, to what extent this is irrespective of other characteristics remains inconclusive.

Objectives: To determine the impact of body mass index (BMI) on the presentation, treatment and outcome of ACS.

Methods: We analysed consecutive patients with ACS in a single tertiary cardiology centre between 2005 and 2016. The study population was divided according to BMI (< 20, 20-25, 25-30, 30-35 e > 35 kg/m^2). Independent predictors of in-hospital mortality and of a composite of all-cause mortality, rehospitalisation for cardiovascular causes, angiography, percutaneous coronary intervention and coronary artery bypass grafting were assessed by multivariate logistic regression.

Results: 2964 pts with ACS were included (mean age 63 ± 13 year, 72% male), mean BMI was 27 ± 4 kg/m^2. Higher BMI pts were younger (p < 0.001), more often female (p < 0.001) and had more arterial hypertension (p < 0.001), diabetes *mellitus* (p < 0.001), dyslipidaemia (p < 0.001) and family history (p 0.017), but lower smoking habits (p < 0.001). Elevated BMI was associated with higher heart rate (p = 0.046) and systolic blood pressure (p < 0.001) at presentation. There were no differences regarding type of ACS, angiographic features nor treatment. Higher BMI groups had less left ventricular systolic dysfunction (p = 0.008), though there were no significant differences in Killip class. At univariable analysis, higher BMI was associated with better in-hospital and 1 year outcomes. However, after adjusting for age or other prognostic variables, BMI's protective role was lost (table).

	Crude OR (95% CI)	Age-adjusted OR (95% CI)	Fully-adjusted OR[a] (95% CI)
In-hospital mortality	0.950 (0.910-0.991) p 0.019	0.977 (0.934-1.021) p 0.303	0.983 (0.931-1.038) p 0.544
Composite outcome at 1 year	0.971 (0.944-0.998) p 0.034	0.985 (0.957-1.014) p 0.301	0.983 (0.950-1.017) p 0.333

[a]Variables inserted in the model were age, gender, heart rate, systolic blood pressure, killip class, creatinine at admission and type of ACS.

Conclusions: Baseline characteristics in ACS patients significantly differ according to their BMI status. The obesity paradox was not evident after adjusting for confoundable variables.

P 111. DETERMINATION OF A PREDICTIVE SCORE OF CARDIOGENIC SHOCK IN ACUTE CORONARY SYNDROME

Raquel Menezes Fernandes[1], Teresa Mota[1], João Bispo[1], Pedro Azevedo[1], João Guedes[1], Daniela Carvalho[1], Dina Bento[2], Nuno Marques[1], Walter Santos[2], Jorge Mimoso[2], Ilídio Jesus[1]

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Introduction: Cardiogenic shock is one of the leading causes of death in patients with Acute coronary syndrome (ACS), reaching in-hospital mortality rates of 50%. This study pretends to identify a predictive score of cardiogenic shock in patients with ACS.
Methods: We performed a retrospective, descriptive and correlational study encompassing patients admitted with ACS in a Cardiology service from 1st October 2010 to 1st October 2018. Demographic factors, risk factors, antecedents and clinical characteristics were analyzed. The correlation between the categorical variables was performed by the Chi-square test, while the T-Student test was applied to the continuous variables, with a significance level of 95%. Independent predictors of cardiogenic shock were identified through a binary logistic regression analysis, considering p = 0.05. Then, a discriminatory function was applied using the Wilks lambda test to determine the discriminant score of the analized groups. Statistical analysis was conducted with SPSS 24.0.
Results: During this period, 4458 patients were admitted with ACS and 74 (1.7%) developed cardiogenic shock. In this subgroup, 59.5% were over 65 years of age, 63.5% were male, 93.2% presented with acute myocardial infarction with ST segment elevation, 83.8% were in sinus rhythm at admission, 22.7% had creatinine > 1,5 mg/dL and 17.9% had left ventricular ejection fraction (LVEF) < 30%. The in-hospital mortality rate was 51.4%. LVEF < 30% (p = 0.018), creatinine > 1.5 mg/dL (p = 0.044) and absence of sinus rhythm at admission (p = 0.041) were independent predictors of cardiogenic shock. A predictive score of this complication in patients with ACS was determined using the formula: 1.723 + 1.505 × (creatinine > 1,5) + 4.483 x (LVEF < 30%) – 2,094 × (sinus rhythm at admission). A cut-off of 0.58 was obtained with 44.4% sensitivity, 85.2% specificity and 85% discriminative power.
Conclusions Cardiogenic shock occurred in 1.7% of patients admitted with ACS and was associated with a high mortality rate. We determined a predictive score of this complication with a good discriminative power, which included LVEF < 30%, creatinine > 1.5 mg/dL and the rhythm on admission's electrocardiogram. By taking into account clinical variables, this score can be used at a very early stage of admission, allowing risk stratification of developing cardiogenic shock in each patient. It still needs validation to be applied in clinical practice.

P 112. WILL MY PATIENT WITH ACUTE CORONARY SYNDROME END UP IN SURGERY?

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Introduction: In acute coronary syndrome (ACS), about 10% of patients are eligible for coronary artery bypass grafting (CABG). This study pretends to identify a predictive score of CABG in patients with ACS.
Methods: We performed a retrospective, descriptive and correlational study encompassing patients admitted with ACS in a Cardiology service from 1st October 2010 to 1st October 2018. Demographic factors, risk factors, antecedents and clinical characteristics were analyzed. The correlation between the categorical variables was performed by the Chi-square test, while the t-Student test was applied to the continuous variables, with a significance level of 95%. Independent predictors of CABG were identified through a binary logistic regression analysis, considering p = 0.05. Then, a discriminatory function was applied using the Wilks lambda test to determine the discriminant score of the analized groups. Statistical anaylis was conducted using SPSS 24.0.
Results: During this period, 4458 patients were admitted with ACS and 313 (7.0%) had indication for CABG. This subgroup had a mean age of 66 ± 11 years and 78.3% were males. Regarding the diagnosis at admission, 87.2% presented with ACS without ST-segment elevation (NSTEACS) and 12.8% with ST-segment elevation acute myocardial infarction (STEMI). NSTEACS (p < 0.001), presence of ST-depression (p < 0.001), creatinine < 1,5 mg/dL (p = 0.007), BNP > 100 pg/ml (p = 0.007), history of angina pectoris (p = 0.001) and absence of history of percutaneous coronary intervention (PCI) (p = 0.002) were independent predictors of CABG. A predictive score of CABG in patients with ACS was determined with the formula: -2.120 – 1.075 × (NSTEACS) + 0.648 × (angina pectoris) + 1.133 × (ST-depression) + 0.433 × (BNP > 100) – 0.926 × (history of ICP) – 0.893 × (creatinine > 1.5). A cut-off of 0.5 was obtained with 74% sensitivity and 67% specificity.
Conclusions: In this population of patients admitted with ACS, 7% were referred for CABG. We determined a predictive score of CABG including NSTEACS, ST-depression, BNP > 100 pg/mL, creatinine < 1.5 mg/dL, history of angina pectoris and no history of PCI, with a good discriminative power. By considering clinical variables, this score can be used at an early stage of the patient's admission, but requires validation to allow its application in clinical practice.

P 113. CAN WE PREDICT ACCURATE IN-HOSPITAL MORTALITY RISK IN OUR ACUTE CORONARY SYNDROMES PATIENTS?

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Introduction: Patients admitted for Acute Coronary Syndromes (ACS) have a varied in-hospital clinical course depending on previous conditions and risk factors. In-hospital mortality (ihM) in ACS has been decreasing over the years, but it still represents an important contributor to the global burden of coronary artery disease.
Objectives: To develop a simple predictive score for assessment of in-hospital mortality risk in patients admitted for ACS.
Methods: The authors present a retrospective, descriptive and correlational study including all patients admitted for Acute Coronary Syndrome (ACS) in a Cardiology department between the 1st of October 2010 and the 1st of October 2018. Two groups were defined, taking into account patients' vital status at discharge (survival *versus* death). The two groups were compared in terms of risk factors, clinical profile and hospitalization data, using correlational tools such as Chi-square test for categorical variables and t-Student test for continuous variables. Independent predictors of ihM were determined applying a Binary logistic regression model, with a predefined significance level of 0.05. With recource to a discriminatory function and the Wilks lambda test the authors determined a discriminant score for the studied groups. SPSS 24.0 was employed for statistical analysis.
Results: A total of 4458 patients were included with a mean age of 65.6 ± 13.2 years, comprising 1120 (25.1%) females. There were 160 (3.6%) patients who died during hospital stay, with higher rates of ihM ocurring in women and patients older than 65 years. IhM was significantly associated with several cardiovascular risk factors and previous conditions, as well as ambulatory prescribed therapies. However, a multivariate analysis restricted independent predictors of ihM to age > 65 years (p < 0.001),

STEMI (p < 0.001), valvular disease (VD) (p < 0.001), cardiogenic shock (CC) (p < 0.001), non-sinus rythm (SR) (p < 0.001), brain natriuretic peptide (BNP) > 100 pg/mL (p = 0.007), left ventricular ejection fraction (LVEF) < 30% (p < 0.001) and LVEF < 50% (p < 0.001). Using these factors, the authors constructed a Predictive score to assess ihM risk in patients admitted for ACS with the following formula = 0.505 + (0.582 × Age > 65 yo) + (0.323 × STEMI) + (1.803 × VD) + (4.286 × CC) – (0,888 × SR) + (0.141 × BNP > 100) + (2.123 × LVEF < 30%) – (0,614 x LVEF > 50%). In this function, variables should be substituted by 1 or 0, depending on wheter the condition they specify is present or not. The optimal discrimination cut-off was 0.96, with a 91.5% sensibility and 59% specificity, and a discriminant power of 90.4%.
Conclusions: The present score is an useful instrument to assess ihM risk in ACS patients, demonstrating a very good discriminant power, based on simple clinical, imaging and laboratory variables. Appliance to clinical contexts will require appropriate validation in a different cohort of ACS patients.

P 114. MYOCARDIAL INFARCTION IN REAL WORLD, WHAT THE NUMBERS TEACH...

César de Matos[1], Rui Marques[1], Inês Cunha[1], Margarida Neto[1], Ana Filipa Viegas[1], Ana Maria Pinto[1], António Assunção[2], Emanuel Correia[1], Costa Cabral[1]

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Introduction: Coronary disease has a strong impact on public health, which makes it imperative to proceed to its analysis and characterization. It is important to understand which numbers belong to each treatment centre, for they can differ locally, and have customized strategies for the treatment of the risk factors according their prevalence.
Objectives: The purpose of this study is to characterize patients with acute myocardium infarct (EAM) admitted at a Coronary Intensive Care Unit of a Central Hospital based on demographic data, clinic situation, risk factors (HTA, dyslipidaemia, diabetes and smoking) and intervention.
Methods: This is a quantitative, descriptive, cross-sectional and retrospective study on patients with diagnosis of EAM, specifically comparing those with ST (w/ ST) and without ST (w/o ST). The data was collected during 2017 at that care unit. The comparative analysis is based on descriptive and inferential statistics in SPPS®.
Results: A total of 336 patients was diagnosed with EAM (142 w/ ST and 194 w/o ST), being the majority male patients (78.2% w/ST and 70.6% w/o ST) with an average age of 66.4 ± 13.7 years *versus* 70.6 ± 12 years, respectively. Among risk factors it is noted the presence of previous diagnosis of HTA in 60.6% w/ST and 77.3% w/o ST; diabetes in 19% w/ST and 28.9% w/o ST. Looking at the lipidic profile of the patients it was verified 79.7% *versus* 79.2% with LDL > 70 mg/dL, 54% *versus* 60.5% with HDL < 40 mg/dL, 14.8% *versus* 25.6% with triglycerides > 175 mg/dL and 34.3% *versus* 25.6% with total cholesterol > 190 mg/dL. Smoking habits was present in 26.8% w/ ST *versus* 11.9% w/o ST and 4.9% *versus* 3.6% were ex-smokers. Fibrinolysis was performed in 26.8% of the patients w/ST and 22.7% w/o ST. The majority of patients did coronarography and 73.5% w/ST *versus* 40% w/o ST were submitted to coronary angiography. The intra hospital mortally rate was 9.5%.
Conclusions: The results of the analysis allow to identify a strategic vision to improve cardiovascular prevention among an high prevalence of risk factors (HTA, diabetes, dyslipidaemia, smoking) for myocardium infarct within the studied population. It is reiterated the need of implementing primary intervention measures through health education sessions (fighting the inertia to therapy and promoting full treatment of risk factors reaching the therapeutic target) in order to raise awareness for coronary disease and the importance of acting on modifiable risk factors such as HTA, diabetes, dyslipidaemia and smoking. In this respect, it is key to broaden the application of risk scales (SCORE system) by all health professionals and the implementation of suitable recommendations for each risk level.

Sábado, 27 Abril de 2019 | 15H30-16H30

JARDIM INVERNO | POSTERS 2 - ÉCRAN 10 - CIRCULAÇÃO/EMBOLIA PULMONAR

P 115. ECHOCARDIOGRAPHIC ASSESSMENT OF DIFFERENT PULMONARY HYPERTENSION GROUPS

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Introduction: Noninvasive echocardiography evaluation of the right ventricle (RV) has been shown to have prognostic value in patients with pulmonary hypertension (PH). We aimed to study if different etiology groups have different echocardiographic expressions. We also assessed echocardiographic correlates of pulmonary vascular resistance (PVR) for each group.
Methods: We collected echocardiographic and right heart catheterization (RHC) data from 77 (75% female, age 63 ± 16 years) consecutive patients with confirmed PH followed in our department from 12/2016 to 11/2018. Echocardiographic analysis was performed using Echo-Pac software from GE Healthcare®. PH group 3 and 5 were excluded due to few patients.

	Group 1 (n = 25)	Group 2 (n = 28)	Group 4 (n = 24)
Age (years)	52 ± 18	72 ± 8	63 ± 14
Female (%)	76	86	63
Echocardiogram			
T6M (m)	419 ± 111	325 ± 70	375 ± 96
T6M (%)	65 ± 25	63 ± 25	59 ± 24
T6M %SatO2 min	87 ± 6	91 ± 4	87 ± 5
Right heart catheterization			
PECP (mmHg)	10 ± 5	24 ± 7	12 ± 10
PMAP (mmHg)	47 ± 17	42 ± 12	38 ± 13
PSAP (mmHg)	71 ± 25	61 ± 19	66 ± 24
PVR (wood)	9.3 ± 7.8	3.6 ± 1.6	5.2 ± 2.7
Echocardiogram			
Sinus rythm (%)	80	46	88
E/A	1.1 ± 0.4	1.1 ± 0.5	1.0 ± 0.4
Deaceleration time (ms)	121 ± 41	144 ± 52	143 ± 39
E/E'	8.1 ± 4.7	14.5 ± 10.2	7.5 ± 2.9
Eccentricity index	1.6 ± 0.5	1.1 ± 0.2	1.3 ± 0.5
Left atria volume (cm2/m2)	30 ± 15	55 ± 27	29 ± 12
TAPSE (mm)	16 ± 5	17 ± 4	18 ± 5
FAC (%)	30 ± 11	37 ± 8	34 ± 11
S tricuspid wave (cm/sec)	10 ± 3	10 ± 3	11 ± 3
RV diameter (mm)	48 ± 8	44 ± 7	43 ± 10
RV global strain	-14.4 ± 5.8	-16.4 ± 4.39	-13.2 ± 4.4
RV free wall strain	-15.7 ± 8.0	-19.0 ± 5.1	-13.3 ± 6.2
PSAP (mmHg)	64 ± 23	54 ± 19	64 ± 40
Right atria area (cm2)	22 ± 10	22 ± 8	21 ± 7
Pulmonary acceleration time (ms)	76 ± 23	83 ± 24	80 ± 36
Pericardial fluid (%)	28	14	16
RVOT notching (%)	48	18	46

Results: Group 2 PH was the most frequent etiology of PH (28), followed by group 1 (25) and group 4 (24). The echocardiographic evaluation of this population as a whole showed borderline parameters of RV dysfunction (tricuspid annular plane systolic excursion (TAPSE) 17 ± 5 mm, fractional area change (FAC) 34 ± 10% and S' tricuspid wave 10 ± 3 cm/sec). Mean RV global strain was -14.8 ± 5.0 and RV free wall strain was -16.2 ± 6.8. PH group 1 had a significantly lower FAC than group 2 (30% ± 2% *versus* 37% ± 2%, p = 0.009), higher eccentricity index (EI) (1.6 ± 0.1 *versus* 1.1 ± 0.1, p = 0.0001) and more frequently RV outflow tract (RVOT) notching (48% *versus* 18%, p = 0.02). In

group 1, EI was the only echocardiographic measure associated with PVR, even after multivariate analysis (β = 10.1, p < 0.001). Patients with PH group 4 had higher global RV strain and RV free wall strain than group 2 (-13.4 ± 0.8 group 4 *versus* -16.4 ± 0.8 group 2, p = 0.015 and -13.3 ± 1.4 *versus* -19.0 ± 1.0, p = 0.0015 respectively). In group 4, PVR was associated with FAC (β = -0.12, p = 0.009), TAPSE (β = -0.44, p = 0.001), global RV strain (β = 0.29, p = 0.039), pulmonary acceleration time (β = -0.06, p = 0.03) and presence of RVOT notching (7.0 ± 0.6 wood in patients with RVOT notching *versus* 4.2 ± 0.8 wood, p = 0.02). In multivariate analysis, only TAPSE was an independent predictor of PVR (β = -0.42, p = 0.01) in group 4.
Conclusions: Different PH groups present mild echocardiographic differences between them. EI predicts PVR in group 1 and TAPSE was the best PVR predictor in group 4. Larger studies are needed to better characterize this population.

P 116. PULMONARY INFARCTION IN ACUTE PULMONARY EMBOLISM: A SIGN OF POOR PROGNOSIS?

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Introduction: Pulmonary infarction (PI) is a common complication in patients with pulmonary embolism (PE), and its impact on prognosis is still uncertain. The main purpose of this study was to evaluate the association between the presence of PI and clinical characteristics and prognosis in patients with PE.
Methods: A retrospective analysis of 209 patients admitted to a Cardiology ward due to PE was performed. Patients without data on PI were excluded (n = 143). The Mann-Whitney U or T-test were used to compare means of selected variables: leukocytes, neutrophils, C-reactive protein (CRP), troponin I, BNP, heart rate (HR), oxygen pressure in arterial blood gas analysis (pO_2), right ventricle diameter (RVD), pulmonary artery diameter (PAD), days of hospitalization (DH) and PESI score. The Chi-square test (χ^2) was used to evaluate the association between fever, chest pain, hemoptysis, tachypnea or syncope at presentation and PI, as well as the association with in-hospital mortality. Mortality at 2 years of follow-up was evaluated with a Kaplan-Meier survival analysis. A multivariable logistic regression (MRlog) model was used to assess the predictive value of the significant variables for the presence of PI.
Results: Mean patient age was 63 ± 18 years and 60% were female. PI was present in 25%. There was no significant association between PI and neutrophil count, troponin I, BNP, HR, RVD, PAD, DH and PESI score. Higher leukocyte count (p = 0.02) and CRP value (p < 0.001) revealed significant association with PI. There was a trend towards association between higher pO_2 and PI (p = 0.052). χ^2 test revealed a significant association with hemoptysis (p = 0.001) and chest pain (p = 0.014). There was no difference between patients in terms of fever, tachypnea or syncope. There was no significant association between the presence of PI and the risk of in-hospital mortality. The logrank test in Kaplan-Meier survival curves did not reveal a significant difference in mortality after 2 years of follow-up (p = 0.17). In MRlog model, only CRP (p = 0.001), hemoptysis (p = 0.015) and chest pain (p = 0.049) retained statistically significant association with PI.
Conclusions: PI might be related with a more pronounced inflammatory process, associated with greater rise in CRP levels. Patients with PI appear to present more often with hemoptysis and chest pain than patients without PI. There is no apparent association between PI and in-hospital mortality or mortality at 2 years of follow-up.

P 117. EXERCISE STRESS ECHOCARDIOGRAPHY DIAGNOSTIC AND PROGNOSTIC VALUE IN POST-PULMONARY EMBOLISM

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Introduction: Exercise stress echocardiography (ESE) is used mainly in the study of patients (P) with coronary artery disease (CAD). However, the technique is increasingly being used to study other diseases namely symptomatic post-pulmonary embolism (PE) P without evidence of pulmonary hypertension (PH) at rest.
Objectives: To evaluate post-PE P that were submitted to ESE. To determine the prognostic value of ESE according to the development of PH in ESE and determine factors associated with symptoms persistence at follow-up (FUP).
Methods: Retrospective study including post-PE symptomatic P without evidence of PH on rest echocardiogram, submitted to ESE, during a 5 year-period (Jan/2013-Dec/2018). Pulmonary hypertension during exercise was defined when estimated systolic pulmonary arterial pressure (SPAP) was > 60 mmHg on exertion.
Results: Of 2518 ESE performed, 31 (1.2%) P were selected: 21 (67.7%) female, mean age 56 ± 12 years. The initial diagnosis of PE was made during an acute episode in 15 P (48.5%); the remaining were diagnosed due to chronic symptoms by ventilation-perfusion scintigraphy or angio-TC. In 7 (22.5%) there was recurrence of PE. PE was central in 12 (38.7%) P and bilateral in 28 (90.3). All PE were considered idiopathic. The majority of the patients were anticoagulated indeterminately (27 P; 87.1%) and 20 P (64.5%) were anticoagulated with warfarin. ESE was performed 28 ± 18 months after the diagnosis, on average. The indication for ESE was fatigue for minor exertion in 58% of the P. The mean time duration of the exam was 473 ± 201 seconds, reaching an average of 6.6 ± 3.4 METS and maximum heart rate of 83 ± 13%. The mean rest estimated SPAP was 23 ± 18 mmHg, with a mean value of 44 ± 24 mmHg on exertion. 10 (32%) P developed PH during exercise. Of these, 6 P were submitted to right heart catheterization after ESE. Only 1 P had PH criteria; the remaining had pulmonary artery pressure (PAP) of 22 ± 2 mmHg, pulmonary vascular resistance of 4.5 ± 1.4 UWood, cardiac output of 4.4 ± 1.5 L/min (by Fick method), on average. 3 P were referred for pulmonary endarterectomy (1 was refused and other didn't accept the surgery) and two were referred to pulmonary angioplasty programme. In a median time of 24 ± 14 months, 20 (64.5%) P mentioned symptoms. P that have symptoms persistence at FUP presented lower maximum heart rates achieved at ESE (p = 0.03), and lower METS achieved (p = 0.03).
Conclusions: In our study, 32% pts developed pulmonary hypertension during exercise stress echocardiography, however only in 1 of these pts was confirmed the diagnosis by right heart catheterization. ESE was important for the determination of invasive therapeutic approach in 12.8% of the patients of the study population.

P 118. RIGHT VENTRICULAR DYSFUNCTION ON ACUTE PULMONARY EMBOLISM: PREDICTORS AND PROGNOSTIC IMPACT

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Introduction: Transthoracic echocardiogram (TTE) is an accessible method that allows a rapid evaluation of indirect signs of acute pulmonary embolism (PE), namely right ventricular dysfunction (RVD), described at 30-50% and leading to a double risk of mortality.
Objectives: Evaluation of predictor factors (PF) for RVD and its impact on short and long term follow up in P presented with PE.
Methods: Retrospective observational case-control study of 483 P admitted with PE between 2014-2016. P were divided into two groups: group 1 - with RVD and group 2 - without RVD, evaluated by TTE. Data was collected regarding clinical, laboratorial and echocardiographic parameters in both groups to predict in-hospital, 7-days (7d), 6-months (6m) and 1-year (1y) mortality.
Results: A total of 246 P were submitted for final analysis. Mean age 64.1 ± 18.4 years, 66.3% females. 45.5% (n = 112) had RVD in TTE. There were no significant differences in age and gender between groups. At univariate analysis, the PF for RVD were: heart rate (HR) (odds ratio (OR): 1.020, p = 0.003, (confidence interval) CI: 1.007-1.034), pCO_2 (OR: 0.968, p = 0.022, CI: 0.942-0.995), lactate levels (OR: 1.456, p = 0.001, CI: 1.177-1.802), troponin levels (OR: 1.425, p = 0.047, CI: 1.004-2.023), NTproBNP levels (OR: 1.000, p = 0.009, CI: 1.015-1.105), D-dimer levels (OR: 1.000, p = 0.001, CI: 1.019-1.082), *shock index* (SI) (OR: 6.602, p < 0.001, CI: 2.180-19.990), PE of central location (OR: 2.966, p < 0.001, CI: 1.629-5.402), hemodynamic instability (OR: 5.172, p < 0.001, CI: 2.142-12.489), shock (OR: 4.290, p = 0.003, CI: 1.649-

11.162), cardiopulmonary arrest (CPR) (OR: 5.000, p = 0.045, CI: 1.039-24.052) and fibrinolysis (OR: 34.112, p = 0.001, CI: 4.525-257.172). At multivariate analysis, the independent PF for RVD development were: pCO2 (p = 0.008), lactate levels (p = 0.013), NTproBNP levels (p = 0.015), D-dimer levels (0.002), central PE (p = 0.001), hemodynamic instability (p = 0.042), shock (p = 0.042), and fibrinolysis (p = 0.008); excluding HR, troponin levels, SI and CPR. p with RVD had higher mortality: in-hospital (14.3% *versus* 5.3%, p = 0.016), at 7d (13.4% *versus* 1.3%, p = 0.026), at 6m (26% *versus* 11.3%, p = 0.004) and at 1y (33.3 *versus* 19.4%, p = 0.033).
Conclusions: In P not submitted to TTE, several other clinical and laboratorial parameters can predict RVD, associated with worse outcomes.

P 119. CLINICAL AND HEMODYNAMIC 5-YEAR MORTALITY PREDICTORS IN PATIENTS WITH PULMONARY HYPERTENSION

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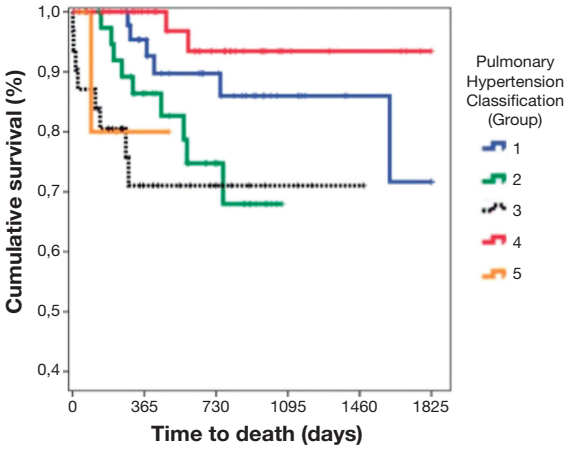
Introduction: Pulmonary hypertension (PH) is associated with high morbidity and mortality rates, making early prognostic stratification essential. Although several predictors of mortality have already been established, the emergence of novel therapies and the evolution in the management of these patients makes it urgent to reassess and validate prognostic markers.
Objectives: To ascertain clinical and hemodynamic 5 year mortality predictors in patients with the diagnosis of PH.
Methods: It was made a retrospective single center study (PH reference center) of consecutive patients with hemodynamic diagnosis of PH. At-diagnosis demographic and clinical data (WHO functional class and presence of right-sided heart failure [HF] signs), non-invasive diagnostic tests (6-minute-walk test [6MWT] and carbon monoxide diffusion capacity [DLCO]) and hemodynamic parameters (right atrial pressure [RAP] and mean pulmonary artery pressure [MPAP]) were collected. The association of these variables with any cause 5-years mortality was evaluated using Kaplan-Meier survival analysis and Cox regression analysis.
Results: A total of 176 patients were included, 69.9% (n = 123) female, with a median age of 68 years (IQR: 24). Based on the clinical classification, 28.4% (n = 50) belonged to group 4, 27.3% (n = 48) to group 1, 23.3% (n = 40 to group 2, 17.6% (n = 31) to group 3 and 3.4% (n = 6) to group 5. The 5-year mortality rate from any cause was 27.3%. Were identified as predictors of mortality being of male gender (p < 0.001) and had group 2, 3 and 5 PH (p = 0.017, p = 0.004, p = 0.042, *versus* group 4 and 1).



Conclusions: In this study, male sex and group 2, 3 and 5 PH were identified as 5 year mortality predictors. These results allow the identification of patients groups who may benefit from earlier multidisciplinary therapeutic interventions.

P120. PROGNOSTIC IMPORTANCE OF CENTRAL THROMBUS IN NORMOTENSIVE PATIENTS WITH PULMONARY EMBOLISM

David Cabrita Roque[1], Joana Simões[1], João Augusto[1], Daniel Faria[2], João Ferreira[2], Hilaryano Ferreira[1], Marco Beringuilho[2], Pedro Magno[1], Carlos Morais[1]

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Introduction: Emboli in the pulmonary trunk and/or main pulmonary arteries (PA) are centrally located in pulmonary arterial tree. Clinical features, prognosis and the impact of the hemodynamic status in central acute pulmonary embolism (PE) are not well known.
Objectives: We aimed to assess (1) the impact of central acute PE on haemodynamic and (2) the prognostic significance of central acute PE in normotensive pts with and without hyperlactacidemia.
Methods: We retrospectively studied 483 consecutive pts hospitalized for acute PE. We defined central PE as the presence of thrombi in at least 1 main PA, and non-central PE as the presence of thrombi in lobar, segmental and/or sub-segmental PA. We further divided central PE patients in those who were (1) normotensive with normal lactates, (2) normotensive with high lactates and (3) hypotensive. Admission data on haemodynamic, laboratory results and right ventricular (RV) function were collected. Haemodynamic decompensation within 7 days as well as all-cause mortality within 7, 30 and 90 days were recorded.
Results: PE localization was determined in 356 patients. Mean age was 65.9 ± 0.9 years, 37.9% (n = 135) were male. Acute PE was central in 39.9% (n = 142) and non-central in 60.1% (n = 214). Central PE patients were more frequently haemodynamically unstable at initial presentation (14.1% *versus* 2.8%, p < 0.001) and tended to have higher lactate values (median 1.51 *versus* 1.36 mmol/L, p = 0.074) than non-central PE patients. Regarding the 3 central PE groups: group 3 had higher shock index (median 0.96 *versus* 0.65 in group 1 *versus* 0.72 in group 2, p < 0.001 for trend) and modified shock index (median 1.36 *versus* 0.91 in group 1 *versus* 1.00 in group 2, p < 0.001 for trend); higher concentrations of NTproBNP (median 3928 *versus* 1379 in group 1 *versus* 3768 pg/mL in group 2, p = 0.005 for trend) as well as higher rates of RV dysfunction (75.0% *versus* 36.3% in group 1 *versus* 58.0% in group 2, p = 0.005 for trend). In contrast, group 2 had higher concentrations of troponin I (median 0.22 *versus* 0.04 in group 1 *versus* 0.12 ng/mL in group 3, p < 0.001 for trend). Central PE patients were more likely to undergo fibrinolysis (11.3 *versus* 0.9% in non-central PE, p < 0.001), namely group 3 (22.2 *versus* 10.3% in group 2 *versus* 2.3% in group 1, p = 0.001 for trend). Outcomes were similar between central PE and non-central PE patients: haemodynamic decompensation within 7 days (9.2 *versus* 5.6%, respectively, p = 0.210), all-cause mortality within 7, 30 and 90 days (p = 0.528, p = 0.703 and p = 1.000, respectively). In the 3 groups of central PE the outcomes were similar in terms of haemodynamic decompensation within 7 days and all-cause mortality within 7 and 90 days (p = 0.224, p = 0.137 and p = 0.093, respectively, all for trend). Of note, all-cause mortality rate at 30 days was higher in group 2 (18.4% *versus* 4.7% in group 1 *versus* 11.1% in group 3, p = 0.002 for trend).
Conclusions: Normotensive patients with centrally-located acute PE and high lactates have the highest thirty-day all-cause mortality.

Domingo, 28 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 3 - ÉCRAN 1 - DOENÇA CORONÁRIA

P 121. IDENTIFYING LOW-RISK PATIENTS ELIGIBLE FOR EARLY DISCHARGE AFTER ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION

Pedro Oliveira De Azevedo, Raquel Fernandes, Teresa Mota, João Bispo, João Guedes, Daniela Carvalho, Dina Bento, Salomé Pereira, Jorge Mimoso, Ilídio Jesus

Centro Hospitalar e Universitário do Algarve.

Introduction: Early discharge after ST-segment elevation myocardial infarction (STEMI) should be considered in low-risk patients after successful

revascularization to reduce healthcare costs and improve resource use. The Zwolle and PAMI-II criteria are recommended by current guidelines for the identification of patients eligible for early discharge, but there have been significant advances in medical care since their description. We hypothesize that a new risk score, FASTEST, could better identify patients at low risk of adverse events.
Methods: We retrospectively reviewed 1692 patients with STEMI hospitalized from 2010 to 2017. Patients who underwent primary PCI and received complete revascularization were analyzed (n = 1353). The FASTEST score awards 1 point for each: femoral access, age > 65, LVEF > 50%, TIMI < 3; creatinine > 1.5 mg/dL; stenosis of the left main coronary artery; and Killip ≥ 2. Low risk is defined as FASTEST 0. The Zwolle score (low-risk ≤ 3), PAMI-II (low risk aged < 70, LVEF > 45%, 1 or 2-vessel disease, successful PCI, and no persistent arrhythmias), GRACE score (low risk ≤ 108) and TIMI score (low risk ≤ 1) were calculated for comparison. In-hospital mortality, 1-year mortality and 1-year hospitalization were compared between low-risk patients according to different scores.
Results: 1353 were included (80.5% male, mean age 62.4 ± 13 years) and 49% with anterior STEMI. The frequency of low-risk patients was: FASTEST 513 (38%); GRACE 103 (7.6%); Zwolle 1194 (88.4%); PAMI 626 (46.3%) and TIMI 375 (27.7%). In-hospital mortality was 3%. Discrimination by AUC for in-hospital mortality was 0.93 for FASTEST, significantly higher than Zwolle (0.85, p = 0.02) and similar to TIMI (0.86, p = 0.05) and GRACE (0.9, p = ns). Low-risk FASTEST, GRACE or PAMI had 0 in-hospital mortality, compared with 2 (0.5%) for TIMI and 13 (1.1%) for Zwolle (p = 0.02 for comparison). Serious complications (composite of heart failure, re-infarction, mechanical complication, major hemorrhage, complete AV block, ventricular tachycardia or fibrillation, and stroke) occurred in 293 (21.7%) patients. In low-risk patients, complications were: FASTEST 46 (9.0%); GRACE 2 (1.9%, p < 0.05 for comparison); PAMI-II 39 (6.2%); Zwolle 181 (15.2%) and TIMI 43 (11.5%). 1-year mortality in low-risk patients was: FASTEST 0.9%; GRACE 0; PAMI 0.7%; Zwolle 4.3% and TIMI 0.6%. 1-year hospitalization was: FASTEST 8.1%; GRACE 13%; PAMI 9.3%; Zwolle 14.2% and TIMI 8.9%.
Conclusions: FASTEST classified 38% of patients as low-risk and showed excellent discrimination for in-hospital mortality (0 patients) and 1-year outcome, although almost 1 in 10 patients had an adverse event during hospitalization. GRACE classified only 7.6% as low risk but demonstrated the best overall accuracy for in-hospital mortality (0) and complications (1.9%). Zwolle performed significantly worse and its use should not be recommended.

P122. CULPRIT VESSEL ONLY *VERSUS* MULTIVESSEL ANGIOPLASTY FOR HEMODYNAMICALLY STABLE PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION AND MULTIVESSEL DISEASE

Liliana Reis[1], Luís Paiva[1], Marta Madeira[1], Marco Paulo Alves da Costa[1], Carolina Lourenço[1], Fátima Loureiro[2], Lino Gonçalves[3]

[1]Centro Hospitalar e Universitário de Coimbra, EPE / Hospital Geral. [2]Sociedade Portuguesa de Cardiologia. [3]Centro Hospitalar e Universitário de Coimbra / Hospitais da Universidade de Coimbra.

Introduction: Multivessel disease (MVD) in ST-elevation myocardial infarction (STEMI) is associated with a worse prognosis. A multivessel approach at the time of primary percutaneous coronary intervention (PCI) is the subject of debate. The objective of this study was to access the prognostic impact of multivessel intervention (MVI) at the time of primary PCI (MVI-P) or staged during the index admission (MVI-S) *versus* culprit vessel-only PCI (CVI) in registry of acute coronary syndromes (ACS) and multivessel disease.
Methods: A retrospective cohort study of 7766 patients with STEMI diagnosis who underwent primary PCI between October 2010 and July 2018, from the Portuguese Registry of Acute Coronary Syndromes (ACS). About 33% patients had MVD. We performed a propensity score matched analysis to obtain 2 groups of patients paired according to whether or not they had undergone multivessel PCI or culprit vessel-only PCI. We also explored this relationship across various patients' subgroups and performed stratified analyses according to the revascularization strategies of nonculprit lesions.
Results: Compared with MVI, after propensity score matching, CVI patients presented similar in-hospital mortality and MACE at index admission. However, follow-up mortality was higher in the CVI group (9.4% *versus* 4.1%, p = 0.016). Comparing CVI with MVI-P, we verified that in-hospital mortality was similar in both groups (6.1% *versus* 5.5%, p = 0.720); but the occurrence of major bleeding was more prevalent in CVI patients (1.3% *versus* 0.0%, p = 0.029). Follow-up mortality was more frequent in these group (8.6% *versus* 3.6%, p = 0.012), without differences in cardiovascular re-hospitalization. Comparing CVI with MVI-S, culprit only cases were associated with increase in-hospital mortality (6.1% *versus* 0.7%, p < 0.001), shock cardiogenic (6.8% *versus* 3.1%, p = 0.001) and follow-up mortality (8.6% *versus* 2.9%, p = 0.032). Regarding MVI subgroups, MVI-P was associated with higher in-hospital mortality (5.5% *versus* 0.7%, p = 0.001) and shock cardiogenic (8.0% *versus* 3.1%, p = 0.008) than MVI-S.
Conclusions: In a real-world registry of patients presenting with STEMI and MVD, complete percutaneous revascularization reduced death after hospital discharge. A staged MVI strategy showed an early clinical impact compared to MVI at the time of primary PCI.

P 123. IMPACT OF DOOR IN-DOOR OUT TIME IN TOTAL ISCHEMIC TIME AND PROGNOSIS IN ACUTE MYOCARDIAL INFARCTION

Cátia Costa Oliveira[1], Miguel Afonso[2], Isabel Campos[1], Carla Pires Rodrigues[1], Paulo Medeiros[1], Rui Flores[1], João Costa[1], Carlos Galvão Braga[1], Jorge Marques[1]

[1]Hospital de Braga. [2]Escola de Medicina da Universidade do Minho.

Introduction: Patients with ST elevation myocardial infarction (STEMI) requiring interhospital transfer for primary Percutaneous Coronary Intervention (PCI) often have delays in reperfusion. The door in-door out time (DIDO), which corresponds to the duration of time from arrival to discharge at the first hospital is increasingly being advocated as an important measure that must be considered in the processes aimed at accelerating reperfusion. DIDO is recommended to be less than 30 minutes.
Objectives: Evaluate DIDO time of the hospitals that transfer patients with STEMI to a center with primary-PCI. To assess the impact of DIDO time on total ischemia time and clinical outcomes in patients with STEMI.
Methods: Retrospective study with 523 patients with STEMI transferred to a center with primary PCI between January 1, 2013 and June 30, 2017.
Results: Median DIDO time was 82 minutes (interquartile range: 61-132 min). Only 7 patients (1.3%) were transfered in 30 min or less. Patients with DIDO times greater than 60 minutes had system delays (207.3 min. *versus* 112.7 min; p < 0.001) and total ischemia time (344.2 min *versus* 222 min; p < 0.001) significantly higher when compared to the patients transferred in 60 min or less. Observed in-hospital mortality was significantly higher among patients with DIDO times greater than 60 min *versus* patients with DIDO times of 60 min or less (5.1% *versus* 0%; p = 0.006; adjusted odds ratio for in-hospital mortality, 1.27 [95%CI: 1.062-1.432]). Until the date of follow-up, patients belonging to the group «> 60 min» had a higher proportion of death events, p = 0.016, and the survival time was significantly lower, p = 0.011.
Conclusions: A DIDO time of 30 min or less was observed in a small proportion of patients transferred for primary PCI. DIDO times of 60 min or less were associated with lower delays in reperfusion, lower in-hospital mortality and longer survival times.

P 124. OUTCOMES OF COMPLETE REVASCULARIZATION ON PATIENTS PRESENTING WITH STEMI

Inês Almeida[1], Hugo Miranda[1], Hélder Santos[1], Joana Chin[1], Catarina Sousa[1], Samuel Almeida[1], João Tavares[1], Registo Nacional de Síndrome Coronária Aguda, Pro-ACS[2]

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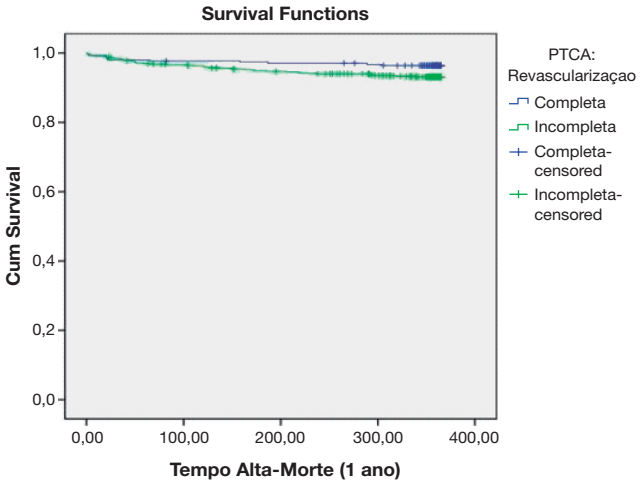
Introduction: 40-50% of patients (P) presenting with ST segment elevation myocardial infarction (STEMI) have multivessel disease (MVD). The PRAMI, CvLPRIT and DANAMI-3 PRIMULTI trials showed that complete revascularization (CR) was associated to better outcomes.
Objectives: Evaluation of prognostic impact of CR in P admitted with STEMI and MVD.

Methods: Retrospective analysis of P data admitted with STEMI and MVD at multicentric registry between 2000-2018. Compared demographic and clinical characteristics of P submitted to CR (group 1-G1) *versus* who did not (group 2-G2). A Cox multivariate regression was performed to evaluate predictor factors of stablished endpoints in-hospital and at 1-year (1y). Survival was evaluated through Kaplan-Meier curve (log-rank test).



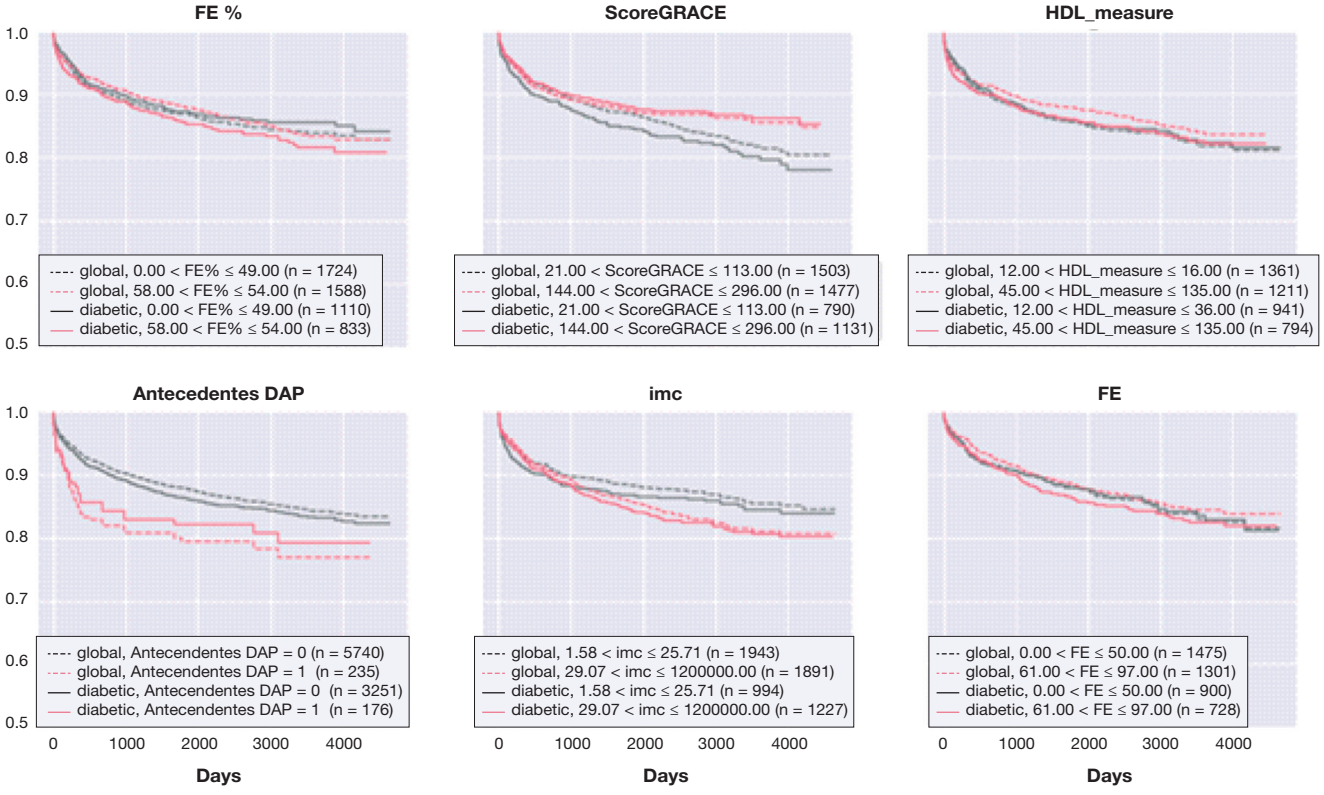
Results: Admitted 7919 P with STEMI. 2924 P performed a coronariography with MVD documentation, 21.7% were submitted to CR. G1 P were younger (63 ± 12 *versus* 66 ± 13 years, p < 0.001). The STEMI location was predominantly inferior in both groups (51.7% *versus* 56.1%). 32.1% of G1 P did more than one coronary procedure during hospitalization. The anterior descendent was the artery more frequently involved in both groups (79.5% *versus* 85.6%). The majority of P in the both groups had 2-vessel disease: 67% *versus* 85.7%. 33% of G1 P and 14.3% of G2 had 3-vessel disease. The culprit lesion was localized at descent anterior artery in 40.3% of G1 P and 39.1% of G2; and at right coronary in 35.4% of G1 and 40.4% of G2. All P of G1 performed percutaneous coronary angioplasty (although 0.2% had coronary artery bypass grafting (CABG) planned after hospital discharge). On G2, 4.6% did a hybrid technique during hospitalization, 3% stayed with CABG planned after discharge. The in-hospital evaluated endpoints were: reinfarction rate (1.7% between G1 *versus* 1.1%, p = 0.238); acute heart failure (15% *versus* 22.7%, p < 0.001); stroke (0.8% *versus* 0.7%, p = 0.795) and death (3.6% *versus* 6.1%, p 0.017). 1y mortality rate was 5.6%. Predictor factors for 1y mortality, evaluated through Cox multivariate regression, were: age ≥ 75 years (odds ratio [OR]: 3.087, p < 0.001, confidence interval [CI]: 1.661-5.737); acute heart failure (OR: 3.574, p < 0.001, CI: 1.898-6.730); heart rate > 100 bpm (OR: 2.708, p = 0.005, CI: 1.342-5.461) and ejection fraction < 50% (OR: 2.873, p = 0.004, CI: 1.403-5.881).
Conclusions: Our results are in accordance to data available from clinical trials, showing that acute heart failure and mortality rates are statistically significant lower in P submitted to CR, however in our study it was not predictor of 1y mortality.

P 125. CAN MACHINE LEARNING HELP US PREDICT READMISSION FOR ACUTE CORONARY SYNDROMES?

Pedro Monteiro[1], Sílvia Monteiro[1], M. He[2], C. Simpson[2], M. Zaslavskiy[2], F. Balazard[2], Lauren Li[3], Adrien Rousset[3], Stefan Schopf[3], David Dellamonica[3], Lino Gonçalves[1]

[1]Centro Hospitalar e Universitário de Coimbra / Hospitais da Universidade de Coimbra. [2]Owkin France. [3]Amgen Europe.

Introduction: Patients with acute coronary syndromes (ACS) are at increased risk of experiencing recurrent ACS. The predictive power of traditional risk scores can discriminate the prediction of future events but remains relatively low. Value of parameter analysis using machine learning algorithms remains largely unexplored.



Group means for 6 most significant features

P 125 Figure

Methods: Our study is a long term, longitudinal, single centre cohort study, where we collected data prospectively on 5977 ACS patients admitted for ACS and discharged alive. Using machine learning algorithms involving data collected on 119 variables, Kaplan Meier event free survival curves were compared for parameters with highest ranked interaction with diabetes *mellitus* (Fig.), age and LDL cholesterol to predict readmission.
Results: For the 5977 overall patients, re-event rates were 13% (771). Half of all recurrentevents occur within (338 days) and the majority (90%) of recurrent events occur within 2000 days; 42% of patients without readmission are observed under 2000 days (n = 2186). Our study shows that: Non-DM females have the best long term event free rates as do non-DM patients with preserved ejection fraction. For non-DM patients, the GRACE score, HDL and prior history of peripheral arterial disease separate event rates well but these parameters have less separation for DM patients. DM has worse event free rates whether ejection fraction is preserved or not. *1)* early predictive power of GRACE holds for about 5 years in non-DM patients but is counter-intuitive for DM patients; *2)* admission triglycerides appear to impact readmission rates overall and also in the older cohort; *3)* GRACE scores hold value in the early first 1000 days across both the overall and older populations but then becomes less discriminatory; *4)* Patients with type 2 diabetes *mellitus* have the highest event rate for readmission with curves separating within the first 2 years not replicated in the older cohort; *5)* most traditional co-parameters such as angina classification, troponin rise, angina class, ECG ST elevation changes have weak bearing on LDL categories; *6)* There appears to be a striking separation of event curves in those with right coronary artery lesions or angioplasty, which further separates with LDL categories.
Conclusions: We investigated a long term clinical dataset to find clinical value for prediction of recurrent events in ACS patients, applying parameter analysis using machine learning algorithms to explore whether our traditional risk markers hold value and over what time period. Some outputs support our traditional beliefs such as relationship to left ventricular ejection fraction, whilst others challenge these such as the GRACE score relation in the field of acute coronary events. These are the first results of a new partnership exploring whether these techniques are capable of informing clinical practice already or still need further clinical input to modify and mature them.

P 126. COMPLETE *VERSUS* CULPRIT-VESSEL ONLY REVASCULARIZATION FOR PATIENTS WITH ACUTE CORONARY SYNDROMES AND MULTIVESSEL DISEASE

João André Ferreira, Sílvia Monteiro, Rui Baptista, Francisco Gonçalves, Pedro Monteiro, Lino Gonçalves

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

Introduction: Recent randomized clinical trials have suggested that complete revascularization (CR) instead of culprit-vessel only revascularization (CVO) strategies may take a stand in the optimal management of patients admitted for acute myocardial infarction (AMI) with multivessel (MV) disease undergoing primary percutaneous coronary intervention (P-PCI). However, despite the 2017 ST-elevation acute coronary syndrome (STEMI) guidelines update with a new class of recommendation for CR, it remains controverse whether this strategy leads to better outcomes.
Objectives: To compare CR *versus* CV strategies during hospitalization in patients presenting with AMI with multivessel disease at P-PCI.
Methods: We analyzed data from all patients admitted with non-ST acute myocardial infarction (NSTEMI) and STEMI in a portuguese coronary care unit (CCU), between 2007 and 2016. We then evaluated potential differences of CR *versus* CVO with PCI during hospitalization in AMI patients with multivessel disease, defined by at least 2 different diseased main coronary vessels, saphenous vein or mammary artery conduits. We used 1:1 ratio propensity score matching to study the impact of CR on patient mortality and adjusted data for relevant risk factors at admission time.
Results: A total of 4758 patients were admitted for AMI, 2690 NSTEMI (56.5%) and 2068 STEMI (43.5%). Access to PCI records was possible in 3162 (66.5%) patients, of which 1707 (54%) underwent CR *versus* 1455 (46%) who underwent CVO. CVO patients were older (67.9 ±11.8 *versus* 63.5 ± 13.1 years, p < 0.001), more diabetic (56.5% *versus* 47.1%, p < 0.001), hypertensive (78.4% *versus* 72.2%, p < 0.001), dyslipidemic (82.1% *versus* 75%, p < 0.001), had greater GRACE score at admission (mean score 143.4 ± 37.2 *versus* 131.2 ± 131.2, p < 0.001), had more severe coronary disease (mean number of diseased vessels - 2.56 ± 0.6 *versus* 2.18 ± 0.4, p < 0.004), reached higher Killip class (mean - 1.42 ± 0.9 *versus* 1.26 ± 0.7, p < 0.001) and had lower left ventricular ejection fraction (48.07 ± 11.6 *versus* 51.25 ± 10.5, p < 0.001). No significant differences were found in peak troponin-I release between CR and CV (44.7 ± 69 *versus* 46.9 ± 76, respectively, p = 0.468). After propensity matching we obtained 130 CR and 133 CVO patients. In this cohort all-cause mortality was lower in CR group at 6-month (RR: 0.262, 95%CI: 0.071-0.962, p = 0.031) and 1-year (RR: 0.340, 95%CI: 0.119-0.973, p = 0.036) follow-up. When comparing STEMI *versus* NSTEMI all-cause mortality was non-significantly lower in CR (RR: 0.394 *versus* 0.226, p = 0.12 *versus* p = 0.16).
Conclusions: In patients presenting with AMI and MV disease, CR strategy during hospitalization leads to greater 6-month and 1-year survival when compared with CVO strategy. Despite not having found significant differences when STEMI was directly compared to NSTEMI, we believe this was due to the great loss of patient numbers after propensity matching, requiring larger trials to prove the effect.

Domingo, 28 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 3 - ÉCRAN 2 - DOENÇA CORONÁRIA

P 127. IDENTIFICATION OF A MAJOR BLEEDING PREDICTIVE SCORE IN ACUTE CORONARY SYNDROME

Raquel Menezes Fernandes[1], Teresa Mota[1], João Bispo[1], Pedro Azevedo[1], João Guedes[1], Daniela Carvalho[1], Dina Bento[2], Nuno Marques[1], Walter Santos[2], Jorge Mimoso[2], Ilídio de Jesus[1]

[1]Centro Hospitalar e Universitário do Algarve. [2]Centro Hospitalar do Algarve, EPE / Hospital de Faro.

Introduction: In Acute coronary syndrome (ACS), major bleeding (MB) is a serious complication and is associated with a worse prognosis. This study pretends to determine a predictive score of MB in patients with ACS.
Methods: We conducted a retrospective, descriptive and correlational study encompassing patients admitted with ACS in a Cardiology service from 1st October 2010 to 1st October 2018. Demographic factors, risk factors, antecedents and clinical characteristics were analyzed. The correlation between the categorical variables was performed by the Chi-square test, while the T-Student test was applied to the continuous variables, with a significance level of 95%. Independent predictors of MB were identified through a binary logistic regression analysis, considering p = 0,05. Then, a discriminatory function was applied using the Wilks lambda test to determine the discriminant score of the analized groups. For statistical analysis, SPSS 24.0 was used.
Results: A total of 4458 patients were admitted with ACS, and 86 (1.9%) had MB during the hospitalization. In this subgroup, 81.4% were over 65 years of age, 74.9% were males, 61.6% had acute myocardial infarction with ST-segment elevation (STEMI), 15.1% had hemoglobin (Hb) < 10 g/dL and 36% were medicated with aspirin on an outpatient basis. The in-hospital mortality rate was 17.4%. Age > 65 years (p = 0.016), STEMI (p = 0.019), hemoglobin < 10 g/dL (p = 0.027), and history of medication with aspirin (p < 0.001) were independent predictors of MB. A predictive score of MB in patients with ACS was determined with the formula: -1.238 + 1.166 × (age > 65) + 0.959 × (STEMI) + 3.7 × (Hb < 10) + 0.504 × (history of taking aspirin). A cut-off of 0.51 was obtained with 60.5% sensitivity, 79.6% specificity and 79.2% discriminative power.
Conclusions: In this population of patients admitted with ACS, 1.9% presented MB. A predictive score of MB with a good discriminative power

was determined, and included age > 65 years, STEMI, hemoglobin < 10 g/dL and previous medication with aspirin. By considering clinical variables, this score can be used at a very early stage of hospital admission, in order to stratify the hemorrhagic risk of each patient. It still needs validation to allow its application in clinical practice.

P 128. PREDICTORS OF IN-HOSPITAL MORTALITY IN STEMI PATIENTS COMPLICATED BY CARDIOGENIC SHOCK TREATED WITH PRIMARY PERCUTANEOUS CORONARY INTERVENTION

Isabel Durães Campos, Cátia Costa Oliveira, Carla Marques Pires, Paulo Medeiros, Carlos Galvão Braga, Catarina Vieira, Rui Flores, João Costa, Jorge Marques

Hospital de Braga.

Introduction: Cardiogenic shock (CS) is an uncommon complex syndrome in patients (pts) with acute myocardial infarction (AMI). However, it remains the most serious complication and the most common cause of in-hospital mortality, with mortality rates ranging from 40-60%. The majority of pts are thought to develop CS after admission, but the incidence in a contemporary STEMI cohort admitted for percutaneous coronary intervention (PCI) remains unknown.
Objectives: The aim of the present study was to evaluate pts with STEMI and cardiogenic shock undergoing pPCI, in order to establish the timing of CS onset, mortality rates and predictors of in-hospital mortality.
Methods: The records of 1679 STEMI pts admitted, consecutively, in our coronary care unit during six years were analysed retrospectively. Of this pts, 137 (8%) developed CS based on clinical criteria. Univariate and multivariate logistic regression analyses were used to identify independent predictors of in-hospital mortality. Primary endpoint was the occurrence of death at 30 days and 1 year; follow-up was completed in 100% of patients. Statistical analysis was performed using SPSS 20.0.
Results: The sample was formed by 90 (65.7%) men and 47 (34.3%) women, with mean age of 67 ± 15 years. The incidence of CS was 8%. The majority of this pts (48%) were transferred from a non-PCI centre, 27% were rescued by an emergency medical system and 26% were admitted directly at a PCI centre. Around of 39% of pts had to be resuscitated before coronary intervention. Regarding the timing of CS onset, 66% of pts had CS on admission and 34% developed late CS. The left anterior descending artery was the most affected artery (47%), and 55% of the patients had multivessel disease. All-cause in-hospital and 1 year mortality was 45% and 53%, respectively. A multivariate analysis identified age > 75 (HR: 1.1, p = 0.002), eGFR < 60 ml/min/1.73 m^2 (HR: 2.2, p = 0.02), left ventricular dysfunction (LVEF < 40%) (HR: 2.1, p = 0.027), resuscitation before PCI (HR: 1.2, p = 0.045), and Intra-Aortic Balloon Pump (IABP) implantation after PCI (HR: 4.4, p = 0.026) as independent predictors of in-hospital mortality.
Conclusions: Despite the therapeutic advances and early revascularization have substantially improved the survival of pts with STEMI and CS, the in-hospital mortality is still significant. This study identified age, acute renal failure, left ventricular dysfunction, resuscitation before PCI, and IABP implantation after PCI as independent predictors of in-hospital mortality in patients with cardiogenic shock due to AMI. Consequently, only the timing of IABP insertion was the only modifiable factor predicting in-hospital mortality in our study, and its implantation before PCI can be considered to improve the outcome of these patients. These results should motivate the search for potentially modifiable factors that can lead to better results in the prognosis of these patients.

P 129. LIPID AREA OF CONTROVERSY: IS SERIC LIPOPROTEIN (A) A CARDIOVASCULAR RISK FACTOR IN PORTUGUESE POPULATION?

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Introduction: Coronary artery disease (CAD) remains a leading cause of morbidity and mortality despite implementation of lifestyle measures and the existence of drugs to reduce classical risk factors. It is necessary to identify other causal risk factors and potential therapeutic targets, and Lipoprotein a (Lpa) seems a likely candidate. Despite the recognition of the Lpa as an independent risk factor for cardiovascular events, the medical knowledge about it is still limited. Lpa determination involves challenging laboratory techniques, limiting its universal implementation.
Objectives: To evaluate if the level of Lpa can be considered a risk marker for CAD in Portuguese population.
Methods: Case control study of 3050 subjects: 1619 patients with at least one > 75% coronary stenosis by angiography (median age 53.3 ± 8 and 78.9% men) and 1431 controls adjusted by age and gender (median age 52.8 ± 7.8 and 89.3% men) selected from GENEMACOR study population. Lipoprotein a was determined by immunoturbidimetry. The distribution normality study was done by Kolmogorov-smirnov test in case-control mode and using non-parametric tests to evaluate the distribution and spearman correlations were determined. The independent predictor value of Lpa from other risk factors and family history of CAD was evaluated by multivariate regression.
Results: The Lpa didn't show a normal distribution curve either in cases or in controls (p < 0.0001). Median of Lpa was superior in patients (18.9 mg/dl, 6-234 mg/dl) in comparison with controls (13.6 mg/dl, 0.5-241 mg/dl), p < 0.001. Although increasing level of Lpa was observed with LDL increase, a low degree correlation was found with LDL (0.098, p < 0.0001) both in patients and in controls. In multivariate logistic regression the Lpa was an independent predictor of coronary disease (OR: 1.01, p < 0.0001). Smoking habits (OR: 3.09), dyslipidemia (OR: 2.8), hypertension (OR: 2.2) and familiar history (OR: 2.1) were also independent predictors.
Conclusions: In our population there were higher levels of Lpa in relation to controls, matched by gender and age. Lpa was an independent marker for CAD. Knowledge about the interaction between Lpa and other risk factors may allow the identification of patients at increased risk of CAD in order to implement adequate preventive strategies.

P 130. NONSPECIFIC INTRAVENTRICULAR CONDUCTION DELAY IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION IS ASSOCIATED WITH A WORSE PROGNOSIS AFTER DISCHARGE

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Introduction: The presence of left or right bundle brunch block in patients with persistent ischaemic symptoms is an indication for emergent coronary angiography. However, there is nothing established about nonspecific intraventricular conduction delay (NICD).
Objectives: The aim of this study was to assess the prognostic impact of NICD in patients with acute myocardial infarction (AMI).
Methods: We retrospectively studied consecutive patients admitted with AMI between 2011 and 2013. We excluded patients with left or right bundle brunch block, or pacemaker. NICD was defined as a QRS duration ≥ 120 ms without meeting the criteria for left or right bundle brunch block. We compared 2 groups of patients: those with NICD and those without NICD. We analysed clinical characteristics, in-hospital evolution, and major adverse cardiovascular events (MACE) during follow-up (cardiovascular death, arrhythmic events, heart failure, myocardial infarction, and stroke). Survival probability free of MACE between groups was analysed using a survival curve analysis by Kaplan-Meier method.
Results: We studied 507 patients. Fifty eight patients had NICD. Patients with NICD were older, had more severe left ventricular ejection fraction (LVEF) dysfunction, and had less frequently ST-segment elevation AMI (STEMI). After discharge, during a mean follow-up time of 24.1 ± 11.5 months, 59/489 patients died. NICD was independently associated with MACE (adjusted OR: 2.39, 95%CI: 1.12-5.10; p = 0.025) (Table). The survival curve analysis showed a greater survival probability free of MACE for those patients without NICD (log-rank, p < 0.001) (Fig.).

Table P 130. Univariate and multivariate predictors of MACE

Predictors of MACE	Unadjusted OR (95% CI)	p-value	Adjusted OR (95% CI)	p-value
Age in years	1.05 (1.03-1.07)	< 0.001	1.05 (1.02-1.07)	< 0.001
Male gender	0.78 (0.48-1.20)	0.236	—	—
Smoker	0.62 (0.38-1.01)	0.055	1.49 (0.75-2.98)	0.256
Diabetes mellitus	2.29 (1.46-3.60)	< 0.001	1.65 (0.95-2.86)	0.074
Chronic Kidney Disease	2.43 (1.20-4.93)	0.014	2.24 (0.95-5.30)	0.066
Atrial fibrillation	1.99 (1.09-3.62)	0.025	1.66 (0.83-3.35)	0.152
Beta-Blocker	0.69 (0.39-1.21)	0.192	—	—
ACEi/ARB	0.93 (0.41-2.11)	0.855	—	—
Statin	0.64 (0.27-l.50)	0.302	—	—
MRA	—	0.999	—	—
ST-Elevation Myocardial Infarction	0.56 (0.36-0.87)	0.009	0.72 (0.42-1.24)	0.234
Nonspecific Intraventricular Conduction Delay	2.92 (1.64-5.18)	< 0.001	2.39 (1.12-5.10)	0.025
LVEF < 40%	5.81 (3.32-10.16)	< 0.001	5.59 (2.98-10.47)	< 0.001
Diagnostic Coronary Angiography	0.41 (0.14-1.18)	0.099	—	—
1 vessel CAD	0.64 (0.36-1.13)	0.121	—	—
2 vessel CAD	0.80 (0.43-1.49)	0.474	—	—
3 vessel CAD	1.86 (1.17-2.94)	0.009	1.33 (0.77-2.30)	0.306
Left Main Trunk CAD	1.88 (0.95-3.71)	0.068	1.05 (0.46-2.39)	0.909
PCI/CABG	0.67 (0.40-1.10)	0.111	—	—

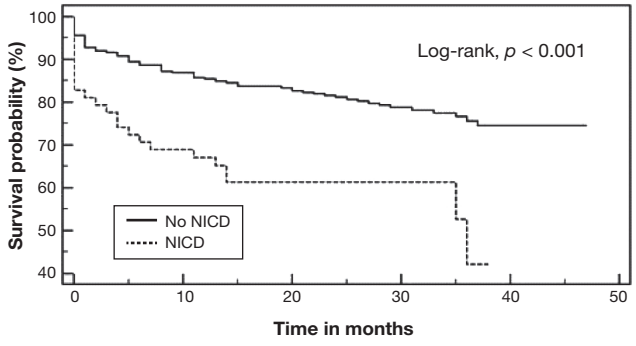

Figure 1. Survival probability among patients with NICD and without NICD.

Conclusions: In this group of patients with AMI, NICD was associated with a worse long term survival free of cardiovascular mortality and hospitalizations. Maybe the threshold for intervention should be equally lower in this type of patients.

P 131. IN-HOSPITAL OUTCOMES OF ACUTE CORONARY SYNDROME IN PATIENTS WITH A PREVIOUS HISTORY OF A CORONARY ARTERY BYPASS GRAFTING SURGERY (CABG) COMPARED WITH NON-CABG PATIENTS: A NATION-WIDE STUDY

Joana M. Ribeiro[1], Rogério Teixeira[1], Luís Puga[1], João Lopes[1], José Pedro Sousa[1], Alexandrina Siserman[1], Diana Campos[1], Carolina Saleiro[1], Lino Gonçalves[1], Registo Nacional de Síndromes Coronárias Agudas[2], Carolina Lourenço[1]

[1]Centro Hospitalar e Universitário de Coimbra, EPE / Hospital Geral; [2]CNCDC - Centro Nacional de Coleção de Dados em Cardiologia.

Introduction and objectives: *1)* To assess the in-hospital outcomes of ACS patients with previous history CABG *versus* non-CABG ACS patients. *2)* Within the previous CABG ACS patients, to compare the in-hospital outcomes of patients submitted to percutaneous coronary intervention (PCI) of the bypass grafts *versus* the ones with PCI of the native coronary tree (NCT).
Methods: *1)* From the Portuguese Registry of Acute Coronary Syndromes (PRACS, n = 17,834), a propensity score (PS) matching was elaborated. The matching was performed in a 1:3 fashion (1 CABG patient per 3 non-CABG), with correction for the following variables: age, gender, type of ACS, hypertension, diabetes mellitus, dyslipidaemia, smoking, stable angina, ACS, PCI, valvular heart disease (VHD), heart failure, cerebrovascular disease and peripheral artery disease (PAD), Killip-Kimbal class and impaired kidney function at admission, invasive coronariography and PCI during hospital stay. After the PS matching, 3024 remained in the analysis: 756 in the CABG group (group A) and 2268 in the non-CABG group (group B). The primary outcome was in-hospital mortality. *2)* Within the population of the PRACS we selected all patients with ACS and previous CABG who underwent either bypass or NTC PCI during hospital stay. This subanalysis included 342 patients, of whom 110 underwent bypass PCI and 232 NCT PCI. We compared both groups for the main basal characteristics and for in-hospital mortality.
Results: *1)* The final sample for the main analysis consisted of 3024 patients with a mean age of 71 ± 11 years (80% male). Median hospital stay was of 6 days (3-7) and was similar between groups. Groups A and B were balanced for all main clinical characteristics, except for history of stable angina (62% *versus* 58%, p = 0.03), previous PCI (34% *versus* 41%, p < 0.01), VHD (11% *versus* 8%, p = 0.03) and PAD (20% *versus* 14%, p < 0.01). In-hospital mortality was similar between groups (3.7% *versus* 3.4%, p = 0.69). *2)* A total of 342 patients were included in the sub-analysis. Mean age was of 70 ± 10 years and 84% of patients were male. Patients who underwent bypass circulation PCI were older (73 ± 9 *versus* 69 ± 10 years, p < 0.01) and had more PAD (22% *versus* 14%, p = 0.05). There were no significant differences regarding in-hospital mortality (0,9 *versus* 1,3, p = 1.0).
Conclusions: According to our propensity-matching, a previous history of CABG does not influence the short term outcome after an ACS. In patients with previous CABG, bypass circulation *versus* NCT PCI had no influence in in-hospital mortality.

P 132. THE RATIO BETWEEN ADMISSION AND CHRONIC GLYCAEMIA IS A PREDICTOR OF WORSE OUTCOMES IN ACS PATIENTS

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Introduction: Hyperglycemia in acute coronary syndrome (ACS) patients (pts) is associated with worse in-hospital outcomes. In diabetic (DM) pts it

does not necessarily indicate the presence of acute hyperglycemia and the prognostic impact isn't clear, emphasizing the importance of quantifying the relative acute glucose (gc) rise instead. The ratio between acute and chronic Gc levels (A/C ratio) could provide a better prognostic value.
Objectives: We investigated the association between the A/C ratio and in-hospital and long term prognosis in ACS pts.
Methods: Retrospective study of pts with ACS periodically included in our center registry between October/2012 and November/2017 with HbA1c information. Gc and HbA1c levels were measured at hospital admission. To calculate the A/C ratio the published formula 28.7×HbA1c-46.7 to estimate chronic Gc was used. The primary endpoints were a composite of in-hospital death and maximum Killip class (KK) ≥ III and a composite of infarction, stroke, heart failure and cardiovascular death (MACCE) in the follow-up.
Results: We included 404 pts (68 ± 13 years; 72.8% males; 43.6% STEMI). The median A/C ratio was 1.07 (IQR: 0.92-1.32). Pts in the highest tertile of the A/C ratio were older (68 ± 12, 65 ± 14, 70 ± 12; p = 0.003), more likely to have STEMI (STEMI: 31%, 45%, 55%; p < 0.001); higher GRACE risk score (134 ± 32, 139 ± 38, 158 ± 42; p < 0.001); higher KK (≥ II: 11%, 24%, 33%; p < 0.001) and have a lower ejection fraction (EF) (53% ± 10%, 50% ± 10%, 48% ± 12%; p = 0.003), than pts in the lower tertiles. During hospitalization 9 (2.2%) pts died and 48 (11.9%) had the primary endpoint. The incidence of the in-hospital primary endpoint increased with A/C ratio tertiles (4.4%, 8.2%, 23.0%; p for trend < 0.001), for which it showed a good predictive capability (AUC: 0.72, 95%CI: 0.67-0.76). Using the Youden index the cut-off value of 1.31 for the A/C ratio was decided. After a median follow-up of 34 months (IQR: 19-51), 50 (13%) pts died (6.8% from CV causes) and 84 (21.9%) had MACCE. After adjusting for admission diagnosis, DM, GRACE and EF, an A/C ratio: 1.31 was an independent predictor for the risk of death (HR 2.79, 95%CI: 1.17-6.65; p = 0.021) and MACCE (HR: 1.79, 95%CI: 1.09-2.93; p = 0.020).
Conclusions: In ACS pts, the A/C glycemic ratio increased with the severity of the index event, showed a good predictive ability and was a predictor of death and MACCE during the follow-up. It is readily available and provides valuable risk stratification and prognostic information.

Domingo, 28 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 3 - ÉCRAN 3 - CIRCULAÇÃO / EMBOLIA PULMONAR

P 133. PORTUGUESE SINGLE CENTER EXPERIENCE IN BALLOON PULMONARY ANGIOPLASTY: HAEMODYNAMICS AND CLINICAL SHORT-TERM EFFECTS

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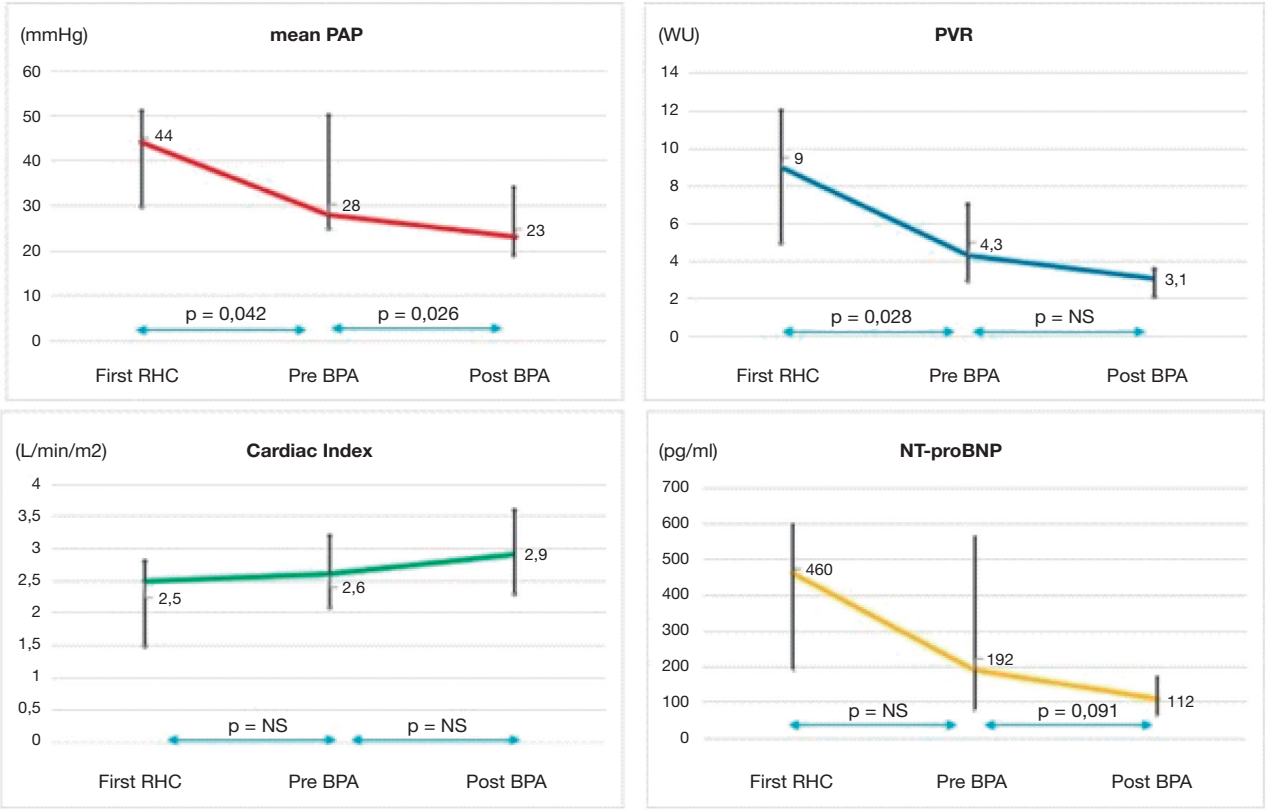
Introduction and objectives: In patients with chronic thromboembolic pulmonary hypertension (CTEPH) refused for pulmonary endarterectomy, the only treatment available in Portugal until recently, was pulmonary vasodilator therapy (PVT). Our aim is to evaluate the immediate efficacy of balloon pulmonary angioplasty (BPA) beyond PVT in patients with non-operable CTEPH or residual and recurrent pulmonary hypertension (PH) after pulmonary endarterectomy.
Methods and results: From December 2017 to December 2018, we performed a total of 57 procedures in 12 patients. Haemodynamics, NT-proBNP and World Health Organization (WHO) functional class were evaluated at the diagnosis, before the 1st session and in the last session of BPA in 7 consecutive CTEPH patients (mean age 66 ± 11, 57% female) who completed the BPA treatment (median of 5 sessions per patient, 3.5 ± 1.7 vessels dilated per session, 9.9 ± 1.3 segments treated in all procedures). The median duration between CTEPH diagnosis and first BPA was 55 months and from first to last BPA was 4 months. After PVT, patients showed improvement of mean pulmonary



P 133 Figure

arterial pressure and pulmonary vascular resistance (Fig.). After BPA there was a significant additional improvement of mean PAP (p = 0.026), a slightly decreased pulmonary vascular resistance (PVR) and increased cardiac index. BPA showed a trend to improvement of NT-proBNP (p = 0.091). At CTEPH diagnosis and after PVT patient were symptomatic (WHO functional class II, III, IV: 4/2/1 and 6/1/0, respectively) and after BPA 86% improved to WHO class I. In these 7 CTEPH patients, 2 had mild pulmonary reperfusion edema without the need of invasive ventilation There was no peri-procedural death.
Conclusions: BPA further improves short term haemodynamics and functional class in patients with non-operable CTEPH or residual/recurrent PH on vasodilator therapy.

P 134. RELATION BETWEEN THE THICKNESS OF THE RIGHT VENTRICULAR OUTFLOW TRACT AND INVASIVE HEMODYNAMIC PARAMETERS IN PATIENTS WITH PULMONARY HYPERTENSION

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Serviço de Cardiologia, Departamento Coração e Vasos, CHULN, CCUL, Faculdade de Medicina, Universidade de Lisboa, Lisboa.

Introduction: Invasive hemodynamic evaluation in pulmonary hypertension (PH) is essential for the diagnosis, determination of severity and establishment of prognosis. However, it is crucial to identify parameters that allow a non-invasive approach to optimize the evaluation and follow-up of these patients and, eventually, replace invasive catheter evaluation. The thickness of the right ventricular outflow tract (RVOT) evaluated by high resolution computed tomography pulmonary angiography (AngioCT) is a noninvasive obtainable parameter whose role in this context is not yet established.
Objectives: To evaluate the relation between the thickness of RVOT, determined by AngioCT, and the hemodynamic data obtained by right heart catheterization in patients with the diagnosis of PH.
Methods: Retrospective single center study of consecutive patients with PAH diagnosis established by hemodynamic evaluation. All the patients were submitted to AngioCT. The following hemodynamic parameters were collected: right atrial pressure (RAP), pulmonary artery pressure (systolic - PSAP; diastolic - PDAP; mean - PMAP), pulmonary capillary wedge pressure (PCWP), cardiac output (CO), cardiac index (CI), and pulmonary vascular resistance (PVR). The thickness, in millimeters, of the RVOT was measured in the sagittal plane and its correlation with the various hemodynamic parameters was accessed using Pearson correlation.

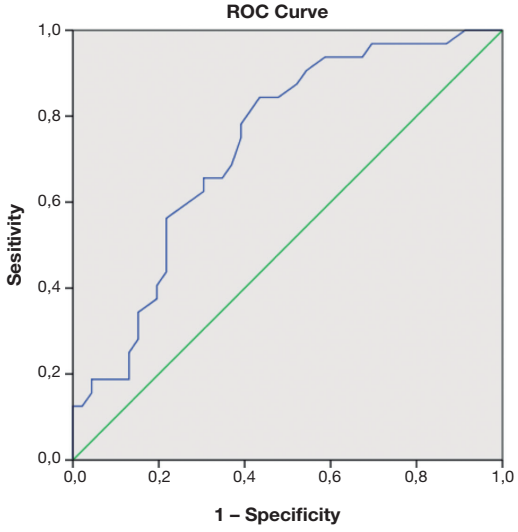

Figure 1. A RVOT thinkness > 5 mm showed a good acuity for a PMAP value ≥ 50 mmHg (AUC 0.73).

Results: Seventy eight patients were included (69.2% female, with a median age of 67 years - IQR: 26). Based on the clinical classification (Nice 2013), 50% of the patients belong to Group 4, 28% to Group 1, 11% to Group 3 and 6% to Group 2. The majority of the patients (76%) had pre-capillary PH, 21% combined PH and 4% post-capillary PH. The mean values of the hemodynamic accessed parameters were: RAP 12 ± 6 mmHg; PSAP 79 ± 23 mmHg; PDAP 30 ± 8mmHg; PMAP 48 ± 14mmHg; PCWP 15 ± 6 mmHg; CO 3.75 ± 1.31 L/min; CI 2.10 ± 0.7 L/min/m^2; PVR 10.78 ± 6.47 Wood. The mean RVOT thickness was 5.56 ± 1.47 mm. There was a positive and significant correlation between RVOT thickness and PSAP (R: 0.36, p = 0.001), PDAP (R: 0.34, p = 0.004), PMAP (R: 0.23, p = 0.004) and the PVR (R: 0.36, p = 0.044). A RVOT thickness > 5 mm showed a good acuity for a PMAP value ≥ 50 mmHg (AUC: 0.73).
Conclusions: The evaluation of RVOT thickness by AngioCT correlated with several hemodynamic parameters, showing promise as a potencial new tool in the diagnostic evaluation and determination of hemodynamic severity in PAH.

P 135. RADIATION EXPOSURE IN COMPLETE ARM, HYBRID AND COMPLETE FEMORAL VASCULAR ACCESS IN PATIENTS UNDERGOING RIGHT HEART CATHETERIZATION

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

Introduction and objectives: Right heart catheterization (RHC) is a standard procedure, namely in the workup of patients with terminal heart failure (HF) who are candidates to advanced HF therapies. Complete (arterial and venous) arm vascular access (AVA), is increasingly used in this setting. We aimed to compare procedure duration and radiation exposure for AVA (isolated and hybrid) and femoral alone vascular access (FVA).
Methods: Single-centre retrospective analysis of 185 consecutive patients between Feb 2011 and Nov 2018 who underwent RHC. Of these, we compared a total of 171 pts (14 pts were excluded because missing data regarding venous access), that underwent RHC by complete femoral access (FVA; n = 70), complete AVA (n = 66) and hybrid access (HVA; n = 35) - either intentionally, due to anticipated difficulties, or access failure - concerning procedure duration and radiation exposure. Standard statistics (chi-square, t-Student and Mann-Whitney tests) were used according to the tested variables.
Results: Complete AVA entered our practice in 2015 and its use increased progressively, from an initial 29% to 73% of the procedures in 2018. The three groups did not differ significantly in their baseline characteristics. When compared to complete femoral access, complete AVA procedures exposed both the patient and the operator to significantly less fluoroscopy radiation time (8.49 IQR: 6.2-12.4 min *versus* 9.24 IQR: 7.6-15.4 min, p = 0.002) and dose (radiation dose: 2059 IQR: 1046-3717 mGy/m^2 *versus* 4246 IQR: 2558-10,099 mGy/m^2, p < 0.001; effective radiation dose: 176 IQR: 96-369 mGy *versus* 508 IQR: 297-1668 mGy). There was no difference in total procedure duration (55 IQR: 45-67 min *versus* 52 IQR: 42-68 min; p = 0.513). The hybrid procedures were significantly longer than complete femoral access (70 min IQR: 51-9 *versus* 52 min IQR: 43-68, p = 0.013) but used less effective x-ray dose (381 IQR: 158-495 *versus* 470 IQR: 277-1187, p = 0.03).
Conclusions: Complete arm vascular access is associated with lower radiation exposure despite similar procedure duration.

P 136. PE-CM SCORE - AN EASY TOOL TO ASSESS PROGNOSIS OF PULMONARY EMBOLISM

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Introduction: There are several scoring systems for risk stratification and mortality prediction in patients with pulmonary embolism. The Pulmonary

Embolism Severity Index (PESI), its simplified version (sPESI) and the European Society of Cardiology (ESC) 2014 risk models are widely used, however, these are time-consuming and don't make use of information regarding the patient metabolic status provided by the arterial blood gas (ABG) examination.
Objectives: To provide a simple and easy-to-perform score based on physical and ABG parameters at admission and to compare its performance to predict in-hospital all-cause mortality.
Methods: In a retrospective single-centre observational study, 487 patients with confirmed PE were admitted in a 24-month period. We calculated PESI, sPESI and ESC 2014 stratification risk scores. Data collected included demographics, clinical characteristics, biochemical markers and echocardiographic parameters. Multivariate analysis was performed using logistic regression to identify independent predictors of all-cause mortality. Discriminative power was accessed by Receiver Operating Characteristic (ROC) curve analysis.
Results: A total of 483 patients were included in the final analysis. Mean age was 66.3 ± 17.4 years (39.4% males). Median in-hospital length of stay was 12 (IQR: 7-21) days. In-hospital mortality rate was 18.3% (n = 89). Modified Shock Index (MSI) and lactate concentration (Lac) were significantly higher (1.18 *versus* 0.96 and 4.87 *versus* 1.87 mmol/L, respectively, p < 0.0001 for both) while Oxygen saturation/fraction of inspired oxygen (OSF) ratio and blood pH were significantly lower (271.9 *versus* 364.2 and 7.37 *versus* 7.43, respectively, p < 0.0001 for both) in patients with in-hospital death. There was a significantly higher proportion of patients with Glasgow Coma Scale (GCS) < 15 with in-hospital death (68.5% *versus* 31.4%, p < 0.0001). Stratified analysis was based on the cut-off value for the last quartile of MSI (1.0) and Lac (2.5 mmol/L) and for the first quartile of OSF ratio (350) and blood pH (7.30). Multivariate analysis using logistic regression is summarized in Table. Based on the different OR values, we attributed points to each variable: GCS < 15 (3 points), pH < 7.30 or MSI ≥ 1.0 (2 points) and OSF ratio < 350 or Lac ≥ 2.50 mmol/L (1 point), with a total score (PE-CM score) range of 0-9. The PE-CM score yielded a good prognostic performance in predicting in-hospital death using ROC analysis (AUC: 0.832, 95%CI: 0.77-0.89, p < 0.0001) and performed better than other scores in predicting death (PESI: AUC: 0.753, p = 0.038; sPESI: AUC: 0.625, p = 0.0001; ESC 2014: AUC: 0.723, p = 0.002) - Figure. A PE-CM score > 3 has a sensitivity of 69.0% and a specificity of 88.3% in predicting in-hospital all-cause mortality.

Multivariate analysis			
	p-value	OR	95% CI
GCS < 15	< 0.0001	6.16	2.91-13.04
MSI ≥ 1.0	< 0.0001	4.01	1.92-8.34
pH < 7.30	0.016	3.99	1.29-12.35
OSF ratio < 350	0.020	2.45	1.15-5.20
Lac ≥ 2.5 mmol/L	0.004	2.99	1.42-6.26

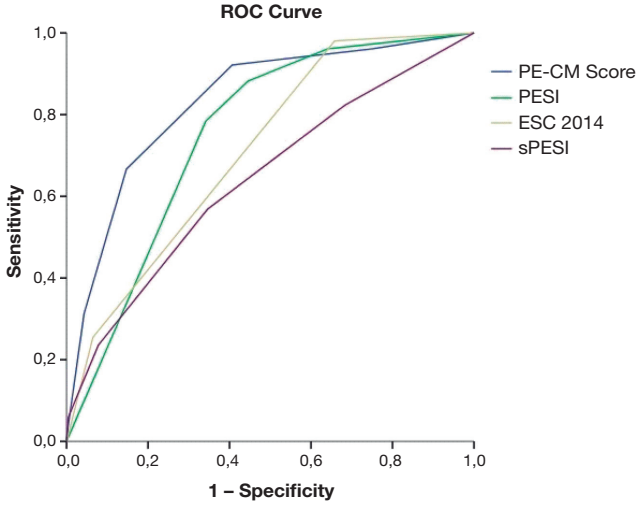

Figure 1. ROC curve comparison

Conclusions: PE-CM score proves an easier and simple tool with good performance to predict in-hospital all-cause mortality in patients admitted for PE.

P 137. DISCRIMINATORY CAPACITY OF PESI SCORE DEPENDING ON AGE: IS IT EQUAL FOR ALL?

Inês Almeida[1], Joana Simões[2], Daniel Faria[2], Marco Beringuilho[2], David Roque[2], João Baltazar[2], Miguel Santos[2], Carlos Morais[2]

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Introduction: Pulmonary Embolism Severity Index (PESI) score is the most commonly risk stratification tool used for patients (P) with acute pulmonary embolism (PE) and validated in many populations.
Objectives: Evaluation of discriminatory capacity of PESI score in P < 65 years *versus* ≥ 65 presented with PE.
Methods: Retrospective observational study of 483 P admitted with PE between 2014-16. P were divided into two groups: group 1 (G1) if < 65 years and group 2 (G2) if ≥ 65 years. Collected data regarding clinical and laboratorial parameters in both groups. Evaluated discriminatory capacity of PESI score in predicting in-hospital and 1-year mortality (1yM) in both groups through analysis of *receiver-operating characteristics* (ROC) curve.
Results: Admitted 483 P with PE, mean age 66.3 ± 17.6 years, 60.2% females. Mean PESI score in global population was 116.9 ± 49.4, smaller in G1 patients (mean value 84.5 ± 39.8 in G1 *versus* 137.5 ± 43.5, p < 0.001). At univariate analysis, PESI score was predictor of in-hospital mortality in G1 ([odds ratio] OR: 1.026, p < 0.001) and G2 patients (OR: 1.025, p < 0.001). Its discriminatory capacity was acceptable: for G1 the *area under the curve* (AUC) was 0.799, p < 0.001, confidence interval (CI) 0.693-0.906; and in G2 AUC: 0.766, p < 0.001, CI: 0.704-0.827. Regarding 1yM, PESI score also showed to be predictor of this outcome in both groups (OR: 1.026, p < 0.001). Its discriminatory capacity was excellent in G1 patients (AUC: 0.809, p < 0.001, CI: 0.732-0.886) and only acceptable in G2 (AUC: 0.776, p < 0.001, CI: 0.718-0.834). The authors determined other predictor factors (not included in PESI score) to accurate risk stratification in this group. At univariate analysis, predictor factors (PF) for 1yM were: protein chain reaction (PCR) (OR: 1.066, p < 0.001), urea (OR: 1.015, p < 0.001), creatinine (OR: 1.843, p = 0.001), lactate (OR: 1.240, p = 0.002), NTproBNP (OR: 0.009, p = 0.002), haemoglobin (OR: 0.817, p = 0.002), cardiopulmonary arrest (CPR) (OR: 7.750, p = 0.008) and heart rate (OR: 1.015, p = 0.017). At multivariate analysis, independent PF for 1Ym were: urea (p = 0.001), PCR (p = 0001), lactate (p = 0.015) and CPR (p = 0.026).
Conclusions: In our center, PESI score had a similar discrimination between groups in predicting in-hospital mortality. However, as predictor of 1yM, specially in older patients other clinical and laboratorial markers besides PESI should be taken into account to assess risk stratification.

P 138. RIGHT VENTRICULAR FUNCTION IN ACUTE PULMONARY EMBOLISM: DOES FIBRINOLYTIC THERAPY IMPROVE IT AND DOES ITS PERSISTENCE AS AN IMPACT ON PROGNOSIS?

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Introduction: Right ventricular (RV) dysfunction is found in at least 25% of pts with acute pulmonary embolism (PE). The presence of RV dysfunction at diagnosis is a determinant of risk stratification and early clinical outcomes. However, it is not well known whether RV dysfunction at diagnosis is improved by fibrinolytic therapy (FT) and if its persistence at discharge as an impact on prognosis.
Objectives: To evaluate *1)* the effect of FT on RV function in acute PE and *2)* the effect of persistent RV dysfunction at the time of discharge.

Methods: Retrospective study of 428 consecutive pts admitted for acute PE in a single-center hospital for 2 consecutive years. We identified those who underwent transthoracic echocardiogram (TTE) and who were found to have RV dysfunction at hospital admission (n = 103, 24.1%). RV dysfunction was defined as the presence of either RV dilatation, TAPSE < 16mm, S' < 10 cm/s or tricuspid regurgitant jet systolic velocity > 2.6 m/s. For the 1st endpoint pts found to have RV dysfunction at admission were divided in 2 groups: those who have undergone FT (1, n = 14; 31.1%) and those who have not undergone FT (2, n = 31; 68.9%). As for the 2nd endpoint pts were also divided in 2 groups: those in whom RV dysfunction was present at the moment of their hospital admission, but not at discharge (3, n = 19; 42.2%) and those in whom RV dysfunction was present at hospital admission and persisted at discharge (4, n = 26; 57.8%). A second TTE was performed at discharge and the persistence of RV dysfunction was looked for.
Results: We included a total of 45 patients with acute PE and RV dysfunction at admission who had a reevaluation TTE at discharge (mean age 66.2 ± 17.8y, 28.9% males). We found no differences in terms of RV dysfunction persistence between patients in group 1 and group 2 (42.9% *versus* 41.9%, respectively; p = 0.954), also well as no differences in proBNP values (mean 9973 *versus* 8694 pg/mL; p = 0.901). For the 2nd endpoint the median FUP time was 495 (interquartile range (IQR): 417) days. Mortality rate after discharge was 8.9%. Median proBNP was significantly superior in group 4 *versus* 3 (median 12.597 *versus* 293 pg/mL; p = 0.029). Similarly, patients in group 4 had significantly higher mortality rate than patients in group 3 (0.0 *versus* 21.1%; p = 0.026).
Conclusions: In acute PE, FT seems not to improve RV function in patients found to have RV dysfunction at admission and mortality seems to be higher in those with persistent RV dysfunction before discharge.

Domingo, 28 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 3 - ÉCRAN 4 - REABILITAÇÃO CARDÍACA

P 139. CARDIAC REHABILITATION PROVISION IN PORTUGAL: COMPARATIVE RESULTS FROM THE GLOBAL SURVEY OF PROGRAMS

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Introduction: Cardiac rehabilitation (CR) is a growing field in preventive cardiology with proven functional benefit in ischaemic heart disease patients, particularly after acute coronary syndrome events.
Objectives: To update our understanding of CR provision in Portugal from our 2013-2014 survey, and how it compares to Europe and Southern European subreagion.
Methods and results: A first-ever survey of CR programs worldwide was conducted online from February 2016 to July 2017. National cardiac associations and local champions facilitated CR programme identification. The main provision measures considered were CR availability, programme volume (number of patients served annually), national capacity (median number of patients a program could serve annually by number of programs in a country), density (national capacity per annual national incidence of ischemic heart disease [IHD]), and financial structuring. To compute density, the 2017 reports from the «European Cardiovascular Disease Statistics» and from «Programa Nacional para as Doenças Cérebro-Cardiovasculares» were used for IHD incidence estimation in Portugal. Overall, 21 (91%) of 23 Portuguese programs participated in the survey. It was determined that CR was available in 39 (89%) of European countries; data were collected in 37 (95%). Results from Portuguese surveys were compared to the 455 (30%) of 1538 responding programs from those countries. In the Southern European subregion, which included 10 (90.9%) responding countries out of 11 with CR programs, there were 152 (44%) participating centres out of 346. Programme volumes averaged 109.1 patients per year in Portugal, compared to 307.9 in the Southern Europe nations, and 531.3 across Europe. Density-wise, there was 1 CR spot for every 4.35 IHD patients in Europe, per 6.46 IHD patients in Southern Europe and per 11.30 IHD patients in Portugal, with an estimated unmet need of 23,699 CR spots in Portugal per year. Most programs were state-funded: 75% across Europe, 76% in Southern Europe, and only 52% in Portugal. The average program cost per patient was 1846.56 € across Europe, 2163.73 € in Southern Europe and 491.33 € in Portugal. Assuming a stable proportion of diagnoses/indications for CR in the Portuguese centres since the 2013-2014 national survey (51.8% of CR spots were occupied by post-myocardial infarction patients), we estimate that, in 2016-17, 10.3% of myocardial infarction patients could participate in CR programs, which signifies a 2.3% growth in the 4-year period. However, even if the maximum national CR capacity was used exclusively for myocardial infarction patients, only 20% of those patients would be rehabilitated.
Conclusions: Portuguese CR provision is steadily growing but still limited, behind European mean standards, even when compared with the socioeconomically similar Southern European countries.

P 140. UPTAKE AND IMPACT OF CARDIAC REHABILITATION IN HEART FAILURE AFTER CARDIAC RESYNCHRONIZATION

Nelson Cunha[1], Inês Aguiar-Ricardo[1], Inês Santos-Gonçalves[1], João R. Agostinho[1], Joana Rigueira[1], Afonso Nunes-Ferreira[1], Pedro Silvério António[1], Sara Couto Pereira[1], Mário Oliveira[2], Miguel Mota Carmo[2], Fausto J. Pinto[1], Ana Abreu[1]

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Introduction: Cardiac rehabilitation (CR) is an important component in the continuum of care for individuals with cardiovascular disease, providing a multidisciplinary program, with education and exercise training to improve morbidity and mortality. Despite the formal recommendation of CR expressed in European guidelines on heart failure (HF) management, referral uptake and adherence are often suboptimal, especially in HF patients with devices.
Objectives: The aim of this study was to assess the uptake and impact of exercise-based CR on mortality, hospital admissions and morbidity of HF patients after CRT in real life.
Methods: Prospective observational study including consecutive HF patients (class II-IV NYHA), different etiologies, undergoing structured cardiac rehabilitation program (CRP) after CRT implant. The CRP included 6 months of exercise training, aerobic and strength exercise, individually prescribed, 3 times a week, 60 min sessions. Clinical, electrocardiographic, and echocardiographic characteristics were evaluated prior to CRT implant and all the variables were re-evaluated at 6 months after onset of CRP. Clinical events (mortality, hospitalization, arrhythmia) were evaluated at 6 months of follow-up. Results were compared between patients who underwent CRP and those who did not perform exercise (control group).
Results: The population sample included 166 HF patients submitted to CRT (66.5% male, mean age 68 ± 14). 15% performed a structured CRP after CRT implant. Reasons for not performing CRP were mostly, living far away from the CR hospital centre, economic problems and professional reasons.24 patients were included in CRP (75% male sex, mean age 69 ± 14), 17% in class II NYHA and 79% in class III. Etiology of heart failure was ischemic in 42% patients and dilated cardiomyopathy in 50%. Mean left ventricular ejection fraction (LVEF) at baseline was 26% ± 6%. The baseline characteristics of the control group were similar to the CR group. At 6 months of follow-up, there

was a significant improvement in LVEF (37% ± 13%, p < 0.005) and in NYHA class (2.8 ± 0.5 to 1.4 ± 0.5; p < 0.005), however comparing to the control group the difference was not significant. During the follow-up, 1 patient died (4.2%), 7 patients (29.2%) were re-hospitalised for any cause and 1 patient (4.2%) was re-hospitalised for decompensated HF (group control 8.4%, 29.4%, 4.2%, respectively). The event rate was lower in the study group although not statistically significant, possibly related to the sample size.
Conclusions: CR uptake was low in this population sample of HF patients with CRT. Clinical improvement and less cardiac events were more frequent in patients submitted to CR, although without statistical significance, probably due to the small sized group. Benefits of CRP in these patients probably are beyond the impact on ventricular remodelling, but larger studies are needed.

P 141. NATURE OF CARDIAC REHABILITATION SERVICES IN PORTUGAL: COMPARATIVE RESULTS FROM THE GLOBAL SURVEY OF PROGRAMS

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Introduction and objectives: Evaluate the nature of cardiac rehabilitation (CR) services in Portugal comparing it to centers in 40 countries.
Methods and results: A worldwide survey of CR programs was conducted online from February 2016 to July 2017. National cardiac associations and local champions facilitated programme identification. The main items evaluated were setting, management, referall, components, costs, accepted indications and session profile. 21 portuguese centers participated. Results from portuguese surveys were compared with 484 centers from 40 countries (European, Russia, Israel, Turkey, Kazakhstan and Georgia). CR started later in Portugal when compared with the abovementioned centers, with median year of initiation in 2008 against 2002 (older center starting in 1988 against 1950). Most portuguese centers operate in urban/suburban areas, one in rural area and none in rehabilitation/residential hospitals (vs 16.1% of all centers). Both in Portugal and in the overall, programs belong most frequently to Cardiology department and are led by a cardiologist, followed by Physical Medicine and Rehabilitation department, with the second most frequent leadership being a physiatrist in 16.7% of portuguese centers and a nurse in 16.2% overall. Portuguese programs have considerably less self-referred patients (11.1% *versus* 39.7% of all centers). Other less frequent referral pathways in the portuguese centers are other health professionals (27.8% *versus* 43.1%) and community health care workers (5.6% *versus* 26.6%).Patients in portuguese centers initiate CR programs later, with an average time for programme enrollment after discharge of 4.9 weeks (vs 3.6 weeks overall). Portuguese centers tend to have more complete programs, some items are significantly more prevalent (stress test, follow-up after program cessation, sleep apnea screening, education sessions) and some are less frequent (individual nurse consultation, vocational counseling/support for return to work). The perception of cost (scale of 1 to 5) averages 2.69 in portuguese centers (vs 2.73 overall). The most costing feature is blood collection and lipid testing (3.33) in portuguese centers *versus* fontline personnel (3.43) in the overall. The least costing feature was space (2.53) in portuguese centers *versus* education materials (2.18) in the overall. A similar proportion of portuguese centers accept non-cardiac chronic diseases as indication for programs when compared with the overall. Portuguese programs enroll less stable angina (64.7% *versus* 74.1%), heart faillure (64.7% *versus* 84.0%), heart transplant (23.5% *versus* 57.4%), device patients (64.7% *versus* 81.9%), congenital cardiopathy (23.5% *versus* 52.5%) and cardiomyopathy (41.2% *versus* 71.4%).
Conclusions: Portuguese CR centers are recent, do not differ significantly from standard practice in Europe and nearby reagions, tend to have complete programs but still lack on referral pathways and different indications enrollment.

P 142. IMPACT OF A CARDIAC REHABILITATION ON HEART FAILURE BIOMARKER NT-PROBNP

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Introduction: Cardiac Rehabilitation Program (CRP) is a recognized intervention for heart failure patients with reduced ejection fraction (HFrEF), decreasing hospitalizations and improving both symptoms and exercise capacity. There are scarce data in the literature regarding the impact of CRP on NT-proBNP, a biomarker reflecting the status of HF compensation.
Objectives: The aim of our research is to evaluate the effectiveness of our CRP on the levels of NT-proBNP and clinical status of HFrEF patients.
Methods: Single-centre retrospective study of 56 consecutive HFrEF patients with ejection fraction < 40%, admitted to our CRP from January to September 2018. After excluding patients with non-maximal CPET pre and post CRP, without pre and post NT-proBNP values and program dropouts, 38 patients, (76.3% males, n = 29), mean age 59.1 ± 9.7 years were included. Ischemic myocardiopathy was the leading etiology, present in 63% (n = 24) of the study population. Pre and post CRP data regarding NT-proBNP, NYHA class, CPET (VO_2 at peak exercise and VT1 level) and Physical Dimension of Minnesota Living with Heart Failure Questionnaire (MLHFQ-PD) were compared.
Results: After the CRP a statistical significative decrease of NT-proBNP was found: 1616.5 pg/ml (95%CI: 715.3-2987.3) to 711.5 (95%CI: 210.8-1287.0, p = 0.008). This mean decrease of 44% on NT-proBNP, was associated with a better clinical profile in terms of NYHA functional class (Pre: Class I = 5, Class II = 18, Class III-IV = 15; Post: Class I = 20, Class II = 3, Class III-IV = 3; p = 0.000) and MLHFQ-PD (Pre: 18.8 ± 11.0; Post: 12.8 ± 9.2, p = 0.029). Positive trends, although not statically significative, were observed on VO_2, pre and post CRP, at peak exercise and VT1 level.
Conclusions: The CRP had a very positive impact on NT-proBNP and clinical parameters (NYHA and MLHF-PD), confirming benefits usually described in HFrEF patients, a recent indication for CRP. The positive trend found regarding VO2 (at peak and VT1 level), will probably be observed in a larger sample population.

P 143. PREDICTORS OF CARDIORESPIRATORY OPTIMAL POINT IN PATIENTS ENROLLED IN A CARDIAC REHABILITATION PROGRAM

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Introduction: The cardiopulmonary exercise test (CPET) allows the evaluation of peak and sub-maximal tolerance to the effort, giving us relevant information for making clinical decisions. The Cardiorespiratory Optimal Point (COP), calculated as the minimum ratio between ventilation and oxygen consumption and (VE/VO_2), may be a good predictor of events and may be influenced by some factors.
Objectives: The aim was to characterize the population of the cardiac rehabilitation (CR) appointment who performed CPET, determine predictive factors of the COP, and evaluate the variation of the COP with the CR program.
Methods: Retrospective analysis of CR appointment patients who underwent CEPT between 2014 and 2017 in a single center. We evaluated clinical, laboratory and echocardiographic characteristics and determined predictors of COP value.

Results: 207P (83.6% men) were included, with a mean age of 57 years. The mean COP was 23.6 ± 5.8 (CI: 24.06-25.66). The majority (96.6%) had a cardiovascular disease or risk factor (diabetes in 24.6%, hypertension in 55.1%, dyslipidemia in 55.1%, excess weight or obesity in 75.4%, with mean body mass index of 27.3, family history in 16.4%, acute myocardial infarction (AMI) in 19.3%, smoking in 44.4% and other diseases in 51.2%). 99% were medicated (91.3% acetylsalicylic acid, 65.2% clopidogrel, 23.7% ticagrelor, 92.8% beta-blocker, 91.3% ACEI/ARB, 90.3% statin). The majority (87.9%) was referred for CR with isquemic cardiopathy (AMI or stable or unstable coronary disease), 9.2% with heart failure (HF) and 9.2% with valvulopathy. The predictors of a highest value of COP were higher age (CC: 0.269, p < 0.0001), female sex (p = 0.001), heart failure (p = 0.017), lower ejection fraction (CC: -0.124, p = 0.011), lower haemoglobin (CC: -0.170, p < 0.0001), higher BNP (CC: 0.233, p < 0.0001) and higher erythrocyte sedimentation rate (CC: 0.171, p = 0.004). Of these, independent predictors of higher COP were age (p < 0.0001), lower haemoglobin (p = 0.001) and higher BNP (p < 0.0001).
Conclusions: The COP value is related to multiple factors, of which the age, the BNP value and the haemoglobin value are independent factors.

P 144. CONTRIBUTION OF MUSCLE EFFICIENCY IN HEART FAILURE PATIENTS POST PHASE 2 CARDIAC REHABILITATION

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Introduction: Muscle efficiency (ME), can help explain the observed improvement in patients without increase in oxygen uptake (VO_2) after cardiac rehabilitation programme (CRP). The better use of energy, independent to the oxygen delivery to muscle, may improve the functional capacity in Heart failure (HF) patients. Our aim was to evaluate the contribution of muscle efficiency improvement after CR on functional capacity.
Methods: We analyse consecutive patients data that had their phase 2 CR concluded, with HF as admission indication with no medical therapy changes and CRT implantation during this period. The aetiology of HF and biometric data, functional class, BNP, Minnesotta and EuroQol questionnaires and cardiorespiratory test pre and post 4 months of CRP were collected. The average of the exercise load in the first two and last two training sessions were recorded. ME was calculated at peak exercise during cardiopulmonary exercise test in pre and post CRP (see formula above).
Results: From 55 HF patients sequentially admitted in our CRP, during the last 24 months, 45 were included, since 2 were transplanted, 1 died and the 7 didn't concluded the program or not had all the data mentioned in the methods. The mean age was 60,5 ± 10,3 years and 78% were male. Ischemic aetiology with depressed ejection fraction (64%) was the main admission indication, followed by cardiomyopathies (18%). Beta-blockers, ACEi or ARBs or ARNi and MRA were taken in 91%, 93%, 46%, respectively. ICD and CRT were previously implanted in 44% of the patients. Comparing pre and post CRP VO_2 at peak exercise and aerobic threshold levels no statically differences were found. In this cohort 27 (60%) patients increased ME. At the end of the CRP, this group had a higher improvement in METs (p = 0.021), higher gain in lean mass (p = 0.041), in EuroQoL (p = 0.002) and in physical dimension of Minnesotta questionnaire (p = 0.032), when compared with patients that didn't improve the ME in at least 5%. In 22 patients that increased ME, the VO_2 at aerobic threshold level didn't improve by at least 5% and in this group the same benefits were confirmed.

$$\text{Muscle Efficiency (\%)} = \frac{\text{Weight (kg)} \times \text{Speed (m/s)} \times \text{Sine of the angle of incline} \times 0{,}01433}{VO_2 \text{ (liters/min) X5}} \times 100$$

Figure 1. Formula of Muscle Efficiency.

Conclusions: The improvement in exercise load reached in the post CRP cardiopulmonary test, independently of possible cardiac output changes (VO_2 peak), seems to be explained in part by the increase in ME improvement.

Domingo, 28 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 3 - ÉCRAN 5 - DOENÇA CV EM POPULAÇÕES ESPECIAIS

P 145. CARDIAC DAMAGE BIOMARKERS IN PATIENTS WITH REFRACTORY EPILEPSY - IS THERE ANY CHANGE AFTER SEIZURES?

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Introduction: Possible mechanisms for Sudden Unexpected Death in Epilepsy (SUDEP) include cardiac dysfunction. Reports independently show elevations of high sensitivity Troponin I (hs-TnI), B-Type Natriuretic Peptide (BNP) or C reactive protein (CRP) after seizures (mainly generalized tonic-clonic seizures - GTCS).
Objectives: To profile serum levels of hs-TnI, BNP and hs-CRP in patients with focal refractory epilepsy, after documented seizures, relating them to the revised SUDEP-7 inventory risk score.
Methods: From May 16 to July 18, we prospectively evaluated patients with focal refractory epilepsy admitted to our institution's Epilepsy Monitoring Unit. Patients without seizures were excluded. All measurements were made at admission - basal - and 12-18 h after the first recognized seizure; hs-TnI and hs-CRP were also measured 6 h after the same seizure. We considered significant any increase above 50% of the basal level. Statistical significance was set at 0.05. The study was approved by our institution Ethics Committee. All patients gave their informed consent.
Results: 58 patients were included (53.4%; median age: 39.5 years [min-max, 16-73]; median duration of epilepsy: 12 years [min-max, 1-67]). 17.2% had GTCS, median duration of seizure was 70 s and 12.3% had post-ictal EEG suppression (PES). 38.6% had cardiovascular risk factors (CRF), without known cardiac disease. After the index seizure, 25.9% had a significant increase in hs-TnI, 23.3% in BNP, and 4.3% in hs-CRP. One patient had increases in both hs-TnI and BNP, and 2 in hs-TnI and hs-CRP. hs-TnI and hs-CRP increases were associated with the presence of both GTCS (p < 0.001, p = 0.035, respectively) and PES (p = 0.001, p = 0.015, respectively). hs-TnI increase was also associated with longer seizures (p = 0.013). We found no significant differences in SUDEP-7 inventory classification between patients with and without either biomarker increase.
Conclusions: A considerable number of patients had an increase in biomarkers of myocardial necrosis/dysfunction after the seizure, but with no significant association with the SUDEP-7 inventory. Nonetheless, hs-TnI and hs-CRP increases were associated with the presence of both GTCS and PES (risk factors for SUDEP), and hs-TnI elevation was associated with longer seizures. Elevation of one biomarker did not compel the elevation of another, which could mean multifactorial causes to incipient myocardial damage leading to SUDEP.

P 146. CAN MACHINE LEARNING HELP US FIND THE FOUNTAIN OF YOUTH FOR ELDERLY ACUTE CORONARY SYNDROME PATIENTS?

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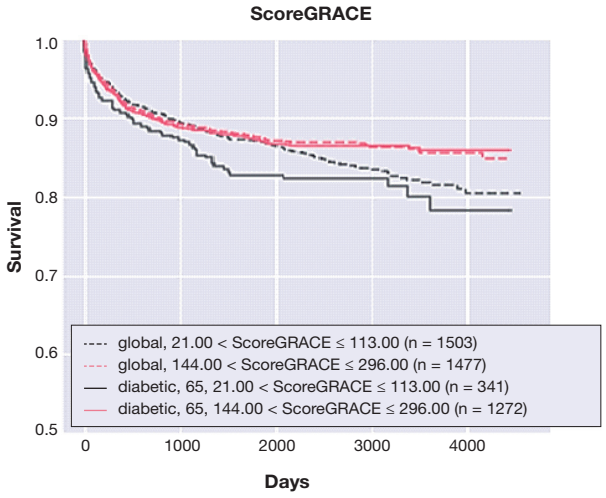
Introduction: Acute coronary syndromes (ACS), remain an important cause of morbidity and mortality, especially amongst elderly patients. Therefore,

new risk prediction tools are important to better identify and risk stratify high risk patients within this important ACS subpopulation. Previous studies already showed that high GRACE score was significant predictor of mortality of ACS.
Objectives: The goal of this analisys was, using machine learning and artificial intelligence, in a single center database of acute coronary syndrome (ACS), to identify the best predictors of a new ACS and to compare its relevance for risk discrimination in a general ACS population *versus* a given subpopulation of interest.
Methods: This study was conducted using the data of 5977 patients, admitted in a single center for ACS between 2004 and 2017 and discharged alive. In the subpopulation of elderly patients (n = 3323), each covariate present in the database was analysed separately with a Cox proportional hazard model with three terms - subpopulation belonging indicator, covariate, interaction term. The p-value of the interaction term was used to rank variables. The more significant the interaction term, the stronger the change in relationship between elderly patients and the risk of a new ACS, compared to the one in the general population. Kaplan Meier curve represents how ACS free-survival depends on the covariate and elderly patients. In the general population and in this group of interest, the covariate was used to further create 3 groups, of which, only the 2 extremes are shown. The solid lines represent KM inside the elderly patients, the dotted lines in the general population. Pink or grey color of the curves represent the stratification level of the covariate (can be 0 or 1 in the case of binary variables or intervals).
Results: In our model, GRACE score was found to be a better discriminator of risk of further ACS in elderly patients than in the general ACS population. We saw that higher GRACE score was associated with lower risk of recurrent ACS.



Conclusions: This may be explained by the fact that elderly patients with higher GRACE score dyed during the index ACS hospitalization or out of hospital. Based on this finding, we now can better risk stratify elderly post-ACS patients, and mare sure that they are closely followed and submitted to optimal risk factor management, in order to improve their post-ACS prognosis.

P 147. CLINICAL IMPACT OF CARDIOTOXICITY INDUCED BY CHEMOTHERAPY IN PATIENTS WITH BREAST CANCER

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Introduction and objectives: Breast cancer (BC) chemotherapy is associated with cardiotoxicity (CT), particularly with anthracyclines (AC) and trastuzumab (T). We aim to evaluate the frequency of CT and its clinical impact on BC patients.
Methods: Retrospective study of BC patients treated with AC and/or T in a single center in 2017. Patients with baseline left ventricular ejection fraction (EF) < 50% were excluded. CT was defined as reduction of EF > 10% to a value < 50% or as relative reduction of global longitudinal strain (GLS) ≥ 15%.
Results: We included 69 women with mean age of 55 ± 11 years and mean body mass index (BMI) of 28 ± 5 kg/m^2, treated with AC (37; 53.6%), T (13; 18.8%) or AC followed by T (19; 27.5%). At the end of AC, there was a significant decrease in GLS (-21.5% *versus* -19.5%, p = 0.001), no change in EF (65% *versus* 63%, p = 0.194) or s'VD (p = 0.309). E/A ratio lowered (0.99 *versus* 0.79, p = 0.001) and deceleration time increased (203 *versus* 225 ms, p = 0.003), but no changes on mean E/e' (p = 0.970) or left atrial volume (p = 0.093) occurred. In patients under T/AC+T, systolic and diastolic parameters did not differ from baseline to after T treatment. Nevertheless, CT occurred in 15 patients (21.7%), including 2 under AC, 6 under T and 7 under AC+T. Of these, only 3 met the EF criteria for CT (1T, 2AC+T). Patients with CT had a lower BMI (25 *versus* 28 kg/m^2, p = 0.031) and were more frequently treated with T (46.2%) and AC+T (36.8%) than with AC alone (5.4%) (p = 0.001). Baseline echo and clinical parameters were similar in CT and non-CT groups. Radiotherapy was not associated with CT. Among patients with CT, there was no heart failure (HF) or need to suspend therapy in patients under AC alone. However, in patients under T/AC+T, HF developed in 2 patients (15.4%) (1T, 1 AC+T) and 3 (23.1%) suspended treatment due to EF reduction (1T, 2AC+T). In a regression model, therapy with T (OR: 17.81; 95%CI: 1.99-158.64, p = 0.01), AC+T (OR: 31.11; 95%CI: 3.25-298.18, p = 0.003) and BMI < 25 kg/m^2 (OR: 0.06; 95%CI: 0.01-0.38, p = 0.003) were associated with CT.
Conclusions: AC were associated to a significant decrease of GLS. CT occurred in 21.7%, mainly on T/AC+T patients, a frequency within literature data for CT under T/AC+T. Lower BMI and treatment with T and AC+T were predictors of CT. CT had clinical impact leading to HF and suspension of chemotherapy only in T/AC+T patients, in a higher frequency than described in the literature, which might be explained by sample size.

P 148. CORONARY REVASCULARIZATION IN ELDERLY PATIENTS WITH ACUTE MYOCARDIAL INFARCTION WITHOUT ST-SEGMENT ELEVATION

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Introduction: Acute coronary syndrome in elderly patients may present a real clinical challenge because of the high number of co-morbidities these patients may have. The aim of this study was to evaluate a population of patients ≥ 85 years old with non-ST-segment elevation myocardial infarction (NSTEMI) and to compare the short and long term prognosis according to the type of revascularization performed.
Methods: This was a retrospective study of patients with NSTEMI periodically included in a national multicenter registry between October/2010 and October/2018, aged ≥ 85 years, who underwent coronary angiography (CC) and had at least one stenosis ≥ 50%. Patients with unfavorable coronary anatomy and patients undergoing cardiac surgery were excluded. Two groups were designated: percutaneous coronary intervention (PCI) and optimized medical treatment (OMT) without PCI. All the results presented are statistically significant (p < 0.05).
Results: A total of 324 patients were identified, of whom 73.1% underwent PCI and 26.9% OMT. The OMT group had more past history of diabetes *mellitus* (43.7% *versus* 29.6%), cerebrovascular disease (20% *versus* 9.4%) and dementia (6% *versus* 0.9%). The PCI group had more frequently a loading dose of 600 mg of clopidogrel (20.4% *versus* 4.8%) and used more the femoral artery as vascular access (35.5% *versus* 19.3%). The presence of single vessel lesions was more common in this group (29.2% *versus* 18.8%), whereas 3 vessel disease was more common in the OMT group (48,8% *versus* 33,2%). Left ventricular ejection fraction was similar in both groups. During

hospitalization, there were more major bleeding events (4.2% *versus* 0%) and death (4.2% *versus* 0%) in the PCI group. There were no differences in re-infarction, cardiogenic shock or stroke. At discharge, clopidogrel prescription was higher in the PCI group (85.2% *versus* 74.1%), and there were no significant differences in the prescription of other antithrombotic therapy. During the one-year follow-up there were no significant differences in terms of new coronary revascularization or mortality.
Conclusions: Very old patients with NSTEMI submitted to OMT had more comorbidities and more 3 vessel disease, factors that could have influenced the therapeutic decision. Patients undergoing PCI had more single vessel lesions, but had more in-hospital major bleeding events and mortality, with no difference in a 1 year follow-up.

P 149. PREDICTORS OF CARDIOTOXICITY AFTER CHEMOTHERAPY WITH ANTHRACYCLINES

Pedro von Hafe, Bebiana Faria, Geraldo Dias, Filipa Cardoso, Liliana Oliveira, Ana Sofia Rolo, Ilda Faustino, Alexandra Teixeira, Filipa Almeida, Jorge Silva, António Lourenço

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Introduction: Anthracyclines (AC) has been established in the treatment of solid tumors and haemato-oncological malignancies. However, it is known to induce type 1 myocardial toxicity resulting in left ventricular dysfunction.
Objectives: To identify the predictors of cardiotoxicity during follow-up of a population under treatment with AC.
Methods: Unicentric, retrospective study include 20 patients with clinical or subclinical left ventricular dysfunction (LVD) - defined by decline in initial ejection fraction (EF) of at least 5% to < 55% with signs and symptoms of heart failure or asymptomatic decrease in EF of at least 10% to < 55%, or decrease in global longitudinal strain > 15%. And a control group of 56 patients who received anthracycline chemotherapy, without LVD. Cardiovascular risk factors and treatment regimens were analyzed.
Results: Mean age is 55.05 ± 9.4 years in the group with LVD and 53.73 ± 11.6 in the control group. There was an association between the occurrence of LVD and AC cumulative dose (409.65 ± 45.62 *versus* 372.51 ± 66.9 6 mg/m^2, p = 0.032), concomitant treatment with anti-HER2 monoclonal antibodies (78.9% *versus* 35.7%, Pearson's Chi square: 10.65, p = 0.001) and with fluoropyrimidines (26.3% *versus* 0%, Pearson's Chi square: 11.84, p = 0.001). Finally, tobacco consumption also showed a correlation with LVD (15.80% *versus* 1.85%, Pearson's Chi square: 5.34, p = 0.003). Logistic regression identified as statistically significant predictors for the development of LVD concomitant treatment with anti-HER2 monoclonal antibodies (p = 0.038) and AC cumulative dose (p = 0.022).
Conclusions: Concomitant treatment with anti-HER2 monoclonal antibodies and AC cumulative dose were independent predictors of left ventricular dysfunction in patients with tumor treated with anthracyclines. Results reinforce the importance of tighter follow-up in patients with these risk factors.

P 150. THE CONTROVERSIAL ROLE OF GENETICS BEHIND PREMATURE CAD: A PLAUSIBLE EXCUSE FOR THE YOUNG?

João Adriano Sousa[1], Andreia Pereira[1], Micaela Neto[2], Joel Ponte Monteiro[2], Flávio Mendonça[1], Mariana Rodrigues[1], Ana Isabel[2], Ilídio Ornelas[2], Ana Célia Sousa[2], A. Drumond Freitas[2], Isabel Mendonça[1], Palma dos Reis[3]

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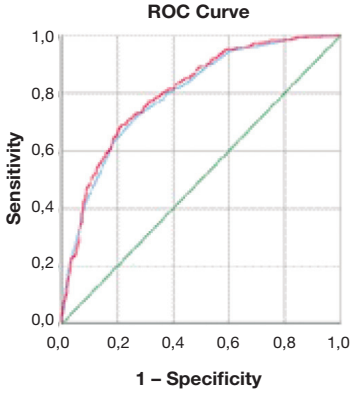
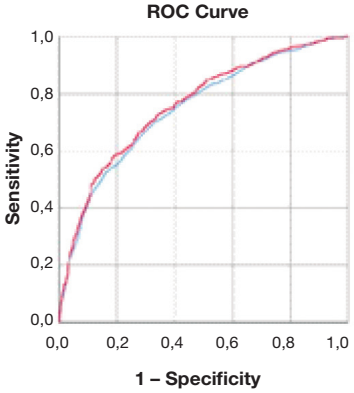
Introduction: The complex interaction between genes and environmental factors contribute to individual-level risk of coronary artery disease (CAD), often resulting in premature CAD. The role for genetic risk scores in premature CAD is still controversial.
Methods: From a group of 1619 pts with angiographic documented CAD from the GENEMACOR study, we selected 1276 pts admitted for ACS and analysed them in 2 groups (group A: ≤ 50 years, n = 491 pts, 87.2% male, mean age 44 ± 4.9 and group B: > 50 years, n = 785 pts, 75.2% male, mean age 57 ± 4.2). Univariate analysis was used to characterize the traits of each group and we used ROC curves and respective AUCs to illustrate the additive power of genetics in the prediction of CAD, through the Genetic Risk score (GRS).
Results: 99.3% of the young patients had at least one modifiable risk factor, 18.4% had 2 modifiable risk factors and 75.2% had 3 or more modifiable risk factors. The pattern of risk factors contributing to CAD were different among groups: family history (A: 27.5%, B: 21.4%, p = 0.015) and smoking habits (A: 64.8%, B: 42.9%, p < 0.001) were more frequent among patients under 50, and traditional age-linked factors like hypertension (A: 58%, B: 75.7%, p < 0.001), diabetes (A: 21.6%, B: 38.6%, p < 0.001) were more common in group B. Acute ST-elevation myocardial infarction was more frequent among the young (A: 55.4%, B: 47.4%, p = 0.006), as non-ST clinical presentation was higher among elder patients. Regarding angiographic presentation, single vessel CAD was higher in group A (A: 50.3%, B: 40.9%, p < 0.001), while multivessel diasease was higher in group B (A: 33.3%, B: 53.9%, p < 0.001). Group B had a worst prognosis, registering a higher rate of cardiovascular death (A: 4.1%, B: 8.6%, p = 0.002) and higher MACE (A: 26.8%, B: 31%, p = 0.128), at a mean follow-up of 5 years. Adding the genetic risk score (GRS), we achieved only a slight improvement in the AUC (0.796 to > 0.805, p = 0.0178 and 0.748 to > 0.761, p = 0.0007 in patients under and over 50, respectively).
Conclusions: Coronary artery disease is not all the same, as premature CAD shares a unique and specific pattern of risk factors, clinical presentation, angiographic severity and prognosis. Genetics should not be used as an excuse to justify premature CAD, as there is frequently more than one potentially reversible risk factor present even in young patients and its additive predictive value is only modest.



AUC of group A

Text Result Variable(s)	Area
Without GRS	0,796
With GRS	0,835



AUC of group B

Text Result Variable(s)	Area
Without GRS	0,748
With GRS	0,751

P 150 Figure

Domingo, 28 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 3 - ÉCRAN 6 - ARRITMOLOGIA

P 151. REGISTRY OF HEREDITARY ARRHYTHMOGENIC DISEASES: CLINICAL CHARACTERIZATION OF A POPULATION

Pedro Silvério António[1], Nuno Cortez-Dias[2], Inês Santos-Gonçalves[2], João R. Agostinho[2], Inês Aguiar-Ricardo[2], Joana Rigueira[2], Afonso Nunes-Ferreira[2], Rafael Santos[2], Nelson Cunha[2], Tiago Rodrigues[2], Luís Carpinteiro[2], Fausto J Pinto[2], João de Sousa[2]

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Introduction: Hereditary Arrhythmogenic Diseases (HAD) comprise a heterogeneous group of rare, genetically transmitted disorders associated with the occurrence of dysrhythmias and an increased risk of sudden death. The description of these pathologies is recent and has been observed geographic and ethnic variation in its prevalence and genotype-phenotype correlation. Therefore, the collection of clinical data of Portuguese patients with these pathologies assumes special relevance.
Objectives: To evaluate the relative frequencies of different pathologies in a population included in a Portuguese HAD registry.
Methods: Prospective unicentric study of consecutive patients diagnosed with HAD. Patients with hypertrophic cardiomyopathy are excluded from this study because they are included in another national registry. The relative prevalence of each pathology was evaluated and demographic, genetic and clinical characterization of the population was performed, and the need for implantable cardioverter-defibrillator (ICD) and other therapeutic modalities were used.
Results: A total of 105 patients, 84.1% (n = 90) with diagnosis of Brugada Syndrome (BS), 8.4% (n = 9) Long QT Syndrome (LQTS), 2.8% (n = 3) with Primary Ventricular Fibrillation (PVF) and 2.8% (n = 3) with Arrhythmogenic Right Ventricular Dysplasia (ARVD). The patients with BS were more frequently males (73%), with mean age of 47 ± 12 years. In 25.4% of the patients, a mutation in the SCN5A gene was identified. Approximately 70% (n = 60) of the patients were asymptomatic, 8.1% (n = 7) had history of presumably arrhythmic syncope, 5.8% (n = 5) of epilepsy and 4.7% (n = 4) had been resuscitated from cardiorespiratory arrest (CRA). They implanted ICD in 21 patients (24.4%) and one patient underwent epicardial ablation. The patients with SQTL present an age of 48 ± 19 years, being 67% female. They were presented with CRA and implanted ICD 56% patients (n = 5), the rest are asymptomatic. Three of the patients present a known pathogen mutation. The three patients with ARVD are male (46 ± 18 years) and had a diagnosis established in the sequence of dysrhythmic events. All were submitted to implantation of ICD and two of them were submitted to ablation. In 2 patients mutations of indeterminate meaning were identified. The patients with PVF with mean age of 39 ± 10 years, 50% of the male gender. All of them presented with CRA, having implanted ICD. No mutation was identified.
Conclusions: This study reports the characterization of a large population of Portuguese patients with HAD. The most common DAH was BS and 25.4% of these patients presented mutations in the SCN5A gene

P 152. ATRIAL FIBRILLATION IN ACUTE MYOCARDIAL INFARCTION

Inês Cunha[1], César Matos[1], António Assunção[2], Margarida Agudo[1], Ana Filipa Viegas[1], Ana Maria Pinto[1], Sara Machado[1], Joana Andrade[1], Rui Marques[1], Vera Romão[1], Emanuel Correia[1], Costa Cabral[1]

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Introduction: It is estimated that 15% of patients with atrial fibrillation (AF) have a history of acute myocardial infarction (AMI). In addition to being well established as a possible complication of AMI, AF may be a predisposing factor for the occurrence of AMI and contribute to a more unfavorable prognosis.
Objectives: The objective of this study was to analyse the prevalence of AF and its correlation with demographic characteristics, type of AMI (with ST-segment elevation (STEMI) *versus* non-ST-segment elevation myocardial infarction (NSTEMI)), presence of heart failure (HF), days of hospitalization and mortality.
Methods: A retrospective study was performed with all patients hospitalized with the diagnosis of AMI in a Coronary Intensive Care Unit in a central hospital, in 2017 (n = 336). The data were obtained through SClinic and analyzed through SPSS®.
Results: 14.3% of patients with AMI had a history of AF (12.7% of STEMI and 15.7% of NSTEMI). 42.3% of the AMI were classified as STEMI. The presence of ST-segment elevation was not significantly different in patients with and without AF who suffered AMI (37.5% *versus* 43.1%, p = 0.471). The mean age was 68.85 ± 12.95 years. Patients with AF were significantly older than the patients without AF (76.27 *versus* 67.61 years, p = 0.000). There was a predominance of the female gender in the total sample (73.2%). There was no statistically significant difference between the number of women in the groups with and without AF (68.8% *versus* 74.0%, p = 0.451). Of the total sample, 11.9% of patients had HF. The prevalence of HF in the group with AF was significantly higher than the group without AF (29.2% *versus* 9.0%, p = 0.000). The average length of stay was 4.78 days. There was no significant difference between patients with and without AF (5.06 *versus* 4.73 days, p = 0.471). The mortality rate of the total sample was 11.9%. Mortality was higher in the group with AF (12.5% *versus* 11.8% in patients without AF), but did not reach statistical significance (p = 0.891).
Conclusions: In patients with AMI, the presence of AF was significantly associated with advanced ages and HF. Those patients had on average longer hospitalizations and higher mortality, although it did not reach statistical significance, but more studies are needed to determine the impact of AF on the prognosis of AMI.

P 153. HIGH-RISK FEATURES AND EVENT PREDICTORS IN PATIENTS WITH UNEXPLAINED SYNCOPE FROM THE YOUNG SCD-SOS COHORT

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Introduction: Sudden Cardiac Death - Screening Of risk factorS (SCD-SOS) survey aimed to screen for warning signs of potential channelopathies and cardiomyopathies that may course with sudden cardiac death in the young. It consisted in an ECG and a digital-based previously validated questionnaire, that were provided by 12,099 individuals.
Objectives: We aimed to characterize the high-risk features and predictors of unexplained syncope in the young SCD-SOS cohort.
Methods: Based on the detailed questionnaire, we determined the most probable etiology of the transient loss of consciousness (TLOC) episodes. According to the 2018 ESC syncope guidelines, reflex syncope (RS, either vasovagal or situational) was precipitated by pain, emotion, fear, warm environment, or standing, and was associated with at least one typical progressive prodrome (pallor, sweating, and/or nausea). Orthostatic hypotension (OH) was assumed if typical triggers were described in the absence of any of the previous prodromes. The remaining causes were ascertained based on the specifications provided by the individuals and unexplained syncope (US) was an exclusion diagnosis. We analyzed minor and major syncope high-risk (HR-) features, as well as basal and ECG characteristics as potential predictors. Type-1 Brugada pattern was detected in 0,15%, and WPW in 0,28% of the individuals.
Results: The lifetime cumulative incidence of TLOC in our population was 26.6% (n = 3211), 75.8% (n = 2433) were female and the mean age was 22 ± 7 years-old (yo). Among individuals with a history of TLOC, 59.9% (n = 1923)

had RS and 7.8% (n = 251) reported episodes compatible with OH. Several other causes for the TLOC were identified: 10.5% (n = 337) reported hypoglycemia/insufficient food intake, 3.7% (n = 119) drugs/alcohol, 3.2% (n = 104) other diseases (ex:anemia), 1.3% (n = 42) head trauma and 1.2% (n = 40) epileptic seizures. Syncope associated with fever was detected in 1.1% (n = 36), and 0.4% (n = 13) of these described a concomitant trigger/prodrome. We found a history of US in 14.9% (n = 477) of the individuals, and that a history of SCD in relatives before 40 yo, QTc < 360 ms, male sex and participation in competitive sports predicted US. In the characterization of major HR-features, in opposition to palpitations preceding syncope, syncope during or after exertion was independently associated with US (see Figure). At least one major HR-feature was identified in 33.5% (n = 160) of the individuals with US, comparing to 20.6% (n = 562) in individuals with the remaining causes of TLOC (p < 0.001).

Variables in the multiple logistic regression	OR	CI 95%	p-value
Predictors of Unexplained Syncope			
Female	0,64	0,48-0,85	0,002
Age	1,02	1,00-1,04	0,018
Participation in competitive sports	1,31	1,03-1,68	0,029
History of SCD in relatives < 40 yo	2,39	1,12-5,08	0,024
QTc (Bazzett) < 360 ms	1,96	1,04-3,69	0,038
Previous history of palpitations	1,30	0,99-1,70	0,057
High-risk features of the Unexplained Syncopal event			
During exertion	4,81	3,65-6,33	< 0,001
After exertion	2,53	1,81-3,54	< 0,001
Palpitations preceding syncope	1,00	0,76-1,33	0,970
No warning symptom	2,21	1,71-2,84	< 0,001
Family history of SD	2,18	1,11-4,28	0,025

Conclusions: We conclude that the lifetime cumulative incidence of TLOC in the young is high and that it remained unexplained in an important proportion of individuals. A history of SCD in relatives and short QTc were the best predictors of US. Additionally, HR-features of syncope should be cautiously evaluated in the young.

P 154. ONDA S NA DERIVAÇÃO DI SEM SIGNIFICADO CLÍNICO NA RELAÇÃO COM EVENTOS NUMA AMOSTRA DE DOENTES COM SÍNDROME DE BRUGADA

Geraldo Dias[1], Sílvia Ribeiro[2], Margarida Oliveira[2], Bebiana Faria[2], Pedro von Hafe[2], Ana Filipa Cardoso[2], Filipa Almeida[2], Victor Sanfins[2], António Lourenço[2]

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A avaliação do risco de eventos adversos nos doentes com Síndrome de Brugada (SB) permanece um importante desafio clínico. A presença espontânea do padrão de Brugada tipo 1 (PBT1) no eletrocardiograma está conhecidamente associada a maior risco de eventos ventriculares e morte súbita arrítmica, mas outros marcadores, como a onda S na derivação DI, têm sido sugeridos nestes doentes. O objetivo deste estudo foi avaliar o valor da onda S na derivação DI como preditora de disritmias ventriculares numa amostra de doentes com PBT1 espontâneo.De um registo de doentes com SB, foram selecionados 64 doentes com PBT1 espontâneo. A partir dos eletrocardiogramas disponíveis no processo clínico eletrónico, com calibração *standardizada* (velocidade 25 mm/s e amplitude 1mV/10mm), foi medida a amplitude e duração da onda S na derivação DI em milímetros, por defeito. Nessa amostra, verificou-se uma idade média de 50 ± 16 anos, sendo 78% (50) dos doentes do género masculino. Relativamente aos antecedentes clínicos, 33% e 17% tinham história de síncope e pré-síncope, respetivamente, 25% de palpitações, 6% de respiração agónica noturna e 5% de fibrilhação auricular. Foram submetidos a estudo eletrofisiológico 58% (37) dos doentes. Em 31% (20) dos doentes foram documentadas arritmias ventriculares malignas (taquicardia ou fibrilhação ventricular induzida em estudo eletrofisiológico, espontânea, ou recuperação de paragem cardiorrespiratória), entre os quais cerca de um terço (7) apresentaram eventos espontâneos. Não se verificou associação entre a ocorrência de eventos ventriculares espontâneos, ou a ocorrência de eventos espontâneos e induzidos, e a amplitude da onda S na derivação DI (eventos espontâneos, p = 0.91; eventos espontâneos e induzidos, p = 0.63), a sua duração (p = 0.86 e p = 0.74), o valor da soma da amplitude e duração (p = 0.97 e p = 0.73) ou o produto da amplitude pela duração (p = 0.97 e p = 0.42). Adicionalmente, não se verificou associação entre a ocorrência de eventos disrítmicos e a presença de ondas S consideradas eletrocardiograficamente significativas (amplitude ≥ 0,1 mV e/ou duração ≥ 40 ms). A inclusão dos doentes com síncope de causa arrítmica suspeita (totalizando 24 doentes com eventos significativos) não alterou a relação entre as variáveis. Este estudo não demonstrou uma associação entre as caraterísticas da onda S na derivação DI e o histórico de eventos disrítmicos ventriculares nos doentes com PBT1 espontâneo.

P 155. DECISION MAKING FOR DOWNGRADING A CARDIAC RESYNCHRONIZATION THERAPY DEVICE USING CARDIOPULMONARY EXERCISE TESTING

Madalena Coutinho Cruz, Ana Abreu, Mário Martins Oliveira, Pedro Silva Cunha, Tânia Branco Mano, João Reis, Alexandra Castelo, Pedro Garcia Brás, José Miguel Viegas, Miguel Mota Carmo, Rui Cruz Ferreira

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Introduction: Heart failure (HF) patients (pts) with an indication for cardiac resynchronization therapy (CRT) often also have an indication for an implantable cardioverter-defibrillator (ICD) to prevent sudden cardiac death. However, for pts with satisfying response to CRT at the time of device generator replacement, this indication may no longer be accurate. There are currently no optimal aids to identify pts who will no longer benefit from CRT-ICD and where downgrading CRT-P is appropriate. We aimed to determine predictors of sustained ventricular arrhythmias (SVA) in pts with good response to CRT.
Methods: Prospective cohort study of HF pts with reduced ejection fraction submitted to CRT-ICD. NYHA class, blood analysis, cardiopulmonary exercise testing and echocardiography were performed before and 3-6 months after CRT. In pts with no SVA prior to CRT (primary prevention) and with left ventricular ejection fraction (LVEF) > 35% 3-6 months after CRT, predictors of SVA were determined using regression analysis. Calibration of a score was assessed by Hosmer-Lemeshow test and discrimination, sensitivity, specificity and likelihood ratio by the area under the receiver operating curves (AUC).
Results: Of the 114 pts analyzed (70 ± 14 years, 69.2% men, 29.1% ischemic etiology, 73.1% baseline NYHA III-IV, baseline LVEF 27% ± 11), 60.5% had LVEF > 35% 3-6 months after CRT. In this population, 14 pts (20.3%) experienced a SVA during a mean follow-up of 38.3 months. 8 pts (12.0%) suffered inappropriate device therapies, adding up to a total of 35 episodes. Furthermore, 11 pts (15.9%) were submitted to generator replacement during follow-up. SVA were associated with troponin I (OR: 1.427 × 10^22, 95%CI: 27.636-7.372 × 10^42 p = 0.036), high-density lipoprotein (OR: 0.957, 95%CI: 0.912-1.004, p = 0.071), VEVCO2 slope (OR: 1.097, 95%CI: 1.021-1.178, p = 0.011), systolic blood pressure (OR: 0.974, 95%CI: 0.974-1.001, p = 0.062) and end-diastolic left ventricular volume (OR: 1.006, 95%CI: 1.000-1.011, p = 0.046). In the multivariate analysis, $VEVCO_2$ slope was the only independent predictor of SVA (OR: 1.156, 95%CI: 1.042-1.283, p = 0.006). As a score to predict SVA, $VEVCO_2$ slope showed good calibration and good discrimination with an AUC of 0.70. The ideal cut-off value of VEVCO2 slope to exclude SVA during follow-up is 24.35 (negative likelihood ratio 0.5).
Conclusions: The incidence of SVA in pts with adequate response to CRT is relatively high. On the other hand, inappropriate therapies are not an uncommon event. Cardiopulmonary exercise testing with assessment of VEVCO2 slope can be used as a widely accessible method with low cost to recognize pts who will no longer benefit from CRT-ICD (and to whom it may cause harm due to inappropriate therapies) and where downgrading CRT-P is suitable.

P 156. FIRST INTENTION EPICARDIAL VT ABLATION: WHAT ARE THE RESULTS?

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Introduction: Ventricular tachycardia (VT) endocardial mapping and ablation may not be sufficient in several arrhythmogenic contexts, because ventricular myocardium may comprise intricate endocardial, intramural and epicardial substract. Thus, epicardial ablation has lately become a complementary and necessary tool to approach some VTs in different types of cardiomyopathies.
Objectives: To evaluate the clinical characteristics of patient most suitable for first intention epicardial VT ablation and to describe our centre experience.
Methods: Single-centre prospective study of consecutive patients (pts) undergoing isolated first intention epicardial VT mapping and ablation since August 2015. All pts had clinical assessment, electrocardiogram (ECG), echocardiogram and cardiac magnetic resonance when feasible. Pts with a previous endocardial ablation were excluded. Epicardial subxiphoid access utilizing a tuhoy needle was performed under fluoroscopic guidance. High-density mapping was performed using CARTO® V4 and EnSite PrecisionTM systems and multipolar catheters (PentarrayTM, LivewireTM and AdvisorTM HD Grid). Radiofrequency energy was applied with an irrigated-tip catheter.
Results: First intention epicardial VT ablation was attempted in 12 pts (mean age 57.6 ± 14.6 years, 91% male). The majority had non-ischemic dilated cardiomyopathy, of unknown aetiology in 59%, hereditary dilated cardiomyopathy in 17% ethanolic origin in 8% and post-myocarditis in 8%. Right ventricular arrhythmogenic cardiomyopathy was present in 1 patient. As expected, our population presented a mean ejection fraction of 29% and 11 pts (92%) had an implantable cardioverter defibrillator - ICD (55% as primary prevention, 45% as secondary prevention). All pts had experienced symptomatic VT, with all ICD carriers receiving appropriate shocks. Only 4 pts had an available 12 lead ECG of the VT, and all of them had a QS pattern in lead aVL and a slurred initial QRS complex. The majority of patients presented low voltage areas and local abnormal ventricular activities at the epicardial surface, with the exception of 2 pts in whom ablation was not performed (one non-ischemic cardiomyopathy of ethanolic aetiology and the other of unknown origin). Mean ablation application time was 68 minutes, with an average maximum power of 39.9 watts. Mean overall procedure and fluoroscopic time was 132 and 24 minutes, respectively, with no major intra-procedural complications. During a mean follow-up of 307 ± 328 days, 3 pts died (mean 121 days after procedure), 3 had recurrent VT episodes and ICD shocks, and 2 received heart transplant.
Conclusions: In selected pts, with non-ischemic dilated cardiomyopathy and ECG with QS pattern in aVL and slurred QRS, epicardial VT mapping and ablation may be used as first approach, preventing unnecessary endocardial mapping. This procedure demonstrated to be safe.

Domingo, 28 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 3 - ÉCRAN 7 - INSUFICIÊNCIA CARDÍACA

P 157. QUEM É O DOENTE COM INSUFICIÊNCIA CARDÍACA CONSIDERADO COMO VULNERÁVEL - CARACTERIZAÇÃO DE UM SUBGRUPO

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Introdução: A fase vulnerável (FV) de um doente com insuficiência cardíaca (IC) é definida pelo período de tempo após a alta em que o doente tem maior risco de eventos, nomeadamente morte (M) ou rehospitalização (R) por IC. Os doentes que atravessam a FV sem eventos tem maior probabilidade de atingir a estabilidade a longo prazo.
Objetivos: Caracterizar o subgrupo de doentes com IC que tem um evento na FV.
Métodos: Selecionados todos os doentes admitidos numa enfermaria de Cardiologia entre 2009-2015 com IC aguda, excluindo aqueles que faleceram no internamento. Divisão em dois grupos de acordo com a presença de evento (M ou R) aos 30 dias: com (GV) *versus* sem (GN). Caracterização dos grupos por análise de associação com recurso a teste qui quadrado e teste T de student.
Resultados: Amostra de 935 doentes, com idade média de 77,1 ± 10,2 anos. 8,7% dos doentes apresentaram eventos na FV (GV, n = 78): 2,6% morte (n = 26) e 5,7% rehospitalização por IC (n = 53). Em comparação com o GN, o grupo GV é caracterizado por um predomínio de elementos do sexo masculino (62,8% *versus* 50,8%, p = 0,042), antecedentes de cirurgia cardíaca (16,7% *versus* 8%, p = 0.001), doença renal crónica (40,9% *versus* 22,3%, p = 0,05), doença valvular aórtica grave (37% *versus* 27%, p = 0,05) e utilização prévia de diuréticos de ansa (78,7% *versus* 62,9%, p = 0,006) e antiroideus ou hormonas tiroideias (13,3% *versus* 5,3%, p = 0,016). Na admissão apresentavam valores inferiores de frequência cardíaca (89,1 *versus* 93,0 bpm, p = 0,035), pressão arterial sistólica (130,9 ± 31,7 *versus* 140,5 ± 30,6 mmHg, p = 0,012) e diastólica (75,4 ± 16,7 *versus* 81,7 ± 42,3 mmHg, p = 0.010), e mais frequentemente derrame pleural (56,9% *versus* 41,4%, p = 0.016). Analiticamente apresentavam valores de BNP (1224,1 *versus* 763,8 pg/mL, p = 0,0001), ureia (79,9 *versus* 67,1 mg/dL, p = 0,003) e potássio superiores (5,3 *versus* 4,8 mEq/L, p = 0,026) e valores de sódio inferiores (137,5 ± 6,1 *versus* 139,3 ± 6,6 mEq/L, p = 0,02). À alta o grupo GV apresentava valores de BNP superiores (868,3 *versus* 458,9 pg/mL, p = 0,0001). O grupo GV foi medicado mais com levosimendano (6,4% *versus* 2,1%, p = 0,019), e à alta houve um maior número de doentes sem prescrição IECA ou ARA (32,9% *versus* 24,7%, p = 0,034) e com prescrição de amiodarona (24,7% *versus* 12,4%, p = 0,003). A ecocardiografia revelou, no GV, valores de área da aurícula esquerda (46,7 *versus* 28,8, p = 0,0001), diâmetro diastólico do VE (58,7 mm *versus* 55,3 mm, p = 0,031) e PSAP superiores (51,2 ± 14,5 *versus* 46,2 ± 15,5 mmHg, p = 0,01) e uma tendência para fração de ejeção inferior (45,8 *versus* 49,8%, p = 0,058). O grupo GV apresentava maior número de dias de internamento (10,8 *versus* 8,6 dias, p = 0,002).
Conclusões: O doente vulnerável com risco de eventos está associado a um perfil típico. A identificação deste perfil pode ajudar a evitar internamentos repetitivos, com conhecido impacto prognóstico, através de um seguimento mais atempado deste tipo de doentes após a alta.

P 158. PREVALENCE AND PROGNOSTIC ASSOCIATION OF HYPERURICEMIA IN HEART FAILURE PATIENTS WITH REDUCED EJECTION FRACTION

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Introduction: Substantial evidence advocates that uric acid (UA) is an independent marker for adverse prognosis in chronic HF of varying severity. Serum UA, produced in the terminal step of purine nucleotide metabolism by xanthine oxidase (XO), seems to be a predictor of mortality in HFrEF, independent of chronic kidney disease (CKD). Whether UA is simply a marker of dismal prognosis or an active contributor in disease pathogenesis is currently unknown.
Objectives: To appraise the association of UA levels with clinical features and prognosis in pts with HF and reduced ejection fraction (HFrEF) in a Heart Failure Clinic (HFC).
Methods: Unicentric, retrospective analysis of pts followed in a HFC since 3/2011. Included pts with reduced ejection fraction (EF) (< 50%) and previous diagnosis for at least 6 months. The pts were divided into 2 groups: hyperuricemic (G1) and with normal UA levels (G2). Hyperuricemia was defined has serum UA ≥ 7.0 mg/dL. Clinical, demographic, analytical, electrical, echocardiographic characteristics and major cardiac events - HF hospitalization (HFhosp) and mortality (from cardiovascular cause (CVm) and non-cardiovascular cause (nCVm)) were analysed.
Results: Included 318 pts, mean age 60.4 ± 13.3 years and a mean body mass index (mBMI) of 27.9 kg/m^2. 74% were male. 41.5% had ischemic etiology. G1 consisting of 153 pts (48%) with mean age of 61.3 ± 13.3 years. There were no differences in age, mBMI and cardiopathy etiology between groups. There were no significant differences in cardiovascular risk factors prevalence, except for smoking (43% *versus* 32%, p = 0.032). The hyperuricemic group correlated positively with the presence of atrial fibrillation (AF) (42% *versus* 28%, p = 0.009) and CKD (41% *versus* 22%, p < 0.001). G1 had more right ventricular dysfunction and lower left ventricular EF (LVEF) at admission (p < 0.001). LVEF remained significantly lower in G1 during follow-up (FU) (p = 0.045). Although there were no significant differences regarding mortality, G1 pts had more HFhosp (20% *versus* 12%, p = 0.046).
Conclusions: Hyperuricemia was particularly prevalent in this cohort. There were no associations with standard cardiovascular risk factors although hyperuricemic pts had more AF and CKD. Furthermore, higher levels of ventricular dysfunction were observed in this subgroup, with greater presence of biventricular dysfunction and HFhosp.

P 159. CHARACTERIZATION OF PATIENTS PRESCRIBED WITH SACUBITRIL/VALSARTAN: A STUDY IN THE PHARMACIES

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Introduction and objectives: The generation of real world data regarding sacubitril/valsartan (sac/val) is of major importance for regulatory and health technology assessment purposes. The aim of this study is to characterize the clinical and therapeutic profile of the patients prescribed with sac/val in Portugal through community pharmacies.
Methods: The PRiMe study is a cross-sectional and multicenter study. Adult patients (≥ 18 years) or caregivers with a prescription (initial or refill) of sac/val are being recruited through Portuguese community pharmacies. All community pharmacies associated with the Portuguese National Association of Pharmacies (~2,600) were invited to participate and 418 were enrolled. Sociodemographic data, clinical and therapeutic characteristics, healthcare resource utilization and patient-reported outcomes are being collected directly from the patients or caregivers through a structured two-part questionnaire: 1st) delivered by a trained pharmacist; 2nd) filled in by the patient. Additional data are being collected through the pharmacy's software and patient's echocardiogram report (the last available before sac/val initiation). This study was approved by the competent Ethics Committee and is compliant with the General Data Protection Regulation.
Results: As of Nov 2018, a total of 165 eligible patients (45 new users) were recruited, 26% through their caregiver. The majority of patients were male (64%) with an average of 70 years (range: 35-93). A total of 71% of patients were overweight (body mass index [BMI] > 25 kg/m^2) with a mean BMI of 28 kg/m^2 (SD = 4.4). About 45% were smokers/ex-smokers and 15% of the patients lived alone. The mean time since heart failure (HF) diagnosis was 7.3 years (SD = 8.2). The most common comorbidities reported were hypertension (72%), atrial fibrillation (70%) and high cholesterol (56%). About 37% of the patients had an implantable cardiac device. The specialty of the

doctor who first prescribed sac/val was cardiology in 82% of the patients. A total of 80% of the patients were taking ACEI or ARB at least one month before starting sac/val. According to the self-assessed NYHA, 85% of the patients were symptomatic (classes II to IV). The majority of patients (50% and 63%) had reduced ejection fraction, ≤ 35% and ≤ 40%, respectively.
Conclusions: This study shows that most of the patients prescribed with sac/val have symptomatic chronic HF with reduced ejection fraction and that a great proportion had previous treatment for HF.

P 160. HEART FAILURE: THE GREAT UNKNOWN

Brenda Moura[1], Sara Gonçalves[2], Cândida Fonseca[3], Gonçalo Proença[4], Carolina Lourenço[5], Susana Costa[6], Aurora Andrade[7], Alexandra Sousa[8], Cristina Gavina[9], Anabela Tavares[10], José Silva-Cardoso[11], contribution of the Competence Network Heart Failure Germany and Comprehensive Heart Failure Center Würzburg

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Introduction: Heart Failure (HF) is a prevalent condition that frequently leads to hospitalizations and has a negative impact on quality of life and prognosis. General public and patients' HF awareness may promote adherence to healthier lifestyle and to therapy, leading to lower HF incidence, hospitalizations and mortality.
Objectives: To gain an insight on general population's knowledge on HF manifestations and treatment.
Methods: In May 2018 we performed a general public survey to those attending HF Awareness Days activities in Portugal. This survey included epidemiological data (age, gender, living conditions, level of education), and questions on HF symptoms, comorbidities, exercise, and treatment.
Results: 732 participants answered the survey (50.3% female), age 58 ±18. 33% had only elementary school level of education, however 23% had a Degree. 438 (59.8%) declared being acquainted with HF symptoms. Fatigue was the most commonly recognized (66.4%) symptom, followed by dyspnea (52.4%) and peripheral edema (39.8%). However, vomiting and chest pain were also symptoms participants frequently associated with HF (37.7% both). 221 (30%) of the participants were unable to recognize any of the most common listed HF signs and symptoms, number that compares poorly with the much higher awareness of cancer signs/symptoms recorded in UK's «Cancer Awareness Measure 2017» 327 (44.6%) believed that HF was normal at a higher age; 486 (66.4%) knew that HF can affect other organs. 153 (21%) answered that exercise should be avoided in HF. Only 420 (57%) identified pharmacotherapy as relevant for HF treatment, followed by devices, surgery and diet (36%, 35% and 32%, respectively). For 24% of the participants none of the mentioned listed options was a valid HF treatment.
Conclusions: Comparing to other conditions, HF is poorly known by the population. Additional to being conceived as normal at higher ages, other misconceptions are common such as exercise being detrimental and no form of treatment being valid. Education and awareness campaigns are an unmet need and can have a significant impact in the prevention and better treatment and prognosis of HF.

P 161. MANAGEMENT OF ACUTE HEART FAILURE SYNDROMES IN THE EMERGENCY DEPARTMENT IN MORE THAN 1000 PATIENTS

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Introduction: The treatment of acute decompensated heart failure (ADHF) has not changed significantly in the past decades, despite the importance of this condition as a public health issue. We aimed to characterize a large population of ADHF patients admitted to a tertiary emergency department (ED) and to follow the management of patients once admitted to the ED.
Methods: We conducted a retrospective, observational study including 1057 patients admitted with ADHF in our ED from November 2016 to December 2017. A diagnosis was considered when ADHF was coded as the primary discharge or admission diagnosis. Patients were followed-up over a median period of 5 (IQR: 3-11) months. Baseline clinical and analytical data were collected.
Results: The mean age was 78 ± 10 years; there was an equilibrate distribution between male (53%) and female (47%) patients. The prevalence of coronary artery disease was 29%, valvular heart disease 42% and atrial fibrillation 67%. Mean left ventricular ejection fraction (LVEF) was 43 ± 13%. Mean serum creatinine was 1.3 ± 0.7 mg/dL, mean reactive C-protein (CRP) 3.3 ± 2.1 mg/dL and median B-type natriuretic peptide (BNP) 545 (IQR: 296-1131) pg/mL. At the ED, 92% of patients received intravenous diuretics, 5% intravenous vasodilators (mainly dinitrate isosorbide), 5% underwent noninvasive ventilation and 1% received inotropic support. The median time from door-to-furosemide administration was 90 (IQR: 40-230) min. Of the 1057 patients, 47% were discharged within the first 12 hours of ED stay. Patients that were admitted to the hospital were predominantly male (56% *versus* 47%, p < 0.001), younger (77 ± 9 *versus* 79 ± 11 years, p = 0.002), with higher creatinine values (1.4 ± 0.8 *versus* 1.2 ± 0.7 mg/dL, p < 0.001), BNP 545 (IQR: 296-1131) pg/mL and CRP (2.5 ± 1.7 *versus* 2.7 ± 1.4 mg/dL, p = 0.021) levels. Male gender (OR: 1.62, 95%CI: 1.4-1.9, p = 0.018), BNP levels (OR: 1.81, 95%CI: 1.47-2.1, p < 0.001) and LVEF (OR: 0.96, 95%CI: 0.94-0.98, p < 0.001) were significant predictors of admission *versus* discharge. Mean admission length was 12 ± 9 days. In-hospital mortality was 13%.
Conclusions: ADHF is responsible for a significant number of ED visits, with half of patients being admitted to the hospital. Acute pharmacological management in the ED was suboptimal, with a very low usage of intravenous vasodilators; also, a delayed administration of loop diuretics was seen. The clinical and analytical status in the ED were important predictors of in-hospital admission.

P 162. THE PROGNOSTIC IMPACT OF HEPATIC INJURY IN ACUTE HEART FAILURE

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Introduction: Hepatic injury has been reported in patients with acute heart failure (AHF).
Objectives: This study aims to assess the prognostic value of elevated transaminases (TM) and alkaline phosphatase (AP) in patients (P) admitted for AHF.
Methods: Retrospective study of 618 consecutive P admitted in our Hospital for AHF: 57% women, 79 ± 11 years, 61% hypertensive, 23% with chronic kidney disease, 16% with coronary artery disease. A comparative analysis was performed according to the elevation above 2× the upper normal limit of aspartate or alanine TM (TM+: with *versus* TM0: without) and of AP (AP+: with *versus* AP0: without), regarding demographic, clinical and analytical parameters, and medication during hospitalization, to evaluate potencial predictors. Prognosis (mortality) was assessed by Cox Regression during a 6 month follow-up.
Results: AP elevation occurred in 14.8% P. By univariate analysis, the group AP+ had higher basal values of urea (63.6 *versus* 54.9 mg/dL, p = 0.02) and creatinine (1.24 *versus* 1.08 mg/dL, p = 0.02), and required higher doses of furosemide during hospitalization (387 *versus* 316.2 mg, p = 0.04). By multivariable regression, only basal creatinine was independent predictor of AP+ (OR: 0.137, 95%CI: 0.001-0.253, p = 0.048). TM elevation occurred in 22.5% P. By univariate analysis, P with TM+ were younger (78 ± 11 *versus* 80 ± 10 years, p = 0.02), showed higher values of AP (157.2 *versus* 128 U/L,

p = 0.001) and hemoglobin (12.7 *versus* 12.2 g/dL, p = 0.02), with no difference in furosemide dose (p = ns). By multivariable regression, AP was an independent predictor of TM+ (OR: 0.173, 95%CI: 0.000-0.002, p = 0.01). No differences were found regarding blood pressure, ejection fraction, NT-proBNP value or lenght of stay for both AP+ and TM+ groups. Mortality was 21% at 30 days and 38% at 6M. Survival was worse at 30 days for AP+, after adjustment for demographics and comorbidities (HR: 0.4, 95CI%: 0.25-0.74, p = 0.002). Regarding TM elevation, no survival difference was found; however, in TM+ group, hemoconcentration occurred in 41.2% of P and was associated with increased survival at 6M (HR: 49.8; 95%CI: 2.44-1016.72; p = 0.011), as well as the use of higher doses of furosemide (HR: 1.0; 95%CI: 1.001-1.005; p = 0.012).
Conclusions: Elevation of AP was associated with higher mortality in P admitted for AHF. TM elevation alone didn't show prognostic impact; nevertheless, its association with hemoconcentration and higher furosemide doses seems to improve survival.

Domingo, 28 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 3 - ÉCRAN 8 - ARRITMOLOGIA

P 163. SHORT- AND LONG-TERM OUTCOMES AFTER RADIOFREQUENCY CATHETER ABLATION OF THE HIS BUNDLE: THE EXPERIENCE OF A PORTUGUESE CENTER

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Introduction: In refractory supraventricular arrhythmias (SA) with rapid ventricular rates and in systolic heart failure (HF) with need of biventricular pacing and high burden of atrial fibrilation (AF) despite a rhythm control approach, catheter ablation of the His bundle (AHB) may be performed. The purpose of this study was to assess outcomes of AHB and pacing therapy in these two conditions.
Methods: Patients referred for AHB from 1997 to 2018 were retrospectively included. Baseline clinical data, procedural variables and outcomes of AHB were collected.
Results: 123 patients were included (69 ± 9 years, 52% male). During a mean follow-up of 8.4 years, 28 patients died (23%). Patients presented advanced HF (NYHA class III - 42%, class IV - 3%), left ventricular disfunction (mean LVEF 47% ± 13), AF (65%) and rapid ventricular rates (mean heart rate 114 ± 33 bpm). Most of the patients needed hospital admission due to decompensated HF: once 31%, twice 20%, three or more times 9%. Devices were implanted before the procedure: pacemaker 82%, CRT-P 6%, CRT-D 8% and ICD 4%. AHB was performed in 113 patients at right side (91%) and in 13 patients at left side (11%). There were no procedure complications. At follow-up patients were less symptomatic (HF NYHA class III 8%, class IV 2%) and had fewer hospitalizations: once 9%, twice 1%, three or more times 4%. After univariate logistic regression, multiple emergency department visits due to HF (OR: 58.7, 95%CI: 16.2-116.7, p = 0.004), hospitalizations due to HF and the use spironolactone (OR: 268, 95%CI: 26.7-969.8, p = 0.017) before the procedure, were found to be independent predictors of the composite endpoint after the procedure (death, hospitalization or emergency department visit due to decompensated HF).
Conclusions: His bundle ablation and pacing therapy is a safe and effective method to control heart rate in patients with supraventricular arrhythmias and rapid ventricular rates who have failed medical therapy.

P 164. IBOX-CRT: CAN WE DO IT BETTER?

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Introduction: Cardiac resynchronization therapy is associated with reduced mortality, morbidity and improved quality of life in patients with low ejection fraction and conduction delays. The optimization of the left ventricle (LV) pacing site guided by the electrical delay increases CRT response, however it's necessary to develop technology that allows its universal use.
Objectives: The aim is to automatically, and operator-independent, assess the conduction delay between the right ventricular (RV) stimulus and the LV available veins in order to select the LV pacing site. It's also intended to evaluate the impact of this selection on clinical and remodeling outcomes.
Methods: Prospective, single-center study including consecutive patients undergoing CRT implant according to the current ESC guidelines indications. All patients were submitted to a clinical (including quality of life of EQ-5D Questionnaire), electrocardiographic and echocardiographic basal evaluation prior to the procedure of CRT implantation. A reassessment of all parameters was performed at 6 months of follow-up, and all the echocardiographic data was analyzed by an independent core lab. The implant of all the LV leads was guided by the longest measured delay. To evaluate conduction delays between the RV lead and the LV available veins (RV-LV delay), an external interface - intelligent Box for CRT (iBox-CRT) was used. Four measurements in at least two different tributary veins were made. The implant of all the LV lead was guided by the longest RV-LV delay. A positive CRT response was considered in case of LVESV reduction > 15% or improvement in LVEF > 10%.
Results: 60 patients were included (68.3% males, 26.7% ischemic, mean age 67.4 ± 10.2 years) and submitted to CRT implant (37 CRT-P; 23 CRT-D). At basal evaluation, the mean left ventricle ejection fraction (LVEF) was 28,8 ± 6.9%, end-diastolic volume (LVEDV) was 197 ± 69ml and end-systolic volume (LVESV) 141 ± 60 ml. At 6 months follow-up, 2 patients died (3.3%) and 85.7% were considered responders. The LVESV reduced 38.2% ± 3% in responders *versus* 5.7% ± 2% in non-responders (p = 0,005), LVEDV reduced 33.3% ± 16% in responders *versus* 13.6% ± 10% in non-responders (p = 0.002) and the mean LVEF improvement in responders was 11% *versus* -1% in non-responders (p = 0.02). The quality of life score significantly improved in both groups (EQ-5D at baseline 69.6 ± 17 *versus* 78.5 ± 15 at follow-up (p = 0.001). The mean RV-LV delay chosen intraprocedure was 187 ± 34 ms and in the reassessment at 6 months was of 180 ± 26 msec. In the group of responders, the baseline delay had a trend to be higher (190 ± 35 ms) *versus* the non-responder group RV-LV delay (165 ± 23 ms; p = ns).

	Responders	Non-responders	P
LVESV	↓ 38.2 ± 3%	↓ 5.7 ± 2%	0.005
LVEDV	↓ 33.3 ± 16%	↓ 13.6 ± 10%	0.002
LVEF	↑ 11%	↓ 1%	0.02

Conclusions: The iBox-CRT allowed the simple and automatic measurement of the RV-LV delays guiding LV lead implant, using this tool 85.7% response rate was achieved based on remodeling criteria.

P 165. EFFECTIVENESS OF DEFIBRILLATION TESTING IN PATIENTS UNDERGOING SUBCUTANEOUS ICD IMPLANTATION

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Introduction: In contrast to transvenous implantable cardioverter-defibrillator (ICD), a defibrillation test (DFT) is systematically performed at implant of

an S-ICD to confirm appropriate sensing and successful 65- J termination of induced ventricular fibrillation. The effectiveness of DFT is known to correlate with a correct positioning of the device. We aimed to access the effectiveness of DFT when following most recent positioning recommendations.
Methods and results: In a real world prospective registry of 94 patients who underwent S-ICD implant between 2011 and 2018, we analyzed the effectiveness of DFT, and the reasons for its failure. Most of the patients were male (78%), with a median age of 41 (24;56) years, 25% had atrial fibrillation (AF), 9% chronic kidney disease (GFR < 60 ml/min/1.73 m^2) and median body mass index was 24 (22;27). S-ICD was implanted on primary prevention on most patients (69%), and hypertrophic cardiomyopathy was the main referring reason (Table). DFT was effective in 98% of the times with the first shock of 65 joules. In 2 of the patients with a higher BMI (32 and 33 kg/m^2) a second shock with inverse polarity with a higher energy (80 J) was delivered. Analyzing the thorax X-ray the misplacement of the coil was evident (leftwards in one case and too inferior in the other case). One of these device was explanted due to infection (with further re-implantation) and the other was left in place (without any shocks recorded on the following 4 years of follow-up).
Conclusions: In our population of patients with S-ICD, DFT was achieved in 100% of implants. In patients with troublesome features, like a higher BMI, special care is needed to guarantee a correct placement of the device.

Baseline population characteristics	
Patient characteristics	N = 94 (100%)
Male sex	78 (78)
Age, years	42 [24;56]
Body Mass Index kg/m^2	24 [22;27]
Hypertension	25 (27)
Diabetes Mellitus	5 (5)
Smoker	21 (22)
Dyslipidemia	34 (36)
Atrial fibrillation	25 (25)
Left ventricle dysfunction	49 (52)
Chronic kidney disease	9 (9)
Primary Prevention	65 (69)
Indication for S-ICD implant	
Ischemic	18 (19)
HCM	20 (21)
Dilated cardiomyopathy	12 (13)
Brugada	8 (9)
Valvular	4 (4)
Non-compacted left ventricle	4 (4)
Others	28 (30)

S-ICD: subcutaneous implantable cardioverter defibrillator; HCM: hipertrophic cardiomyopathy.

P 166. SUBCUTANEOUS IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR: EXPERIENCE FROM A PERIPHERAL TERTIARY HOSPITAL CENTER

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Introduction: Conventional transvenous implantable cardioverter-defibrillators (ICD) have proved to be effective in preventing sudden cardiac death. Subcutaneous ICDs (S-ICD) represent a new less-invasive approach, that minimize intravascular lead complications. There is only one cohort of real word data from an international patient S-ICD population, the EFFORTLESS S-ICD registry.
Objectives: This study aims to describe the population of patients with an implanted S-ICD from a tertiary hospital center, and compare them with the EFFORTLESS S-ICD registry.
Methods: Local registry designed to collect clinical and patient outcome related data from S-ICD implanted in patients since December 2015.
Results: The total population of 13 patients, from which 11 were enrolled retrospectively, had a mean follow-up of 590 days (range: 26-1053 days). Our population has a mean age of 48.5 ± 3.66 years and 84.6% are males. Main indication for S-ICD implantation was primary prevention (76.9%), in a population with a mean left ventricle ejection fraction of 34.1 ± 4.6%. Primary diagnosis for 46.2% of the patients was ischemic cardiomyopathy. The only two baseline characteristics that differed from the population enrolled in the EFFORTLESS S-ICD registry were the prevalence of heart failure (84.6% *versus* 24%; p < 0.01) and diabetes *mellitus* (38.5% *versus* 12%; p = 0.014) which were higher in our population. We report two patients that developed small hematomas in the peri procedure. We also report an unusual case of hypersensitivity to the S-ICD material which led to the replacement of the whole system by a gold-coated conventional ICD. No inappropriate therapies were registered in the follow-up. Only 1 patient had therapies delivered in relation with 4 episodes of ventricular tachycardia/fibrillation.
Conclusions: S-ICD implanted in our population was similar to the EFFORTLESS S-ICD registry and revealed to have a good performance in preventing sudden cardiac death, with low incidence of complications and inappropriate therapies.

P 167. PROGNOSTIC IMPACT OF ICD SHOCKS: DIFFERENCE BETWEEN SUBCUTANEOUS AND ENDOVASCULAR DEVICES

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Introduction and objectives: To compare the impact of transvenous and subcutaneous implantable cardioverter defibrillators (T-ICD, S-ICD) shocks in a propensity matched population.
Methods: Single-center observational registry including 845 consecutive patients (pts) who underwent S-ICD/T-ICD implantation for either primary or secondary prevention of SCD (2007-2016). Following adjustment for age, gender, primary/secondary prevention, ischemic etiology, atrial fibrillation (AF), left ventricular systolic dysfunction, and current beta-blocker therapy, propensity-score (PS) matched 65 S-ICD with 130 T-ICD pts in a 1:2 fashion, respectively. We determined mortality increment after ICD shocks depending on the device type.
Results: After a median follow-up of 4.9 ± 2.8 years there were 35 deaths (18%), 71 pts (34%) received ICD shocks, and 53 pts (28%) received ICD appropriated shocks. The mortality among pts that experienced appropriated shocks was higher than among pts without shocks (26% *versus* 15%; p = 0,093). Inappropriated shocks were not related to mortality. 1 year after an appropriated shock the mortality was equal between S-ICD and T-ICD pts (8%; log-rank: 0,89).
Conclusions: S-ICDs shocks were not associated to a better outcome compared to T- ICD shocks.

P 168. ABSORBABLE ANTIBACTERIAL ENVELOPE FOR THE PREVENTION OF CARDIAC IMPLANTABLE ELECTRONIC DEVICE INFECTION IN HIGH RISK PATIENTS: WHAT IS OUR REALITY?

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Introduction: Infection of cardiac implantable electronic devices (CIED) have increased in recent years and are associated with longer hospital stays, need for device extraction and high morbidity and mortality rates.

Absorbable antibacterial envelope has emerged with the aim of preventing infections associated with CIED, stabilizing the generator and reducing the likelihood of skin erosion. We aimed to study CIED infection rates in patients receiving an antibacterial envelope.

Methods: Observational, longitudinal study over a period of 2,5 years (November 2015-April 2018) in patients with ≥ 2 risk factors for infection undergoing a CIED implant, treated with the absorbable antibacterial envelope. Patients were evaluated at 3, 6 and 12 months after intervention.

Results: A total of 44 patients were included (72.7% males, 65 ± 16 years). Hypertension (77.3%), replacement/revision of CIED (77.3%) and congestive heart failure (52.3%) were the most frequent risk factors for infection in our population. Of note is the presence of previous device infections in 20.46% of the cases. We found that 36.4% and 27.7% presented, respectively, an intermediate or high infectious risk (Mittal score), and 59.1% presented a high risk of infection (Shariff score). Mean Mittal and Shariff scores of 10.95 ± 5.89 and 3.05 ± 1.75, respectively, revealed a population with high infectious risk. Regarding infectious complications we documented one case of pocket infection (2.27%). One patient died due to complications of a cardiac valve surgery.

Conclusions: In patients identified at high risk for CIED infection, use of an antibacterial envelope was associated with a low incidence of infection according to previously published literature.

Domingo, 28 Abril de 2019 | 10H30-11H30

JARDIM INVERNO | POSTERS 3 - ÉCRAN 9 - IMAGIOLOGIA CARDIOVASCULAR

P 169. THREE DIMENSIONAL CARDIAC MECHANICS: A ECHOCARDIOGRAPHIC STUDY FOCUSING ON VARIABILITY

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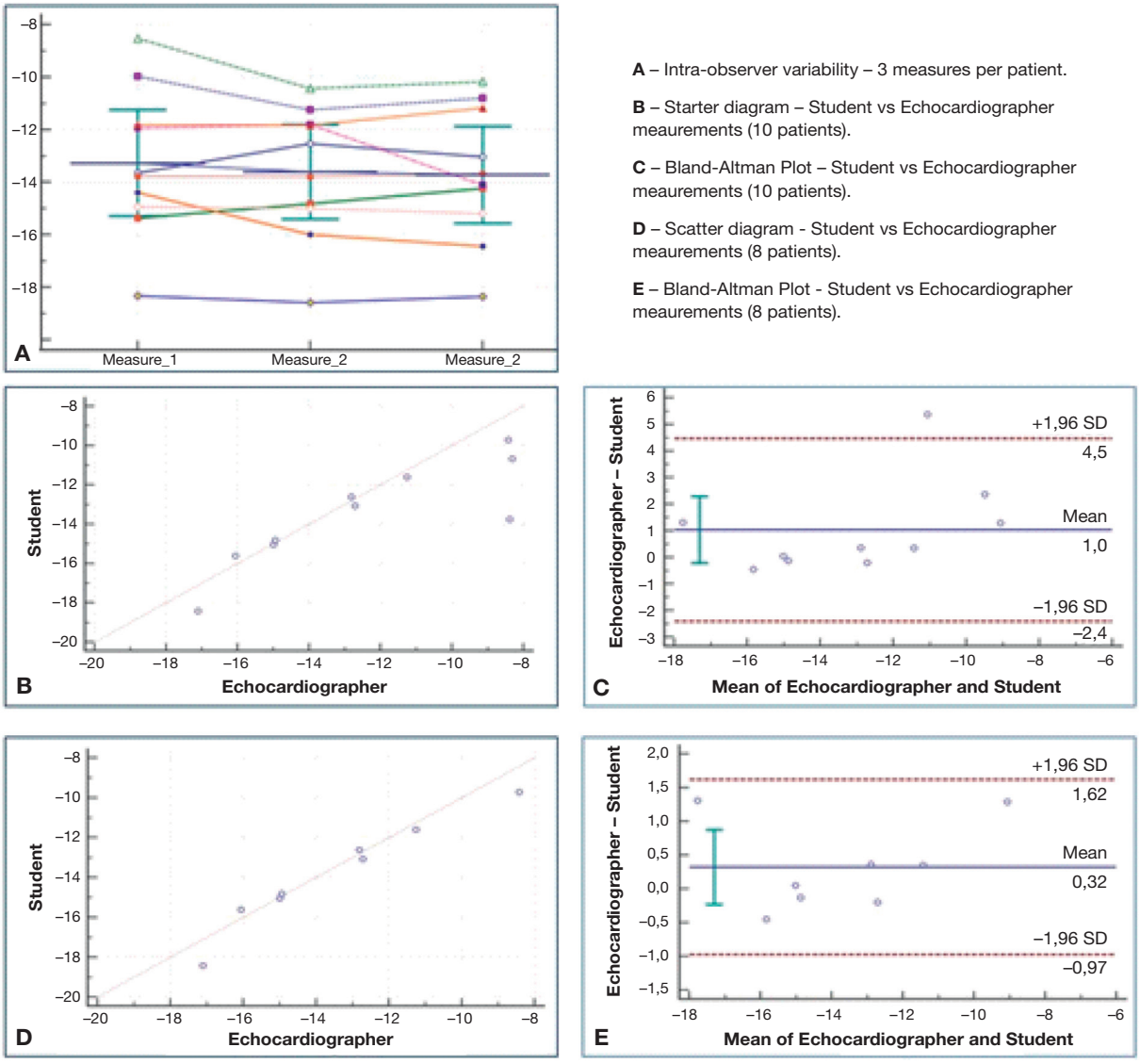
Introduction: Recent decades have been marked by substantial advances in echocardiography imaging including the development of three-dimensional techniques with automated analysis. This evolution raised the question



A – Intra-observer variability – 3 measures per patient.

B – Starter diagram – Student vs Echocardiographer meaurements (10 patients).

C – Bland-Altman Plot – Student vs Echocardiographer meaurements (10 patients).

D – Scatter diagram - Student vs Echocardiographer meaurements (8 patients).

E – Bland-Altman Plot - Student vs Echocardiographer meaurements (8 patients).

P 169 Figure

as how much echocardiography training among 3D-systems deformation analysis is needed to ensure feasibility and accuracy of the evaluation.
Objectives: Assess the reproducibility and feasibility of 3D-longitudinal strain analysis by transthoracic echocardiographic evaluation performed by expert echocardiographer *versus* a medical student.
Methods: A medical student went an organized training program (4 weeks, 8 hours a day) in 3D echocardiographic principles, image acquisition, and mechanics analysis. Subsequently, based on 10 hypertrophic myocardiopathy stored echocardiographic exams with 3D images acquisition, the medical student performed a deformation parameters analysis (left ventricular longitudinal strain). To test intra-observer variability, the student performed a three-time analysis with some days apart. To test inter-observer variability, results were compared with those obtained previously by an echocardiographer. The medical student analysis was performed blinded to previous results. The data collection was done using Aplio i900 (Canon/Toshiba® Medical Systems). Cine-loops were recorded, and quantitative analyses were conducted off-line. To determine intra and inter-observer variability, the coefficient of variability, kappa coefficient and a Bland-Altman plot analysis was used.
Results: Regarding inter-observer variability, coefficient of variation was -10,6% ± 1,28%, with a kappa coefficient of 0.65 ± 0.12 (95%CI: 0.41-0.89). The bias was 1,0 with 95% limits of agreement of 2.4 to 4.5. When excluding the two patients with sub-optimal images, the coefficient of variation decreases to -3.6% ± 0.5 with a kappa coefficient of 0.77 ± 0.05 (95%CI: 0.66-0.88), with a decrease in bias to 0.32 with a 95% limits of agreement of -0.97 to 1.62) Intra-observer variability was calculated as absolute difference between measurements over the mean of those measurements with an intraclass correlation of 0.97 (95%CI: 0.92-0.99).
Conclusions: A medical students imaging program focusing on the use of 3D cardiac mechanics by speckle-tracking echocardiography analysis is feasible and results in accurate post-processing analysis. These finding re-enforce the reproducibility of this technique. However, the quality of the acoustic window is important and likely affects an accurate tracking of left ventricular wall.

P 170. STRESS ECHOCARDIOGRAPHY IN PATIENTS WITH END-STAGE RENAL DISEASE PRE AND POST RENAL TRANSPLANTATION - SINGLE CENTER EXPERIENCE

Daniel Sebaiti, Paula Fazendas, Filipa Ferreira, Alexandra Briosa, Inês Cruz, Ana Almeida, Isabel João, Ana Rita Pereira, Ana Marques, Hélder Pereira

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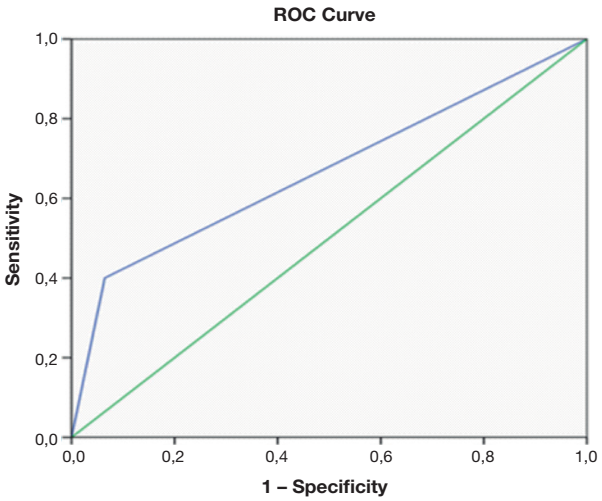
Introduction: Ischemic heart disease is the leading cause of mortality in patients with end stage renal disease (ESRD) candidates for renal transplantation (RT) or after RT. It is important to risk stratify this population for coronary artery disease to improve survival. The performance of stress echocardiography (SE) for adverse cardiac events has been variable in this population. The optimal non-invasive test for coronary artery disease (CAD) diagnosis in this population has yet to be established. The aim of this study was to assess the safety of SE and ability for predicting adverse cardiac events in this population.
Methods: retrospective study. From January 2016 to April 2018 a total of 1245 SE were performed. We selected patients referred for risk stratification with ESRD on RT waiting list or after RT. The mean follow-up period was 18 months for major adverse cardiovascular events (MACE).
Results: we studied a total of 37 patients; 26 (70.3%) were pre-RT and 11 (29.7) patients post-RT; 24 (64.9%) were male, mean age 59 years (SD 9). Risk factors: all patients had hypertension; diabetes 8 (21.6%); hyperlipidemia 23 (62.2%); overweight 9 (24.3%); history of tobacco use 19 (51.4%); previous myocardial infarction 6 (16.2%), 20 (54%) of pts had at least 3 risk factors. 46% of pts were on beta-blockers. All pts had been on dialysis (mean duration 5 years). 16 (43.2%) pts performed exercise SE, overall they had a normal exercise tolerance: 15 pts achieved ≥ 4 METs (mean 7 METs), 9 (more than half) had an non-conclusive result; 3 had a positive test: one patient had significant CAD and underwent single vessel PCI, the second patient had diffuse coronary calcification but no significant epicardial stenosis and the third patient refused angiography. 21 patients underwent Dobutamine SE (DSE): 6 pts had a non-conclusive test result, 15 had a negative test result. One patient with negative DSE underwent angiography due to recurrent chest pain and had no significant CAD; one patient with non-conclusive result on DSE had a normal angiography. No other patients that underwent DSE had cardiac catheterization until the day of data acquisition. There were no complications of SE in this group of patients. After an average follow-up of 18 months 4 MACE occurred: 3 AMI (1 from inconclusive ESE group and 2 from inconclusive DSE group); 1 Stable angina (from de inconclusive DSE group). No need for surgical revascularization, emergency percutaneous revascularization or deaths occurred.



Diagonal segments are produced by ties.

The area under the curve has na AUC of 0,67, which represents a moderate specificity mostly due to a high percentage of inconclusive stress tests and very reduced number of MACE.

Conclusions: SE is a safe procedure in patients with ESRD. This population, although young, has a high cardiovascular risk burden. A significant proportion of SE are non-conclusive, this reflects either being on drugs with anti-ischemic effects (70% of patients / 46% on beta-blockers) and chronotropic incompetence common in patients with ESRD. Patients with negative tests had no MACE or need for coronary angiography on follow-up.

P 171. INTRAOPERATIVE TRANSESOPHAGEAL AND POSTOPERATIVE ECHOCARDIOGRAPHY IN MITRAL VALVE SURGERY: THE RIGHT MATCH?

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Introduction: Intraoperative transesophageal echocardiography (iTEE) has an important role in diagnosing post-cardiopulmonary bypass (CPB) results of mitral valve (MV) replacement and repair. Intraoperative Doppler features may be dissimilar from those measured in the postoperative follow-up period due to a different hemodynamic status. We aimed to evaluate iTTE Doppler flow profile after mitral valve replacement and repair and compare with the postoperative transthoracic echocardiography (post-TTE).
Methods: We conducted a prospective, observational study of 76 patients that underwent mitral valve surgery from December 2017 to October 2018. iTEE was performed in the post-CBP period, with Doppler evaluation [mean pressure gradient (MPG) and functional area]. Patients were re-evaluated with TTE, 72 hours after surgery (post-TTE). iTEE and post-TTE Doppler values were compared and correlated. Preoperative TTE (pre-TTE) parameters were also determined.
Results: The mean age was 59 ± 18 years and 55% were female. The prevalence of severe mitral regurgitation (MR) was 77.6% and severe mitral stenosis (MS) 23.7%. In 5.3% cases there was both severe mitral regurgitation

Table P 171

	MR			MS		
	pre-TTE	post TTE	P value	pre-TTE	post-TTE	P value
LVEF (± SD, %)	57 ± 9	52 ± 10	< 0.001	58 ± 6	56 ± 7	< 0.001
LVDD (± SD, mm)	56 ± 7	53 ± 7	< 0.001	49 ± 7	49 ± 8	0.943
sPAP (± SD, mmHg)	42 ± 17	33 ± 9	< 0.001	47 ± 18	35 ± 6	< 0.001
RVD (± SD, mm)	35 ± 7	32 ± 6	0.023	34 ± 7	32 ± 6	0.159
TAPSE (± SD, mm)	18 ± 2	14 ± 3	< 0.001	18 ± 2	14 ± 3	< 0.001
	MV repair			MV replacement		
	iTEE	post-TTE	P value	iTEE	post-TTE	P value
MPG (± SD, mmHg)	2.8 ± 1.5	3.1 ± 1.4	0.084	3.2 ± 1.4	4.2 ± 1.6	0.016
Functional Area (± SD, cm^2)	2.8 ± 0.6	2.8 ± 0.7	0.665	2.8 ± 0.6	2.7 ± 0.8	0.653

and stenosis. Etiology of MR was rheumatic in 25% cases, degenerative in 61%, endocarditis in 5% and secondary in 8.5%. Etiology in MS was rheumatic in all cases. Globally, mitral valve repair was performed in 71% cases (83% for MR and 15% for MS) and replacement in 29% (64% for MR and 46% for MS). Left ventricular ejection fraction (LVEF), LV end-diastolic diameter (LVDD), systolic pulmonary artery pressure (sPAP), right ventricular diameter (RVD), tricuspid annular plane systolic excursion (TAPSE) assessed in pre-TTE and post-TTE, as also MPG and functional area in post-TTE and iTEE are depicted on table 1. There was a higher numerical difference in iTEE *versus* post-TTE MPG values in mechanical valves (n = 5) (3.5 ± 1.2 to 5.2 ± 1.6 mmHg, difference of 1.65 ± 2.4 mmHg), than in biological valves (n = 17) (3.1 ± 1.1 to 3.9 ± 1.5 mmHg, difference of 0.8 ± 1.7 mmHg). Globally, iTEE-derived MPG and functional area were strongly correlated with their post-TTE values (r^2: 0.7 and 0.8, p < 0.001).
Conclusions: iTEE Doppler parameters were strongly correlated with postoperative TTE parameters, with minimal differences: postoperative MPG were +0.4 ± 1 mmHg higher in MV repair and +1.0 ± 1.8 mmHg in MV replacement. There was a global improvement in sPAP, although LVEF was slightly reduced in the postoperative evaluation. Our study demonstrates the usefulness of iTEE and its importance in stablishing possible reference values for postoperative follow-up.

P 172. FUNCTIONAL CAPACITY, BUT NOT LEFT VENTRICLE DIASTOLIC DYSFUNCTION OR BNP, IS ASSOCIATED WITH QUALITY OF LIFE IN HFPEF PATIENTS

Maria Trêpa[1], Cristine Schimdt[2], Raquel Santos[1], Marta Fontes-Oliveira[1], Ricardo Costa[1], André Frias[1], Daniel Moreira-Gonçalves[3], José Oliveira[3], Vasco Dias[1], Mário Santos[1], Severo Torres[1]

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Introduction: Heart Failure with preserved ejection fraction (HFpEF) is a heterogeneous systemic disease that affects predominantly the elderly and requires tailored therapies. The Minnesota Living with Heart Failure questionnaire (MLHFQ) is validated in HFpEF to measure quality of life (QoL), an increasingly important outcome in this population. However, the relation of QoL with functional capacity and cardiac function has not been defined before. We aimed to study these correlations.
Methods: Prospective, cross-sectional study of patients with HFpEF (n = 24). MLHFQ was done by interview. Patients were divided into two groups according to their median MLFHQ score. We compared (1) cardiorespiratory fitness assessed by pulmonary gas exchange analysis during a 6-minute walk test (6MWT), (2) anthropometric measurements, (3) BNP value; (4) LV diastolic function by echocardiographic.
Results: The mean age of patients included was 76 ± 6 yo, 70% were female and 51% were obese. The MLHFQ total median score was 25 (interquartile range: 5-37). 58% of patients had score bellow 25, representing a good QoL, while 42% had score over 25 representing a poorer QoL. The groups had no significant differences regarding age or sex, baseline cardiovascular risk factors or NYHA Class Echocardiographic evaluation didn't show differences in diastolic function between the two QoL groups (left atrial indexed volume: 42 ml/m^2 *versus* 43 ml/m^2, p = 0.7; E/e': 14 *versus* 15, p = 0.5; tricuspide maximum regurgitant velocity: 31 cm/s *versus* 33 cm/s, p = 0.7). No difference in the BNP plasma concentrations was observed (265 pg/mL *versus* 323 pg/mL, p = 0.05). Regarding functional capacity, patients with lower QoL had a significantly lower functional capacity indicated by oxygen peak uptake (peak VO_2: 12 ml/min/kg *versus* 9.9 ml/min/kg, p = 0.01) and 6-min walking distance (344 m *versus* 266 m, p = 0.03).
Conclusions: HFpEF patients with worse QoL have reduced functional capacity, but no differences on diastolic function and BNP plasma concentrations. Our results emphasize the systemic nature of this disease arguing in favour of a less cardiocentric approach when aiming to improve QoL of these patients.

P 173. ECHOCARDIOGRAPHY AND 99MTC-DPD SCINTIGRAPHY ON CARDIAC AMYLOIDOSIS INVESTIGATION

Célia Domingues, Maria João Vidigal Ferreira, Hélder Martins, Patrícia Alves, José Almeida, Ana Vera Marinho, Maria João Cunha, Gracinda Costa, Lino Gonçalves

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Introduction: The uptake of bone-seeking radiotracers in the amyloid heart is well recognized. ^{99m}Tc-DPD has been shown to be highly sensitive for cardiac transthyretin (ATTR) amyloid. With the ageing population, restrictive/hypertrophic myocardiopathy pattern with heart failure and cardiac amyloidosis increases.
Objectives: The purpose of this study was to find echocardiography and clinical predictors of 99mTc-DPD uptake on cardiac scintigraphy of patients under cardiac amyloidosis investigation.
Results: Thirteen patients in whom cardiac scintigraphy with 99mTc-DPD was performed were also evaluated through echocardiography. The patients had a mean age of 74.0 ± 14 years and 69% (n = 9) were males. Visual moderate to severemyocardial uptake of the tracer was presented in 46% (n = 6) patients. The uptake of 99mTc-DPD presents direct correlation with permanent atrial flutter/fibrillation (AF) (r: 0.69; p = 0.09) and with right atria area (RAA) (r: 0.62; p = 0.02) and inversely correlates with systolic tissue velocity mapping of right ventricle (S'RV) (r: -0,89; p = 0,02). No correlation was found with LVEF (r: 0.25; p = 0.41), thicker of LV wall (r: 0.23; p = 0.45), E/A pattern of mitral flow (r: 0.30; p = 0.50), TAPSE of RV (r: -0.31; p = 0.32) or with indexed left atrial volume (r: 0.39; p = 0.21). On this study the presence of at least 2 of 3 factors: S'VD < 10 cm/s, presence of permanent AF and RAA > 20 cm^2, can predict with 83% sensitivity and 86% of specificity uptake of cardiac 99mTc-DPD (AUC 0.85; p = 0.04; 95%CI: 0.61-1.0) which seems to point out the relation between tracer uptake and a severe pattern of restrictive behavior of the myocardium.
Conclusions: With ageing population and increase of suspicion of cardiac amyloidosis, echocardiography is particularly useful on daily practice. A larger prospective study is necessary to verify these results.

P 174. INTRAVENTRICULAR GRADIENT IN EXERCISE ECHOCARDIOGRAM: A SINGLE-CENTER EXPERIENCE

Rita Ventura Gomes[1], João Pais[2], Ana Rita Pereira[3], Daniel Sebaiti[3], Ana Marques[3], Inês Cruz[3], Ana Rita Almeida[3], Paula Fazendas[3], Isabel João[3], Carlos Cotrim[4], Hélder Pereira[3]

[1]Hospital de Vila Franca de Xira. [2]Hospital do Espírito Santo, EPE, Évora. [3]Hospital Garcia de Orta, EPE. [4]Hospital da Cruz Vermelha.

Introduction: The development of intraventricular gradient (IVG) during exercise is rare and usually associated with left ventricular hypertrophy (LVH). Exercise echocardiography (EE) is a fundamental tool for its assessment and to establish a relation between the patients' complaints and the hemodynamic changes during exercise.
Objectives: To evaluate the baseline characteristics, therapeutic strategies and the long-term outcomes of patients (pts) with IVG during EE.
Methods: Retrospective cohort study of pts with a significant IVG (> 50 mmHg) during EE, and no more than moderate valvular heart disease, who were examined in our echo lab between January 2011 and December 2017. Mean follow-up (FU) duration was 5.2 ± 1.9 years.
Results: A total of 146 pts were included in the analysis (mean age 46.0 ± 19.2 years; 74.0% male). The main indication for performing the EE was to further investigate pts' complaints (chest discomfort [15.8%], fatigue [9.6%], dizziness [2.7%]). 54 (37.0%) were on beta-blockers (BB) or nondihydropyridine calcium channel blockers (CCB) at the time of the EE. The main pathological echocardiographic findings were hypertrophic myocardiopathy (26.0%, n = 38) and LVH (40.7%, n = 57). 43 pts (30.7%) had a normal echo. The mean immediate recovery period IVG was 99.1 ± 44.7mmHg. 47pts (32.2%) developed systolic anterior motion of the mitral valve, 25 (17.1%) had a hypotensive response to exercise (8pts symptomatic) and 6 (4.1%) had ST segment depression. There were no differences between pts on BB/CCB and those with no drugs during EE. After the exam, 61 pts (41.8%) started therapy with or changed the dosage of BB/CCB. The remaining were advised to perform non-pharmacological measures. 22 pts reported resolution of the initial symptoms. Only 45 pts (30.8%) performed a second EE and 33 (71.1%) had a reduction in IVG. A significant higher number of pts on pharmacological therapy had a resolution of the initial symptoms (31.1% *versus* 3.5%, p = 0.002) and a reduction in IVG (88.5% *versus* 47.4%, p = 0.003). During the 5 years of FU, 3pts died and 3 had at least one hospitalization.
Conclusions: A significant IVG during EE can help the cardiologist to clarify undefined symptoms and to tailor treatment options. Even though, IVG is frequently associated with structural cardiac changes, in this study there was a significant number of pts with a normal rest exam. Treatment with BB improved symptoms and reduced IVG. In a 5-year FU, the adverse events in pts with IVG are rare.

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P 175. HEART FAILURE HOSPITALIZATION IN PATIENTS WITH REDUCED EJECTION FRACTION IN A HEART FAILURE CLINIC

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Introduction: Heart failure (HF) is a major clinical and public health concern. The high prevalence and clinical course of HF results in increased burden of hospitalizations and health care costs. HF hospitalizations (HFhosp) remain a strong predictor of mortality for existing patients (pts) with HF. Efforts should be made to identify clinical predictors that might help reducing HFhosp.
Objectives: Characterize a cohort of pts with HF with reduced ejection fraction (HFrEF) in a HF clinic (HFC) who had HFhosp in the previous year and identify clinical and prognostic features.
Methods: Unicentric, retrospective analysis of pts followed in a HFCsince 3/2011. Included pts with reduced ejection fraction (EF) (< 50%) and previous diagnosis for at least 6 months; divided in two groups: pts with HFhosp (G1) and no HFhosp (G2) in the previous year.Clinical, demographic, analytical and echocardiographic characteristics and mortality (from cardiovascular [CV] cause [CVm] and non-CV cause [nCVm]) were analysed.
Results: Included 374 pts with a mean age of 60.6 ± 13.2 years. G1 consisting of 68 pts (18%) with male predominance (85% *versus* 73%, p = 0.032). There were no differences in age between groups. Ischemic etiology was more frequent in G1 (56% *versus* 37%, p = 0.004). There were no significant differences in CV risk factors prevalence, except for diabetes (50% *versus* 29%, p < 0.001) and dyslipidaemia (78% *versus* 55%, p < 0.001). G1 correlated positively with the presence of atrial fibrillation (AF) (50% *versus* 31%, p = 0.003) and chronic kidney disease (CKD) (52% *versus* 26%, p < 0.001). HFhosp group were linked to higher values of serum uric acid (p = 0.005) and BNP (p < 0.001). Left ventricle EF (LVEF) at admission (p = 0.041) and during follow-up (FU) (p < 0.001) were lower in G1, as well as right ventricle dysfunction (RVD) (p = 0.005). On the other hand, G2 had more LVEF recovery (p < 0.001). During the FU, G1 had higher mortality (53% *versus* 16%, p < 0.001), mostly related to mCV (p < 0.001). After multivariate analysis adjustment, ischemic etiology, CKD, AF, diabetes and dyslipidaemia remained significantly associated with HFhosp.
Conclusions: In our cohort, HFhosp group had more ischemic etiology and higher prevalence of AF, diabetes, dyslipidaemia and CKD. As expected, G1 showed a marked relationship with HFrEF severity surrogates, namely initial and FU LVEF and RVD. HFhosp had higher mortality rate, particularly related to mCV.

P 176. CHA2DS2-VASC SCORE AS A MORTALITY PREDICTOR IN SINUS RHYTHM HEART FAILURE PATIENTS

Hélder Santos[1], Inês Almeida[1], Hugo Miranda[1], Catarina Sousa[1], Lurdes Almeida[1], Joana Chan Chin[2], Samuel Almeida[1], Luís Santos[1], João Tavares[1]

[1]Centro Hospitalar Barreiro/Montijo, EPE / Hospital Nossa Senhora do Rosário. [2]Centro Hospitalar do Algarve, EPE / Hospital de Faro.

Introduction: CHA_2DS_2-VASC score is a validated and established tool to stratify the stroke risk in atrial fibrillation patients. However, CHA_2DS_2-VASC score has not been validated in heart failure (HF) patients as well as its capability to predict mortality in sinus rhythm patients.
Objectives: Validation of the CHA_2DS_2-VASC score as a predictive tool of mortality in patients admitted with acute heart failure in a peripheral centre.
Methods: Single-centre retrospective study, engaging patients hospitalized for acute heart failure between 1/01/2010-31/12/2017. All patients' clinical data were extracted at admission and the follow up occurred in our centre. CHA_2DS_2-VASC score was assessed at admission. Patients were divided in two samples, according to their rhythm at admission (sinus rhythm - SR or other (included atrial fibrillation/flutter, pacing) - Ot). To evaluate the survival rates between SR and Ot, Kaplan-Meier method was used (log-rank test). Chi-square, T-student and ANOVA tests were used to compare categorical and continuous variables. SR patients were then categorized in 4 groups (1-only heart failure; 2-3; 4-5; ≥ 6), according to CHA_2DS_2-VASC score risk and survival rates were established with a Kaplan-Meier test.
Results: 298 patients were included, 72.1% were male, mean age 67.48 ± 12.34 years with 33.79 ± 28.52 months of follow up. SR (181 patients) and Ot (117 patients) were similar regarding age, gender, cardiovascular risk factors, mean CHA_2DS_2-VASC score and survival rates. Interestingly, the presence of vascular disease (defined as a previous acute coronary syndrome) was significantly different between SR and Ot (54.7% *versus* 35.9%, respectively), p = 0.002. As expected, the categorization of SR

patients in 4 groups, revealed that the CHA_2DS_2-VASC score's variables had significant differences between the groups (namely in mean age, gender, arterial hypertension, diabetes, vascular disease and previous stroke). Mortality rates significantly increase with the CHA_2DS_2-VASC score (42.9, 43.5, 59.7, 85.7%), with a Kaplan-Meier test of $p < 0.001$ (Fig.).

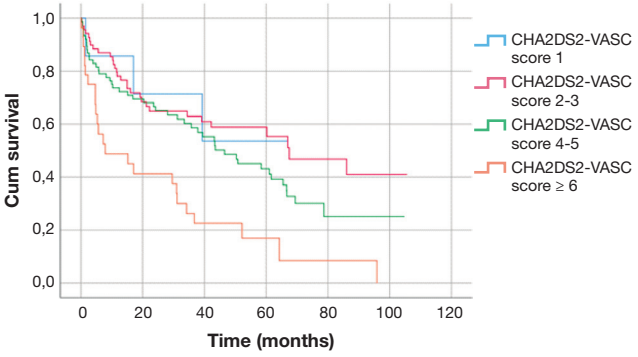

Figure 1. Sinus rhythmic patients represented according with CHA_2DS_2-VASC score.

Conclusions: CHA_2DS_2-VASC score, largely implemented in atrial fibrillation patients assessment, proved to be a predictor of mortality in heart failure patients admitted in HF, even in SR.

P 177. WHO ARNI THE BEST RESPONDERS AMONG PATIENTS WITH LVEF < 35%?

José de Almeida[1], S. Martinho[1], R. Baptista[1], F. Franco[1], S. Costa[1], M. Ferreira[1], M. Robalo[2], Lino Gonçalves[1]

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Introduction: Although it is not a perfect surrogate in heart failure (HF), left ventricle ejection fraction (LVEF) is an important tool to guide therapy and evaluate ventricular function. The cut-off of 35% is of particular interest because it is helpful in guiding therapeutic decisions, pharmacological and device-related. Among patients on Angiotensin II Receptor Blocker Neprilysin Inhibitor (ARNI) with LVEF below this threshold, we wanted to identify which factors could help us predict a more favorable response to this therapy.
Methods: We retrospectively studied a population of 200 HF patients treated with ARNI. We selected patients with LVEF (evaluated with nuclear imaging) < 35% and on maximum ARNI dose (n = 78) and divided them into 2 groups: those who reached an EF > 35% after at least 3 months of ARNI titrated up to maximum dose (optimal responders, n = 14) and those who did not reach this threshold («non-responders», n = 64). There were no deaths. We characterized our population and looked for significant differences betweeb groups.
Results: Our population had a mean age of 60.5 ± 11.9, baseline LVEF 24.9% ± 5.6%, medium blood pressure of 126.2 ± 16.2 mmHg, creatinine 1.12 ± 0.38 mg/dL, K of 4.55 ± 4.49 mmol/L and NT-proBNP 128,105 ± 1476.2pg/mL. 90.8% of patients were men and 55.1% had an ischemic etiology. Regarding symptoms, 56% were in NYHA Class II, 60% in NYHA Class III and 4% in NYHA class IV. The majority of patients had an implanted ICD (36.8%) or CRT-D (39.5%). Considering comorbidities, 40% of patients had diabetes, 38.7% AF and 30% had smoking habits. For previous events, 41.3% had a previous acute coronary syndrome and 65.8% a previous HF hospitalization. 98.7% of patients were on beta-blocker (30.7% reached maximum dose), 98.7% on angiotensin inhibitor (32% on maximum dose), 66.7% had aldosterone inhibitor on intermediate to high dose. 96% had furosemide. There was a statistically lower rate of ischemic *versus* non-ischemic patients within the responder group (12.9% *versus* 28.5%, p = 0.026) than within the non-responders (87.1% *versus* 61.5%, p = 0.026) and a trend towards lesser rate of previous ACS (12.5% *versus* 34.4%, p = 0.061) comparing to non-responsders (87.5% *versus* 65.6%, p = 0.061). Within ischemic patients, only 12.9% of patients reached EF > 35%, compared with 38.5% of non-ischemic (RR: 2.95, p = 0.026). No other factors were statistically different between compared groups.
Conclusions: We observed that ischemic HF patients have an overall worse response to neuro-hormonal system modulator therapy, and this is in line with previous reports. The same remains true for this particular subset of patients, who already carry a poor prognosis and may benefit from other therapies, medical or structural. On the other hand, non-ischemic HF patients appear to be better responders and the expected favorable outcome could be helpful to better optimize the adequacy and timing of other therapies.

P 178. 18F-FDG UPTAKE IN THE RIGHT ATRIUM IN PATIENTS WITH HEART FAILURE

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The purpose of this study was to evaluate 18F-FDG activity in the right atrium in a group of patients with ischemic cardiomyopathy, scheduled for

Etiology * LVEF > 35 after 1 month with máximum dose

			LVEF > 35 after 1 month with máximum dose		
			No	Yes	Total
Etiology	Ischemic	Count	27	4	31
		% within Biology	87.1%	12.9%	100.0%
		% within LVEF > 35 after 1 month with máximum dose	62.8%	28.6%	54.4%
		% of Total	47.4%	7.0%	54.4%
	Non-ischemic	Count	16	10	26
		% within Etiology	61 5%	38.5%	100.0%
		% within LVEF > 35 after 1 month with máximum dose	37.2%	71.4%	45.6%
		% of Total	28.1%	17.5%	45.6%
Total		Count	43	14	57
		% within Etiology	75.4%	24.6%	100.0%
		% within LVEF > 35 after 1 mooth with máximum dose	100.0%	100.0%	100.0%
		% of Total	75.4%	24.6%	100.0%

P 177 Figure

viability assessment. 41 patients were evaluated according to the viability protocol with 18F-FDG. 39 men and 2 women were included with a mean age of 65.1 ± 9.6 years. The activity in the right atrium (RA) wall was corrected for blood-pool activity registered in the lumen of the RA. The tracer activity was compared with echocardiography parameters: LVEF; RA area; tricuspid annular plane systolic excursion (TAPSE) and RA area. Left ventricular ejection fraction (LVEF) was of 33.9 ± 10.0, the TAPSE was of 17.2 ± 4.2 and RA area 15.4 ± 4.9. The corrected 18F-FDG activity in RA wall was of 1.3 ± 0.5. No correlation was seen between RA activity and LVEF: r: 0.12, p = 0.45. RA activity was related with the TAPSE: r: 0.42, p = 0.008 and the RA area: r: 0.47, p = 0.006. It seems that right atrium 18F-FDG activity is related with right ventricle function and enlargement of the right atrium. Further studies should be performed in order to confirm these results and validate 18F-FDG activity in the right atrium as an image marker of right heart overload.

P 179. PROGNOSTIC IMPACT OF LEFT VENTRICLE DYSFUNCTION IN PATIENTS WITH PULMONARY HYPERTENSION

Nzinga André, Rui Plácido, Tatiana Guimarães, João R. Agostinho, Joana Rigueira, Inês Aguiar Ricardo, Rafael Pacheco Santos, Nelson Cunha, Tiago Rodrigues, Ana Mineiro, Susana Martins, Nuno Lousada, Fausto J. Pinto

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Introduction: Left ventricular (LV) dysfunction is the main cause of pulmonary hypertension (PH) and is associated with a worse prognosis. However, the contributory factor of LV dysfunction in patients with predominantly pre-capillary PH is unclear.
Objectives: to assess the prognostic impact of LV dysfunction in patients with PH.
Methods: Retrospective, single-center study of consecutive patients followed in the PH treatment center, with hemodynamic diagnosis of PH, submitted to transthoracic echocardiography at diagnosis. The concomitant presence of LV dysfunction, classified as isolated diastolic dysfunction, systolic dysfunction or valvulopathy with hemodynamic repercussion was evaluated. The association of this variable with any cause mortality at 5 years was determined using the Kaplan Meier survival analysis and the Cox regression analysis.
Results: 176 patients were included, 69.9% female (n = 123), with a median age of 68 years (IQR: 24). LV dysfunction was identified in 28.4% (n = 49), with the majority (n = 40) presenting with group 2 PH. The 5-year mortality rate from any cause was 27.3%. Patients with systolic dysfunction had 50% mortality at 5 years, significantly higher than the other groups (p = 0.001), being a predictor of mortality in this period (p = 0.003).
Conclusions: The presence of left ventricular systolic dysfunction is associated with worse prognosis in PH patients.

P 180. EFFECTS OF LEVOSIMENDAN IN PATIENTS WITH ST ELEVATION ACUTE MYOCARDIAL INFARCTION COMPLICATED WITH SEVERE VENTRICULAR DYSFUNCTION AND WITHOUT CARDIOGENIC SHOCK AT ADMISSION

Bruno Cordeiro Piçarra[1], João Pais[1], Ana Rita Santos[1], Mafalda Carrington[2], Diogo Brás[1], Kisa Congo[1], José Aguiar[1], Investigadores do Registo Nacional de Síndromes Coronárias Agudas[3]

[1]Hospital do Espírito Santo, EPE, Évora. [2]Centro Hospitalar de Lisboa Central, EPE / Hospital Santo António dos Capuchos. [3]CNCDC - Centro Nacional de Coleção de Dados em Cardiologia.

Introduction: Levosimendan is an inodilator with inotropic properties often used in patients (Pts) with acute heart failure or cardiogenic shock. Its use Pts with acute ST-elevation myocardial infarction (STEMI) complicated by severe left ventricular dysfunction but without cardiogenic shock at admission is still unknown.
Objectives: To evaluate the effects of Levosimendan in a population of Pts with STEMI complicated by severe left ventricular dysfunction (defined as ejection fraction < 30%) and without cardiogenic shock at admission.
Methods: We studied 289 Pts with STEMI complicated of severe left ventricular dysfunction and without cardiogenic shock at admission included in a national multicenter registry. We considered 2 groups: Pts who performed Levosimendan (n = 23D) and Pts who did not perform Levosimendan (n = 166 Pts). We recorded age, gender, cardiovascular and non-cardiovascular history, vital signs, Killip-Kimbal (KK) class at admission, coronary angiography, coronary anatomy and in-hospital therapy. In-hospital mortality was assessed as the primary end point and secondary end points were defined as the presence of one of the following complications: Re-AMI, high-grade atrial-ventricular (AVB), sustained ventricular tachycardia (VT) and atrial fibrillation (AF). Multivariate analysis was performed to evaluate the impact of Levosimendan in each of the endpoints considered.
Results: The baseline characteristics between the two groups were very similar, with no statistically significant differences between age, gender and cardiovascular and non-cardiovascular history. At admission, vital signs (systolic and diastolic blood pressure, heart rate), as well as KK class were similar between the 2 groups. The coronary angiography rate was similar between the groups, with no difference in the number of vessels with lesions or the number of angioplasties performed. Although Levosimendan was used in a greater number of Pts who developed heart failure (87.0% *versus* 59.0%, p = 0.008) and cardiogenic shock (52.4% *versus* 26.0%, p = 0.01), in-hospital mortality was similar between groups. There were no differences in any of the secondary endpoints (Re-EAM, AVB, TVM and AF).
Conclusions: In the context of STEMI complicated by severe left ventricular dysfunction, the use of Levosimendan appears to be safe, not associated with increased in-hospital mortality or complications.

Domingo, 28 Abril de 2019 | 16H00-17H00

JARDIM INVERNO | POSTERS 4 - ÉCRAN 1 - DOENÇA CORONÁRIA

P 181. ANGIOTENSINOGEN AND HYDROGEN PEROXIDE IN HUMAN ACUTE HEART FAILURE

Marta Reina-Couto[1], Rita Cruz[2], Paula Serrão[3], Joana Afonso[3], Roberto Roncon-Albuquerque[1], José A. Paiva[1], António Albino-Teixeira[3], Manuela Morato[2], Teresa Sousa[3]

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Introduction and objectives: Acute heart failure (AHF) is the most common cause of unscheduled hospital admissions. The renin-angiotensin-aldosterone system (RAAS) and hydrogen peroxide (H_2O_2) contribute to the pathophysiology of AHF, where H_2O_2 may function either as downstream mediator or as upstream regulator of RAAS. Since heart dysfunction negatively affects the kidney and vice versa, we aimed to evaluate the urinary excretion of angiotensinogen (U-AGT, a marker of intrarenal RAAS) and H_2O_2 (U-H_2O_2), as well as their correlation with each other and with cardiac biomarkers in acute heart failure (AHF) and cardiogenic shock (CS).
Methods: This study was approved by the Health Ethics Committee of our hospital. Blood and urine samples were collected from patients with AHF (n = 9), CS (n = 7) or non-cardiogenic shock (NCS) (n = 6) at admission,

days 3-4 and days 5-7 of the hospitalization period. Samples from healthy volunteers (controls) (n = 8) were collected at a single time point. U-AGT and U-H2O2 were quantified by ELISA and a fluorimetric assay, respectively and B-type natriuretic peptide (BNP), high-sensitivity troponin I (hs-trop I) using automated analyzers.
Results: U-AGT (ng/mg creatinine) at admission was higher in all patients groups, being markedly higher in CS and NCS (controls: 3.6 ± 0.8; AHF: 18.8 ± 5.9; CS: 106.6 ± 32.6; NCS: 491.1 ± 244.0; CS and NCS *versus* controls, p < 0.01 and p < 0.001, respectively). In most shock patients, U-AGT increased during hospitalization. U-H_2O_2 values (nmol/mg creatinine) at admission were lower in patients groups, particularly in those with shock (controls: 6.3 ± 1.1; AHF: 1.7 ± 0.8; CS: 0.6 ± 0.4; NCS: 0.9 ± 0.5; CS and NCS *versus* controls, p < 0.01). There was a significant inverse correlation between U-AGT and U-H2O2 at admission (r: -0.55, p = 0.002), when considering all groups. U-AGT or U-H_2O_2 were not correlated with cardiac biomarkers like BNP or hs-trop I or even with APACHE II and SAPS II scores.
Conclusions: At admission, U-AGT is higher and U-H_2O_2 is lower in all patients groups, being more markedly altered in shock patients, although no changes in renal function were observed in these groups, probably reflecting intrarenal RAAS activation, with increased local AGT production. The inverse correlation between U-AGT and U-H_2O_2 suggests the existence of a counterregulatory mechanism between these markers.

P 182. VENOARTERIAL EXTRACORPOREAL MEMBRANE OXYGENATION IN CARDIOGENIC SHOCK: PROGNOSTIC VARIABLES AND PERFORMANCE OF DIFFERENT CLINICAL RISK SCORES

Pedro Gonçalves Teixeira[1], Marisa Silva[1], Domingas Mbala[1], Miguel Varela[2], Maria Ana Canelas[1], Ana Raquel Barbosa[1], Cláudio Guerreiro[1], Ana Mosalina[1], Tiago Dias[1], Pedro Queirós[1], Eduardo Vilela[1], Ricardo Fontes-Carvalho[1], Marta Ponte[1], Gustavo Morais[1], Adelaide V. Dias[1], Alberto Rodrigues[1], Pedro Braga[1], Daniel Caeiro[1]

[1]Centro Hospitalar de Vila Nova de Gaia / Espinho. [2]Centro Hospitalar do Algarve, EPE / Hospital de Faro.

Introduction: The use of venoarterial extracorporeal membrane oxygenation (VA-ECMO) to support patients in cardiogenic shock has been increasing in Portugal over the past few years. Nonetheless, epidemiologic, prognostic and clinical outcome data are scarce.
Objectives: We aim to identify clinical variables with prognostic significance in this challenging population, as well as the performance of various risk scores in mortality prediction.
Methods: All patients that underwent VA-ECMO support at our Cardiac ICU between 2011 and 2018 were included in the analysis. Logistic regression analysis was used to assess the relationship between clinical variables and outcomes. All statistical analyses were conducted using IBM SPSS Statistics 25®.
Results: Short-term mechanical support with VA-ECMO was given to 40 patients, with a mean age of 52 ± 11 years. At the time of the implant, mean SOFA score was 11.2 ± 4.0, and mean SAVE score was -4.75 ± 4.6. Mean ECMO support duration was 116 ± 96 h. In 70% (n = 28) of patients, VA-ECMO was successfully weaned. In-hospital mortality was observed in 52.5% of patients, which was in accordance with the predicted mortality by SOFA score (22.5% to 82% in our population risk range) and by SAVE score (60 to 70%). Those who placed the VA-ECMO as a bridge to transplant or to long-term mechanical LV assist device had greater in-hospital mortality rates (91.6 *versus* 41.9%, p = 0.013), as well as those under ≥ 2 inotropic/vasopressors (69.2 *versus* 21.4%, p = 0.012) or when adrenaline use was needed (100% *versus* 44.1%, p = 0.01). No other between-group differences were observed in what concerns short-term mortality. After logistic regression analysis, independent predictors of in-hospital mortality included AMI setting, number of vasoactive amines used, and necessity of an LV venting device. SAVE score had the greater predictive ability in these patients (AUC: 0.638) among the most utilized clinical risk scores (SOFA score AUC: 0.37; APACHE II score AUC: 0.59; SAPS II score AUC: 0.54).
Conclusions: In our analysis, patients in profound cardiogenic shock on VA-ECMO support had slightly better survival rates than predicted by classical Risk scores. The SAVE score may be the most accurate tool to predict in-hospital mortality in this specific, and yet heterogeneous, clinical subset. Other well recognized clinical markers of severity may also help refine short-term prognosis, and potentially improve organ transplant or other destination therapy prioritization.

P 183. ABANDONING THERAPEUTIC HYPOTHERMIA AFTER CARDIAC ARREST: ARE REAL WORLD DATA COMPELLING ENOUGH TO QUESTION THE TARGETED TEMPERATURE MANAGEMENT TRIAL?

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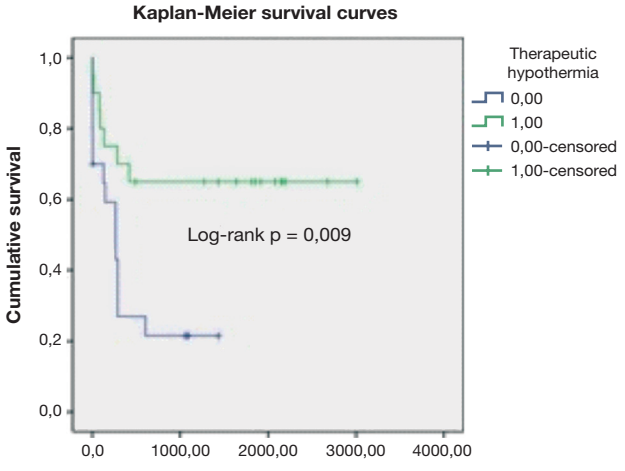
Introduction: Until 2013, a growing body of evidence favored the use of therapeutic hypothermia (TH) in comatose survivors after cardiac arrest. Practices changed dramatically after the TTM trial demonstrated no difference between 32-34 ºC and 36 ºC targets. However, difficulties in avoiding fever during «normothermia» may potentially compromise a 36 ºC based strategy. We aimed to assess the impact of not performing hypothermia in real-world conditions.
Methods: Consecutive patients admitted to a cardiac ICU from January 2008 to October 2018 after arrest of presumed cardiac origin and presenting with a Glasgow Coma Scale score ≤ 8 were identified and divided into two groups (TH: 32-34 ºC during 24 h followed by gradual rewarming and no-TH: fever control). The decision to perform TH was left to the attending physicians. A propensity score (PS) was used to account for baseline imbalances using the variables collected in the TTM trial. Primary endpoints were all-cause mortality and severe disability defined as a cerebral performance category > 2 (range: 1-5).
Results: 90 patients were identified during the study period, of which 22 underwent TH. Mean patient age was 64 ± 15 years, 78% were male and in 63% of cases the presenting rhythm was shockable. Mean time to return of spontaneous circulation (ROSC) was 25 ± 19 min, mean lactate was 6.4 ± 4.6 mmol/L and mean pH was 7.24 ± 0.13. After ROSC, the most frequent ECG change was ST-segment elevation (47%). The majority of patients underwent emergent coronary angiography (80%) and PCI was performed in 42 cases. After PS matching, TH (n = 20) and no-TH (n = 20) groups showed no significant difference in clinical characteristics. Mean temperature during the first 48 h was 33.8 ºC (range: 33.0-36.0 ºC) in the TH group and 36.8º C in the non-TH group (range: 35-37.5 ºC) —p < 0.01. Median follow-up in the matched population was 0.8 (IQR: 0.2-4.4) years. Kaplan-Meier curves (Fig.) revealed improved survival in hypothermia patients (65% *versus* 25%, log-rank p = 0.009). Neurological status at discharge was significantly better in the TH group (70% *versus* 30%, p = 0.026).



Conclusions: In a real-world setting, moderate TH may offer a prognostic benefit to patients resuscitated after cardiac arrest. Difficulties in

maintaining body temperature below 36 ºC may, to some extent, account for the diverging results between our population and patients from the TTM trial.

P 184. THE SUPERIORITY OF GRACE IN PREDICTING CARDIOGENIC SHOCK AND IN-HOSPITAL MORTALITY IN STEMI

Mafalda Carrington[1], Ana Rita Santos[2], João Pais[2], Bruno Piçarra[2], Diogo Brás[2], Rui Azevedo-Guerreiro[2], Kisa Hyde-Congo[2], José Aguiar[2], investigadores do Registo Nacional de Síndromes Coronárias Agudas[3]

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Introduction: Traditionally, TIMI is used for stratification of in-hospital mortality (IHM) in ST-elevation myocardial infarction (STEMI) and GRACE in non-STEMI patients. A Simple Clinical score (SCS) validated in the Swedish population, which included clinical variables at admission was associated to higher IHM in patients with MI. On the other side, we still have few tools to predict cardiogenic shock (CS) and none of the scores was studied for this outcome.
Objectives: To assess the ability of GRACE and SCS to predict IHM and CS in a STEMI Portuguese population, as compared to TIMI. We aimed to create a cut-off point to help clinicians define a higher-risk group of patients for each score and for each outcome.
Methods: Consecutive patients who were admitted with suspected STEMI were identified through a national multicentric national registry. We excluded patients with cardiac arrest or CS prior to admission. We defined IHM as primary outcome and CS as a secondary outcome. We calculated GRACE and TIMI for each patient, as well as a SCS by using the following variables: age ≥ 50 years (1 point), male sex (1 point), ST-T abnormalities (2 points), Killip Class > 1 (2 points), heart rate < 40 or ≥ 100 bpm (2 points), and systolic blood pressure < 100 mmHg (4 points). The area under the ROC curve (AUC) assessed the discrimination power of the scores. We identified the most appropriate cut-off values based on the point where the Youden's Index was maximum, thus creating high-risk groups for each clinical event. Logistic regression models evaluated independent association of high risk scoring with the studied events.
Results: We included 5294 patients with STEMI, in which GRACE score was better than both TIMI and the SCS at predicting both IHM (AUC: GRACE 0.866, 95%CI: 0.856-0.805, *versus* TIMI 0.837, 95%CI: 0.827-0.847, p = 0.009; GRACE *versus* SCS 0.692, 95%CI: 0.679-0.704, p < 0.001) and CS (AUC: GRACE 0.794, 95%CI: 0.783-0.805 *versus* TIMI 0.771, 95%CI: 0.759-0.782, p = 0.029; GRACE *versus* SCS 0.687, 95%CI: 0.674-0.699, p < 0.001) (Table). Additionally, comparing to TIMI, the SCS was worse at predicting IHM and CS (p < 0.001). According to the most appropriate cut-off points identified, logistic regression models showed that patients with GRACE ≥ 184 (OR: 4.46; 95%CI: 2.60-7.64) and TIMI ≥ 6 (OR: 2.55; 95%CI: 1.55-4.18) had, respectively, 4.5 and 2.6 times higher risk for IHM than patients with lower scores. On the other side, GRACE ≥ 173 (OR: 1.82; 95%CI: 1.04-3.20) increased 1.8 times the risk to develop CS. It was not possible to define a cut-off point for the SCS.

	IH Mortality	IH Cardiogenic Shock
Simple Clinical Score	0,692; IC95% 0,679-0,704	0,687; IC95% 0,674-0,699
TIMI Score	0,837; IC95% 0,827-0,847	0,771; IC95% 0,759-0,782
GRACE Score	0,866; IC95% 0-856-0.805	0,794; IC95% 0,78 3-0,805
SCS vs TIMI/GRACE	p < 0,001	p < 0,001
TIMI vs GRACE	p = 0,009	p = 0,029

Conclusions: In STEMI patients, all scores studied performed well at predicting IHM and CS. Even if GRACE score is not well validated for STEMI, it performed better than TIMI at predicting both IHM and CS, and TIMI did better than the SCS. Patients with high-risk scores according to the defined cut-offs may need closer monitoring and more aggressive therapy.

P 185. VENOARTERIAL EXTRACORPOREAL MEMBRANE OXYGENATION IN CARDIOGENIC SHOCK: INSIGHTS FROM A PORTUGUESE CARDIAC INTENSIVE CARE UNIT

Pedro Gonçalves Teixeira[1], Marisa Silva[1], Domingas Mbala[1], Miguel Varela[2], Maria Ana Canelas[1], Ana Raquel Barbosa[1], Cláudio Guerreiro[1], Ana Mosalina[1], Tiago Dias[1], Pedro Queirós[1], Eduardo Vilela[1], Ricardo Fontes-Carvalho[1], Marta Ponte[1], Adelaide V. Dias[1], Alberto Rodrigues[1], Pedro Braga[1], Daniel Caeiro[1]

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Introduction: Over the past few years, venoarterial extracorporeal membrane oxygenation (VA-ECMO) has been increasingly used to support patients in cardiogenic shock, either as a bridge to myocardial recovery, long-term mechanical circulatory support, or heart transplant. Its use in Portugal in this clinical scenario is rapidly growing, but epidemiologic and clinical outcome data are scarce.
Objectives: To characterize a Cardiac ICU experience with VA-ECMO support in patients with profound cardiogenic shock over the past decade, providing insights into major clinical outcomes and complications.
Methods: All patients that underwent VA-ECMO support at our Cardiac ICU between September 2011 and October 2018 were included in the analysis. Statistical analyses were conducted using IBM SPSS Statistics 25®.
Results: Short-term mechanical support with VA ECMO was given to 40 patients, with a mean age of 52 ± 11 years, of which 52.5% were male. Median door-to-ECMO time was 6 hours [IQR: 23]. In 70% of the cases (n = 28), the device was placed as a bridge to recovery. Pre-implantation cardiac arrest occurred in 55% (n = 22) of patients, with a mean time to ROSC of 17.57 ± 7.5 min. The leading cause for VA-ECMO implantation was AMI (37.5%, n = 15), followed by acute fulminant myocarditis (22.5%, n = 9). Devices for left ventricle venting were simultaneously implanted in 47.5% (n = 19), the most frequent being IABP (n = 12). At the time of the implant, the mean SAVE score was -4.75 ± 4.6. CNS dysfunction occurred in 12.8% of patients (n = 5), end-stage acute renal failure in 45% (n = 18), and hepatic dysfunction in 69.2% (n = 27). The great majority of patients were under systemic anticoagulation (94.7%, n = 36). Access-related ipsilateral lower limb ischaemic complications occurred in 27.5% (n = 11, of which 4 developed compartment syndrome). Access-related hemorrhagic complications occurred in 15% (n = 6), those of gastrointestinal origin in 12.5% (n = 5), and intracerebral hemorrhage in 2.5% (n = 1). Mean ECMO support duration was 116 ± 96 h. In 70% (n = 28) of patients, VA-ECMO was successfully weaned. Mean hospitalization length was 17.5 ± 16.0 days. In-hospital mortality was observed in 52.5% of patients, and 30-day mortality in 60%.
Conclusions: Several advances had been made over the years in VA-ECMO use in this challenging clinical scenario, but broad detailed epidemiologic information on complications and clinical outcomes is needed to improve quality of care.

P 186. NEUTROPHIL-TO-LYMPHOCYTE RATIO: A NOVEL PROGNOSTIC MARKER IN RECUPERATED OUT-OF-HOSPITAL CARDIAC ARREST DUE TO CORONARY ARTERY DISEASE

Maria Trêpa[1], Samuel Bastos[2], Marta Fontes-Oliveira[1], Raquel Santos[1], Ricardo Costa[1], André Frias[1], Bruno Brochado[1], André Luz[1], João Silveira[1], Anibal Albuquerque[1], Mário Santos[1], Severo Torres[1]

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Introduction: Recuperated out-of-hospital cardiac arrest (rOHCA) population is wide and heterogenous. Few studies focused specifically on outcomes in the rOHCA subgroup with proven significant coronary artery disease (SigCAD). Furthermore, the neutrophil-to-lymphocyte ratio (NLR), a marker of inflammation, is associated with prognosis in acute coronary syndromes but no data exists in patients with SigCAD presenting after rOHCA. Our aim was to assess the prognostic significance of NLR ratio in this specific subgroup of patients.

Methods: Retrospective observational study of rOHCA patients submitted to coronary angiography. SigCAD was defined as > 70% stenosis in major vessels or > 50% in left main or performance of percutaneous coronary intervention (PCI). The finding of SigCAD was used to establish a coronary cause for OHCA and only those patients were included for further analysis. Logistic regression and receiver operator curves (ROC) models were used for statistical analysis.
Results: 63 patients were included, median age was 63 years old (yo) and 84% were male. In-hospital mortality was 36%. In coronary angiography, 90% had at least 1 suboclusive lesion and 73% had a recent total occlusion; 72% underwent PCI. The median NLR at 24h was 8 (interquartile range: 6.5). Patients with higher NLR were older (57 ± 11yo *versus* 65 ± 13, p = 0.02), more likely to be non-smokers (74% *versus* 47%, p = 0.04) and to have a higher GRACE score measured at 24 h (151 ± 35 *versus* 172 ± 31, p = 0.04). No statistically significant difference were found between groups regarding to other clinical characteristics, initial arrest rhythm, EKG changes, initial lactate and troponin values and extent of CAD. Univariates predictors of in-hospital mortality were: At admission, pH < 7.2 (63% *versus* 34%, p = 0.04) and a non-shockable rhythm (75% *versus* 34%, p = 0.02). At 24 h, a lactate value > 1.7 mmol/L (33% *versus* 66%, p = 0.03), and NLR > 8 (13% *versus* 55% p < 0.01). In multivariate analysis, including all aforementioned significant predictors, only a 24 h NLR > 8 remained an independent predictor of in-hospital mortality (p = 0.01) increasing the of death risk by 12 fold. In ROC analysis a 24h NLR > 8 demonstrated a moderate discriminative performance (area under the curve: 0.7) to identify those patients who eventually died.
Conclusions: A 24 h NLR > 8 in rOHCA patients with SigCAD is significantly associated with in-hospital mortality, even after adjustment for other classical prognostic markers. Our findings suggest inflammation as a critical pathophysiological mechanism and NLR as a novel and simple to use marker, that can improve prognostic evaluation in these patients.

Domingo, 28 Abril de 2019 | 16H00-17H00

JARDIM INVERNO | POSTERS 4 - ÉCRAN 2 - DOENÇA CORONÁRIA

P 187. SECONDARY PREVENTION IN PATIENTS WITH MYOCARDIAL INFARCTION AND NONOBSTRUCTIVE CORONARY ARTERY DISEASE: CHARACTERIZATION AND IMPACT ON 1-YEAR OUTCOMES

Pedro Oliveira de Azevedo[1], Teresa Mota[1], João Bispo[1], João Guedes[1], Daniela Carvalho[1], Nuno Marques[2], Walter Santos[2], Jorge Mimoso[1], Ilídio Jesus[1], investigadores do Registo Nacional de Síndromes Coronárias Agudas[3]

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Introduction: Myocardial infarction with nonobstructive coronary arteries (MINOCA) occurs in 5% to 10% of all patients with myocardial infarction. Although these patients are often treated as if they had obstructive coronary artery disease (OCAD), optimal medical therapy for secondary prevention in MINOCA patients have not been prospectively studied.
Objectives: We aim to characterize and assess the impact of discharge medication on 1-year mortality or hospitalization in patients with MINOCA.
Methods: Retrospective and observational study of consecutive patients with acute myocardial infarction (AMI) recorded in the Portuguese Registry of Acute Coronary Syndromes (ProACS) between 2010 and 1017. All patients who underwent coronary angiography and had no obstructive lesions (defined as ≥ 50% diameter stenosis) were included for analysis (n = 829, 4.8% of a total of 17,213 patients in the registry). Patient demographics, clinical characteristics and medication at discharge were analyzed. The association between treatment and outcome was estimated by comparing treated and untreated groups using Cox proportional hazard models. The exposures considered were treatment at discharge with statins, angiotensin-converting enzyme inhibitors/angiotensin receptor blockers (ACEi/ARBs), beta-blockers (BB), aspirin (ASA) or dual antiplatelet therapy (DAPT). The outcomes evaluated were 1-year all-cause mortality and 1-year hospitalization due to cardiovascular disease (CVD)
Results: 829 patients (54% male, mean age 65 ± 13 years) were included. 67% had hypertension, 20% diabetes mellitus, 45% had hyperlipidemia, 6% had familiar history of AMI, 66% were overweight, 23% were current smokers, 5.5% had previously diagnosed heart failure, 4.3% valvular heart disease, 8% cerebrovascular disease and 4.7% chronic kidney failure. The admission diagnosis was most frequently non-ST elevation MI (79.3%) and mean left ventricular ejection fraction was 56±12. 4 patients died during hospitalization (0.5%). At discharge, aspirin was prescribed in 85.7% patients, clopidogrel in 54.8%, ticagrelor in 7.5%, DAPT in 57.7%, ACEi/ARB in 79.2%, beta-blocker in 69% and statins in 90.2%. 1-year mortality and 1-year CVD hospitalization was 3.8% and 9%, respectively. After adjusting for covariates in Cox regression analysis, we found no association between any medication at discharge and 1-year outcomes.
Conclusions: Our analysis found no significant 1-year beneficial effect of treatment with statins, ACEi/ARBs, BB, aspirin or DAPT in MINOCA patients. This may be partially explained by the highly heterogenous population and relative short-term follow-up (1-year). In these patients, treatment should be personalized after an exhaustive diagnostic workup to identify the underlying cause (CAD with spontaneous autolysis of an intracoronary thrombus, myocarditis or takotsubo syndrome, for instance).

P 188. THROMBOCYTOPENIA AND ACUTE CORONARY SYNDROME, WHAT PROGNOSIS?

Maria Luísa Gonçalves, Hugo Antunes, Inês Pires, João Miguel Santos, Júlio Pereira, Davide Moreira, Inês Almeida, Costa Cabral

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

Introduction: Thrombocytopenia (Th) is a recognized marker of poor prognosis. Current management of ACS is associated with increased risk of bleeding from antithrombotic drugs (AD) and invasive procedures. There are no specific recommendations in the treatment of patients (P) with Th and ACS, most of which occurs in a case-by-case analysis.
Objectives: To evaluate the characteristics, treatment and hospital prognosis of P with ACS and Th.
Methods: Selected P admitted by ACS between 2002-2017, inserted in a national multicenter registry. P were divided into 2 groups, according with platelet (Pl) counts: Th group if < 100,000/uL; or NTh. Comparative and multivariate analysis were done.
Results: Out of a total of 13,915 P, 1.4% had significant Th (n = 191). Th group was characterized by older P (> 75 years, 40.8% *versus* 30.4%, p = 0.002) and a higher proportion of males (81.7% *versus* 72.6%, p = 0.005), diabetics (40.4% *versus* 30.9%, p = 0.005), previous MI (27.5% *versus* 19.2%, p = 0.004), CABG (11.6% *versus* 4.6%, p = 0.001), AF (12.1% *versus* 7.3%, p = 0.011) and other comorbidities (valvular disease, peripheral vascular disease, neoplasia and COPD). At admission, Th group had lower systolic values (134 ± 32 *versus* 139 ± 29 mmHg, p = 0.011) and hemoglobin (13.4 ± 2.2 *versus* 13.8 ± 1.9 g/dL, p = 0.016), and higher KK class (IV, 4.8% *versus* 1.7% p = 0.005) and creatinine (1.3 ± 1.3 *versus* 1.1 ± 0.9 mg/dL, p = 0.001). Aspirin and ticagrelor were more frequently used in NTh (98.5% *versus* 94.7%, p = 0.001; 18.4% *versus* 8.4%, p = 0.001). Coronariography and angioplasty were less frequently performed in Th group (71.7% *versus* 87.1%, p = 0.001; 59.3% *versus* 66.4%, p = 0.038 r), with femoral access more frequently used (33.6% *versus* 20.8%, p = 0.001) and no difference in vessel disease. If Pl < 50,000/uL, enoxaparin was less frequently used (37.1% *versus* 59.5%, p = 0.007). Th group related with development of CHF (28.8% *versus* 17.5%, p = 0.001), cardiogenic shock (8.4% *versus* 3.8%, p = 0.001), sustained VT (4.7% *versus* 1.9%, p = 0.012), need for blood transfusion (TF) (4.7% *versus* 1.9%, p = 0.014) and hospital death (11.0% *versus* 3.3%, p = 0.001). Th was found to be an independent risk factor for the need of blood TF (OR: 3.22 [1.20-869] p = 0.021; r: 11× higher

if Pl < 50,000/uL). On discharge, a non-antiaggregation or anticoagulant strategy were more likely to belong to the ST group (17.0% *versus* 9.3%, p = 0.001). Length of hospital stay was lower in the NTh group (6 [3-6] *versus* 7 [3-8] days, p = 0.004).
Conclusions: Th was a marker of P at high cardiovascular risk and was associated with a greater number of hospital complications, however, it was only an independent predictor of TF. In the absence of recommendations, the clinical decision led to an underutilization of AD. It is important to check whether the poor prognosis is related to cardiovascular risk or underutilization of AD.

P 189. UNSTABLE ANGINA IN THE ERA OF HIGH SENSITIVITY TROPONIN: A CLINICAL DILEMMA?

Maria João Vieira[1], João Gameiro[2], Luís Puga[2], Liliana Reis[2], Joana Ribeiro[2], Luís Paiva[2], Marco Costa[2], Lino Gonçalves[2]

[1]Hospital Distrital de Santarém, EPE. [2]Centro Hospitalar e Universitário de Coimbra / Hospitais da Universidade de Coimbra.

Introduction: Due to widespread use of high sensitive cardiac troponin (hs-cTn) assays, the patients (pts) that were formerly included in the diagnosis of unstable angina (UA) group, are now being classified as NSTEMI patients. With this paradigm shift, the truly unstable angina patients (troponin negative) represent a new entity of lesser cardiovascular risk, however poorly characterized.
Objectives: To assess prognosis and its predictors in pts with UA submitted to percutaneous revascularization (PCI).
Methods: Retrospective study with 229 pts admitted to emergency service between 01/01/2013 and 11/30/2017 and classified as a high probability of unstable angina by a senior cardiologist. Of these pts, those with significant coronary artery disease that underwent PCI (n = 93) were included in the analysis. The primary outcome was the presence of adverse cardiovascular events (AMI, stroke or death - MACE) during the follow-up period (747 ± 525 days). These pts were divided into two groups, according to the primary outcome: Group A (GpA), patients with MACE occurrence; Group B (GpB), patients without MACE occurrence. Demographic, clinical, electrocardiographic, echocardiographic and angiographic data were evaluated.
Results: The primary outcome was observed in 9 pts (10.3%). Mortality rate was 4.6% (2.3% from cardiovascular cause). Age (GpA 75.9 ± 6.2 *versus* GpB 67.6 ± 9.2 years; p = 0.011), hemoglobin levels (GpA 12.5 ± 1.2 *versus* GpB 13.8 ± 1.7 mg/dL; p = 0.031), hsT (GpA 0.022 ± 0.008 *versus* GpB 0.015 ± 0.006 ng/dL; p = 0.002) and glomerular filtration rate (MDRD) (GpA 61.0 ± 22.8 *versus* GpB 84.3 ± 30.7 mL/min/1.73 m²; p = 0.011) were the parameters associated with the occurrence of MACE in the univariate analysis. Concerning angiographic parameters, including the affected vessel, number of vessels with significant stenosis and number of significant lesions, no risk factors associated with poor prognosis were identified. In the multivariate analysis the only independent predictor of MACE occurrence was the hsT concentration on admission (β: 123; p = 0.032), with levels between 0.013 ng/ml and the lower reference limit (0.034 ng/mL) estimated to have a sensitivity of 89% and a specificity of 60% for the occurrence of MACE.
Conclusions: In this study, this UA population was considered a low risk population, with a low MACE incidence. High sensitivity troponin levels, even below the lower reference limits, were strong predictors of long-term events. These results underline the value of hsT not only as a lesion discriminator in an acute context but also as a predictor of prognosis in the long term, rising the debate about the need of refinement of the severity criteria, to achieve better risk stratification in an emergency context.

P 190. CAN WE PREDICT ACUTE KIDNEY INJURY IN PATIENTS ADMITTED WITH ACUTE CORONARY SYNDROMES?

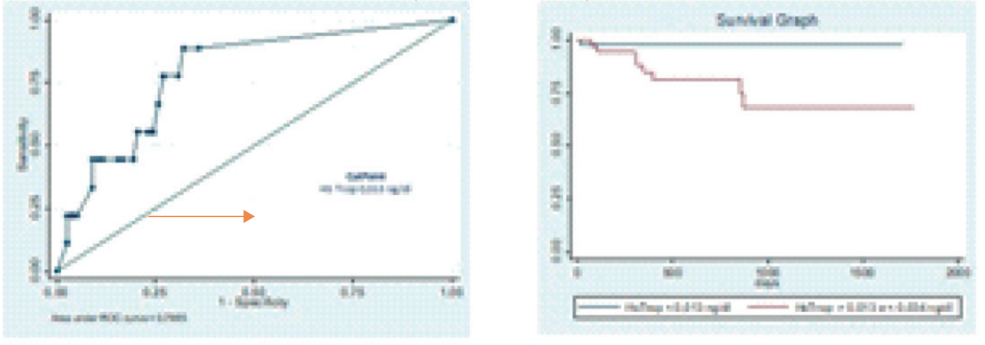
João André Ferreira, Sílvia Monteiro, Pedro Monteiro, Rui Baptista, Francisco Gonçalves, Lino Gonçalves

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

Introduction: Acute kidney injury (AKI) is a complex, potentially catastrophic disorder whose clinical manifestations range from mild increase in creatinin

MACE – AMI, stroke or death	GpA n = 93
MACE	10,3%
Mortality	4,6%
Cardiovascular Mortality	2,3%

Multivariate analysis	β	IC 95%	P
Age	0,10	-0,02-0,22	0,096
Gender	0,55	-1,25-,238	0,546
Hemoglobin	-0,42	-1,02-0,17	0,159
HS Troponin	123	10,8-235	0,032



P 189 Figure

levels to serious anuria leading to emergent renal replacement therapy. There have been increasing reports stating the important prevalence of AKI in patients admitted with acute coronary syndromes (ACS).
Objectives: To determine the incidence of AKI in patients admitted with ACS in a portuguese coronary care unit (CCU) and to study possible clinical predictors associated with AKI development.
Methods: We analyzed data from all patients admitted with ACS in a portuguese CCU, between 2007 and 2016. AKI and its severity were defined according to Kidney Disease Improving Global Outcomes (KDIGO) criteria. Patients were divided in 2 groups according to the development of AKI during hospital stay (AKI *versus* no AKI). Groups were compared for potential demographic, clinical, treatment and outcome differences.
Results: We obtained 4791 patients admitted for ACS, 1299 unstable anginas (27.1%), 2035 non-ST-elevation myocardial infarctions (42.5%) and 1457 ST-elevation myocardial infarctions (30.4%). AKI was observed in 1611 (33.6%). Regarding AKI severity patients were classified in stage 1 (24.8%, n = 1189), stage 2 (3.1%, n = 148) and stage 3 (5.7%, n = 274). AKI group patients were older (72.31 ± 11.1 *versus* 65.05 ± 12.9 years, p < 0.001), more diabetic (39.4% *versus* 28.1%, p < 0.001), more hypertensive (82.8% *versus* 74.3%, p < 0.001) and had more significant coronary artery disease (88.9% *versus* 78.6%, p < 0.001). There was no significant difference regarding AKI after an invasive strategy (32.3% *versus* 31.6%, p = 0.685). Higher AKI stages were associated with higher peak troponin-I, peak C-reactive protein, peak glycemia and lower hemoglobin levels during hospital stay. AKI was associated with increased hospital stay (5.93 ± 9.9 *versus* 3.72 ± 2.2 days, p < 0.001) and elevated in-hospital (3.2% *versus* 1.4%, p < 0.001), 30-day (5.9% *versus* 2.3%, p < 0.001), 6-month (7.7% *versus* 3.8%, p < 0.001), 1-year (9.2% *versus* 4.9%, p < 0.001) and 5-year mortality (16.4% *versus* 11.5%, p < 0.001). After multivariate analysis we found that age greater than 65 years (OR: 3.056, 95%CI: 2.669-3.499, p < 0.001), diabetes (OR: 2.597, 95%CI: 2.282-2.955, p < 0.001), anaemia (OR: 4.057, 95%CI: 3.523-4.673), stress hyperglycemia at admission (OR: 2.134, 95%CI: 1.888-2.412, p < 0.001), diuretic use (OR: 2.035, 95%CI: 1.743-2.376, p < 0.001), catecholamines use (OR: 5.369, 95%CI: 3.739-7.708, p < 0.001) and regular insulin use (OR: 1.864, 95%CI: 1.508-2.304, p < 0.001) were independently associated with a greater risk of AKI.
Conclusions: AKI complicates a large quantity of ACS hospital admissions. Its development during hospitalisation is associated with a greater short-term and long-term mortality. Patients that develop AKI tend to have more comorbidities, and AKI itself correlates with ACS severity.

P 191. PROGNOSTIC IMPACT OF OCCLUDED CULPRIT IN NON-ST SEGMENT ELEVATION MYOCARDIAL INFARCTION

Carla Marques Pires, Paulo Medeiros, Cátia Oliveira, Isabel Durães Campos, Rui Flores, João Costa, Carlos Galvão Braga, Nuno Antunes, Jorge Marques

Hospital de Braga.

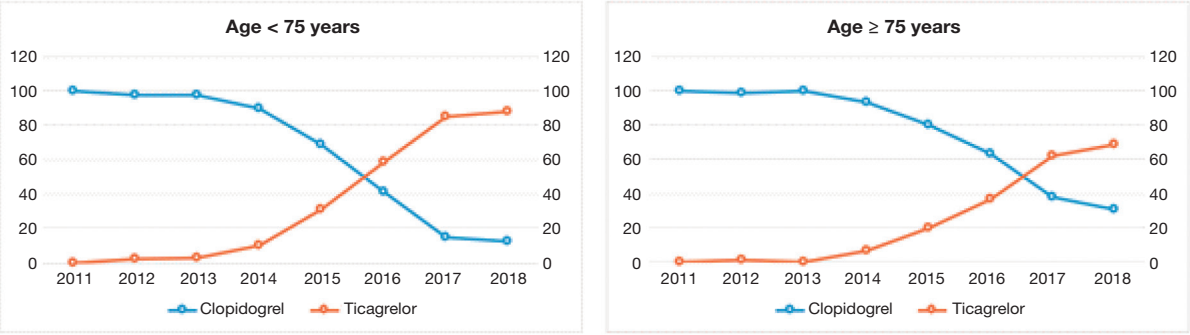
Introduction: The long-term prognostic impact of coronary occlusion in non-ST-segment elevation myocardial infarction (NSTEMI) is still being investigated.
Objectives: To evaluate in patients (pts) with NSTEMI the impact of occluded culprit arteries on the primary endpoint, a composite of all-cause mortality, recurrent nonfatal myocardial infarction and unplanned revascularization during a 24 months follow-up.
Methods: We analysed retrospectively 488 NSTEMI pts admitted without cardiogenic shock in our coronary care unit, from January 2015 to December 2016. They were divided in two groups: group 1- NSTEMI pts with coronary occlusion (n = 112, 22.95%); group 2-NSTEMI pts without coronary occlusion (n = 376, 77.05%). The follow-up was completed in 99% of pts. To compare the primary endpoint between the two groups we first elaborated a Kaplan Meier curve to show the event free-survival curve during the 24 months and then a multivariate Cox regression analysis adjusted to confounding factors.
Results: During follow-up the prevalence of all-cause mortality, recurrent nonfatal myocardial infarction and unplanned revascularization was not statistically different among the two groups (9.8% *versus* 12%, p = 0.532). The Kaplan Meier event-free survival curves, non-adjusted to confounding factors, were also not statistically different (Tarone-Ware test: p = 0,620). In addition, the multivariate Cox regression analysis adjusted to confounding factors (age, gender, multiple cardiovascular risk factors, previous myocardial infarction, previous percutaneous coronary intervention and coronary artery bypass grafting, time from hospital arrival to angiography and successful intervention) did not demonstrate a significant statistical impact of occluded culprit arteries on the primary endpoint (HR adjusted: 1,247; p = 0,523).
Conclusions: In the NSTEMI population studied, the presence of a totally occluded culprit lesion was not associated with worst long term-clinical outcomes during a 24-months follow-up.

P 192. TICAGRELOR *VERSUS* CLOPIDOGREL IN ELDERLY PATIENTS WITH MYOCARDIAL INFARCTION: A REAL-LIFE EXPERIENCE

Ana Pereira[1], Ana Marques[1], Sofia Alegria[1], Alexandra Briosa[1], Daniel Sebaiti[1], Inês Rangel[1], Rita Calé[1], Cristina Martins[1], Hélder Pereira[1], Registo Nacional de Síndromes Coronárias Agudas[2]

[1]Hospital Garcia de Orta, EPE. [2]CNCDC - Centro Nacional de Coleção de Dados em Cardiologia.

Introduction: Dual anti-platelet therapy (DAPT) with ticagrelor (T) is recommended in patients (pts) with myocardial infarction (MI), due to its long-term benefit over clopidogrel (C). Elderly pts have both higher risk of recurrent ischemic events and higher risk of bleeding but there is few evidence for this cohort of pts.
Objectives: To compare the short-term safety profile of DAPT with T *versus* (vs) C in elderly pts treated with percutaneous coronary intervention (PCI) after MI. To determine the evolution of this therapy prescription over the last years.
Methods: From a retrospective multicenter national registry, pts with MI treated with PCI, between January 2011 and October 2018, were selected. These pts were divided according to age (< 75 *versus* ≥ 75 years). A detailed comparison between DAPT with T *versus* C was performed in the elderly group. Pts under triple antithrombotic therapy at hospital discharge were excluded. The safety profile was evaluated by the occurrence of major hemorrhage, need for red blood cell transfusion and all-cause death during hospital stay.



P 192 Figure

Results: Of a total of 5847 pts, 1332 (22.8%) were age ≥ 75 years (mean age 81 ± 4 years; 61.1% male). In both groups (Fig.), there was a progressive increase in T prescription over the years. However, the interception point of the prescription curves occurred 1 year later for elderly pts and the highest prescription proportion (observed in 2018) was significantly lower in this group (88% *versus* 69%, p < 0.01). Non-ST segment MI diagnosis (OR: 0.9, 95%CI: 0.5-0.9, p = 0.01), dyspnea as predominant initial symptom (OR: 0.35, 95%CI: 0.1-0.9, p = 0.02) and previous vascular peripheral disease (OR: 0.5, 95%CI: 0.3-0.9, p = 0.03) were independent predictors for C prescription in the elderly group. No other factors influenced the DAPT choice, such as, previous kidney disease or bleeding, creatinine or hemoglobin values and the number or type of vessels with coronary disease. Regarding safety profile, there were no differences between C and T (major hemorrhage [p = 0.56], need for transfusion [p = 0.11] and death [p > 0.99]).
Conclusions: In this real-life context, there was a significantly lower prescription of T in elderly group. Several clinical factors, not related to predictors of validated bleeding risk scores, influenced the DAPT choice in this subgroup. No difference was observed in short-term safety profile between the 2 drugs. Thus, prescription of T in elderly should be rethought, in order to provide them with the best long-term benefit already demonstrated by large randomized trials.

Domingo, 28 Abril de 2019 | 16H00-17H00

JARDIM INVERNO | POSTERS 4 - ÉCRAN 3 - DOENÇA CORONÁRIA

P 193. CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN ACUTE CORONARY SYNDROME - A VICIOUS CIRCLE

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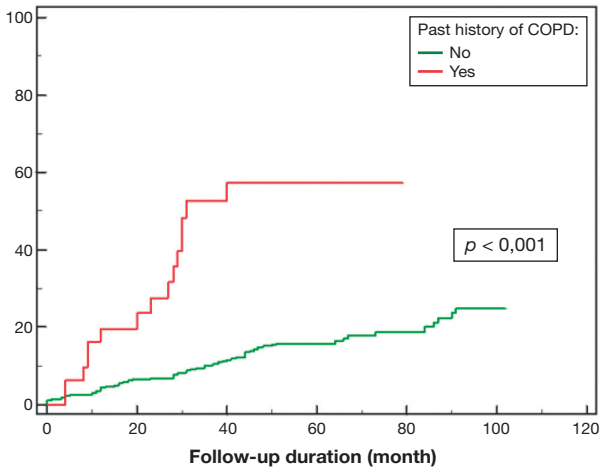
Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE / Hospital de Vila Real.

Introduction: Chronic obstructive pulmonary disease (COPD) and acute coronary syndrome (ACS) are two prevalent diseases and impose a considerable degree of difficulty in the diagnostic and therapeutic approach when present simultaneously. The aim of this study was to evaluate the prognostic impact of COPD in patients hospitalized for ACS.
Methods: This was a retrospective study of patients with nonfatal ACS, periodically included in our center registry between October/2010 and November/2017. At a median follow-up of 42 months (IQR: 25-59), the endpoints evaluated were acute myocardial infarction (MI), hospitalization due to decompensated heart failure (DHF) and mortality.
Results: In a total of 574 patients, in which 74.7% were men and the mean age was 66.2 ± 13.0 years, 5,4% had past history of COPD. In this group, patients were older (74.1 ± 8.1 *versus* 65.7 ± 13.1 years, p < 0.001), 19.4% had ST-segment elevation MI (STEMI) and 67.7% non-ST-segment elevation MI (NSTEMI), whereas 43.8% of patients without COPD had STEMI and 47.9% NSTEMI. We found that patients with past history of COPD were less medicated with beta-blockers (BB) at discharge (58.1% *versus* 82.1%, p < 0.05). The prescription of BB in this group was associated with a significant reduction in DHF events (HR: 0.3, 95%CI: 0.1-0,8), but not mortality (HR: 0.4, 95%CI: 0.2-1.3), nor cardiovascular (HR: 0.3, 95%CI: 0.1-1.1) nor non-cardiovascular (HR: 1.1, 95%CI: 0.2-6.3), and MI (HR: 1.2, 95%CI: 0.1-21.0). In a multivariate analysis adjusted for age, ACS type, left ventricular ejection fraction and BB prescription at discharge, patients with past history of COPD had a significant increase in DHF events (HR: 2.0, 95%CI: 1.0-3.7) and mortality (HR: 2.8, 95%CI: 1.5-5.1), either cardiovascular (HR: 2.4, 95%CI: 1.1-5.4) or non-cardiovascular (HR: 3.2, 95%CI: 1.2-8.8). The same did not happen for MI (HR: 0.7, 95%CI: 0.2-3.1).



Conclusions: In this study, patients with ACS diagnosed previously with COPD had an independent greater number of DHF events and death, both cardiovascular and non-cardiovascular. In this group, patients who were not prescribed BB, possibly due to the severity of the pulmonary disease, had a significant increase in DHF events.

P 194. CORONARY ANGIOPLASTY FOR OCTOGENARIAN ACUTE CORONARY SYNDROME PATIENTS? IS IT WORTH IT?

Carolina Saleiro[1], Diana de Campos[1], Rogério Teixeira[1], João Lopes[2], José Pedro Lopes[2], Joana M. Ribeiro[2], Luís Puga[1], Carolina Lourenço[1], Marco Paulo Alves da Costa[1], Lino Gonçalves[3]

[1]Centro Hospitalar e Universitário de Coimbra, EPE / Hospital Geral. [2]Centro Hospitalar e Universitário de Coimbra. [3]Centro Hospitalar e Universitário de Coimbra / Hospitais da Universidade de Coimbra.

Introduction: As the population ages, doctors are being challenged by the decision to offer intervention treatment in increasingly older and fragile patients. The comorbidity burden and performance status should be considered when making the decision.
Objectives: To assess the impact of optimal medical therapy (OMT) *versus* percutaneous coronary intervention (PCI) in non-ST elevation acute coronary syndrome (ACS) patients older than 80 years.
Methods: 182 patients older than 80 years old admitted to a single coronary care unit with a diagnosis of non-ST elevation ACS, who survived hospital stay were included. Clinical, laboratorial and echocardiographic data were evaluated. Two groups were created: Group A (OMT group) n = 83; Group B (PCI group) n = 99. The primary endpoint was long-term all-cause mortality. Kaplan-Meyer curves and Cox regression were conducted to evaluate the impact of OMT *versus* PCI on the primary endpoint. The mean time of follow-up was 37 ± 29 months.
Results: Groups were homogenous regarding gender, cardiovascular risk factors, heart failure diagnosis, left ventricular (LV) systolic function and peak troponin I. OMT group patients were older (85.1 ± 3.7 *versus* 82.7 ± 3.2 years old, p < 0.01), had a higher prevalence of chronic kidney disease (CKD) (61.4% *versus* 46.5%, p < 0.05), a lower haemoglobin (Hb) level (12.0 ± 1.9 *versus* 12.6 ± 1.7 g/dL, p < 0.05) and were less likely to receive double antiplatelet therapy at discharge (80.8% *versus* 100%, p < 0.001). 84 patients met the primary outcome. Kaplan-Meyer curves showed increased survival in the PCI group (36.5% *versus* 59.3%, log-rank p < 0.001 —Fig.). Nevertheless, PCI was not associated with long-term mortality (HR 1.05, 95% CI 0.98-1.12) in a model adjusted for age, CKD, peak troponin, LV systolic function and Hb level. Only Hb (HR: 0.81, 95%CI: 0.73-0.93), peak troponin (HR: 1.01, 95%CI: 1.00-1.01) and LV function (slightly impaired [HR: 1.89, 95%CI: 1.03-

3,48] and moderate/severely impaired [HR: 1.96, 95%CI: 1.14-3.36]) remained associated with the outcome.

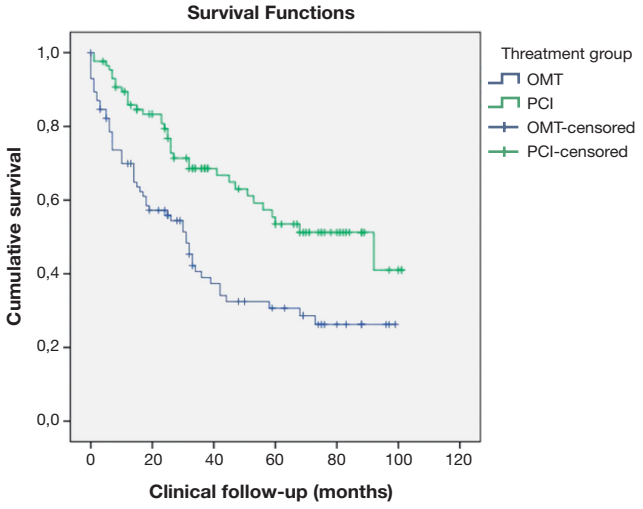


Figure 1. Kaplan-Meyer curves for all-cause mortality according to treatment option group: OMT vs PCI.

Conclusions: Increased survival in older patients receiving PCI after a non-ST elevation ACS may be ascribed to the selection of patients with less comorbidities. This reinforces the idea it may be applied in well-fit patients regardless of age. In our elderly population, lower Hb level, peak troponin and impaired LV systolic function appear to be the main contributors to decreased survival, irrespective of intervention.

P 195. HIGH DOSE STATIN THERAPY, ACUTE CORONARY SYNDROME AND HEART FAILURE WITH REDUCED EJECTION FRACTION: THE GOOD, THE BAD AND THE UGLY?

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Introduction: The benefit of statins after an acute coronary syndrome (ACS) is well established. Nevertheless the use of statins in patients with heart failure (HF) and reduced ejection fraction has been recently challenged.
Objectives: To understand study the effectiveness and safety of a high-dosage statin therapy (HDST) in ACS patients complicated with HF.
Methods: Cohort analysis of all patients admitted to an intensive care unit for an ACS between 2009 and 2016, who had a left ventricular ejection fraction (LVEF) ≤ 40% plus documented coronary artery disease (CAD). The patients were divided In 2 groups based on the statin therapy prescribed at hospital discharge: group A (n = 52) - HDST and group B (n = 141) - low dosage statin therapy. HDST was defined as atorvastatin ≥ 40mg od, rosuvastatin ≥ 20 mg od or pitavastatin ≥ 2 mg od; when ezetimib was added, dosages of atorvastatin ≥ 20 mg and rosuvastatin ≥ 10 mg were considered high dosage. The primary endpoint was all-cause mortality. The secondary endpoints consisted of an «ischaemic endpoint» composed of death, myocardial infarction, stroke and repeat revascularization and an «HF endpoint» composed by death and hospital admission for HF. The impact of HDST was accessed by the Kaplan-Meier method. We also elaborated a Cox regression analysis for 5 years of follow-up, adjusted to the variables more strongly associated with each endpoint in the bivariate analysis.
Results: The cohort consisted of 193 patients with a mean age of 68 ± 13 years (76% male). Mean follow-up time was 46 ± 30 months. The Kaplan-Meier curves (Fig.) showed that a HDST was associated with a lower mortality (panel A), a lower incidence of the ischaemic endpoint (panel B) and a trend towards a lower incidence of the HF endpoint (panel C). After adjustment for the confounding variables, a HDST was associated with a non-significant trend towards a reduced mortality (OR: 0.81, CI: 0.33-2.00, p = 0.65) and a lower incidence in the ischaemic endpoint (OR: 0.78, CI: 0.38-1.62, p = 0.51) but had no effect on the HF endpoint (OR: 0.97, CI: 0.48-1.98, p = 0.94).
Conclusions: A HDST after an ACS in patients with a reduced ejection fraction was associated with a non-significant trend for increased survival. Moreover HDST showed no harm regarding an heart failure readmission.

P 196. PREDIABETES *VERSUS* DIABETES *MELLITUS* IN ACUTE CORONARY SYNDROME PATIENTS: TWO SIDES OF THE SAME COIN

Carolina Saleiro[1], João Lopes[2], Rogério Teixeira[1], Diana de Campos[1], José Pedro Sousa[1], Luís Puga[1], Joana M. Ribeiro[2], Carolina Lourenço[1], Marco Paulo Alves da Costa[1], Lino Gonçalves[3]

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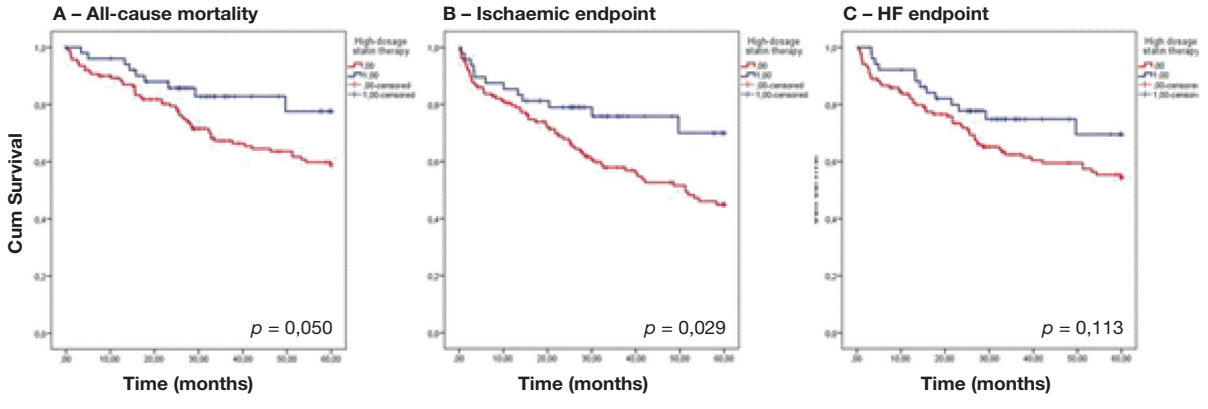
Introduction: Prediabetic patients are at increased risk of composite cardiovascular (CV) events and all-cause mortality. The impact of prediabetes diagnosis in the context of an acute coronary syndrome (ACS) remains to be determined.
Objectives: To assess the differences on long-term mortality between well controlled diabetic and prediabetic patients admitted with non-ST elevation ACS.
Methods: 352 non-ST elevation ACS patients admitted to a single coronary care unit between 2009 and 2016 were included. Clinical, laboratorial and echocardiographic data were evaluated. Two groups were created based on



P 195 Figure

the diabetic status and HbA1c level: Group A (prediabetic patients, HbA1c between 5.7%-6.4%) n = 229; Group B (diabetic patients, HbA1c ≤ 7%) n = 123. The primary endpoint was long-term all-cause mortality. Kaplan-Meyer survival curves and Cox regression were done. The mean time of follow up was 48 ± 30 months.

Results: The groups were similar regarding demographics, CV risk factors, ACS type, heart failure diagnosis, peak troponin I, left ventricular (LV) systolic function, multivessel disease and treatment option (PCI, CABG or OMT). On the contrary, well controlled diabetic patients had a higher prevalence of chronic kidney disease (CKD) (27.9% *versus* 39.0%, p < 0.05), hypertension (82.5% *versus* 91.9%, p < 0.05), higher body mass index (BMI) (23 ± 4 *versus* 24 ± 4 kg/m², p < 0.05) and previous coronary artery disease (37.1% *versus* 51.2%, p < 0.05). 95 patients met the primary outcome. Kaplan-Meyer curves showed a tendency to decreased survival in the diabetic group (72.8% *versus* 66.4%, log-rank p = 0.09 —Fig.). After adjustment for age, CKD, BMI (6 categories), heart failure diagnosis, peak troponin I and LV systolic function, controlled diabetes was not associated with increased death (HR: 1.40, 95%CI: 0.87-2.26). In this model, only age (HR: 1.05, 95%CI: 1.02-1.08), peak troponin (HR: 1.01, 95%CI: 1.00-1.01) and moderate to severely impaired LV function (HR: 2.00, 95%CI: 1.12-3.56) remained associated with the outcome.

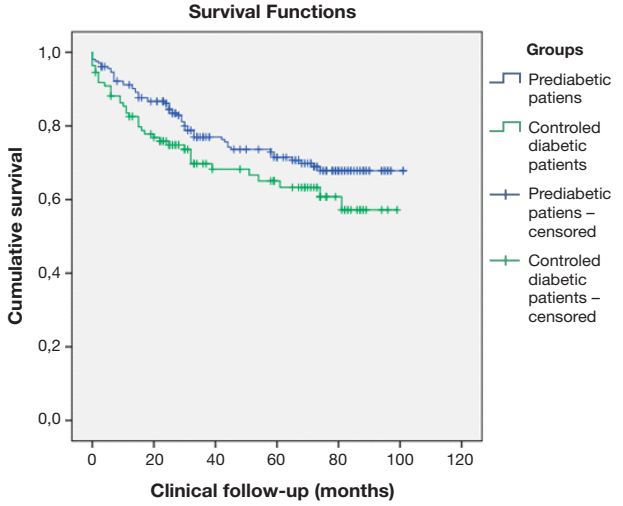


Figure 1. Kaplan-Meyer curves for all-cause mortality according to diabetic status: prediabetic vs well controlled diabetic patiens.

Conclusions: In the context of an ACS, prediabetics should be regarded as a high-risk group. This study raises the provocative question that prediabetics and diabetics patients should be approached in similar ways in terms of risk stratification and therapeutic options after an ACS. In these patients, age, peak troponin and impaired LV function appear to be the main contributors to decreased survival.

P 197. ANGIOTENSIN-CONVERTING ENZYME INHIBITORS IN ACUTE CORONARY SYNDROME WITH MID-RANGE EJECTION FRACTION

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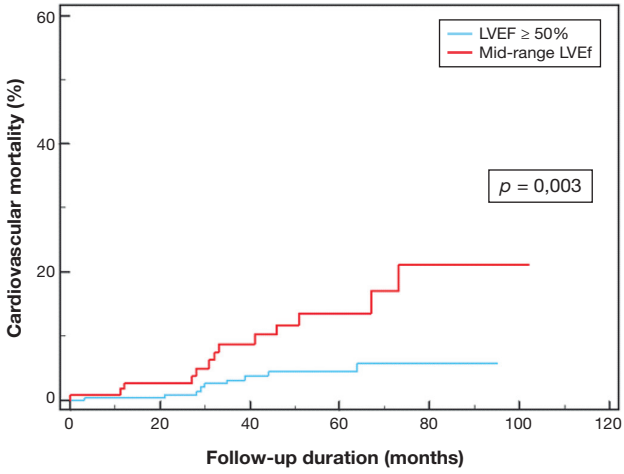
Introduction: Classically included in the group of patients with 'preserved' left ventricular systolic function (LVEF), heart failure (HF) with mid-range ejection fraction (40-49%) is a group of patients with more recent individualization, whom approach and treatment in the context of ischemic heart disease are not yet fully established. The aim of this study was to evaluate the impact of angiotensin-converting enzyme inhibitors (ACEI) on acute coronary syndrome (ACS) with mid-range LVEF (MREF) and its comparison with patients with LVEF ≥ 50%.

Methods: This was a retrospective study of patients with nonfatal ACS, periodically included in our center registry between October/2010 and November/2017, who were evaluated for LVEF during the index event. Patients were subdivided into 2 groups - group 1 with MREF and group 2 with LVEF ≥ 50%. The primary endpoints evaluated were cardiovascular mortality (CV) and MACE (myocardial infarction, coronary revascularization and CV death), at a median follow-up of 42 months (IQR: 27-59).

Results: A total of 394 patients were identified, 28.9% belonging to group 1 and 71.1% to group 2. The prescription of ACEI at discharge was 90.4% in group 1 and 90% in group 2.

Cardiovascular mortality was significantly higher in group 1 (11.4% *versus* 3.6%, p < 0.05). In addition, there was a trend for more MACE in this group (17.5% *versus* 11.4%, p = 0.104). In a multivariate analysis adjusted for age and ACS type, the use of ACEI in group 1 was associated with lower CV death (HR: 0.2, 95%CI: 0.1-0.8). There was also less MACE, but this difference did not reach statistical significance (HR: 0.5, 95%CI: 0.2-1.5). In group 2, no significant differences were found either for CV death (HR: 0.9, 95%CI: 0.2-4.5) or for MACE (HR: 0.8, 95%CI: 0.3-2.1), despite a tendency for fewer events.



Conclusions: In ACS, MREF appears to be associated with worse prognosis when compared with LVEF ≥ 50%. The prescription of ACEI was associated with a decrease in cardiovascular events in the MREF group, which did not occur significantly in the LVEF ≥ 50% group.

P 198. C-REACTIVE PROTEIN ELEVATION AT THE TIME OF PRESENTATION IN MINOCA

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Introduction: C-reactive protein (CRP) is a nonspecific marker of inflammation. CRP levels reflect the severity of myocardial damage and are associated with worse outcomes. Myocardial infarction (MI) with non-obstructive coronary arteries (MINOCA) is characterised by clinical evidence of MI with normal or near-normal coronary arteries on angiography. It is not known whether inflammation plays a role in the time-course of MINOCA.

Objectives: To appraise the association of CRP with clinical features and prognosis in a MINOCA cohort who underwent cardiac magnetic ressonance (CMR).

Methods: Unicentric, retrospective analysis of pts who underwent CMR after a diagnose of MINOCA, between 1/2013 and 9/2018. Clinical, analytical, electrical (ECG), imagiological features and cardiovascular (CV) events (CVE)

—acute coronary syndrome, heart failure, stroke and peripheral embolism— were analysed and associated with peak CRP levels.
Results: Included 124 pts with a mean age of 52.3 ± 14.8 years (male predominance, 59%). Mean CRP level (mCRP) was 41.1 mg/L and the median CRP level was 17.5 (7.5-475) mg/L. There were no differences in age, gender, atrial fibrillation and CV risk factors prevalence, except for diabetes (mCRP 79 *versus* 35 mg/L, p = 0.004). A positive correlation between mCRP and BNP level (p = 0.019) was found, but not with peak troponin I. Pts who presented with ECG changes had higher mCRP (p = 0.005). A negative correlation was found with left ventricle ejection fraction (LVEF) (p = 0.003) assessed by echocardiogram (but not in CMR). Regarding discharge prescription, pts with higher CRP were less prone to be prescribed with antiplatelet therapy. Concerning CMR parameters, there was a positive correlation between the number of segments with late gadolinium enhancement and CRP (p = 0.045), with no differences on its distribution pattern. Regarding final diagnosis, myocarditis had higher mCRP (p = 0.048) and normal CMR had lower mCRP (p = 0.009). However, there was no difference in the coronary artery disease diagnosis. No differences were found in CVE or mortality.
Conclusions: In our MINOCA cohort, mCRP associated with ECG changes at admission. There was a positive relation with BNP and LVEF measured by echocardiogram. Pts with higher CRP were less prescribed with antiplatelet therapy. Pts with myocarditis tend to have higher mCRP contrary to normal CMR. Interestingly, pts with the final diagnosis of MI had no relevant asymmetries in mCRP. There were no differences in CVE or mortality.

Domingo, 28 Abril de 2019 | 16H00-17H00

JARDIM INVERNO | POSTERS 4 - ÉCRAN 4 - DOENÇAS DO MIOCÁRDIO

P 199. SEX DIFFERENCES IN LEFT VENTRICULAR NONCOMPACTION

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Introduction: Left ventricular noncompaction (LVNC) is a rare cardiomyopathy that can occur with dilation and left ventricular dysfunction and consequent complications, such as heart failure (HF), arrhythmias and thromboembolic events (TE).
Objectives: Identify clinical, genetic, imaging, and electrocardiographic differences between genders in patients diagnosed with LVNC.
Methods: Multicentric, retrospective study with a sample of 120 patients diagnosed with LVNC. Clinical, genetic, imaging and electrocardiographic parameters were studied, and the differences between the genders for each parameter were statistically evaluated.
Results: In this study, LVNC patients were predominantly male (58.3%) and had a mean age at diagnosis of 47 ± 18 years. Patients had a follow-up lasting, on average, 3.7 ± 2.6 years. Male patients had a worse left ventricular (LV) ejection fraction on echocardiogram (43.8 ± 15.5 *versus* 53.6 ± 14.1%, t (112): -3.5, p = 0.001) and on MRI (42.6 ± 14.2 *versus* 51.9 ± 17.9%, t (89): 2.7, p = 0.008). Male patients with LVNC had an increased left ventricular end-diastolic (ED) diameter on the echocardiogram (58.4 ± 9.4 *versus* 51.3 ± 7.4 mm, t (117): 4.4, p < 0.001) and higher ED (154.4 ± 79.4 *versus* 110.4 ±85.9 ml/m^2; t(60): 2.1, p = 0.004), and end-systolic (ES) volumes of the left ventricle (85.5 ± 44.8 *versus* 41.3 ± 30.2 ml/m^2; t(42): 3.8, p < 0.001) on cardiac MRI.With regard to complications, an association between the male sex and the presence of HF (56.9 *versus* 37.5%, Pearson's chi-square p = 0.041) and TE events (14.1% *versus* 2.1%, Pearson's chi-square p = 0.030) was demonstrated in the follow-up
Conclusions: Male patients with LVNC, compared to female patients, have a larger size and worse LV function, as well as higher frequency of HF and TE events.

P 200. LATE ONSET HYPERTROPHIC CARDIOMYOPATHY - SAME DISEASE OR DISGUISED IMPOSTOR?

Luís Puga[1], Rogério Teixeira[1], Liliana Reis[1], Alexandrina Siserman[1], José Pedro Sousa[1], Diana Campos[1], João Gameiro[1], Carolina Saleiro[1], Joana Ribeiro[1], Lino Gonçalves[2]

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Introduction: Hypertrophic cardiomyopathy (HCM) frequently develops in teenage or early adulthood but rarely it can be diagnosed in older ages. Cardiac amyloid deposition in elderly patients is gaining increased recognition with new imaging modalities.
Objectives: To evaluate phenotype and outcomes in patients with late HCM diagnosis.
Methods: Single-centre retrospective cohort consisting of 106 patients attending a tertiary hospital with the diagnose of HCM. The sample was divided in 2 groups, A (n = 65) age of diagnosis < 65 years old and B (n = 41) age of diagnosis ≥ 65 years old. The groups were compared for clinical, phenotypic characteristics (echocardiographic and cardiac magnetic resonance (CMR) data) and outcomes (implantable cardiac defibrillator [ICD], ventricular tachycardia, death, ICD shocks).
Results: The sample included of 47% (50) males, mean age of 66 ± 17 years old. Regarding the echocardiographic variables, both groups were homogeneous. Mean interventricular septum thickness was similar (A 16.9 ± 5.0 mm *versus* B 17.0 ± 5.0 mm, p = 0.7), as was the left ventricular (LV) mass index, left atrium volume, and LV obstrution. Regarding CMR phenotype the groups were similar for LV ejection fraction, maximum wall thickness, presence of late gadolinium enhancement), but there was a trend for increased LV mass index in group A patients (A 91 ± 40 g/m^2 *versus* B 68 ± 44 g/m^2, p = 0.074). HCM Risk-SCD score was significantly higher in group A (A 3.8 ± 3.0 *versus* B 2.0 ± 1.0, p < 0.01). Family history of sudden cardiac death was also higher in group A (A 17/64 [27%] *versus* B 1/41 [2%], p < 0.01). Regarding clinical outcomes, the rate of ventricular tachycardia during follow up was equal (A 14/62 [23%] *versus* B 7/38 [18%], p < 0.62). Mortality was higher in group B (A 2/63 [3%] *versus* B 8/40 [20%], p < 0.01), and ICD implant was higher in group A (19/65 [29%] *versus* B 5/40 [13%], p < 0,047) althoug ICD shocks were similar between groups (A 1/24 [4,2%] *versus* B 0/12 [0%], p < 0.473)
Conclusions: Late onset HCM patients had a similar phenotype, a lower estimated risk of sudden cardiac death but a worse prognosis.

P 201. TAKOTSUBO SYNDROME: HOW TO PREDICT LEFT VENTRICULAR DYSFUNCTION?

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Serviço de Cardiologia, Departamento Coração e Vasos, CHULN, CCUL, Faculdade de Medicina, Universidade de Lisboa, Lisboa.

Introduction: Takotsubo syndrome (TS) is a cardiomyopathy that clinically mimics an acute coronary syndrome and is often associated with physical or emotional stress. Although it is an usually benign condition, it may be

associated with significant ventricular dysfunction, so it is important to identify patients at higher risk.
Objectives: To assess epidemiological and clinical characteristics of a population with TS and evaluation of variables associated with left ventricular dysfunction.
Methods: Retrospective, unicentric cohort study that included consecutive patients with TS diagnosis between January 2015 to December 2018. Demographic, clinical, electrocardiographic, echocardiographic, and laboratory data were collected. For statistical analysis, the chi-square test and the Student t-test were used.
Results: A total of 54 patients (87% female, 67.4 ± 12 years) were included in the study with a mean InterTAK score of 58.5 ± 17 (68.6% with a score > 50; 18, 5% between 30-50 and 1.9% < 30 points). The most frequent comorbidities were HTN 74.1%, diabetes 25.9%, dyslipidemia 46.3% and depressive syndrome 26.4%. The majority of women (87.8%) were in the postmenopausal period. Emotional stress was identified as a trigger factor in 57.4% of cases and physical stress in 38.9%. The mean hospitalization time was 9.5 ± 5.8 days. Of the electrocardiographic characteristics at admission, ST elevation was found in 50% of patients, ST deflection in 18.5% and inversion of T wave in 37%, mean QTc of 421 ± 38 ms. Echocardiographic evaluation showed a mean left ventricular ejection fraction (LVEF) at admission of 47.8% ± 10%, with 17 patients having LVEF < 40% (31.5%). The TS when preceded by physical stress was associated with a lower LVEF on admission (43.4 ± 9.8 *versus* 50.7 ± 9.4, p = 0.008). There was a tendency for the postmenopausal period being protective of the development of ventricular dysfunction (χ^2: 4.2, p = 0.041, OR: 0.16, CI: 0.03-1.07), with no relation to anymore comorbidity. No ECG pattern was associated with ventricular dysfunction.
Conclusions: In this population, the presence of physical stress was more frequently associated with a compromised ventricular function, and the postmenopausal period appeared to be protective. The identification of ventricular dysfunction preditors may allow the identification of patients at higher risk and who benefit more rigorous monitoring.

P 202. HYPERTROPHIC CARDIOMYOPATHY: LEFT VENTRICULAR LONGITUDINAL 3D STRAIN AS A SURROGATE OF MYOCARDIAL FIBROSIS

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Introduction: Myocardial fibrosis is a known risk factor of adverse myocardial events in Hypertrophic Myocardiopathy (HCM). Late gadolinium enhancement cardiovascular magnetic resonance (LGE-CMR) is the actual gold standard to cardiac fibrosis detection, but its availability isn't always present.
Objectives: We aim to study the role of 3D Speckle Tracking Echocardiography in detecting myocardial fibrosis assessed by LGE-CMR in patients with HCM.
Methods: Observational, monocentric study, including 24 patients with HCM (12 men, mean age 58 ± 17 years). 3D Speckle Tracking Echocardiography was performed for phenotypic characterization and assessment of left ventricular function (LVEF), 3D volumes, 3D global longitudinal strain (GLS), 3D global circumferential strain (GCS) and 3D global radial strain (GRS). LGE-CMR was performed to assess left ventricular (LV) mass, LV function and the presence of LGE. Patients were divided in two groups: Group A with LGE-CMR consistent with myocardial fibrosis and Group B without LGE-CMR.

A

	Group A n = 11	Group B n = 13	P
Demographic Parameters			
Male gender (%)	7 (60)	5 (67)	0,62
Age (years)	61 ± 15	60 ± 15	0,88
History			
Diabetes (%)	4 (31)	5 (45)	0,46
Arterial hypertension (%)	8 (62)	8 (73)	0,34
Family Sudden Cardiac Death (%)	7 (54)	7 (54)	0,62
Laboratory Values			
NT-pro-BNP (pg/ml)	884 ± 1044	861 ± 427	0,96
HA1c (%)	5,8 ± 0,5	6,4 ± 1,0	0,21
Echocardiographic Parameters			
LVEF (%)	59,9 ± 14	62,2 ± 9,4	0,59
MV mass (g/m^2)	110 ± 28	113 ± 34	0,83
Left Auricular volume (ml/m^2)	45 ± 21	56 ± 19	0,21
LV 2D GLS (%)	-14,8 ± 2,5	-13,0 ± 2,9	0,13
LV 2D LS – 4C (%)	-14,6 ± 2,6	-13,2 ± 3,3	0,27
LV 2D LS – 2C (%)	-15,2 ± 3,5	-12,5 ± 3,4	0,07
LV 2D LS – 3C (%)	-14,8 ± 2,8	-13,4 ± 3,7	0,32
LV 2D LS – 4C (%) - Reservoir	-20,9 ± 7,2	15,02 ± 5,6	0,07
CMR Parameters			
Left ventricular ejection fraction (%)	67,8 ± 8,5	68,6 ± 5,9	0,08
Maximum thickness (mm)	**18,1 ± 3,8**	**23,9 ± 4,1**	**0,003**
LA area (cm^2)	28,7 ± 5,3	29,3 ± 4,5	0,85
Obstructive HCM (%)	7 (54)	6 (55)	0,97
3D Echocardiographic Parameters			
LV 3D GLS (%)	**-14,3 ± 3,3**	**-11,1 ± 2,9**	**0,036**
LV 3D GCS (%)	-24,0 ± 9,9	-22,9 ± 9,2	0,072
LV 3D GRS (%)	15,1 ± 7,3	13,0 ± 7,1	0,54

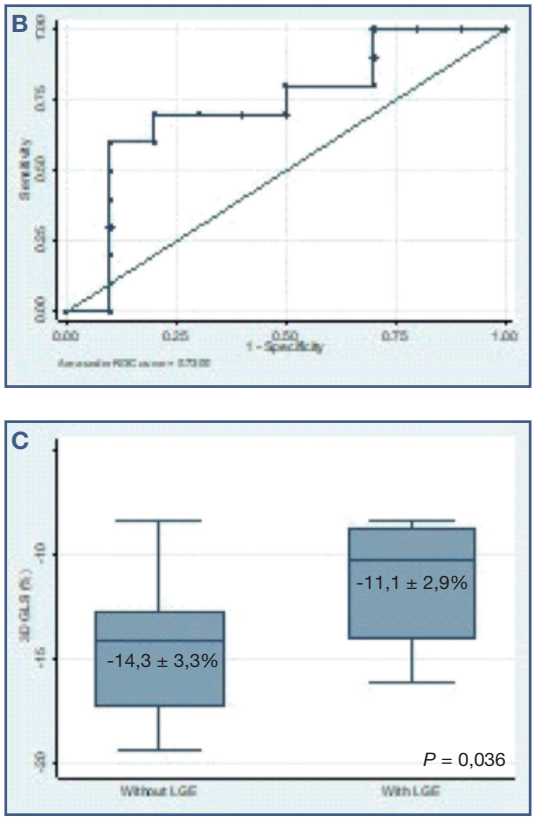

Figure 1. A: Baseline characteristics, echocardiographic and CMR findings. B: Comparison of 3D GLS between Group A (with LGE) and Group B (without LGE). C Accuracy for fibrose detection: (ROC 0,73; 0,7 sensitivity, 0,8 specificity).

P 202 Figure

Results: LGE-CMR consistent with myocardial fibrosis was observed in 46% (n = 11) of patients (Group A), with the remaining 15 patients (Group B) without signs of LGE. Regarding demographic characteristic, prevalence of cardiovascular risk factors, baseline echocardiography, 2D deformation parameters and LVEF assessed either by echocardiography or CMR no differences were observed between the groups (Fig. A). 3D Global longitudinal strain in group A patients was significantly lower than in group B patients (–14.3% ± 3.3% *versus* –11.1% ± 2.9%, p = 0.036). Multivariate analysis showed that 3D GLS was an independent predictor of LGE (p = 0.042), with a good accuracy to detected fibrosis (ROC: 0.73, 0.70 sensitivity and 0.80 specificity), when assuming a cut-off point of –12,7%. Other 3D derived parameters didn't show any correlation with the presence of LGE (Fig. B, C).
Conclusions: These results suggest that global 3D GLS might provide useful information about the presence of myocardial fibrosis in HCM patients, with eventual detection of patients with a higher risk of cardiovascular adverse events.

P 203. FLUTUAÇÃO DOS VALORES SÉRICOS DE TROPONINA EM DOENTES COM MIOCARDITE AGUDA, UM NOVO DADO

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Introdução: A miocardite aguda (MA) é uma doença inflamatória do miocárdio de prognóstico habitualmente benigno. A elevação da troponina (T) reflete lesão miocárdica. A persistência de mecanismos inflamatórios (I) contribui para a lesão e pode condicionar a recuperação do miocárdio. A flutuação dos valores séricos de T verifica-se em alguns casos de MA e tem significado incerto.
Objetivos: Analisar as características clínicas, analíticas, imagiológicas e o prognóstico associado aos doentes (D) com MA que se apresentam com flutuações dos valores séricos de T.
Métodos: Selecionados todos os D admitidos numa unidade de cuidados intensivos cardíacos com o diagnóstico de MA confirmada por ressonância magnética cardíaca através dos critérios de Lake-Louise, entre 2015-2017, e seriação de Troponina-I ao longo do internamento. Divisão em dois grupos: com flutuação dos valores séricos de T - grupo F, definido por perfil enzimático crescente-decrescente-crescente ou descrescente-crescente; grupo S - perfil crescente-descrescente ou decrescente. *Follow-up* (FU) de 2 anos.
Resultados: Amostra de 37 D, 81.1% (n = 30) sexo masculino, idade média de 36.5 ± 13.6 anos. Grupo F em 21.6% (n = 8). Tempo médio de FU de 699.9 ± 137.4 dias. Sem diferenças de género ou idade. O grupo F apresentava frequentemente associação com pericardite aguda (85.7% *versus* 42.3%, p = 0.041). Sem outras diferenças entre os grupos na apresentação clínica, antecedentes de doença ou fatores de risco cardiovascular ou medicação prévia. Analiticamente o grupo F cursou com valores superiores de T-I na admissão e máxima (39.9 *versus* 16.0 ng/dL, p = 0.07; 46.4 *versus* 22.9 ng/dL, p = 0.011), CK na admissão (1173.5 ± 572.9 *versus* 571.0 ± 113.6 U/L, p = 0.038), LDH (788.4 *versus* 502.4 U/L, p = 0.017), tempo de protrombina (29.6 *versus* 16.6 s, p = 0.045), linfocitose (28.5% *versus* 17.5%, p = 0.016) e menor neutrofilia (61.9% *versus* 71.7%, p = 0.006). À alta os valores de BNP foram superiores (125.0 *versus* 33.2 mg/dL, p = 0.08). Por ecocardiografia a presença de derrame pericárdico verificou-se apenas no grupo F (25% *versus* 0%, p = 0.05), as alterações da contractilidade segmentar foram mais frequentes (57.1% *versus* 18.5%, p = 0.039), a fração de ejeção do ventrículo esquerdo (FEVE) inferior (50.5 *versus* 57.7%, p = 0.05) e a PSAP superior (29.5 *versus* 25.8 mmHg, p = 0.001). Os D do grupo F foram mais frequentemente medicados com colquicina no internamento (75% *versus* 27.6%, p = 0.014) e na data de alta (62.5% *versus* 24.1%, p = 0.04). Sem diferenças na mortalidade ou morbilidade no FU (disritmias, cardiomiopatia dilatada, CDI/PM, transplante cardíaco) e na reavaliação da FEVE no FU.
Conclusões: A flutuação dos valores séricos de T ao longo do internamento verificou-se em D com uma série de parâmetros reconhecidamente associados a maior gravidade e provavelmente relaciona-se com a presença de processos I mais prolongados e/ou persistentes. Será importante caracterizar o seu impacto prognóstico num *follow-up* mais prolongado.

P 204. CARDIAC TUMOURS: THREE DECADES OF EXPERIENCE FROM A TERTIARY CARDIAC SURGERY CENTRE

Gustavo Sá Mendes, João Abecasis, António Ferreira, Regina Ribeiras, Tiago Nolasco, Eduarda Horta, Miguel Abecasis, Rosa Gouveia, Miguel Mendes, Sância Ramos, José Pedro Neves

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

Introduction: Cardiac tumours are relatively rare and non-invasive diagnosis remains challenging despite improvements provided by newer imaging tools. Our aim was to describe the experience of a cardiac surgery centre managing cardiac tumours.
Methods: Single-centre retrospective study of consecutive patients admitted to a tertiary centre with the diagnosis of a cardiac mass or tumour between 1990 and 2018. Registry data concerning clinical presentation, non-invasive assessment, presumptive diagnosis, treatment strategy and histopathology were collected. The follow-up was obtained either from clinical records or telephone contact.
Results: We included 154 patients (pts), 95 (61,7%) females, with a median age of 61 (51-71) years. Pathologic diagnosis was made in 144 pts: 117 (81%) benign lesions (106 myxomas; 11 papillary fibroelastomas); 8 (6%) primary tumours (3 lymphomas, 2 fibrous histiocytomas, 2 rhabdomyosarcomas and 1 myxofibrosarcoma) and 3 (2%) secondary malignancies (1 renal cell carcinoma extension; 2 metastatic invasions from malignant melanoma and ovary tumour). 16 (11%) of lesions were identified as pseudotumours. There were 3 cases of insufficient material for diagnosis and in 7 pts it was not accomplished surgical excision (4 asymptomatic tricuspid valve fibroelastomas; 2 pts refusing intervention; 1 pts referred for chemotherapy). Pts with benign tumours were older than those with malignant lesions (62 *versus* 48 y) with female predominance (65% *versus* 27%, p = 0,021). Overall, 36% of pts with benign tumours were asymptomatic, being symptomatic all malignant lesion pts. The majority (86%) of benign tumours were localized in the left atrium, different from malignant tumours that were mainly seen in the right heart (64%). 83% of the tumours were first detected by transthoracic echocardiography. Computed tomography and cardiac magnetic resonance were performed in 14% of the cases. Pre-operative presumptive diagnosis was correct in 79% of the benign cases, being wrong in 55% of malignant lesions (previously considered as benign). During the follow-up period of 10,5 ± 12,2 years there were 12 (7.8%) recurrences (only 3 benign tumours). Direct tumour associated mortality occurred in 11 patients (7.1%), 3 of them from benign conditions.
Conclusions: Benign tumours are far more common than both primary and secondary cardiac malignancies. In this series, adjunctive non-invasive imaging investigation beyond echocardiography was used in a small number of cases. As presumptive diagnosis before surgical mass excision is mostly wrong in identifying malignant lesions, preoperative non-invasive investigation should be expanded when trying to define the best therapeutic approach.

Domingo, 28 Abril de 2019 | 16H00-17H00

JARDIM INVERNO | POSTERS 4 - ÉCRAN 5 - DOENÇA CORONÁRIA

P 205. PREVIOUS NEOPLASIA IN PATIENTS WITH STEMI: CHARACTERIZATION OF POPULATION AND IMPACT ON PROGNOSIS

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Introduction: Therapeutic Advances in Oncology have allowed a significant increase in the survival of these patients (P). However options for medical and interventional cardiologic therapies are limited and prognosis of this population is different from general population.
Objectives: To evaluate the impact of the presence of previous neoplasia on the therapeutic approach, complications and in-hospital mortality in P with STEMI.
Methods: A total of 7176 P with STEMI were evaluated. We considered 2 groups: P with STEMI and previous history of neoplasia and P with STEMI without history of neoplasia. We compared age, personal history, clinical presentation, location and severity of coronary disease, therapeutic approach and ejection fraction (EF). In-hospital mortality (HM) and the following complications were evaluated: heart failure (HF), cardiogenic shock (CC), reinfarction, major haemorrhage (MH), high-grade AV block. Multivariate analysis was performed, adjusting for the variables with a statistically significant difference in the groups' characterization in order to assess the relationship between previous neoplasia and HM and any of the complications considered.
Results: Previous neoplasia was present in 4.5% (324P) with STEMI. These P were older (71 ± 11 *versus* 63 ± 14, p < 0.001) and had a higher prevalence of arterial hypertension (69.4% *versus* 60.6%; p = 0.002), previous HF (4.4% *versus* 1.9%, p = 0.002), peripheral arterial disease (6.3% *versus* 2.9%, p < 0.001), chronic renal failure (6.6% *versus* 3.1%, p < 0.001) and previous haemorrhage (3.2% *versus* 1.3%, p < 0.012). The P with STEMI and neoplasia presented more frequently with Killip-Kimbal class: 4 (5.9% *versus* 3.4%, p < 0.016), however they were submitted to less coronariography (85.8% *versus* 93.1%, p < 0.001) and angioplasty (80.2% *versus* 87.1%, p < 0.001). They presented higher HM (9,0% *versus* 4.9%, p < 0.001) and developed more in-hospital complications: HF (26.5% *versus* 17.9%, p < 0.001, CC (10.2% *versus* 6.1% p < 0.003), reinfarction (2.2% *versus* 0.8% p < 0.021), MH (4.6% *versus* 1.9%, p < 0.001), high-grade AV block (8.6% *versus* 5.4%, p < 0.011). After multivariate analysis, the presence of previous neoplasia in P with STEMI was an independent predictor of HM (OR: 2.12, p < 0.033), reinfarction (OR: 2.96; p = 0,027), MH (OR: 2.62; p = 0,005).
Conclusions: The presence of previous neoplasia seems to influence the therapeutic approach of P with STEMI and is associated with increased in-hospital mortality and complications.

P 206. THERAPEUTIC DECISIONS FOR MYOCARDIAL INFARCTION WITH NON-OBSTRUCTIVE CORONARY ARTERY DISEASE: HOW GENDER INFLUENCES CHOICES

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Introduction: In patients with myocardial infarction (MI) and non-obstructive coronary artery disease (MINOCA), clear recommendations regarding specific therapy are lacking. Women are more frequently affected by this entity. However, their prognosis seems to be worst, and published registries refer that specific medication seems to be less prescribed to women. According to current guidelines, therapy for post-MI patients includes dual antiplatelet therapy (DAPT), beta-blocker (BB), angiotensin converting enzyme-inhibitors (ACE)/angiotensin receptor blockers (ARB) and statins, regardless of gender.
Objectives: This study aims to identify whether MINOCA therapeutic decisions are influenced by gender.
Methods: The authors analysed a multicentre national prospective registry enrolling patients with a first MI between 2010 and 2017, who underwent a coronary angiography evidencing absence of any lesion causing ≥ 50% of luminal reduction. Univariate comparison between genders was performed. In order to search for MINOCA therapy predictors, a multivariate analysis with logistic regression was applied for each specific therapeutic group. All analysis included demographic, clinical and laboratorial data, past medical history, coronary angiography findings and MI type.
Results: From a total of 16 237 patients analysed, 709 (4.4%) were included as MINOCA. Mean age was 64 ± 13 years, 46.3% (n = 409) were females and ST-segment elevation MI (STEMI) was identified in 20.2% (n = 145). The presence of trivial coronary lesions (< 50% of luminal reduction) was identified in 36.1% (n = 256). Regarding univariate comparison, there were no differences between male *versus* female patients regarding BB (69.5% *versus* 60.3%, p = 0.98); ACE/ARB (80.7% *versus* 80.2%, p = 0.88) and statin therapy (91.1% *versus* 89.7%, p = 0.51). DAPT was used in a total of 390 (55%) patients, being more frequent in males (62.2% *versus* 46.6%, p < 0.01) than in females. After multivariate analysis (Table), male gender remained an independent DAPT predictor: OR: 1.67 [1.05-2.38], p = 0.027.

DAPT use predictors	OR	95CI	p-value
Male gender	1.67	1.05-2.38	0.027
Active smoker	1.82	1.05-3.16	0.033
Previous PCI	3.18	1.48-6.81	0.003
Diagnosis: ST-segment elevation myocardial infarction	2.70	1.59-4.76	< 0.001
Sinus Rhythm at admission	3.94	2.07-7.48	< 0.001

PCI, percutaneous coronary intervention; DAPT, dual antiplatelet therapy.

Conclusions: Despite the lack of clear recommendations for the use of antithrombotics in patients with MINOCA, in a large nationwide registry DAPT was prescribed at discharge in 55% of patients. The explanation for this surprising high rate of DAPT in patients with non-obstructive coronary artery disease is not clear. How gender influences DAPT decision, and how to handle antithrombotics in MINOCA patients in general is an open topic for discussion.

P 207. MYOCARDIAL INFARCTION WITH NONOBSTRUCTIVE CORONARY ARTERIES: DOES ASPIRIN HAVE A PLACE IN THE TREATMENT OF THIS ENTITY?

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Introduction: Myocardial infarction with nonobstructive coronary arteries (MINOCA) is still a clinical enigma that is being increasingly recognised, as the number of coronary angiographies we perform in our centres also increase. However, the treatment for this entity is still a matter of important debate, not only due to the different causative mechanisms of this disease but also because there are no major trials regarding MINOCA treatment.
Objectives: To determine the association between Acetylsalicylic acid (ASA) use after discharge and mortality after discharge in MINOCA patients admitted in a coronary care unit (CCU).
Methods: We analyzed data from 370 (11.7% of global sample) patients admitted with MINOCA in our CCU. Patients with other final diagnoses, missing mortality data, previous acute myocardial infarction, contra-indications to aspirin and known heart failure before admission were excluded. All patients underwent transthoracic echocardiography and coronary angiography at any point during hospitalisation. After adjusting data for relevant comorbidities we then compared mortality after hospital discharge between ASA group and no-ASA group.
Results: Of all MINOCA patients admitted in our CCU, 84 (22.7%) were diagnosed with ST-elevation myocardial infarction (STEMI) and 286 (77.3%) with non-ST elevation myocardial infarction (NSTEMI). 296 (80%) patients received ASA after discharge. Both groups were homogeneous as we did not find any significant diferences between groups regarding age (p = 0.106), left ventricle ejection fraction (p = 0.100), GRACE score at hospitalisation (p = 0.150), KIllip-Kimball class at hospitalisation (p = 0.604), incidence of acute kidney injury (p = 0.450), maximum c-reactive protein during stay

(p = 0.804) and low-density lipoprotein levels at hospitalization (p = 0.055). There was also no difference in the incidence of diabetes (p = 0.350), exposure to daily stress (p = 0.767), active smoking (p = 0.569), dyslipidemia (p = 0.229), hypertension (p = 0.057) and type of myocardial infarction (STEMI *versus* NSTEMI - p = 0.215). In this MINOCA cohort (5 years follow-up) a total of 47 patients died (12.7%). ASA *versus* no-ASA 1-month (3.1% *versus* 0.0%, p = 0.214), 6-month (4.5% *versus* 1.4%, p = 0.317), 1-year (5.9% *versus* 5.6%, p = 0.900), 3-year (10.5% *versus* 8.3%, p = 0.668) and 5-year (13.3% *versus* 12.5%, p = 0.860) all-cause mortality was not significantly different. The same non-significant trend towards higher mortality with ASA was obtained when survival curves were taken into account.
Conclusions: MINOCA remains a challenging entity. In our study, the systematic use of ASA in all patients following MINOCA was not associated with better survival after long-term follow-up.

P 208. IS LOW DENSITY LIPOPROTEIN CHOLESTEROL UNDER CONTROL IN PATIENTS WITH PREVIOUS MYOCARDIAL INFARCTION RE-ADMITTED FOR ACUTE CORONARY SYNDROME? - THE CHALLENGES OF SECONDARY PREVENTION IN ACS

Teresa Faria da Mota[1], Raquel Fernandes[1], João Sousa Bispo[2], Pedro Azevedo[1], João Pedro Guedes[1], Daniela Carvalho Silva[1], Dina Bento[2], Walter Santos[2], Nuno Marques[1], Jorge Mimoso[2], Ilídio de Jesus[1]

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Introduction: In survivors of Myocardial Infarction (MI), lipid lowering therapies are a key point in secondary prevention strategies, and European guidelines define its goals as a Low Density Lipoprotein cholesterol (LDLc) concentration < 70 mg/dL or a reduction in its value of at least 50% (if values between 70-135 mg/dL).
Methods: The authors present a retrospective, descriptive and correlational study with all patients with a previous diagnosis of MI admitted for Acute Coronary Syndrome in a Cardiology department between the 1st of October 2010 and the 1st of October 2018. The baseline values of total cholesterol (Tc), LDLc, High Density Lipoprotein cholesterol (HDLc) and tryglicerids (Tg) of these patients were described. Demographic and clinical characteristics as well as hospitalization data of patients with LDLc > 70 mg/dL were analyzed. A 1-year (1y) follow up was made through registry consultation and phone call by a Cardiologist. The authors performed a multivariate analysis of in-hospital complications (including mortality), as well as 1y outcomes (mortality and hospitalization rates), using SPSS 24,0 for statistical purposes.
Results: A total of 1069 patients were included, 856 (80.1%) of which were male, with a mean age of 67.63 ± 12.68 years. The mean serum concentrations of Tc, LDLc, HDLc and Tg were respectively 178.8 ± 49 mg/dL, 110.7 ± 42.8 mg/dL, 39 ± 11.1 mg/dL, 135.5 ± 78.2 mg/dL. A serum concentration of LDLc > 70 mg/dL was present in 574 (81.4%) patients. The authors found significant positive associations of higher LDLc values with a younger age, smoking and family history of coronary artery disease, and negative associations with hypertension, previous angina, and previous stroke. Patients with LDLc > 70 mg/dL were less frequently medicated with statins (p < 0.001). Higher LDLc values were also significantly more common in patients presenting with ST Elevation Myocardial Infarction (STEMI) (p = 0.002) and normal QRS duration (p = 0.009). The group with LDLc > 70 mg/dL showed higer rate of LVEF > 30% (p = 0.009). Concerning in-hospital complications, the authors identified a lower incidence of re-infarction in patients with higher LDLc (p = 0.032), but no relation with other intercurrences such as atrial fibrillation, heart failure or in-hospital mortality. Regarding 1y outcomes, there were no diferences in re-admission rates, but 1y mortality was significantely lower (p = 0.005). On a multivariate statistical analysis, a LDLc > 70 mg/dL didn't prove to be an independent predictor of re-infarction, in-hospital mortality and 1y mortality.
Conclusions: In the present study, a serum concentration of LDLc > 70mg/dL was present in 574 patients. Eventhough these patients had an interestingly lower incidence of in-hospital re-infarction and 1y mortality, the established LDLc cut-off didn't behave as an independent predictor of Re-infarction, in-hospital mortality and 1y mortality.

P 209. UTILIDADE DO PRESTO *SCORE* NA DECISÃO DE ALTA PRECOCE NOS DOENTES COM ENFARTE AGUDO DO MIOCÁRDIO COM SUPRA-ST SUBMETIDOS A ANGIOPLASTIA PRIMÁRIA

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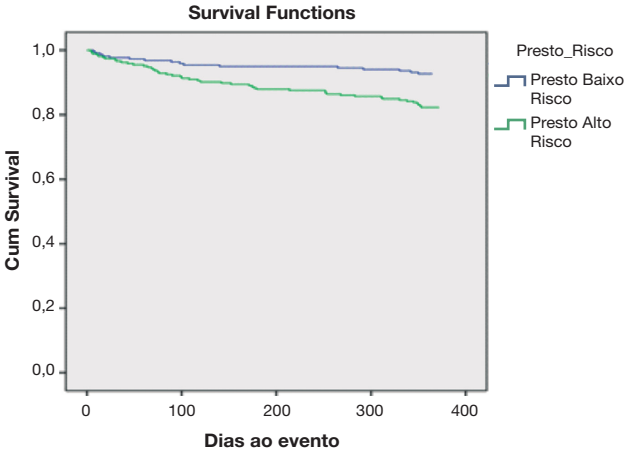
Introdução: O avanço das técnicas de reperfusão e consequente melhoria do prognóstico de doentes (D) com enfarte agudo do miocárdio com supraST (EAMcST) tem levado à redução progressiva do tempo de internamento. A alta precoce em D de baixo risco tratados com angioplastia primária é segura e custo-efetiva. Contudo, os *scores* de risco já validados para identificar estes D são laboriosos, limitando a sua aplicabilidade na prática clínica. O Presto *score* é um *score* recente, de fácil utilização, mas ainda não validado.
Objetivos: Em D admitidos por EAMcST, avaliar a *performance* do Presto *score* como preditor de eventos MACE (mortalidade, EAM e acidente vascular cerebral) a curto-médio prazo e compará-lo com o Grace score.
Métodos: Incluídos D admitidos por EAMcST e submetidos a angioplastia primária, durante seis anos, num único centro. Calculados o Presto *score* (pressão arterial sistólica: ≤ 80mmHg – 5 pontos (pts), 81-119 mmHg - 2,5 pts, 120-159 mmHg - 0 pts, ≥ 160 mmHg - 2,5 pts; FC ≤ 50 bpm - 1,5 pts, 51-75 bpm - 2,5 pts, 76-124 bpm - 4 pts, ≥ 125 bpm - 5 pts; idade ≤ 35 anos - 3 pts; 36-55 anos - 4,5 pts; 56-75 anos - 5,5 pts, ≥ 76 anos - 7 pts). Considerou-se baixo risco (BR) se *score* < 10 pts e alto risco (AR) se ≥ 10 pts. Com recurso a análise de associações e de desempenho, inferiram-se associações entre o *score* de risco e os MACE. Realizada análise de sobrevida, comparando o Presto e o Grace scores (BR < 140 e AR ≥ 140).
Resultados: Incluídos 651 D, 73,9% do sexo masculino; 66,2 ± 13,6 anos. Registaram-se 9,9% de eventos MACE aos 12M (morte: 4,6%; AVC: 1,7%; EAM: 3,6%). De acordo com o Presto score, 44,5% dos D foram classificados como de BR (vs 25,5% BR no Grace). Estes caracterizaram-se por serem mais jovens (61 ± 13 *versus* 71 ± 13 anos, p < 0,001), do sexo masculino (79,7 *versus* 68,6%, p = 0,002) menos hipertensos (49,5 *versus* 65,5%, p < 0,001) e diabéticos (15,6 *versus* 28,2%, p < 0,001); apresentarem doença coronária menos grave (3 vasos: 14,8 *versus* 28,7%, p = 0,003) e menor necessidade de cirurgia cardíaca (2,2 *versus* 5,0%, p < 0,001); evolução com menor disfunção sistólica do VE (FE < 40% 8,8 *versus* 16,8%, p = 0,028) e menor KK III/IV (KK III 0,7 *versus* 5,0%; KK IV 0 *versus* 6,2%, p < 0,001). Os eventos MACE foram inferiores no grupo BR identificado pelo Presto *score* (3,4 *versus* 5,7% aos 30 dias, p = 0,065; 3,9 *versus* 10,9% aos 6M, p = 0,018; 5,2 *versus* 14,7% aos 12M, p < 0,001). Nas curvas de sobrevida, a incidência cumulativa de MACE foi inferior no Presto *score* de BR quer aos 30 dias (p = 0,065), 6M (p < 0,001) e 12M (p < 0,001). A curva ROC revela que o Presto *score* tem melhor desempenho como preditor de MACE (AUC: 0,623) quando comparado com o Grace (AUC: 0,564).



Conclusões: Neste estudo, o Presto *score* revelou uma boa *performance* na identificação de D com baixo risco de MACE a curto/médio prazo em D

com EAMcST, sendo superior ao Grace. Por se tratar de um *score* simples de calcular, com apenas três variáveis, poderá ser uma ferramenta útil na estratificação deste grupo de D, auxiliando o clínico na tomada de decisão em relação a uma alta precoce mas segura.

P 210. IMPACT OF PRETREATMENT WITH ACETYLSALICYLIC ACID ON THE SEVERITY OF A FIRST MYOCARDIAL INFARCTION

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Introduction: Guidelines on the use of acetylsalicylic acid (ASA) for primary prevention of Cardiovascular Disease (CVD) are conflicting and a reflection of no robust evidence accounting for unequivocal favourable benefit-to-risk balance of its use. An eventual advantage of AAS in reducing the severity and prognostic impact of a first episode of Acute Myocardial Infarction (AMI) could be seen has an additional argument for the use of ASA in primary prevention. The present study aimed to evaluate the influence of ASA on the presentation, severity and in-hospital prognosis of AMI in patients without history of CVD.
Methods: Retrospective study based on the analysis of patients without previous evidence of CVD that were diagnosed with type 1 AMI in a district hospital between January 2016 and December 2017. The analysis was dichotomized according to whether or not patients were taking ASA previous to the event. The following endpoints were evaluated: type of AMI, angor refractoriness, maximal troponin, ejection fraction (EF), coronary grade flow (TIMI score), arrhythmic and mechanical complications, and in-hospital death.
Results: The study was accomplished for a total of 150 patients with a mean age of 71.6 ± 9.5 years, of which 71.3% were male. The group of patients that was receiving ASA (16.7%) was significantly older and had a higher prevalence of hypertension (96.0% *versus* 72.5%, p = 0.01), and diabetes (68.0% *versus* 29.2%, p < 0.001). Regarding the endpoints studied, in the group of patients taking the drug there was a lower prevalence of AMI with ST segment elevation (24.0% *versus* 36.7%, p = 0.26), lower prevalence of refractory angor (4.0% *versus* 11.7%, p = 0.46), a lower troponin elevation (7065 *versus* 33412.0, p = 0.78), a higher median EF (55.2 ± 3.5 *versus* 47.5 ± 6.3, p = 0.52), less cases with TIMI score 0 or 1 (40.0% *versus* 60.0%; p = 0.79), lower complication rates (4.0% *versus* 7.6%, p = 1.00) and less in-hospital death (0% *versus* 1.7%). However, none of the observations was associated with statistical significance.
Conclusions: The present study revealed that, although statistical significance was not reached, prior use of ASA to a first AMI was associated with a better profile of different parameters reflecting the extent and severity of the event. Adequately powered trials are needed to evaluate the relevance of these findings.

Domingo, 28 Abril de 2019 | 16H00-17H00

JARDIM INVERNO | POSTERS 4 - ÉCRAN 6 - MISCELÂNEA

P 211. DIAGNOSTIC ACCURACY OF A NOVEL ELECTROCARDIOGRAPHIC CRITERION FOR THE DIAGNOSIS OF LEFT VENTRICULAR HYPERTROPHY IN HYPERTROPHIC CARDIOMYOPATHY

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Introduction: The 12-lead electrocardiogram (ECG) is a fundamental initial diagnostic modality for the early evaluation of a patient suspected of having hypertrophic cardiomyopathy (HCM). ECG criteria for the diagnosis of left ventricular hypertrophy (LVH) typically have low sensitivity and high specificity. Recently, a novel ECG criterion (Peguero-Lo Presti, PLP) with higher sensitivity (62%) and similar specificity (90%) was developed in a cohort of hypertensive patients, but its accuracy in patients with HCM has not been tested. We hypothesized that Peguero-Lo Presti criterion would improve upon the sensitivity of other criteria, while maintaining high specificity, for the diagnosis of LVH in patients for with HCM.
Methods: We retrospectively analyzed 215 consecutive patients who underwent cardiac magnetic resonance (CMR) between 2010 and 2018 for suspected HCM. All patients aged 18 years or older, who had CMR-confirmed HCM and an ECG without confounders (complete left or right bundle brunch block or paced ventricular rhythm) were included for analysis (n = 88). Left ventricular mass (LVM) index and maximum wall thickness were derived from CMR analysis. The PLP criteria was defined as the sum of the deepest S wave (SD) in any lead and the S wave amplitude of lead V4 (SV4). Cornell voltage (CL) and Sokolow-Lyon (SL) were used for comparison. 88 gender-matched patients who performed an ECG and CMR for other clinical reasons and who had no structural heart disease or LVH were used as controls. The DeLong and McNemar's test were used to compare ROC area under the curve (AUC) and sensitivity and specificity, respectively, between the three criteria.
Results: 88 patients with HCM (63% male, mean age 56.7 ± 15 years) were analyzed. The mean maximum wall thickness was 19.9 ± 4.4mm and mean indexed LVM was 89.7 ± 27 g/m^2. 34 patients (38.6%) had increased indexed LVM and 77 (87.5%) had at least one segment with late gadolinium enhancement (LGE). Discrimination by AUC was highest for PLP (0.85 [95%CI: 0.8-0.9]), compared to CL (0.79, p = 0.03) and SL (0.73, p = 0.02). Using literature cut-offs, the sensitivity of PLP (60% [95%CI: 50-70%]) was significantly higher compared to CL (40% [95%CI: 30-50%, p < 0,001) and SL (41%, [95%CI: 31-51%], p = 0.01), whilst maintaining high specificity (PLP 96%; CL 98%; SL 94%). After adjusting for LVM, the amount of LGE had a positive correlation with PLP amplitude (Spearman's rho: 0.6, coef: 2.4, p = 0.01), but not Cornell or Sokolow. The sensitivity of PLP was significantly higher than CL and Sokolow in patients with LGE (61% *versus* 44% *versus* 43%, p < 0.05).
Conclusions: The Peguero-Lo Presti criteria demonstrated higher sensitivity and similar specificity when compared to the Cornell and Sokolow-Lyon criteria for the diagnosis of LVH in a cohort of patients with hypertrophic cardiomyopathy. Therefore, they could become the standard ECG diagnostic criteria in patients suspected of having LVH and HCM.

P 212. PROGNOSTIC IMPACT OF TRICUSPID VALVE SURGERY FOR MODERATE REGURGITATION AT THE TIME OF AORTIC VALVE REPLACEMENT

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Introduction: Significant functional tricuspid regurgitation (FTR) is associated with poor long-term survival due to a higher incidence of right-side heart failure. The management of FTR in patients with aortic valve disease seems to be as important as when it is associated with mitral valve disease. However, few studies have reported the impact of tricuspid valve disease at the time of aortic valve surgery.
Objectives: We aimed to evaluate the impact in long-term survival of moderate FTR at the time of aortic valve surgery.
Methods: From January 2005 to November 2018, 258 consecutive patients underwent aortic valve replacement (AVR) and had preoperative moderate FTR. Of those patients, 63 had concomitant tricuspid valve surgery. Patients were divided in two groups: patients who had concomitant tricuspid valve surgery (AVR+TVS; n = 63) and patients who had isolated AVR (n = 195). Cox proportional hazards models were used to analyze risk factors for survival and Kaplan-Meier methods were used to plot survival curves.
Results: Mean age was (AVR+TVS *versus* AVR) 70.2 ± 10.0 *versus* 72.6 ± 9.3 years (p = 0.096), 56.1% *versus* 45.1% were male (p = 0.384) and 42.9% *versus* 48.2% had severe aortic stenosis (p = 0.472). Chronic pulmonary obstructive disease was present in 9.5% *versus* 10.8% (p = 0.779), preoperative atrial fibrillation in 59.7%

versus 34.4% (p = 0.001), 61.9% *versus* 49.2% were in NYHA class 3/4 (p = 0.084) and 12.7% *versus* 4.6% were redo surgery, respectively. Long term survival at 10 years was similar between the two groups (61.6 ± 8.1 *versus* 48.7 ± 6.4, p = 0.512) as well as the incidence of major adverse cardiac and cerebrovascular events in long term follow up (42.9 ± 10.1 *versus* 51.0 ± 5.5, p = 0.349)
Conclusions: Adding tricuspid valve annulloplasty for moderate regurgitation at the time of aortic valve replacement did not show a significant impact in long term outcomes in this patients.

P 213. PREVALENCE OF CONCOMITANT OBSTRUCTIVE CORONARY ARTERY DISEASE IN A CONTEMPORARY POPULATION OF PATIENTS WITH SURGICAL VALVULAR HEART DISEASE

David Cabrita Roque[1], Sérgio Baptista[1], Paulo Leal[1], Miguel Santos[1], Pedro Magno[2], José Loureiro[1], Luís Brizida[1], Pedro Abreu[1], Carlos Morais[1]

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Introduction: Invasive coronary angiography (ICA) is recommended in many patients with valvular heart disease (VHD) requiring surgery. These recommendations are based on outdated epidemiological data and the actual prevalence of significant coronary artery disease (CAD) may be overestimated.
Objetives: Determine the prevalence and predictors of obstructive CAD in patients with severe valvular heart disease.
Methods: In a single center retrospective study, all consecutive patients submitted to ICA prior to valvular surgery, between April 2015 and February 2017, were selected. Patients undergoing percutaneous valve intervention were excluded. Obstructive CAD was defined as 50% stenosis in a major epicardial vessel. Bivariate regression analysis was used to determine predictors of obstructive CAD.
Results: 192 consecutive patients were included in the analysis (mean age 73.1 ± 10.7 years old; 51.6% male gender and median euroscore II 2.41 [IQR: 2.57]). The majority had severe aortic stenosis (AS) (64.6%), followed by severe mitral regurgitation (10.9%) and less prevalent forms of VHD (5.2% with severe mitral stenosis, 3.6% with severe aortic regurgitation and 0.5% with severe tricuspid regurgitation). The overall prevalence of any obstructive CAD in this heterogeneous population was 48.4%, but only 28.6% had significant (> 50%) lesions. Multivariate predictors of obstructive CAD were age (OR: 1.069; 95%CI: 1.024-1.117, p = 0.002), male gender (OR: 2.285, 95%CI: 1.105-4.725, p = 0.026), diabetes (OR: 2.273, 95%CI: 1.107-5.666, p = 0.025) and dyslipidemia (OR: 2.388, 95%CI: 1.112-5.128, p = 0.026), with a trend for current smoking habits (OR: 3.368, 95%CI: 0.951-11.931, p = 0.06). Hypertension and severe AS were not independent predictors of obstructive CAD in this population. In patients without any traditional risk factors, the prevalence of significant CAD was only 7.1%. In patients < 60 years and in non-diabetic patients < 70 years, the prevalence of significant CAD was only 10.7% and 11.6%, respectively.
Conclusions: The prevalence of CAD was lower than expected in this contemporary cohort of patients with VHD undergoing surgery. The main predictors of obstructive CAD were age, gender, diabetes and dyslipidemia. In younger patients, particularly those without risk factors, prevalence of CAD was particularly low. In these low risk patients, non-invasive evaluation of CAD by coronary CT-Scan may be an alternative.

P 214. NEW APROACHES IN CARDIOPULMONARY EXERCISE TESTING IN CONGENITAL HEART DISEASE ADULTS

Tânia Branco Mano[1], António Valentim Gonçalves[1], Sílvia Aguiar Rosa[1], Ana Agapito[1], Lídia de Sousa[1], José de Oliveira[1], André Monteiro[1], Ana Sofia Silva[1], Sandra Alves[2], Fátima F. Pinto[1], José Fragata[1], Rui Cruz Ferreira[1]

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Introduction: In recent years, new parameters for ventilatory efficiency assessment in Cardiopulmonary Exercise Testing (CPET) have demonstrated to predict prognosis. However, their value in Congenital Heart Disease (CHD) population remains unclear.
Objectives: The aim was to compare functional capacity in different types of CHD, assessed by CPET, and to investigate an association between CPET parameters and cardiovascular outcome.
Methods: Retrospective analysis of adult CHD patients who underwent CPET and followed up for at least one year. Primary endpoint: death from any cause. Combined secondary endpoint: death from any cause and cardiac hospitalization. CPET parameters were evaluated and determined endpoints predictors.

Univariate (a) and Multivariate (b) Analysis for primary (1) and secundary (2) outcomes

1. Primary outcome

1.a) Univariate Analysis

Variable	Hazard Ratio/ *Odds ratio*	P value	95% CI
Eisenmenger syndorme	6.070	0.007	1.624-22.692
Final SpO2	0.929	0.018	0.874-0.988
Rest ETCO2	0.879	0.02	0.789-0.980
Cardiorespiratory optimal point	1.046	0.023	1.006-1.088
Rest SpO2	0.870	0.032	0.766-0.988
VO2	0.890	0.036	0.797-0.993
Final ETCO2	0.926	0.036	0.862-0.995

l.b) Multivariate Analysis

Variable	Hazard Ratio/ *Odds ratio*	P value	95% CI
Cardiorespiratory optimal point	1.104	0.007	1.104-1.203
VO2	0.806	0.029	0.665-0.978

2. Secundary outcome

2.a) Univariate Analysis

Variable	Hazard Ratio/ *Odds ratio*	P value	95% CI
ECB	6.040	< 0.001	2.258-16.183
Male gender	2.084	0.003	1.288-3.369
Chronotropic index	0.986	0.004	0.976-0.996
Initial SpO2	0.943	0.005	0.905-0.999
VO2	0.984	0.008	0.924-0.988
Cyanose	1.029	0.011	1.147-2.95
Age	1.029	0.015	1.006-1.052

2.b) Multivariate Analysis

Variable	Hazard Ratio/ *Odds ratio*	P value	95% CI
ECB	4.766	< 0.001	1.684-13.488
Male gender	3.089	< 0.001	1.699-5.610
Initial SpO2	0.908	0.011	0.886-0.972
Age	1.040	0.013	1.011-1.069

Results: We analyse 286 CPET: 50,3% males, mean age of 35.6 ± 9.4 years and of 3.89 ± 2.3 years of follow-up (FU). Etiology: Tetralogy of Fallot 36% (n = 103); complex defects 19.6% (n = 56); transposition of the great arteries (TGA) after Senning or Mustard procedures 14.3% (n = 41); right ventricular outflow tract obstruction 8% (n = 23), left heart valve disease 4.5% (n = 13); Eisenmenger syndrome 3.1% (n = 6) and congenitally corrected TGA 2.8% (n = 8). The primary and secundary endpoints were achieved in 9 (3.2%; at 9 ± 0.12 years) and 75 patients (25.2%; at 6.28 ± 0.27 years) in the follow-up. Predictors of outcomes evaluated by Cox analysis are represented in Table. In multivariated analysis higher cardiorespiratory optimal point (HR: 1.104; p = 0.007) and and lower VO_2 (HR: 0.806; p = 0.029) were predictors of primary endpoint. In multivariated analysis, exercise oscillatory breathing

(EOB) (HR: 4.766, p < 0.0001), male gender (HR: 3.087, p < 0.0001), inicial oxyhemoglobin saturation (SpO_2) (HR: 0.937; p = 0.011) and age (HR: 1.040; p = 0,013) were the predictors of secondary endpoint. The strongest predict power for primary endpoint was observed for SpO_2 in maximal effort with an area under the curve (AUC) of 0.859 and initial SpO_2 0.783, followed by cardiorespiratory optimal point (AUC: 0.757), rest End-Tidal Carbon Dioxide ($ETCO_2$, AUC 0.755) and pVO_2 (AUC: 0.783)
Conclusions: In CHD adult patients, not only SpO2, pVO2 and chronotropic index, but also non-traditional parameters as cardiorespiratory optimal point, ETCO2 and EOB can predict all-cause mortality and hospitalization for cardiac cause.

P 215. KAWASAKI DISEASE - A TERTIARY SINGLE-CENTRE 10 YEAR RETROSPECTIVE

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Introduction: Kawasaki disease (KD) is the most frequent acquired paediatric heart disease in developed world. In a recent study, epidemiology of KD in Portugal revealed to be similar to other European countries, incidence was 6.5/100,000 children under 5 years, with male predominance and male/female ratio of 1.6/1.
Methods: Retrospective study of KD in hospitalized children from 2006-2016 in a Portuguese tertiary centre. Demographic, clinical, laboratory and echocardiographic parameters were evaluated.
Results: 41 patients were identified. Male/female ratio and mean age at diagnosis were inferior to national means: 1.3/1 and 2 years (0.25:11); 93% < 5 years, 31% < 1 year. Median hospital stay was 8 days, with no fatalities. Classic KD was presented in 56% of cases; there was one case of recurrence. Intravenous immunoglobulin (IVIG) was administered between days 5-10 in 71% of cases. IVIG resistance occurred in 12%; all of these patients received a second infusion of IVIG, 60% were additionally treated with steroids, and in one case with Infliximab. Coronary artery abnormalities were found in 48% of patients in the acute phase (dilation only [z-score: 2-2.5]: 17%, small-sized aneurysms [z-score: 2.5-5]: 24%, medium-sized aneurysms [z-score: 5-10]: 7%, no giant aneurysms were found). At 6 months follow-up, 100% of dilations had regressed, 80% of small-sized coronary artery aneurysm (CAA) had regressed, and 33% of the medium-sized CAA regressed (and the remaining 67% reduced to small-sized aneurysms). At 6 months CAA were present in 9.8% of patients. During follow-up (mean follow-up 6.9 years, range [2.3:13]) all the remaining initially small-sized aneurysms regressed, but the remaining initially medium-sized aneurysms did not regress, therefore 4.9% had CAA. Transient mitral regurgitation was found in 26% of cases, pericardial effusion occurred in 26%. Arthritis/polyarthralgia was present in 19% of cases. On follow-up no children suffered myocardial ischemic events.
Conclusions: CAA incidence was initially higher than reported in the literature, but on follow-up the incidence of CAA that didn't regress was similar. IVIG resistance was somewhat low. Long-term outcomes are positive, without a single myocardial ischemic event in the study population during follow-up.

P 216. UNDERDOSING FRAGILE PATIENTS - ARE WE HELPING OR HARMING?

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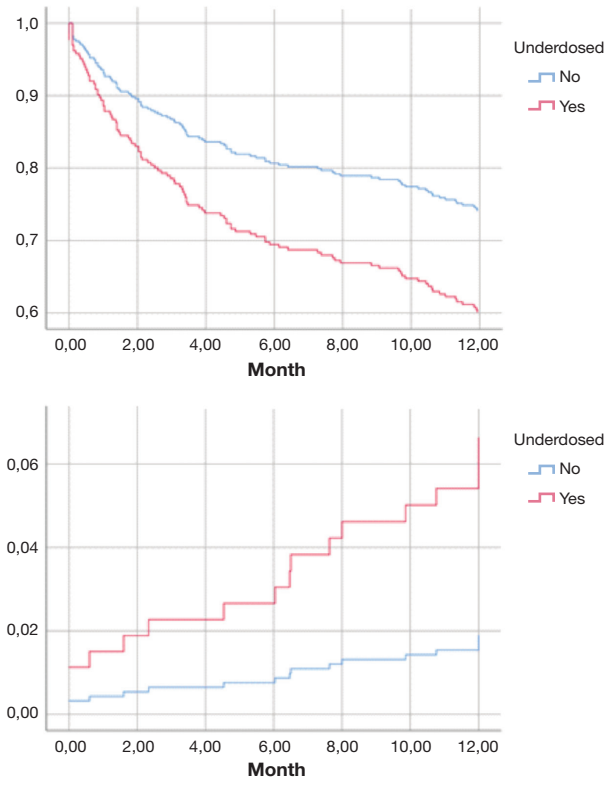
Introduction: An individualized approach should be taken regarding the utilization of direct oral anticoagulants (DOAC) in frail and elderly populations with atrial fibrillation (AF). We hypothesized that among an elderly and frail population, where the risk of bleeding, both real and perceived, is very high, the proportion of patients with a dose regimen different from the formal indication would be particularly high due to potential underdosing.
Methods: We conducted a retrospective, observational study enrolling 327 patients with AF admitted to an Internal Medicine ward during a 1-year period and discharged with a DOAC prescription. We divided the population in 2 groups: patients prescribed a reduced dose without formal dose reduction criteria (underdosed, n = 170) and the rest of the population (n = 157), which included adequately dosed patients, both with normal dose (n = 99) and correctly reduced dose (n = 43) and overdosed patients (n = 15). A 1-year follow-up was completed for all patients, assessing the following outcomes: all-cause mortality, stroke, systemic embolism and major bleeding.
Results: Patients were elderly (81.9 ± 7.68) and frail (Katz index 3.35 ± 2.36). Apixaban was the most commonly prescribed NOAC (38.8%), followed by rivaroxaban (36.4%) and dabigatran (24.8%). Among underdosed patients, apixaban was prescribed in 45.3% of patients, dabigatran in 29.4% and rivaroxaban 25.3%. Although only 18.3% of patients had clinical criteria for dose reduction, 65.4% were discharged with reduced dose and thus 52% were underdosed. Regarding 1-year outcomes, mortality (40.8% *versus* 25.5%, RR: 1.6, p = 0.003) and the combined stroke, systemic embolism and major bleeding event rate (10.1% *versus* 3.2%, RR: 3.16, p = 0.015) were higher for underdosed patients. Among underdosed patients, comparing with the rest of the population, the increased ischemic events rate (ischemic stroke and systemic embolism) did not reached statistical significance (3.7% *versus* 1.9%, p = 0.5), but it did for hemorrhagic events (major bleeding and hemorrhagic stroke) (6.1% *versus* 0.6%, p = 0.01). On multivariate analysis, even after considering adjustment for age, Katz and $CHAD_2VAS_2C$ scores, renal function and DOAC prescribed, DOAC underdosing was associated with a higher risk of both ischemic and hemorrhagic events (HR: 3.51, 95%CI: 1.08-11.38). However, it lost its independent negative effect regarding mortality (HR: 1.32, 95%CI: 0.87-1.99).



Conclusions: There is a significant proportion of frail and elderly patients with AF that are underdosed. This subset has a significant survival disadvantage, eventually reflecting prescription bias. However, underdosed patients have also a higher event rate of both ischemic and hemorrhagic events, suggesting that underdosing fragile patients is not an effective strategy and that instead it may be hazardous.

Domingo, 28 Abril de 2019 | 16H00-17H00

JARDIM INVERNO | POSTERS 4 - ÉCRAN 7 - PREVENÇÃO

P 217. EMPAGLIFLOZIN- EFFECTS IN HEART AND VESSELS

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Introduction: In the EMPA-REG Outcome trial, empagliflozin (EMPA) reduced the 3P-MACE (CV death, non-fatal MI or non-fatal stroke) and hospitalizations for heart failure. Cardiac evaluation was not performed, so the underlying mechanisms are not known.
Objectives: To analyze the impact of EMPA in cardiac and vascular function in patients with diabetes *mellitus* (DM).
Methods: We prospectively included patients with DM before starting medication with EMPA between June 2017 and May 2018. Other Inclusion criteria were stable anti-diabetic and cardiovascular therapy in the last 3 months, eGRF > 60 ml/min/m^2; exclusion criteria were acute coronary syndrome, heart failure or sepsis in the last 6 months. Patients had a visit before and 6 months after starting EMPA, and anthropometric measures, blood analysis, echocardiogram, and measure of pulse wave velocity (PWV) were performed. Baseline and follow-up data were compared using paired sample t-test.
Results: 38 patients were evaluated, only 23 completed follow-up. Mean follow-up length was 7 months. Mean age 65 ± 7 (47-80) years, 70% males. At baseline, BMI was 31.4 ± 4.3 kg/m^2, hemoglobin was 14.0 ± 1.2 g/dL, and 59% of patients had HbA1c: 7%. Only 8% were treated for cardiac disease.At baseline, 52% pts had left atrium (LA) area > 20 cm^2 (–21.6 ± 3.8 cm^2), 57% had left atrium volume index (LAVI) > 34 ml/m^2 (35.0 ± 9.7 mL/m^2), E/e' was > 8 in 71%. Left ventricular mass index (LVMI) was 108.2 g/m^2 in men and 111.6 g/m^2 in women. GLS was < –20 in 85% of patients (mean value: –17.3 ± 3.4). No other echocardiographic abnormalities were found.At the end of follow-up, BMI decreased (31.4 *versus* 30.4 kg/m^2; p = 0.04) and hemoglobin values increased (14.0 *versus* 14.8 g/dL, p < 0.001).There was a significant reduction in LA area (21.6 to 20.3 cm^2, p = 0.036), LAVI (35.0 to 31.7 mL/m^2, p = 0.044) and also in right atrial volume index (21.0 to 18.6 mL/m^2, p = 0.048). E/e' decreased (12.1 *versus* 11.0; p = 0.029), but only in those with E/e' = 8 at baseline.Additionally PWV showed a significantly reduction - from 9.5 to 8.0 m/s (p = 0.006).
Conclusions: In most of our DM patients, Echocardiographic evaluation showed diastolic dysfunction, and abnormal left ventricular Global Longitudinal Strain value. Treatment with EMPA decreased atria volume, suggesting ventricular unloading. PWV, an important metric of vascular health, was also significantly improved.

P 218. LIPOPROTEIN A AND CARDIOVASCULAR RISK: GENDER ANALYSIS

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[1]Hospital Dr. Nélio Mendonça. [2]Faculdade de Ciências Médicas da Universidade de Lisboa.

Introduction: Despite consideration of modifiable and non-modifiable risk factors, 40% of the deaths are still attributed to coronary artery disease (CAD). This residual risk appears to be partially attributed to others risk markers, like elevation of lipoprotein a (Lpa). More knowledge about Lpa can guide us in therapeutic decisions. Elevation of lipoprotein has been controversially associated with a increased risk, namely in women.
Objectives: To evaluate if the elevation of Lpa is associated with MACE in females, males or both.
Methods: Case control study of 3050 subjects from the GENEMACOR study population. In female population (n = 676): cases were 341 patients with at least one > 75% coronary stenosis (median age 55.7 ± 7.2) and 335 normal controls (median age 55.8 ± 6) adjusted by age with cases. In male population (n = 2374): 1278 patients with at least one > 75% coronary stenosis (median age 52.7 ± 8) and 1096 controls (median age 51.9 ± 8) also adjusted by age. χ^2 and t Student tests were used to analyze the demographic, laboratorial, angiographic and anthropometric characteristics of the population. Lipoprotein a was determined by immunoturbidimetry. High Lpa level was considered if superior to 30 mg/dl. Logistic regression was used to evaluate Lpa as a risk factor for CAD in total, female and male populations.
Results: In female population 44.0% patients *versus* 21.2% controls (p < 0.000) had Lpa > 30 mg/dL. In male population 39.4% patients *versus* 23.8% controls (p < 0.000) had Lpa > 30 mg/dL. In total population Lpa > 30mg/dL was a predictor for CAD (OR: 2.24, 95%CI: 1.91-2.62, p < 0.0001). analyzing by gender, Lpa > 30 mg/dL was also a predictor for CAD either in male (OR: 2.08, 95%CI: 1.74-2.5, p < 0.0001) or female population (OR: 2.92, 95%CI: 2.08-4.09, p < 0.0001).
Conclusions: In our population elevated Lpa levels (> 30mg/dl) were associated with CAD disease, regardless of gender. We conclude that Lpa can be considered an independent risk factor for CAD disease in both sexes, and further strategies for Lpa reduction may indeed translate in improved outcomes in CAD disease.

P 219. CAN MACHINE LEARNING HELP US IMPROVE RISK STRATIFICATION OF DIABETIC PATIENTS WITH ACUTE CORONARY SYNDROMES? THE ANSWER WILL BLOW YOUR MIND

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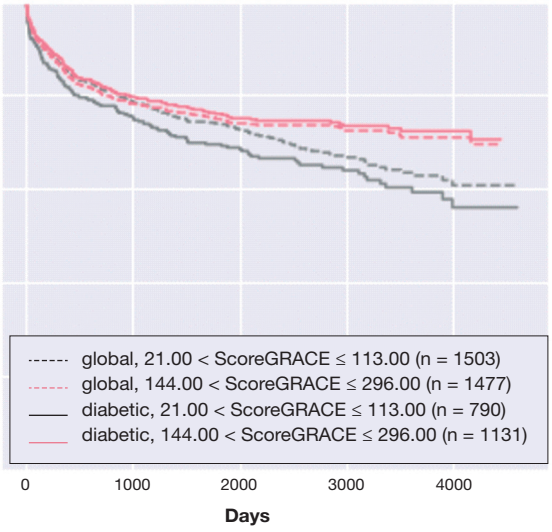
Introduction: Risk stratification following an acute coronary syndrome (ACS) is of utmost importance, in order to identify patients at higher risk of subsequent cardiovascular events. Diabetic patients have a significantly worse prognosis, so new risk prediction tools are important to better identify and risk stratify high risk patients within this important ACS subpopulation.
Objectives: The aim of this study was to identify the best predictors of a new ACS, in a single-center database of ACS, resorting to machine learning and artificial intelligence, and to compare the Global Registry of Acute Coronary Events (GRACE) risk score's relevance for risk discrimination in a general ACS population *versus* a subpopulation of diabetic patients.
Methods: In a single center, 5977 patients admitted due to ACS between 2004 and 2017 and alive at discharge were studied. In the subpopulation of diabetic patients (n = 3429), each covariate present in the database was analyzed separately with a Cox proportional hazard model with three terms - subpopulation belonging indicator, covariate, interaction term. The p-value of the interaction term was used to rank variables. The more significant the interaction term, the stronger the change in relationship between patients in the subpopulation and the risk of a new ACS, compared to the one in the general population.
Results: During long term follow-up, 13% of patients (n = 771) experienced a second event. Kaplan-Meier curve represents how ACS free-survival depends on the GRACE risk score and group of interest. In the general population and in the subpopulation of diabetic patients, the GRACE score was used to further divide patients into 3 terciles, of which only the lower and upper tercile are shown (GRACE £ 113 and GRACE > 144, respectively). The solid lines represent Kaplan-Meier curves for diabetic patients, and the dotted lines in the general population. Pink or grey colour of the curves represent the stratification level of the covariate.



Conclusions: In our model, the GRACE risk score was found to be a better discriminator of risk of futher ACS in diabetic patients than in the general ACS population. Strikingly, a higher GRACE score predicts a lower rate of readmission, probably because many patients will die in the index hospitalization or out of hospital. This finding reinforces the usefulness of the GRACE score in high risk patients and may improve risk stratisfication in diabetic post-ACS patients, making sure that they are closely followed and submitted to optimal risk factor management, in order to improve their post-ACS prognosis.

P 220. LEFT VENTRICULAR SYSTOLIC FUNCTION IN ATHLETES AND SEDENTARY CONTROLS: A STUDY BY 2D AND 3D SPECKLE TRACKING ECHOCARDIOGRAPHY

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Introduction: Athlete's heart is associated with physiological remodeling as a consequence of repetitive cardiac loading. Two-dimensional (2D) speckle-tracking echocardiography (STE) is a modality for the assessment of systolic and diastolic myocardial deformation in a broad variety of clinical scenarios, including adaptive changes of the athlete's heart. However, 2D-STE has some limitations, potentially overcome by three-dimensional (3D) STE.
Objectives: To compare left ventricular global longitudinal strain (GLS), obtained by 2D and 3D- STE, between athletes and sedentary healthy controls.
Methods: We included 42 consecutive male professional soccer players and 30 sedentary male healthy controls, matched by age and race. All subjects underwent echocardiographic examination with analysis of 2D and 3D GLS and left ventricular ejection fraction (LVEF).
Results: Mean age was 22.3 ± 4.2 in athletes and 25.9 ± 3.4 in sedentary controls.There was a statistically significant difference between the 3D and 2D GLS between athletes and controls, being worse in athletes in both cases (-17.24 ± 2.03 *versus* -18.44 ± 1.53%, p = 0.020 and -18.44 ± 1.71 *versus* -19.69 ± 1.83%, p = 0.011, respectively). LVEF was not statistically different between athletes and controls, either by 3D or 2D methods (62.74 ± 4.60 *versus* 64.60 ± 5.01%, p = 0.056 and 60.00 ± 3.88 *versus* 61.79 ± 2.98%, p = 0.159, respectively). In athletes, there was a strong correlation between 3D and 2D GLS, when the 2D GLS was better than -17% (Pearson correlation = 0.70, p < 0.001). For worse values than -17%, there was no statistical correlation between 2D and 3D GLS (p = 0.823). In controls, there was a strong correlation between 2D and 3D GLS (Pearson correlation = 0.76, p < 0.001).
Conclusions: Male athletes present worse 2D and 3D-GLS compared to age and race-matched sedentary controls. There was a strong correlation between 2D and 3D GLS in both athletes and controls, except for athletes with 2D GLS worse than -17%, in whom no correlation was found. In this subgroup of athletes, 3D GLS was statistically worse than 2D GLS, raising the hypothesis of 3D GLS being superior to 2D GLS in the better stratification of the effect of exercise on cardiac systolic function.

P 221. GENETIC POLYMORPHISMS ASSOCIATED WITH A HIGHER RISK OF ESSENCIAL HYPERTENSION IN A POPULATION WITH LOW SALT INTAKE

Ana Célia Sousa[1], Maria Isabel Mendonça[2], Sara Gouveia[1], Sofia Gonçalves[1], Teresa Goes[1], Rafael Nascimento[1], Andreia Pereira[2], Mariana Rodrigues[2], Eva Henriques[2], Sónia Freitas[2], Ana Isabel Freitas[1], Graça Guerra[1], Ilídio Ornelas[2], Roberto Palma dos Reis[3]

[1]Hospital Dr. Nélio Mendonça - Hospital Central do Funchal. [2]Hospital Dr. Nélio Mendonça. [3]Faculdade de Medicina da Universidade de Lisboa.

Introduction: High salt intake has been associated with the development of Essential Hypertension (EH). However there are individuals whose blood pressure greatly increases with a slight increase in salt intake and others that present almost invariable blood pressure values even when undergoing high salt diets. This phenomenon of salt sensitivity is determined genetically.
Objectives: To evaluate the importance of genetics in the development of EH in individuals with lower salt intake.
Methods: Within 1712 individuals we separated two groups according to whether or not they had EH (860 hypertensive and 852 controls). We studied the genes *ACE I/D, ACE A2350G, AGT T174M, AGT M235T, AGTR1 A1166C, CYP11B2 C-344T, ADRB1 R389G, ADRB2 R16G, ADD1 G460W, SCNN1G G-173A, GNB3 C825T, ATP2B1 A/G, CYP17A1 T/C* in both groups. In the hypertensive group we evaluated the renal sodium excretion in the 24-h urine which is linked to sodium intake. We divided the values of renal sodium excretion into tertiles, comparing the frequency of polymorphisms in the 1st tertile (with a lower sodium intake (lower SI) ≤ 155 mEq/24 h (n = 285)) with the frequency of the same polymorphisms in controls. We did the same regarding the 3rd tertile ([highest SI], ≥ 183 mEq/24 h, n = 285). Statistical Analysis: We performed the chi-square test to compare the genetic variants between groups. We calculated the various genetic models and finally a logistic regression analysis was carried out. Data analysis was performed using SPSS software for Windows version 19.0. We used the significance level of p < 0.05.
Results: None of the polymorphisms was associated with the occurrence of EH in hypertensive individuals with higher SI (3rd tertile). The *ADRB1* gene polymorphism in the dominant, additive and multiplicative models was associated with EH in individuals with lower SI, (OR: 1.995, p = 0.008; OR: 1.245, p = 0.038 and OR: 1.253, p = 0.035, respectively), and the *ADD1* variant in the recessive model (OR: 3.069, p = 0.006). After multivariate analysis, these same genes remained in the equation (Table).

Variables	*Odds ratio* (IC 95%)	p-value
ADD1	—	0.034
GW	1.040 (0.763-1.416)	0.805
WW	3.115 (1.324-7.326)	0.009
ADRB1	—	0.032
GR	1.944 (1.129-3.350)	0.017
RR	2.049 (1.196-3.509)	0.009
Constant	0.171	< 0.0001

Conclusions: The group with minor SI presented an association of the genetic component and EH. Polymorphisms *ADD1* G460W and *ADRB1* R389G were associated with a higher risk of EH in individuals with a lower SI. None

of the studied genetic polymorphisms was associated with the onset of EH in individuals with higher SI. This study attempted to explain in an innovative way EH in patients with lower salt intake.

P 222. GENETIC VARIATION AT THE ADAMTS7 LOCUS AND SMOKING INTERACTION IN CAD PROGRESSION

Joel Ponte Monteiro[1], Maria Isabel Mendonça[1], Andreia Pereira[2], João Adriano Sousa[2], Flávio Mendonça[2], Micaela Neto[2], Joel Monteiro[2], Ana Célia Sousa[1], Eva Henriques[2], Mariana Rodrigues[2], Ana Isabel Freitas[1], Ilídio Ornelas[2], António Drumond[1], Roberto Palma Dos Reis[3]

[1]Hospital Dr. Nélio Mendonça - Hospital Central do Funchal. [2]Hospital Dr. Nélio Mendonça. [3]Centro Hospitalar de Lisboa Norte, EPE / Hospital Pulido Valente.

Introduction: Complex gene-environment interactions are at the origin and development of Coronary Disease. Recent studies have demonstrated that allelic variation A > G at ADAMTS7 rs3825807 locus, is associated with reduced gene expression and confer stronger CAD protection.
Objectives: Investigate the cardio-protection demonstrated by ADAMTS7 rs3825807 GG genotype *versus* AA+GA, throughout the evolution of CAD, in our non-smoking coronary population and whether, in the smoking population, this effect disappears or is attenuated.
Methods: A total of 1607 coronary patients were selected from GENEMACOR Study: 853 non-smokers (55.4 ± 7.4 years; 70% male) and 754 smokers (50.9 ± 8 years; 89%). 'Smoking status' refers to current smokers or subjects with less than 5 years of smoking cessation. Genotyping was performed using the TaqMan Real-Time PCR method for ADAMTS7 AA, AG and GG. The patient's survival was evaluated according to the genetic variation A > G (GG *versus* AA + GA). The probability of survival was estimated through a Kaplan-Meier analysis.
Results: After a maximum follow-up period of 12 years, in the non-smoking population, the mutated GG genotype showed a survival probability of 88.1%, whereas the genotypes (AA + AG) with the non-mutated allele presented 81.2% survival. The log-rank test showed significant differences between the two curves (p = 0.015). In the smoking population, the protective effect of the mutation was maintained in the GG genotype (survival probability = 79%), but the wild-type (AA + AG) presented worse survival (69.1%) (curves cross each other, and Breslow test did not reach significance p = 0.075). In the smoking population, the survival curves start to diverge only after 8 years of follow-up.
Conclusions: The GG genotype of ADAMTS7 decreases survival in CAD patients. The environmental factor (smoking) interacts with the genetic variation of the polymorphism ADAMTS7 A < G, interfering with the mechanisms involved in CAD progression. Inhibition of ADAMTS7 can represent a novel potential therapeutic strategy for CAD that may have particular benefit in individuals who smoke cigarettes.

Domingo, 28 Abril de 2019 | 16H00-17H00

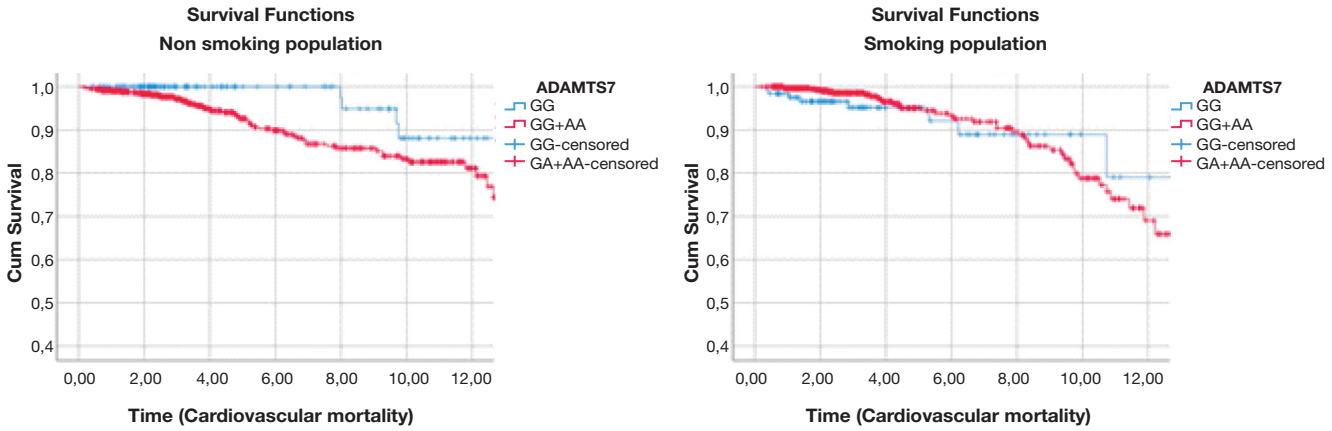
JARDIM INVERNO | POSTERS 4 - ÉCRAN 8 - CARDIOLOGIA DE INTERVENÇÃO

P 223. PROPHYLACTIC CAROTID ARTERY STENTING IN CARDIAC SURGERY CANDIDATES - IS IT WORTH THE RISK?

Luís Puga[1], Rogério Teixeira[1], Joana Silva[1], Diana De Campos[1], José Luís Martins[2], Joana Ribeiro[1], Luís Paiva[1], José Pedro Sousa[1], João Gameiro[1], Carolina Saleiro[1], Marco Paulo Alves da Costa[1], Lino Goncalves[1]

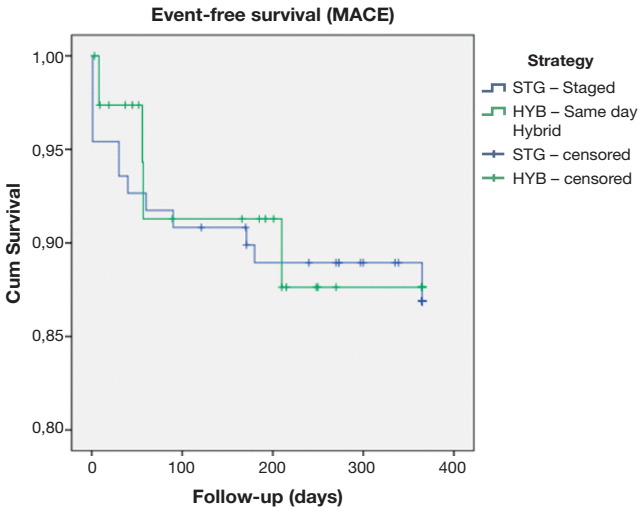
[1]Centro Hospitalar e Universitário de Coimbra, EPE / Hospital Geral. [2]Centro Hospitalar do Baixo Vouga / Hospital Infante D. Pedro, EPE.

Introduction: Evidence supporting the benefits of prophylactic revascularization of asymptomatic carotid stenosis in cardiac surgery candidates to reduce perioperative stroke is lacking.
Objectives: To evaluate cardiovascular outcomes in patients undergoing hybrid carotid artery stenting (CAS) and cardiac surgery.
Methods: Single-centre retrospective cohort consisting of 161 patients referred for CAS from February 2001 to December 2017 prior to cardiac surgery either hybrid on the same day or staged. The endpoints evaluated were stroke, myocardial infarction (MI), death and major adverse cardiovascular events (MACE) at 30 days and at 1 year follow up. The sample was further divided in group HYB (hybrid CAS and heart surgery on the same day) and STG (staged CAS prior to heart surgery) to compare both strategies. Event-free survival (MACE) was compared between group HYB and STG by the Kaplan-Meier method.
Results: The sample included of 80% (129) males, mean age of 74 ± 8 years old. 66.5% (107) performed CABG while 33.5% (54) performed valvular heart surgery. Group HYB (n = 41) and STG (n = 111) showed similar cardiovascular risk profile. No statistically significant differences were found between groups in stroke (HYB 0/40 [0%] *versus* STG 4/110 [3.6%], p = 0.222), MI (HYB 0/40 [0%] *versus* STG 1/109 [0.9%], p = 0.543), death (HYB 0/40 [7.5%] *versus* STG 7/110 [6.4%], p = 0.805), MACE (HYB 3/40 [7.5%] *versus* STG 10/110 [9.1%], p = 0.759) at 30 days. The results were also similar at 1 year, stroke (HYB 0/39 [0%] *versus* STG 5/109 [4.6%], p = 0.174), MI (HYB 0/39 [0%] *versus* STG 5/109 [4.6%], p = 0.174), death (HYB 4/39 [10.3%] *versus* STG 9/109 [8.3%], p = 0.705), MACE (HYB 4/39 [10.3%] *versus* STG 14/109 [12.8%], p = 0.671). Age was the only predictor of MACE at 1 year (odds ratio: 1.087, 95%CI: 1.005-1.175, p = 0.038). ROC curve analysis identified 77 years old as a cut off for MACE at 1 year (AUC: 0,660, p = 0,02, sensitivity 56% - 95%CI:



P 222 Figure

31-79, specificity 76% 95%CI: 68-83). Both groups showed similar event-free survival curves by the Kaplan Meier method at one year (HYB 331 ± 16 *versus* STG 330 ± 10 days, log rank p = 0,871) —Fig.



Conclusions: The frequency of adverse events following CAS in cardiac surgery candidates is considered low in our series. The hybrid strategy on the same day showed similar results in major cardiovascular risk events and adds the advantage of decreasing the waiting time for surgery and risks associated with the double antiplatelet therapy prior to cardiac surgery. The cut point of 77 years old shows that this strategy may be a good option even for old patients.

P 224. PROCEDURAL GUIDANCE OF TRANSCATHETER LEFT ATRIAL APPENDAGE OCCLUSION - CLOSER LAMP SHINES BRIGHTER

José Pedro Sousa[1], Luís Puga[1], Joana Ribeiro[1], Liliana Reis[1], Carolina Négrier[1], Marco Costa[1], Lino Gonçalves[2]

[1]Centro Hospitalar e Universitário de Coimbra, EPE / Hospital Geral. [2]Centro Hospitalar e Universitário de Coimbra / Hospitais da Universidade de Coimbra.

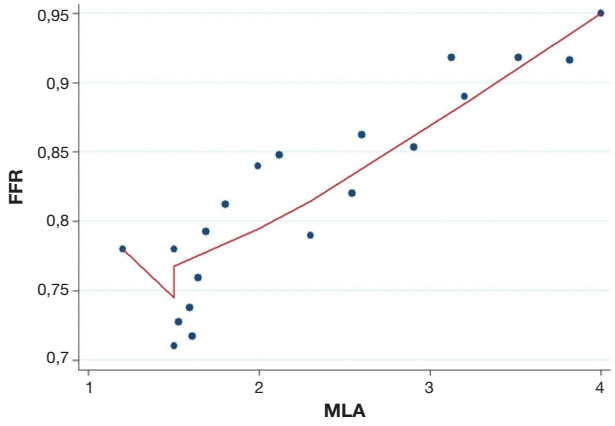
Introduction: Procedural guidance is key to the success of transcatheter left atrial appendage occlusion (T-LAAO), and transesophageal echocardiography (TEE) (with general anesthesia) is the current gold standard. On the other hand, intracardiac echocardiography (ICE) value is yet to be fully demonstrated.
Objectives: To compare efficacy and safety of ICE, as opposed to TEE, for procedural guidance of T-LAAO.
Methods: Single-center retrospective observational study comprising patients undergoing T-LAAO. Procedures were guided by TEE alone, ICE alone or both. The primary efficacy outcome was technical success, defined as correct device positioning with no no device-related complications and no peridevice leaks > 3 mm on TEE, performed one month later. A secondary efficacy endpoint was the presence and degree of peridevice leaks. Safety outcomes included stroke, pericardial tamponade, device embolization, major and minor bleeding. Moreover, procedure duration, fluoroscopy time and length of in-hospital stay (LOS) were recorded.
Results: 122 patients were included between May 2010 and February 2018. Median age was 77 (70-81.5) years and 37.2% were female. 36.4% had history of stroke or transient ischemic attack and 54.5% of major bleeding. Median CHA2DS2-VASc score was 5 (3-6) and median HAS-BLED score was 3 (2-4). Implanted occluder devices were as follows: Watchman®, 9.3%; ACP®, 27.1%; and Amulet®, 63.6%. As for echocardiographic guidance, the following results were obtained: TEE, 51.6%, mainly with general anesthesia (95%); ICE, 43.4%, with general anesthesia in 5.7%, local anesthesia in 71.7% and conscious sedation in 22.6%; TEE plus ICE in 5.0%, with general anesthesia in 100%. Technical success occurred in 95%. Peridevice leaks were identified in 10.3%, with no jet > 3 mm. Device thrombosis was diagnosed twice. A case of stroke and none of device embolization were documented, whereas pericardial tamponade, major and minor bleeding were verified in 3.3%, 5% and 5.8%, respectively. Median procedure duration and fluoroscopy time were 60 (55-80) and 26 (21-31) minutes, respectively, and median LOS was 2 (2-3) days. Both primary and secondary efficacy outcomes did not differ significantly between groups. When compared with TEE, ICE guidance was associated with lesser major and minor bleeding (ZRES: -2.3, p = 0.029, for both) and procedure time (p = 0.008). All other safety outcomes and both fluoroscopy time and LOS were similar across categories.
Conclusions: For procedural guidance of T-LAAO, when compared with ETT, ICE appears to be as effective but safer and more logistic-friendly, allowing conscious sedation or local anesthesia instead of general anesthesia and decreasing bleeding and procedural time.

P 225. WHEN IN DARK, FOLLOW THE LIGHT: OPTIMAL COHERENCE TOMOGRAPHY PREVENTS RECURRENCE AND GUIDES COMPLEX, STENT-RELATED LESIONS

Patrícia Alves, Ava Vera Marinho, Manuel Oliveira-Santos, Luís Candal Leite, Rui Baptista, Elisabete Jorge, João Silva Marques, Vítor Matos, Marco Costa, Lino Gonçalves

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

Introduction: Optimal coherence tomography (OCT) provides accurate characterization of plaque lesions and is very sensitive in detecting suboptimal stent implantation. Possibly, OCT parameters can predict fractional flow reserve (FFR). We aimed to characterize the applicability of OCT in plaque characterization and its utility in guiding angioplasty. Additionally, we assessed its correlation to FFR.
Methods: We prospectively included all 80 patients that underwent OCT-guided angioplasty in our centre from November 2014 to October 2018. Clinical, angiographic, OCT and FFR data were collected. The patients were followed up for a median 15 (IQR: 7-27) months. Outcomes included all-cause death, acute coronary syndrome (ACS) and heart failure (HF).



Results: Mean age was 64 ± 12 years and 74% were male. Indications for angiography were stable angina in 40% cases, ACS in 43%, and ACS associated angioplasty complications in 7%. Around 10% lesions were associated with heart allograft vasculopathy. Left anterior descending (LAD) was involved in 64%, the right coronary (RCA) in 16% and the circumflex (LCx) in 20%. Stent-related lesion was present in 45% (stent re-stenosis in 29%), fibrocalcified plaque in 40%, thrombus in 7% and spontaneous dissection in 7%. Mean minimal luminal area (MLA) was lower for LAD lesions (1.8 ± 0.7 mm *versus* 2.4 ± 0.7 mm in RCA and 2.3 ± 1.1 in LCx, p = 0.013 and 0.021). Mean lesion length (LL) did not vary between vessels; it was 4.2 ± 2.5 smaller than mean stent length (19.8 ± 4 *versus* 24.1 ± 5, p < 0.001). Mean reference distal diameter (RDD) did not vary from mean stent diameter (2.9 ± 0.50 *versus* 2.9 ± 0.45 mm, p = 0.07). FFR was performed in 25% cases. MLA had a strong correlation with FFR (r^2: 0.8, p < 0.001) (Fig.). A ROC-derived cut-point of 2.2 cm^2 for MLA had a sensitivity of 71% and specificity of 90% for a FFR value of 0.80. Around 39%

cases required OCT-guided post-dilation. At 15 months, ACS rate was 7.2%, HF was 8.8% and all-cause mortality was 5.8%. Predictors for ACS included MLA (HR: 0.5, 95%CI: 0.4-0.9, p = 0.021) and OCT-guided post-dilatation (HR: 0.4, 95%CI: 0.3-0.8, p = 0.013), but not LL (p = 0.221) or stent diameter (p = 0.061). **Conclusions:** OCT is very useful in assessing stent-related complications and guiding post-dilation. MLA has a strong correlation with FFR, with high specificity. Both MLA and OCT-guided post-dilation were important predictors of ACS recurrence.

P 226. ZWOLLE SCORE AS A PREDICTOR OF CONTRAST-INDUCED NEPHROPATHY AFTER PRIMARY ANGIOPLASTY

Diogo Brás, Mafalda Carrington, Rui Guerreiro, João Pais, Kisa Congo, Pedro Semedo, Bruno Piçarra, José Aguiar

Hospital do Espírito Santo, EPE, Évora.

Introduction: Contrast-induced nephropathy is an important complication after invasive cardiac procedures, as it is associated with short- and long-term morbidity/mortality, as well as longer hospitalizations and higher hospital costs. The Zwolle primary PCI index is a risk score that has been used to identify low-risk patients with ST-elevation myocardial infarction (STEMI) undergoing primary PCI (PPCI). We questioned whether the this score, with simple and practical components that might be calculable in the Catheterization Laboratory during primary PCI, could predict the development of Contrast-Induced Nephropathy.
Objectives: The authors intend to study the Zwolle score (ZS) as a predictor of contrast-induced nephropathy (CIN).
Methods: This retrospective study is composed of a sample of 225 patients that were admitted in our hospital with STEMI that underwent PPCI. The ZS (16 points (p) total) is characterized by: Killip 1: 0p; Killip 2: 4p; Killip 3-4: 9p; TIMI 3 flow post: 0p; TIMI 2: 1p; TIMI 0-1: 2p; age < 60: 0p; ≥ 60: 2p; 3-vessel disease: 1p; anterior MI: 1p; ischaemia time > 4 h: 1p. The variable CIN is defined as an increase of 25% or 0.5 mg/dL relative to baseline serum creatinine in the first 72 hours after contrast administration. After population characterization, we have performed a ROC curve analysis between the outcome CIN and ZS, reporting AUC, optimal c-statistic and its epidemiological data. We also have performed a multivariate analysis reporting OR with plausible variables.
Results: The sample mean age was 63.4 ± 14.7, and it is composed by 79.5% of males. The majority of patients presented Killip Class I (83.1%). More than half of the patients presented anterior MI (51.3%). The mean serum creatinine at admission was 1 ± 0.4 md/dL. The mean ZS was 3.8 ± 3.2 points, and 21.3% of the included patients presented CIN. The ROC curve analysis between CIN and ZS revealed an c-statistic of 0.824 and an Youden index of 3.5 p (optimal cut-off point: specificity 68%, sensitivity 84%, negative predicting value 94%, positive predicting value 42% and diagnostic accuracy of 72%). We have also performed a multivariate analysis model to test the outcome CIN, which included the variables Killip Class, age and ZS > 3.5 p. It registered an OR of 8 (95%CI: 2.2-28.8; p = 0.002) for the variable ZS > 3.5 p. The other variables have not achieved statistical significance.
Conclusions: We conclude that the ZS is a good test to predict CIN in our population of patients submitted to PPCI. A ZS > 3.5 is the optimal cut-off point to predict the studied outcome and represents an increased risk of CIN by 8 times. The calculation of the Zwolle score during PCI could allow the initiation of preventive measures to limit the renal damage associated with this intervention. It can also be used for risk stratification in this population of patients.

P 227. SAME-DAY DISCHARGE PCI: AN EXPLORATORY ANALYSIS ON THE LIMITING STEPS OF A PARADIGM SHIFT

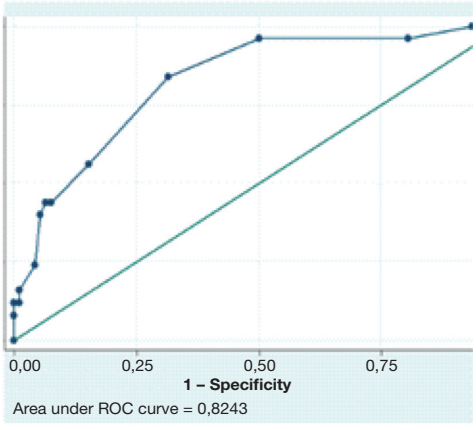
Afonso Félix de Oliveira, Sérgio Madeira, João Brito, Manuel Almeida, Cláudia Silva, Luís Raposo, Pedro Gonçalves, Henrique Mesquita Gabriel, Marisa Trabulo, Jorge Ferreira, Rui Campante Teles, Miguel Mendes

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

Introduction: The current paradigm for post-PCI care in elective patients is still overnight ward stay. However, same-day discharge PCI (SDD-PCI) has

VARIABLES	N = 225
AGE (YEARS)	63,4 ± 14,7
MALES, N (%)	178 (79,5)
HYPERTENSION, N (%)	144 (64,1)
DIABETES, N (%)	144 (64,1)
DISLIPIDEMIA, N (%)	58 (25,6)
SMOKING, N (%)	87 (38,5)
FAMILY HISTORV OF CHD, N (%)	19 (8,6)
PAST HISTORY OF ACS, N (%)	46 (20,5)
KILLIP KIMBAL	
KILLIP I	187 (83,1)
KILLIP II	19 (8,4)
KILLIP III	4 (1,8)
KILLIP IV	14 (6,2)
ANTERIOR MI, N (%)	115 (51,3)
CULPRIT TIMI FLOW 3 POST-PCI, N (%)	221 (98)
CREATININE, MG/DL	1.0 ± 0.4
3-VESSEL DISEASE, N (%)	112 (49,6)
NORMAL SYSTOLIC FUNCTION, N (%)	110 (48,7)
ISCHAEMIA TIME, H	5,5 ± 5,1
ZWOLLE (POINTS)	3,8 ± 3,2
AKIN, N (%)	
AKIN 1	4 (1,8)
AKIN 2	2 (0,9)
AKIN 3	111 (49,3)
CONTRAST NEPHROPATHY, N (%)	48 (21,3)

Table 1. Population characteristics.



P 226 Figure

Multivariate	OR	95% CI	p value
Killip Class	0,97	0,55 – 1,71	0,912
Age	1,03	0,99 – 1,09	0,147
Zwolle > 3,5	7,98	2,21 – 28,82	0,002

Table 2. Multivariate analysis.

been demonstrated to be feasible and safe with potential gains in patient comfort and resource allocation. Appropriate criteria for SDD-PCI and an economical analysis of this practice in Portugal have not been defined. The aim of this work is to simulate patient selection protocols and generate the discussion on the limiting steps of this paradigm shift.
Methods: We performed cross sectional study of 1002 PCIs performed in outpatients for stable coronary disease between Jan/2015 and Dec/2018. Eligibility for SDD-PCI was determined in the case of an outpatient, with successful and uncomplicated procedure, using radial artery access. Two possible protocols with the following exclusion criteria were then applied: *1.* Primary - more than one vessel treated, bifurcation lesion PCI, left main PCI or graft-PCI; *2.* Secondary - General criteria plus age < 80 yo, LVEF < 30%, GFRe < 30 mL/min and blood pressure > 180/100 during procedure.
Results: From the initial group of 1002 PCIs for stable coronary artery disease in outpatients, 750 (74.8%) were eligible for SSD-PCI according to pre-specified criteria. Patients were excluded due to non-radial access in 247 cases (24.7%) and due to procedural complications in 9 cases (0.8%). If the Primary protocol was applied, 533 out of 750 (71%) would be included in the SDD-PCI protocol. The main reasons for exclusion were: more than one vessel treated - 150 (20%); bifurcation lesion - 78 (10,4%); Left main PCI - 23 (9.2) and Graft-PCI 13 (1.7%). If the secondary protocol was applied, 436 out of 533 (82%) would be included in a SSD-PCI program. The reasons for exclusion were age > 80 (58; 11%), reduced LVEF (11; 2%), impaired renal function (10; 2%) and severe hypertension (30; 7%). The application of the primary protocol would lead to 133 patients/year eligible for SDD-PCI, while the secondary protocol would lead to 109 patients/year.
Conclusions: The future of elective PCI will likely evolve towards systematic use of SDD-PCI. Our work analyzed the impact of two SDD-PCI protocols on patient selection and illustrated the need for further refinement of SDD-PCI strategies and cost-effectiveness analysis.

P 228. LONG-TERM CLINICAL OUTCOMES OF CORONARY SLOW-FLOW PHENOMENON: NOT AS BENIGN AS THOUGHT?

Rita Marinheiro[1], Ricardo Santos[1], Filipe Seixo[1], Nuno Fonseca[1], Carina Ramalho[2], José Farinha[1], Marta Fonseca[1], Ana Fátima Esteves[1], António Pinheiro[1], Nuno Gomes[1], Andreia Fernandes[1], Cristina Carradas[1], José Venâncio[1], Bruno Santos[1], Rui Caria[1]

[1]Centro Hospitalar de Setúbal, EPE / Hospital de São Bernardo. [2]Centro Hospitalar Barreiro/Montijo, EPE / Hospital Nossa Senhora do Rosário

Introduction: Coronary slow flow phenomenon (CSFP) describes a slow progression of contrast medium in filling the coronary arteries during coronary angiography, in the absence of other abnormalities. The pathogenic mechanisms are incompletely understood, but probably include coronary microvascular disease. Although reported as having a benign outcome, relapses and ventricular arrhythmias have been reported. Furthermore, studies incorporating assessment of endothelial function indicated a higher risk of serious cardiovascular events, suggesting CSFP patients can have a similar risk.
Objectives: to study patients (pts) with CSFP regarding basal characteristics and presentation at the time of coronary angiography and analyze long-term clinical outcomes (recurrent angina, acute coronary syndrome (ACS), cardiovascular (CV) death and overall death).
Methods: We evaluated pts who had performed coronary angiography between 2008 and 2015 in a single center. We identified those in whom CSF was detected. CSF was defined as the presence of angiographically normal coronary arteries and Thrombolysis In Myocardial Infarction (TIMI)-2 flow (i.e., requiring ≥ 3 beats to opacify prespecified branch points in the distal vasculature of at least one of the three major epicardial coronary vessels). Pts are excluded if they have other conditions that would confound impaired coronary flow. An age- and gender-matched population with normal coronary angiography was evaluated as a control group.
Results: The selection of pts for analysis is shown in the study flow diagram (Fig. A). Primary CSFP was detected in 72 pts (median age 63 years [IQR: 53-71], 68% male). Comparing to control group, CSFP pts were more frequently current smokers (25% *versus* 11%, p = 0.03) and presently more commonly with ACS (50% *versus* 30%, p = 0.02) (Fig. B). Recurrent angina occurred in 17 CSFP pts (25%) comparing with 3 (4) control pts (odds ratio: 7.1, confidence interval (CI): 1.9-25.5, p = 0.03), leading to additional invasive and non-invasive exams (7 electrocardiogram exercise testing, 3 myocardial perfusion scintigraphy and 2 invasive coronary angiography in CSFP pts and 2 coronary computed tomography angiography in controls). ACS did not occurred in any pt. During the follow-up (73 ± 23 months), CV death occurred in 6 CSFP pts (8%) comparing to 1 pt in control group (1%) (adjusted hazard ratio (HR): 11.8, CI: 0.9-16.3, p = 0.06) and overall death occurred in 7 CSFP pts (10%) comparing to 5 pts in control group (7%) (adjusted HR: 1.6, CI: 0.5-5.5, p = 0.45) (Fig. C).
Conclusions: In our study, CSFP was associated with current smoking and with ACS presentation. There was a trend for a higher risk of CV death in patients with CSFP, raising the hypothesis that microvascular disease may contribute to a worse long-term outcome.

Domingo, 28 Abril de 2019 | 15H00-17H00

JARDIM INVERNO | POSTERS 4 - ÉCRAN 9 - INSUFICIÊNCIA CARDÍACA

P 229. RESYNCHRONIZATION IN HEART FAILURE PATIENTS: WHO WILL DEVELOP ATRIAL FIBRILLATION?

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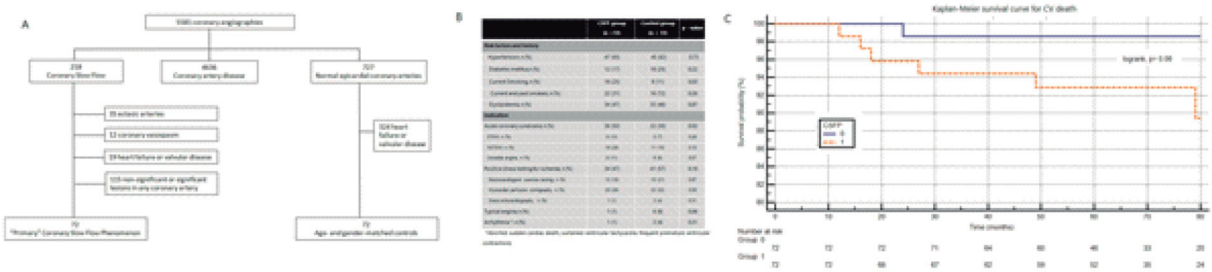
Introduction: Heart failure (HF) patients have a predisposition for atrial fibrillation (AF), resulting in increased morbidity and mortality. However, there is scarce data regarding predictors of development of AF among patients submitted to cardiac resynchronization therapy (CRT), which could have significant therapeutic implications.



P 228 Figure

Objectives: To investigate potential risk factors for AF development in a cohort of HF patients submitted to CRT.
Methods: Single-center retrospective study of 274 patients submitted to CRT, in sinus rhythm at the time of the device implantation. The population was divided into two groups: A) those who developed AF (n = 54) and B) those who do not present AF during long term follow up (n = 220). Median follow-up was 2.9 ± 1.5 years after CRT. Baseline demographic, clinical and echocardiographic characteristics were compared.
Results: During long term follow-up, 20% of patients developed AF. Age was similar in both groups (65 ± 11), with a higher prevalence of males among patients presenting AF (82% *versus* 64%, p = 0.013). Prevalence of other comorbidities, including arterial hypertension, hyperlipidemia, diabetes and chronic kidney disease did not differ significantly between groups, and patients were treated with disease-modifying HF drugs in similar proportions. Patients had HF of non-ischemic etiology in 60% of cases in both groups, with a higher prevalence of patients with NYHA functional class III or IV among patients who present AF at any time during follow up (89% *versus* 74%, p = 0.033). No inter-group difference was found regarding electrocardiographic (including heart rate, QRS duration and left bundle branch block pattern) and echocardiographic parameters (including left ventricular ejection fraction, left ventricular volumes and left atrium diameter). Despite no difference in all-cause mortality between groups, there was a trend towards more readmissions due to acute decompensated HF in AF patients (38% *versus* 25%, p = 0.072). After multivariate analysis, male gender and NYHA III or IV previously to resynchronization remained as independent predictors of AF during follow-up (OR: 2.82, 95%CI: 1.26-6.40, p = 0.012, and OR: 3.15, 95%CI: 1.16-8.56, p = 0.025, respectively).
Conclusions: A significant proportion of HF patients submitted to CRT develop AF during follow-up, and males and patients in higher NYHA functional classes have a higher risk of AF in this population. The recognition of predictors of AF in HF patients is of paramount importance for the prevention and early identification of AF, which may help avoid HF decompensation and allow a timely treatment of AF.

P 230. NEUROHORMONAL ANTAGONIST THERAPIES, RENAL FUNCTION AND KALAEMIA: A TRADE-OFF TO CONSIDER WHEN TREATING HEART FAILURE PATIENTS

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Introduction: The heart failure (HF) with reduced ejection fraction (rEF) therapeutic algorithm encompasses three pharmacological classes that interact with homeostatic renal mechanisms and with potassium (K) excretion. The known effects of sacubitril/valsartan (S/V) on renal function and K levels accrue form the PARADIGM-HF Trial results but there is a lack of every-day clinical practice derived evidence.
Objectives: To evaluate the impact of S/V initiation therapy on renal function, serum K levels and concomitant K-retaining drugs in patients (pts) with HFrEF.
Methods: Single-centre, prospective study of pts medicated with S/V. Estimated glomerular filtration rate (eGFR) calculated by the CKD-EPI formula, serum creatinine (sCr) and K were recorded before S/V initiation and after the up-titration (to maximal individualized tolerated doses) period. Concomitant therapy with mineralocorticoid receptor antagonists (MRAs) and their respective doses was recorded. The effect of S/V introduction on laboratorial data and changes in MRA doses were evaluated by Wilcoxon test.
Results: S/V was prescribed to 102 pts. The mean sCr value was 1.24 ± 0.5 mg/dL, corresponding to an average eGFR of 67.5 ± 23.4 ml/min/1.73. There was no significant change in mean sCr (1.26 ± 0.46, p = ns) or eGFR (62.6 ± 22.5 ml/min/1.73; p = ns) after S/V initiation. Eleven pts (10.8%) had an increase of sCr > 0.3 mg/dL, which, however, did not led to the interruption or reduction of S/V dose. In 8 pts (7.8%) the drug was started off-label in pts with eGFR < 30 ml/min/1.73 but > 20 ml/min/1.73: in 7 of these pts, a sCr reduction was observed after S/V initiation (this reduction was > 0.3 mg/dL in 3 pts). The mean baseline K value was 4.5 ± 0.6 mmol/L and there was seen a statistically but not clinically significant increase (4.66 ± 0.5 mmol/L; p = 0.034) after S/V introduction. Hyperkalaemia with K > 5.5mmol/L was observed in 6 pts (5.9%). In 18 pts (17.6%) S/V was started in the presence of K between 5 and 5.5 mmol/L. In this sub-population, 10 pts (9.8%) had K reduction after starting the drug, 1 pt maintained the exact same level of K, and 4 pts (3.9%) had a rise of 0.1 to 0.2 mmol/L. Only 1 pt required S/V dose reduction (basal K: 5.5 mmol/L, maximum K: 6.2 mmol/L). There was a need for MRA dose reduction in 5 pts (4.9%), and even interruption in 3 pts (2.9%) in order to reduce K levels. It is also worth noting that in 35 pts (34%) S/V was started without prior MRA prescription.
Conclusions: In this study population the initiation of S/V did not affect negatively renal function and its introduction in pts with eGFR between 20 and 30 mL/min/1.73 was found to be safe. Hyperkalaemia was a frequent problem, but did not led to S/V discontinuation. It was observed that sometimes physicians choose to reduce MRA dose in order to maintain S/V therapy and consequently take the possible clinical benefit from both drugs.

P 231. HEART FAILURE FOLLOWING ST-ELEVATION MYOCARDIAL INFARCTION: INCIDENCE AND PROGNOSTIC PREDICTORS

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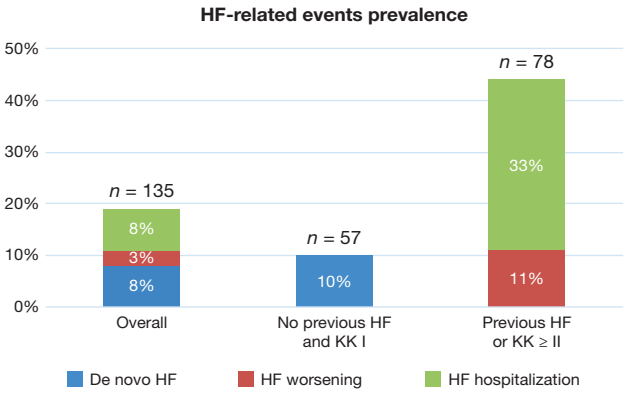
Introduction: Patients with ST-elevation myocardial infarction (STEMI) are at high risk of developing heart failure (HF). The magnitude of this risk with the advent of primary percutaneous coronary intervention (PPCI) is less characterized. We aimed to examine the incidence, predictors and prognostic significance of HF in STEMI patients that underwent PPCI.
Methods: We retrospectively studied consecutive STEMI patients treated with PPCI at a tertiary hospital between 1st January 2010 and 31st December 2016. Clinical and outcome data were retrieved by chart review. HF-related events were defined as *de novo* HF diagnosis, clinical worsening HF (increased dose of diuretics at outpatient clinic) or HF hospitalization. Associations between clinical variables and HF-related events, as well as the association between HF-related events and all-cause mortality were assessed using Cox models.



Results: Of 864 patients (63 ± 13 years, 75% male), 70% had Killip-Kimball class (KK) I, 14% KK II, 3% KK III and 13% KK IV. In-hospital mortality was 9%; 61% of those who survived had a left ventricular ejection fraction (LVEF) lower than 50% at hospital discharge. The overall post-STEMI HF-related events was 18.2% (7.7% *de novo* HF, 2.7% HF worsening and 7.8% HF hospitalization) with a median time to event of 10.8 (2.4-32.4) months. In the multivariate analysis, only age (HR: 1.05, 95%CI: 1.03-1.08), diabetes (HR: 1.88, 95%CI: 1.32-2.68), KK class (HR: 1.47, 95%CI: 1.26-1.71) and LVEF

(if > 50%, HR: 0.50, 95%CI: 0.33-0.77) were independent predictors of incident HF-related events. Patients with an HF-related event had a 2.2-fold increased risk of dying (HR: 2.20, 95%CI: 1.08-4.50). Considering only those patients with no previous history of HF and KK I (n = 564), the incidence of post-STEMI HF-related diagnosis was 10.1%; median time to event was 14.4 (3.6-37.2) months. In this subset of patients, only age (HR: 1.07, 95%CI: 1.04-1.10) and diabetic status (HR: 1.72, 95%CI: 1.0-2.96) independently predicted HF.
Conclusions: Contemporary STEMI patients treated by PPCI still have a heightened risk of developing or worsening preexistent HF, which signals an increased mortality risk. The elderly, diabetics and those with reduced LVEF at hospital discharge are at increased risk, and most of them become symptomatic in the first year post-STEMI.

P 232: DE NOVO HEART FAILURE PATIENTS - CAN WE PREDICT RECOVERY?

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Introduction: Left ventricular function recovery (LVFR) in the setting of heart failure (HF) is known to be associated with better outcomes. However, few and inconsistent data exists about predictors of LVFR in *de novo* HF patients. The aim of the present study is to identify clinical, analytical and echocardiographic predictors of LVFR in a cohort of HF patients followed in advanced HF consult.
Methods: A single-center study was designed, with a cohort of 329 patients regularly followed from Jan/2010 until Nov/2018. 240 patients were excluded, due to the impossibility to identify the onset of HF syndrome or absence of follow-up data. 18 patients were also excluded as they were submitted to resynchronization therapy. For the studied population with the remaining 70 patients, we analysed demographic, clinical, analytical and echocardiographic parameters. The primary endpoint (LVFR) was defined as an increase in left ventricular ejection fraction (LVEF) of 15%. Predictors of the endpoint were assessed using χ^2 or Fisher's exact tests, accordindly, and known confounders were assessed with multiple logistic regression. Missing data, assumed completely at random, were assessed through multiple imputation. Analysis with STATA14.2 (α = 0.05).

Predictors of LVFR		
	OR	p-value
Comorbidities		
Coronary Artery Disease	0.33	0.125
Vascular arterial disease	0.36	0.227
Chronic Kidney Disease	0.30	0.147
Diagnosis profile	2.81	0.124
Previous neurohormonal antagonist tx	0.27	**0.015**
Ischemic etiology	0.26	**0.015**
QRS ≥ 130ms	1.26	0.672
Left bundle branch block	0.99	0.981
Biochemical parameters		
Haemoglobin	1.24	0.167
GFRe (CKD-EPI)	1.01	0.413
Troponin	0.85	0.295
BNP	1.00	0.125
Iron deficiency	0.20	0.076
Echocardiographic parameters		
Increased LVTDD	1.07	0.900
LVEF < 30%	1.09	0.858

Results: The studied population was 81.4% (n = 57) male, and had a mean age of 63.5 ± 12.6 yo. 32 patients (45.7%) were already treated with neurohormonal antagonist drugs at the HF diagnosis. Hemodynamic profile at HF diagnosis was congestive in 81.4% (n = 57). Etiology was ischemic in 27.1% (n = 19), ethanolic in 27.1% (n = 19), tachycardiomyopathy in 15.7% (n = 11), familiar in 8.6% (n = 6) and unknown in 21.4% (n = 15). 45.7% (n = 32) of population studied experienced LVFR within a follow-up period of 197,8 person-years and an incidence rate of 1.6 cases per 10 person-years of follow-up. Mean time up to the recovery was 22.2 months. Univariate analyses for predictors of LVEF are presented in the table. Treatment with neurohormonal antagonist drugs was associated to less probability of LVFR, even when controlled for age and for the presence of HTN with an adjusted OR of 0.29 (p = 0.036, 95%CI: 0.09-0.92). Ischemic etiology was also associated with less probability of LVFR (OR: 0.26, p = 0.015, 95%CI: 0.09-0.76). No predictors of LVFR were found regarding biochemical data (Hb, GFR, troponin, BNP, iron deficiency). The presence/absence of LBBB and a QRS ≥ 130 were not associated with LVFR. Echocardiographic parameters such as LVTDD, LVEFgravity or presence/absence of LA dilation at the diagnosis, were also not predictive of LVFR.
Conclusions: In this cohort, almost half of the patients experienced LVFR, with an incidence rate of 1.6 cases per 10 person-years of follow-up. According to our sample, we were unable to find predictors of LVFR. Only previous treatment with neurohormonal antagonists drugs and ischemic etiology were significantly associated with less probability of LVFR.

P 233. PRESCRIPTION OF SACUBITRIL/VALSARTAN IN A REAL-WORLD POPULATION

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Introduction: The introduction of sacubitril/valsartan (S/V) in the therapeutic armamentarium for patients (pts) with chronic heart failure (HF) and a reduced ejection fraction (rEF) was the major pharmacological therapeutic advance in recent years. Given the short time since the introduction of S/V into clinical practice, there is not much comparative data between the real world populations and the PARADIGM-HF study population.
Objectives: To characterize a population followed in the HF Clinic of a tertiary hospital medicated with S/V, and to compare it with the PARADIGM-HF Trial population.
Methods: Prospective data recording study of pts with HFrEF treated with S/V. Clinical and demographic characteristics, S/V doses, adverse effects and concomitant therapy data were evaluated. Comparisons with the PARADIGM-HF S/V treated population were established by Student's t-test and ANOVA.
Results: One hundred and two pts were included. Median follow-up time since S/V first dose-first patient was 6 (4-10) months. The study population presents statistically higher mean age, NTproBNP plasma levels and serum creatinine levels (sCr) when compared to the PARADIGM-HF population. There was a higher number of pts in NYHA functional class I and II, and ischemic etiology was less frequent. There were no significant differences regarding gender, systolic blood pressure or baseline ejection fraction (Table). This real-world population had a higher rate of β-blocker and mineralocorticoid receptor antagonist prescription (Table 1); 59 pts (57.8%) started on S/V at the dose of 24 ± 26 mg and 43 pts (42.2%) at the intermediate dose. The average maximum tolerated dose was significantly lower than that reported in PARADIGM-HF (175 ± 84 *versus* 375 ± 71 mg/day, p < 0.001): low dose in 28 pts (27.5%), intermediate dose in 54 pts (52.9%) and high dose in 20 pts (19.6%). The mean dose of ACEi/ARB before S/V initiation was lower than that reported in PARADIGM-HF (dose equivalent to enalapril 14.75 ± 11.75 mg/day *versus* 18.9 ± 3.4, p = 0.01), and 4 pts (3.9%) were medicated with ACEi/ARB previously. The rate of ICD and/or CRT implantations was much higher in the real-world population (Table). S/V was discontinued in 7 pts (6.9 *versus* 2.3%, p = ns): in 4 pts due to symptomatic hypotension (3.9 *versus* 0.9%, p = 0.011), in 1 due to cough (1 *versus* 0%, p = ns), in 1 due to angioedema (1 *versus* 0.4%, p = 0.003), and in 1 due to HF decompensation (1 *versus* 0%, p = ns). The mortality rate in this study population was 3.9% (4 pts).

Variables	PARADIGM-HF Population	Real World Population	*P*
Age (years)	63.8 ± 11.5	67.8 ± 10.3	< 0.001
Female sex - Nº of patients (%)	879 (21)	21 (21)	0.92
Systolic blood pressure (mmHg)	122 ± 15	120.2 ± 18,8	0.37
Ejection fraction (%)	29.6 ± 6.1	29.5 ± 7,6	0.936
NTproBNP (pg/mL)	1631	3107	0.002
Serum Creatinine (mg/dL)	1.13 ± 0.3	1.24 ± 0.5	0.021
Potassium (mmol/L)		4.5	
Etiology			
Dilated Cardiomyopathy – Nº of patients (%)		35 (34.3)	
Ischemic Cardiomyopathy - Nº of patients (%)	2506 (59.9)	57 (55.9)	< 0.001
Other		10 (9.8)	
NHYA Functional Class			0.006
I – Nº of patients (%)	180 (4.3)	10 (9.8)	< 0.001
II – Nº of patients (%)	2998 (71.6)	76 (74.5)	< 0.001
III – Nº of patients (%)	969 (23.1)	16 (15.7)	< 0.001
IV – Nº of patients (%)	33 (0.8)	0 (0)	< 0.001
Pharmacological Therapy			
Previous ACEi - Nº of patients (%)	3266 (78)	74 (72.5)	0.46
Previous ARB – Nº of patients (%)	929 (22,2)	22 (21.6)	0.96
B-blocker – Nº of patients (%)	3899 (93.1)	101 (99)	< 0.001
MRA – Nº of patients (%)	2271 (54.2)	67 (66)	0.01
Diuretics - Nº of patients (%)	3363 (80.3)	76 (76.5)	0.6
Digitalis – Nº of patients (%)	1223 (29.2)	11 (11)	< 0.001
Ivabradine – Nº of patients (%)		16 (16)	
Maximum tolerate Sacubitril/ Valsartan dose (mg/day)	375 ± 71	175 ± 84	< 0.001
Previous ACEi/ARB doses (Enalapril equivalent - mg/day)	18.9 ± 3.4	14.75 ± 11.75	0.001
Devices			
ICD – Nº of patients (%)	623 (14.9)	50 (49)	< 0.001
CRT – Nº of patients (%)	292 (7)	27 (26)	< 0.001

Conclusions: When comparing the PARADIGM-HF Trial population with a real-world population, it was observed that the latter includes older patients with higher levels of NTproBNP and sCr, and that maximal S/V tolerated doses were lower than those reported in the PARADIGM-HF trial. The rate S/V discontinuation due to adverse events was similar, attesting the safety of the drug in daily practice.

P 234. ARNI USE IN CLINICAL PRACTICE: PARADIGM-HF TRIAL RESULTS APPLIED TO THE REAL WORLD

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Introduction: The PARADIGM-HF trial showed the clinical benefits of the addition of sacubitril to the conventional neurohormonal antagonist therapy regimen for heart failure (HF) with reduced ejection fraction (rEF). However, national data on the effects of sacubitril/valsartan (S/V) introduction in real-life patients (pts) is scarce.
Objectives: To evaluate the clinical effects of S/V introduction in a population of pts with HFrEF followed in a tertiary hospital HF Clinic.
Methods: Prospective study of consecutive pts with HFrEF treated with S/V. Clinical, echocardiographic and laboratorial data were collected before and after the introduction of the drug. Episodes of HF decompensation (defined as the need to increase oral dose of diuretics or intravenous administration of diuretics) and hospitalizations during the follow-up period were registered. The number of decompensation episodes or hospitalization were compared with the number of similar events that occurred in a period with exactly the same time duration but preceding the first dose of S/V. Comparative statistical analysis was performed using Wilcoxon test.
Results: One hundred and two pts were included. The median follow-up time was 6 (4-10) months. There was a significant improvement in NYHA functional class (FC), mainly due to a marked decrease in the number of pts in CF III (15.7 *versus* 2%, p < 0.001) (Table). Mean left ventricle ejection fraction (29.5 ± 3.2 *versus* 34 ± 5.8%, p = 0.005) also improved, and NTproBNP was significantly reduced (3107 ± 2128 *versus* 2619 ± 1437 pg/mL, p < 0.001) after S/V prescription.There was no significant change in serum creatinine (1.24 ± 0.49 *versus* 1.26 ± 0.46 mg/dL, p = NS) or systolic blood pressure (120.2 ± 18.8 *versus* 119.2 ± 18.8 mmHg, p = ns). Importantly, there was a significant reduction in the number of HF decompensations (49 episodes in 37 pts *versus* 10 episodes in 8 pts, p < 0.001) and hospitalizations (31 episodes in 23 pts *versus* 10 events in 7 pts, p < 0.001) after initiation of the drug.

	Pre Sacubitril/ Valsartan	Post Sacubitril/ Valsartan	*P*
NYHA Functional Class			
I – Nº of patients (%)	10 (9.8)	27 (26.5)	<0.001
II – Nº of patients (%)	76 (74.5)	73 (71.6)	<0.001
III – Nº of patients (%)	16 (15.7)	2 (2)	0.71
IV – Nº of patients (%)	0 (0)	0 (0)	<0.001
Left Ventricle Ejection Fraction (%)	29.5 ± 3.2	34.0 ± 5.8	1.0
Systolic blood pressure (mmHg)	120.2 ± 18.8	119.2 ± 18.8	0.005
NTproBNP (pg/mL)	3107 ± 2128	2619 ± 1437	0.361
Serum Creatinine (mg/dL)	1.24 ± 0.49	1.26 ± 0.46	<0.001
Potassium (mmol/L)	4.5 ± 0.8	4.66 ± 0.7	0.62
HF decompensation – Nº of episodes	49	10	0.034
HF decompensation – Nº of patients (%)	37 (36.2)	8 (7.8)	<0.001
Hospitalization – Nº of episodes	31	10	<0.001
Hospitalization – Nº of patients (%)	23 (22.5)	7 (6.8)	<0.001

Conclusions: Starting sacubitril/valsartan in a population of patients followed in a HF Clinic was associated with significant clinical improvement, marginal echocardiographic improvement, and NTproBNP reduction. In parallel, the introduction of the drug led to a significant reduction of HF decompensation episodes and hospitalizations. These data derived from a real-life population confirm the benefits of sacubitril/valsartan firstly demonstrated in the PARADIGM-HF Trial.

Domingo, 28 Abril de 2019 | 16H00-17H00

JARDIM INVERNO | POSTERS 4 - ÉCRAN 10 - INSUFICIÊNCIA CARDÍACA

P 235. SEXUAL DYSFUNCTION IN PATIENTS WITH HEART FAILURE: A THERAPEUTIC LIMITATION FOR THE PATIENT OR THE PHYSICIAN?

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Introduction: Erectile dysfunction (ED) is a common comorbidity in patients (pts) with cardiovascular disease, with major impact on their quality of life

(QoL). Given the association between ED and the pharmacological therapy commonly used in heart failure (HF) with reduced left ventricular ejection fraction (LVEF), the management of ED in these pts may be challenging.
Objectives: To evaluate the erectile function (EF) in pts with chronic HF and reduced LVEF, and its possible potential relation with the clinical severity, QoL and pharmacological therapy used to treat the syndrome.
Methods: Single centre prospective study that included men aged 18 to 70 years hospitalized for decompensate chronic HF. EF was assessed at discharge and at 9 ± 3 months of follow-up, using the validated Portuguese Version of the International Index of Erectile Function. ED is considered to be present when the test value is < 26, and can be classified as mild (25-17), moderate (16-11) and severe (10-6). The relationship of EF with clinical features, medical therapy and QoL ([validated Portuguese Version of the Kansas City Cardiomyopathy Questionnaire (KCCQ]) was established by Spearman correlation, Mann-Whitney, Wilcoxon and Chi-square tests.
Results: 24 pts, 62.8 ± 7.5 years, were included. The prevalence of hypertension (HTN), diabetes and ischemic heart disease, was 71%, 50%, and 38%, respectively. The median LVEF was 26.5%. The prevalence of ED at the initial evaluation was 92% (mild in 3 pts, moderate in 6 and severe in 13), and 71% at the follow-up (mild in 2 pts, moderate in 3 and severe in 12) – p = ns. The EF evaluated in the follow-up associated with age (p < 0.01; r: -0.767), HTN (p = 0.30), maximum and minimum NTproBNP values recorded during hospitalization (p = 0.11, r: -0.54 and p = 0.38, r: -0.048, respectively), serum creatinine (p = 0.06, r: -0.416) and urea (p = 0.025, r: -0.488). During the follow-up it was possible to increase significantly beta-blocker (p < 0.001) and ACEI/ARB doses (p = 0.006) —compared to pre-admission ones— and a significant improvement in LVEF (p = 0.001) and NYHA functional class (p = 0.002) was also observed. Erectile dysfunction had no relationship with these parameters, but it correlated with physical limitation (p = 0.022, r: 0.509) and frequency of symptoms (p = 0.024, r: 0.502) assessed by KCCQ.
Conclusions: Erectile function in patients with chronic HF correlated with NTproBNP values and erectile dysfunction showed impact on QoL. The progressive increase in doses of neurohormonal antagonists was not associated with a significant change in erectile function, suggesting that the beneficial effects of recommended HFrEF therapies prevail in this population. This should motivate medical therapy uptitration, regardless of the presence of erectile dysfunction.

P 236. SLEEP APNEA IN THE SPECTRUM OF HEART FAILURE: A CLOSER LOOK AT PRESERVED *VERSUS* REDUCED FUNCTION

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Introduction: Sleep Apnea (SA) is scarcely investigated in Heart Failure (HF) with preserved ejection fraction (HFpEF) compared to HF with reduced ejection fraction (HFrEF). The main goals of this study were to determine the features of patients with HFrEF *versus* HFpEF and SA [defined by apnea-hypopnea index (AHI) > 15/h] or a desaturation time with SpO_2 < 90% (T90) ≥ 22 min.
Methods: Our work is based on a single-center retrospective cohort of patients hospitalized for decompensated HF during 2013-2018. All patients were screened for SA with ApneaLink™ the day preceding discharge, a thoroughly validated screening tool in this population. HF was defined as recommended by the European Society of Cardiology guidelines. A left ventricular ejection fraction (LVEF) ≤ 45% and > 45% was used to define HFrEF and HFpEF, respectively, as per SERVE-HF trial.
Results: A total of 228 patients were included in the analysis. Mean age of the overall cohort was 75.3 ± 10.5 years and 41.2% had HFrEF. Compared HFpEF, those with HFrEF were more often male with ischemic HF (p < 0.001), had more often AHI > 15/h (73.4% *versus* 48.5%, p < 0.001), and were significantly more likely to have more total apneas (62 ± 148 *versus* 16 ± 79, p < 0.001), obstructive apneas (28 ± 76 *versus* 8 ± 43, p < 0,001) and central apneas (6 ± 20 *versus* 0 ± 5, p < 0.001). T90 ≥ 22 minutes was highly prevalent and no different between groups (78.7% *versus* 71.6%, p = 0,227). In multivariate models, oxygen desaturation index (ODI) was the only predictor of AHI > 15/h in both HFrEF [area under the curve (AUC) 0.942, p < 0.001) and HFpEF (AUC: 0.935, p < 0.001), with the best cut-off of ≥ 11.50/h (sensitivity: 91.9%; specificity: 86.2%) and ≥ 14,50/h (sensitivity: 90.4%; specificity: 84.9%), respectively. Similarly, mean SpO_2 was the only predictor of T90 ≥ 22 minutes in both HFrEF (AUC: 0.910, p < 0.001) and HFpEF (AUC: 0.959, p < 0.001), with the best cut-off of ≤ 92.5% (sensitivity: 92.3%; specificity: 77.5%) and ≤ 92.5% (sensitivity: 96.0%; specificity: 89.0%), respectively.
Conclusions: In a cohort of patients with recently compensated HF, SA was more prevalent in HFrEF compared to HFpEF. Even so, almost half of those with HFpEF had SA. Interestingly, the multivariate models were highly predictive of AHI > 15/h and T90 ≥ 22 min, both prognostic markers validated in a population with HFrEF, and equally so in HFrEF and HFpEF. Thus, one may argue that these findings hypothesize a similar pathophysiology of SA in HF, regardless of LVEF.

P 237. CARDIAC RESYNCHRONIZATION THERAPY FAILED TO SHOW IMPACT ON SURVIVAL IN THE PRESENCE OF HIGH COMPETING NON-CARDIOVASCULAR RISK

José Maria Farinha, Leonor Parreira, Marta Fonseca, Rita Marinheiro, Ana Esteves, António Pinheiro, Dinis Mesquita, Pedro Amador, Artur Lopes, Rui Caria

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Introduction: The indications for cardiac resynchronization therapy (CRT) have been frequently revisited. In our country, the CRT implantation is yet inferior to the European mean.
Objectives: We aimed to study a population of patients fulfilling clinical, electrocardiographic, and echocardiographic criteria for CRT implantation, and to evaluate the reasons of non-implantation when it was not performed and the impact of non-implanting a CRT in patients with a high non-cardiovascular risk.
Methods: We retrospectively analysed all patients with a left ventricular ejection fraction (LVEF) ≤ 35% in echocardiogram, during the year 2014. We excluded patients already on CRT and those lost to follow-up. We selected those patients with indication for CRT implantation according to contemporary recommendations. We compared 2 groups: with CRT implanted and without CRT. The reason for non-implantation was specified. We analysed the baseline characteristics, and calculated the Charlson Comorbidity Index (CCI). During follow-up, we evaluated mortality and hospital admissions.
Results: We studied 43 patients with indication for CRT. Twelve implanted a CRT. Comparison between groups is presented in table. The reasons for non-implantation were mostly related to the presence of major comorbidities (48.4%), followed by symptomatic improvement after optimal medical therapy (OMT) readjustments (38.7%), lost follow-up (9.7%), and non-adherence to medical therapy (3.2%). Mean follow-up was 29.8 ± 14.1 months. Patients who did not implant a CRT were older, had a greater Charlson Comorbidity Index, and died more frequently because of non-cardiovascular causes (45.2% *versus* 8.3%, p = 0.033) (Table). Despite not statistically significant, patients without CRT also had a trend for a greater number of non-cardiovascular hospital admissions (Table).
Conclusions: In this group of patients, the non-cardiovascular mortality was significantly higher in those patients with a higher number of comorbidities. Probably these extremely debilitated patients will not benefit from CRT implantation.

P 238. HEART FAILURE WITH «RECOVERED FUNCTION»: CLINICAL CHARACTERISTICS AND OUTCOMES

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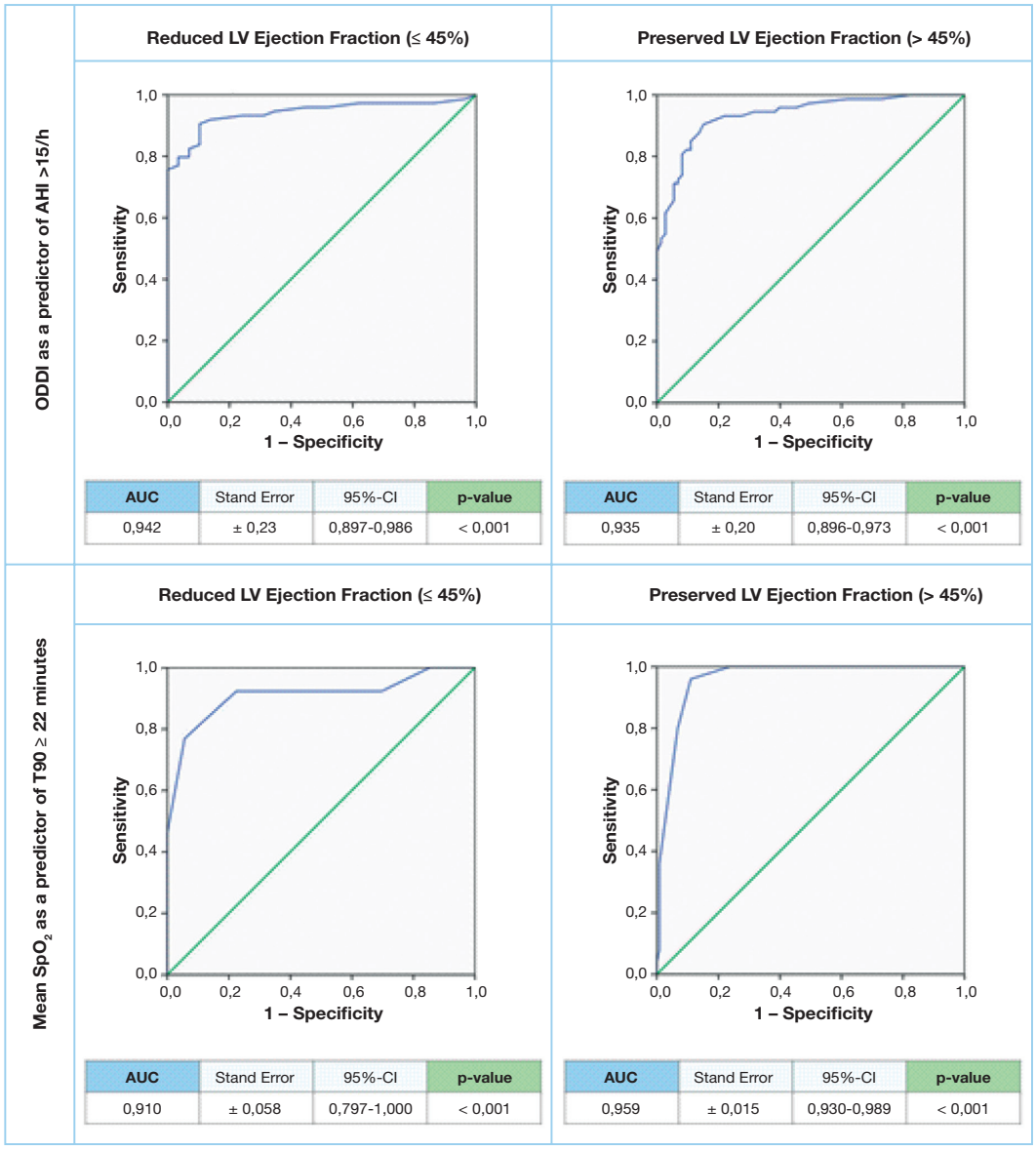
Introduction: Patients with systolic dysfunction that improve/recover their left ventricular systolic ejection fraction (LVEF) present a more favorable clinical profile when compared to patients that maintain dysfunction, despite therapy.



P 236 Figure

Table P 237. Comparison between patients with CRT and without CRT

	Total (n = 43)	No CRT (n = 31)	CRT (n = 12)	*p*-value
Patients Characteristks				
Age in years, mean ± SD	73.3 ± 9.5	75.5 ± 8.5	67.6 ± 9.8	0,012
Male gender, n (%)	35 (81.4)	23 (74.2)	12 (100)	0,082
LVEF in %, median (IQR)	27.4 (22.2-33.1)	27.4 (22.0-33.1)	27.4 (24.5-32.9)	0.800
Ischemic cardiomyopathy, n (%)	19 (44.2)	11 (35.5)	8 (66.7)	0,065
Charlson Comorbidity Index, mean ± SD	6.2 ± 2.4	6.7 ± 2.4	4.8 ± 1.7	0.017
NYHA class 2, n (%)	18 (41.9)	12 (38.7)	6 (50.0)	0.501
NYHA class 3, n (%)	22 (51.2)	16 (51.6)	6 (50.0)	0.924
NYHA class 4, n (%)	3 (7.0)	3 (9.7)	0 (0)	0.548
Mortality, n (%)				
All cause	17 (39.5)	15 (48.4)	2 (16.7)	0.085
Cardiovascular	2 (4.7)	1 (3.2)	1 (8.3)	0.485
Non-cardiovascular	15 (34.9)	14 (45.2)	1 (8.3)	0.033
Hospital Admissions, n (%)				
All cause	26 (60.5)	21 (67.7)	5 (41.7)	0.168
Cardiovascular	12 (27.9)	8 (25.8)	4 (33.3)	0.711
Non-cardiovascular	14 (32.6)	13 (41.9)	1 (8.3)	0.067

The characteristics and outcomes of patients with «recovered function» are not fully described, and more studies in these patients are necessary.
Objectives: To determine in a population with heart failure (HF) the prevalence of patients that improved/recovered LVEF and characterize this sample according to clinical characteristics and outcomes.
Methods: Patients followed at a HF clinic with initial LVEF < 40% were retrospectively evaluated. The population was divided into 3 groups according to the LVEF: Group I - did not recover function (LVEF < 40%); Group 2 - recovered function (LVEF > 50%); Group 3 partially improved the function (LVEF between 45-50%). The groups were characterized according to baseline characteristics, comorbidities, therapeutics and outcomes - death for cardiovascular cause; hospitalizations for HF; composite endpoint. The prevalence of «recovered function» and predictive factors were evaluated.
Results: One hundred fifty-five patients were studied (male 72% [n = 112], mean age: 67 ± 10 years). In 43% (66) of the patients there was an improvement in systolic function: LVEF > 50%: 53% (35); LVEF between 45 and 50: 47% (31). Patients that did not improve the systolic dysfunction are predominantly male. The non-ischemic etiology was associated with greater ventricular remodeling with improved function. The patients that improved/recovered function had less events but non-statistically significant. Median levels of BNP were lower in the two groups that improved function (Table).

Variable	Group 1 (LVEF < 40%) (N = 89)	Group 1 (LVEF > 50%) (N = 35)	Group 1 (LVEF 45-50%) (N = 31)	p-value
Male (n)	73	16	23	0,034
Age (years)	67 ± 1	68 ± 2	66 ± 2	0,9
Ischemic etiology (n)	52	9	13	0,041
Death (n)	14	2	4	0,5
HF hospitalization (n)	43	16	13	0,6
Composite endpoint (n)	45	16	14	0,8
BNP pg/ml (median; IQ)	257 (93; 558)	109 (22; 172)	118 (35; 268)	0,032

Conclusions: The improvement/recovery of LVEF was frequent in this sample, especially in patients with non-ischemic etiology. This group of patients keeps a reasonable number of events that suggests the persistence of a risk profile and need of surveillance. More studies in patients with «recovered function» are necessary, to determine predictors of «improved/recovered function» and to optimize therapeutics.

P 239. REAL LIFE HEART FAILURE, A HETEROGENEOUS POPULATION BENEFITING FROM A SPECIALIZED MULTIDISCIPLINARY PROGRAMME

Inês Egídio de Sousa[1], Inês Lopes da Costa[2], Inês Nabais[3], Francisco Adragão[4], Patrícia Moniz[1], Susana Quintão[1], Lúcia Fernandes[1], Célia Osana[1], Luís Campos[1], Inês Araújo[1], Cândida Fonseca[1]

[1]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de S. Francisco Xavier. [2]Hospital de São José. [3]Hospital de Cascais. [4]Centro Hospitalar do Algarve, EPE / Hospital de Faro.

Introduction: Heart failure(HF) is a public health problem, affecting a diversified population, growing in prevalence despite therapy and prevention advances. Most Cardiology departments' registries describe predominantly HF with reduced ejection fraction(HFrEF), while Internal Medicine(IM) mainly reports HF with preserved ejection fraction(HFpEF).
Objectives: To evaluate demographics, clinical characteristics and acute management(AM) of a non-selected population hospitalized in an Acute Heart Failure Unit (AHFU) with a multidisciplinary team.
Methods: Retrospective study of consecutive hospitalizations due to decompensated HF in an AHFU, over one year.
Results: Of 181 hospitalizations, 55.2% were men, mean age 76 years. Most patients (77.3%) were admitted from the emergency room and 12.1% were admitted from our Day Hospital (DH). 50.8% had non-HErEF (HEpEF 44.2% and HF with mid-range ejection fraction [HFmrEF] 6.6%) and 49.2% HErEF. The most frequent aetiologies of HF were hypertensive (48.6%), ischemic (44.2%) and valvular (26%). 93% were decompensations of chronic HF. Most decompensation were due to arrhythmias (26%), infection (24.9%), medication non-adherence (24.9%). Patients were admitted in NYHA classes III (35.4%) or IV (64.6%), and at discharge the majority (70.7%) were in class II. Most were on B profile (95.6%) requiring IV diuretics; of these 14.4% evolved to C profile requiring inotropics, 9.4% of which on levosimendan. Mean in-AHFU stay: 8.1days, mortality 6%. Population had high multimorbidity, with an average of 6 comorbidities: arterial hypertension (75.6%), atrial fibrillation (6.2%), chronic Kidney disease (56.4%), diabetes (42.5%), among others (Table). After discharge, 87.7% were referred to DH, 76.5% HF consultation and 45.7% other speciality evaluation (22.2% pneumology, 16% cardiology, 4.3% nephrology, Endocrinology and IM). Readmission at 30 days was 12.5% (52.4% due to decompensated HF) and mortality 5.3% (45.4% due to HF).

Characteristics of an HF population admitted to an acute HF unit, part of an HF multidisciplinary structured programmed during one year

	HFrEF	HFmrEF	HFpEF
Population	89 (49.2%)	12 (6.6%)	80 (44.2%)
Male	60 (67.4%)	7 (58.3%)	33 (41.3%)
Age	73.2	70.3	81.4
Comorbidities (average)	5.3	4.8	5.6
HBP	58 (32%)	9 (75%)	70 (87.5%)
Diabetes	40 (22%)	5 (41.7%)	32 (40%)
AF	56 (30,9%)	9 (75%)	55 (68,8%)
CKD	51 (28.1%)	5 (41.7%)	45 (44.1%)
Iron deficíency	38 (21%)	7 (58.3%)	46 (57.5%)
Anaemia	38 (21%)	4 (33.3%)	36 (45%)
In-hospital mortality	7 (7.9%)	0	4 (5%)

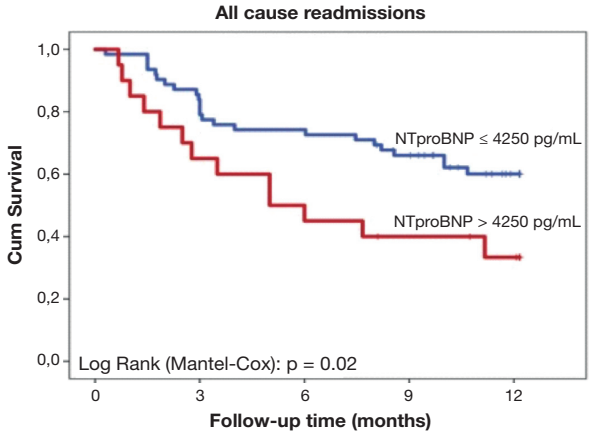
Conclusions: results support epidemiologic data, where HErEF tend to be as prevalent as non-HErEF. Despite differences, AM tends to be similar as most patients are congestive at admission. All groups had similar number of comorbidities, requiring multidisciplinary approach. A specialized and structured HF Program allows integrated care, with systematic and differentiated approach, reflected on our short hospital stay and mortality, inferior to national (9.6 days and 12.5% in 2014, respectively) and international data.

P 240. NTPROBNP IN ACUTE HEART FAILURE: WHICH VALUES TO RELY ON TO ESTIMATE LONG-TERM PROGNOSIS?

Rafael Santos[1], João R. Agostinho[2], Inês Santos-Gonçalves[2], Joana Rigueira[2], Inês Aguiar-Ricardo[2], Afonso Nunes Ferreira[1], Tiago Rodrigues[2], Nelson Cunha[2], Mónica Mendes-Pedro[2], Fátima Veiga[1], Fausto J. Pinto[2], Dulce Brito[2]

[1]Centro Hospitalar de Lisboa Norte, EPE / Hospital de Santa Maria. [2]Serviço de Cardiologia, Departamento Coração e Vasos, CHULN, CCUL, Faculdade de Medicina, Universidade de Lisboa, Lisboa.

Introduction: Hospitalizations remain a main cause of morbidity and mortality in heart failure (HF) patients (pts), and readmission rate is still unacceptably high. NTproBNP is widely used as a tool in establishing the diagnosis of HF and as a marker of decompensation. However its efficacy in predicting readmissions is not well established.
Objectives: To evaluate the efficacy of NTproBNP in predicting all-cause hospital readmissions during the first year after discharge (index-hospitalization for acute HF).
Methods: Retrospective study with prospective data registry of consecutive pts discharged after hospitalization for acute HF. All pts were submitted to clinical, laboratorial, electrocardiographic and echocardiographic evaluations, including NTproBNP on admission and at discharge. Multivariate Cox regression and Kaplan-Meier survival analysis were used to evaluate NTproBNP utility as a predictor of readmissions.
Results: One hundred and fifty six pts were included (mean age: 68.1 ± 12.4 years, 60.1% males). The mean left ventricular ejection fraction (LVEF) was 36.4 ± 15.9% (LVEF < 40% in 60.3%). Patients were discharged in NYHA functional class I (44.8%), in class II (51.9%), and in class III (3.2%). During a mean follow-up time of 11.1 ± 2.6 months, the readmission rate



was 46.2%, and the mortality rate was 10.3%. The median NTproBNP values were 4222 (IQ: 1981-9715) pg/mL on admission, and 1717 (IQ: 858-4249) pg/mL at discharge. In 92.5% of pts there was a decrease of NTproBNP during hospitalization, and the average descent rate was 48.1 ± 31.9%. The presence of preserved LVEF (p = 0.011) and worse functional class at discharge (p = 0.005) were associated with readmissions during follow up. NTproBNP at discharge (p = 0.036), particularly if values > 4250 pg/mL (4th quartile) were also linked to higher probability of readmission (p = 0.024). By multivariate analysis (age-adjusted) discharge NTproBNP > 4250 pg/mL was established as an independent factor to predict readmissions (HR: 2.6, CI: 1.2-6.0, p = 0.022). There was no association between admission NTproBNP or the magnitude of decrease during hospitalization and the rate of readmission during follow up (p = ns). Additionally, an increase of NTproBNP during hospitalization did not predict readmissions as well (p = ns).

Conclusions: NTproBNP at discharge is an important biomarker to predict one-year hospital readmissions. However, contrary to expectations, the absolute value of NTproBNP at discharge, mainly in the presence of higher biomarker levels, seems to be more important than its variation (decrease or increase) during hospitalization for acute HF.

Segunda-feira, 29 Abril de 2019 | 11H00-12H00

JARDIM INVERNO | POSTERS 5 - ÉCRAN 1 - DOENÇA CORONÁRIA

P 241. PREDICTING BLEEDING AND INTRA-HOSPITAL MORTALITY IN ACUTE CORONARY SYNDROMES: A MULTICENTRE COMPARISON STUDY BETWEEN TWO RISK SCORES

Diogo Brás[1], Rui Guerreiro[1], Mafalda Carrington[1], João Pais[1], Kisa Congo[1], João Carvalho[1], Ana Rita Santos[1], Bruno Piçarra[1], José Aguiar[1], Registo Nacional de SCA[2]

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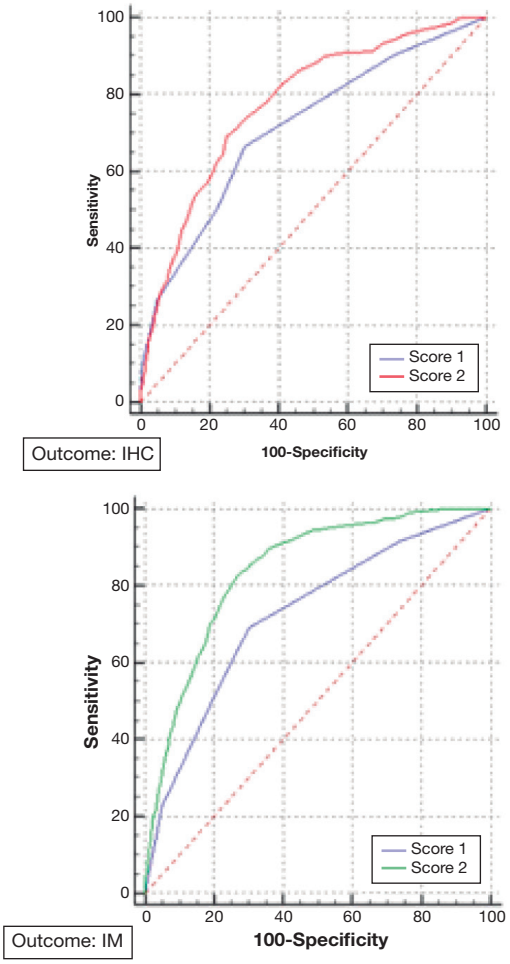
Introduction: Recent advances in antithrombotic drugs have resulted in significant improvements in the treatment of patients with Acute Coronary

VARIABLES	N = 14.287
AGE (YEARS)	66 ± 13
MALES, N (%)	10.407 (72.8)
BMI, KG/M2	27.4 ± 4.3
HIPERTENSION, N (%)	9.954 (69.7)
DIABETES, N (%)	4.373 (30.9)
DISLIPIDEMIA, N (%)	8.002 (58.3)
SMOKING, N (%)	3.893 (27.3)
FAMILY HISTORY OF CHD, N (%)	828 (6.7)
PAST HISTORY OF ACS, N (%)	2.856 (20.1)
PAST HISTORY OF PCI, N (%)	2.089 (14.7)
PAST HISTORY OF CABG, N (%)	700 (4.9)
PAST HISTORY OF BLEEDING, N (%)	260 (1.8)
CKD, N (%)	868 (6.1)
STEMI, N (%)	5.704 (39.9)
NSTEMI, N (%)	7.156 (50.1)
HR, BPM	78 ± 20
SBP, MMHG	139 ± 29
DBP, MMHG	80 ± 17
KILLIP-KIMBAL I	12.092 (84.9)
CREATININE, MG/DL	1.1 ± 0.9
HAEMOGLOBIN, G/DL	13.8 ± 1.9
PLATELETS. X10^3/MM3	219 ± 71
ASPIRIN, N (%)	4.073 (28.8)
CLOPIDOGREL, N (%)	1.787 (12.6)
TICAGRELOR, N (%)	125 (1.1)
VKA, N (%)	435 (3.1)
NOACS, N (%)	265 (2.1)
MULTIVESSEL DISEASE, N (%)	5.584 (49)
NORMAL SYSTOLIC FUNCTION, N (%)	8.674 (63.7)



P 241 Figure

Syndrome (ACS). However, these advances were also accompanied by an increase in the incidence of haemorrhagic complications and sometimes, intra-hospital mortality.
Objectives: The authors sought to compare two risk scores carried out at patient admission in ACS, CRUSADE and «intra-hospital bleeding and mortality in ACS score» (IBMACS), and study which one performed better regarding the outcomes: intra-hospital haemorrhagic complication (transfusion or major bleeding event) (IHC) and intra-hospital mortality (IM).
Methods: This retrospective and multicentre study is composed of a sample of 13,182 patients admitted with ACS, collected from a national registry of ACS. The IBMACS score was defined by: age > 75 years: 2 points; past bleeding history: 1 point; admission serum creatinine > 1.5 mg/dL: 1 point; admission haemoglobin < 10 g/dL: 1 point. The IBMACS and CRUSADE scores were calculated for each patient. We have also collected data about cardiovascular risk factors, past medical history, antithrombotic drugs and catheterization vascular access. A multivariate analysis and ROC curve was performed for each score regarding each of the two outcomes: IHC and IM. Then, the ROC curves were compared between CRUSADE and IBMACS score and both outcomes.
Results: The sample mean age was 65 ± 13 years old, with 74% of males. Past history of bleeding events were present in 1.8%, past ACS in 19.9%, past stroke in 7.5%, hypertension in 69.7% (systolic BP 139 ± 29 mmHg), diabetes in 29.9%, admission serum creatinine of 1.1 ± 0.9 mg/dL, admission haemoglobin of 13.8 ± 1.9 g/dL and admission signs of heart failure 14.5%. The mean IBMACS score was 1.3 ± 0.6, and the mean CRUSADE score was 26.7 ± 16.6. In the ROC curve analysis, regarding IHC, the AUC was 0.719 (sensitivity (SE): 69.2%, specificity (SP): 67.9%) for IBMACS and 0.776 (SE: 68.8%, SP: 75.3%) for CRUSADE (p < 0.001). In relation to IM, the AUC was 0.723 (SE: 71.3%, SP: 68.2%) for IBMACS and 0.840 (SE: 82.5%, SP: 72.8%) for CRUSADE (p < 0.001).
Conclusions: In this study, we intended to compare a previously assessed score (IBMACS) with the extensively validated CRUSADE score, in terms of intra-hospital ACS complications and mortality. We acknowledge the big predicting power of the CRUSADE score regarding both outcomes. However, the difference between scores was attenuated in the IHC, with a small difference between the two AUC curves of 0.057. The IBMACS score also had a slightly bigger SE in predicting IHC. It is also true that the CRUSADE score needs input from 8 variables and may require a dedicated calculator. The IBMACS score is composed of 4 easily assessed binary variables, resulting in a faster manual calculation. In summary, the IBMACS score may have a role in a faster, easier prediction IHC in the admission of ACS patients, without a loss of SE.

P 242. PROGNOSTIC SIGNIFICANCE OF OBESITY IN STEMI PATIENTS: THE IMPACT ON HEART FAILURE

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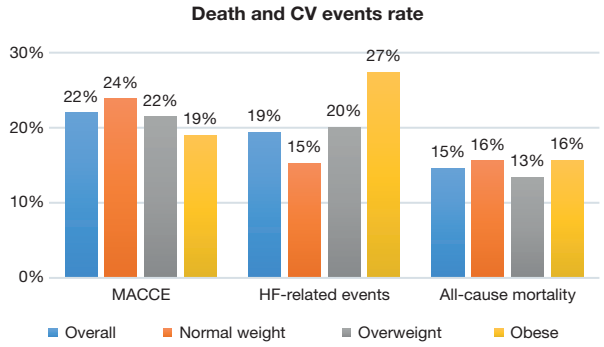
Introduction: In general population, a normal range body mass index (BMI) is associated with lower mortality. Paradoxically, in several chronic diseases an increased BMI is related to better prognosis, including in patients post-acute coronary syndrome. We aimed to evaluate if this effect occurs in a cohort of ST-elevation myocardial infarction (STEMI) patients.
Methods: We retrospectively studied consecutive STEMI patients treated with primary percutaneous coronary intervention at a tertiary hospital between 1st January 2010 and 31st December 2016. Clinical and outcome data were retrieved by chart review. BMI was categorized as low weight (< 18.5 kg/m^2), normal (18.5-24.9 kg/m^2), overweight (25-29.9 kg/m^2) and obese (> 30 kg/m^2). Major adverse cardiovascular and cerebrovascular events (MACCE) were defined as occurrence of cardiovascular death, myocardial infarction, stroke or target lesion revascularization. Heart failure (HF)-related events were defined as de novo HF diagnosis, clinical worsening HF (increased dose of diuretics at outpatient clinic) or HF hospitalization.
Results: We included 864 patients (63 ± 13 years, 75% male), 0.6% with low weight, 33.3% with normal weight, 45.1% overweight and 16.1% obese. Obese were younger and exhibited higher prevalence of previous hypertension, diabetes and dyslipidemia. Incidence of MACCE was 20.1%, with a median time to event of 10.1 (1.3-255.1) days and no significant differences between BMI groups. In multivariate analysis, only left ventricular ejection fraction (LVEF; if preserved, HR: 0.45, 95%CI: 0.23-086) and previous history of hypertension (HR: 2.77, 95%CI: 1.43-5.39) were independent predictors of MACCE. The overall post-STEMI HF-related events was 18.2% (6.2% de novo HF, 2.7% HF worsening and 9.3% HF hospitalization) with a median time to event of 10.8 (2.4-32.4) months. Independent predictors of HF-related events were age (HR: 1.05, 95%CI: 1.03-1.08), diabetes (HR: 1.94, 95%CI: 1.17-3.20), Killip-Kimball class (HR: 3.02, 95%CI: 1.96-5.25), LVEF (if preserved, HR: 0.46, 95%CI: 0.27-0.79) and obesity (HR: 2.43, 95%CI: 1.19-4.96). Obese individuals had a 1.8-fold increased risk of HF-related events (HR: 1.80, 95%CI: 1.11-2.92).



Conclusions: In a cohort of all-comers STEMI patients, BMI was not associated with MACCE. In contrast, obese patients had an increased risk of developing *de novo* HF or worsening of preexistent HF. Our data suggests that obesity has a divergent prognostic significance regarding cardiovascular outcomes.

P 243. CAN IMAGING IMPROVE THE GRACE RISK SCORE ACCURACY?

Diana de Campos[1], Carolina Saleiro[1], Rogério Teixeira[1], João Lopes[2], Joana M. Ribeiro[2], Luís Puga[1], José Pedro Sousa[1], Ana Botelho[2], Carolina Lourenço[1], Lino Gonçalves[3]

[1]Centro Hospitalar e Universitário de Coimbra, EPE / Hospital Geral. [2]Centro Hospitalar e Universitário de Coimbra. [3]Centro Hospitalar e Universitário de Coimbra / Hospitais da Universidade de Coimbra.

Introduction: Both interventricular septum thickness (IST) and Global Registry of Acute Coronary Events (GRACE) score have moderate predictive value for mortality in patients with ST-segment elevation myocardial infarction (STEMI). The prognostic significance of combined GRACE score and IST remains unclear.
Methods: A total of 303 consecutive patients admitted for STEMI in a single center coronary intensive unit with evaluation of both GRACE score and IST were included. Six-month all-cause mortality was analyzed. A univariate analysis was done to identify if both GRACE score and IST were predictors of the endpoint. Then they were entered in a multivariate Cox regression model. Receiver operating characteristic (ROC) analysis was used to determine the ability of the GRACE score and IST to distinguish patients with and without the event. The ROC curve of combined indicator (GRACE score + IST) was acquired through binary logistic regression analysis followed by ROC analysis. The respective areas under the curve (AUCs) and 95% confidence interval (CI) were calculated and differences were tested by the DeLong equality test. The cut-off value of each predictive model was derived from the Youden index.
Results: During the 6-month follow-up, 14 patients (4.6%) met the endpoint. Patients who died until the 6th month had higher GRACE score (179.9 ± 29.5 *versus* 150.7 ± 37.6, p < 0.01) and higher IST (11.9 ± 1.6 *versus* 10.4 ± 2.0,

p < 0.01). Multivariate Cox analysis showed that both IST (HR: 1.317; 95%CI: 1.048-1.654; p = 0.018) and GRACE score (HR: 1.017; 95%CI: 1.004-1.030; p = 0.010) were independently associated with 6-month mortality. GRACE score had an AUC of 0.735 (p < 0.001) and the associated criterion was 149 points. IST had an AUC of 0.742 (p < 0.001) and the associated criterion was 11 mm. Adding IST on top of the GRACE score yielded superior risk predictive capacity, which is shown by improved c-statistic value (0.84, p value for improvement = 0.0298).

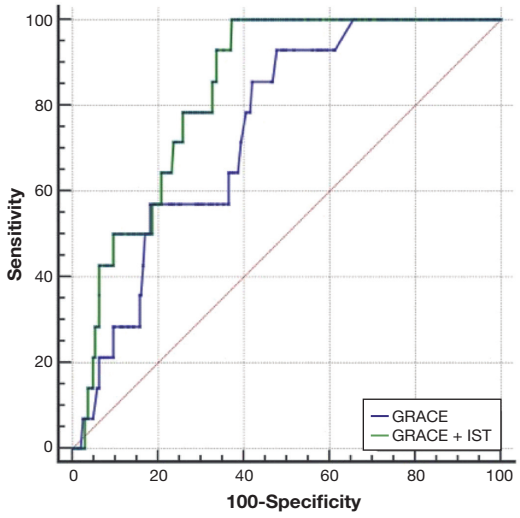


Figure 1. Receiver operating characteristics (ROC) curves analysis for GRACE score alone and combination of GRACE score + IST.

Conclusions: According to our data, in patients with STEMI, a simple imaging variable, septum thickness can increase the accuracy of the classic GRACE risk score.

P 244. NAS2H SCORE - A NOVEL PREDICTIVE SCORE OF 1-YEAR ALL CAUSE MORTALITY IN ACUTE CORONARY SYNDROMES

Teresa Faria Da Mota[1], João Sousa Bispo[2], Pedro Azevedo[1], Raquel Fernandes[1], Daniela Carvalho Silva[1], João Pedro Guedes[1], Dina Bento[2], Walter Santos[2], Nuno Marques[1], Jorge Mimoso[2], Ilídio de Jesus[1]

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Introduction: In patients admitted for Acute Coronary Syndromes (ACS), mortality is influenced by several clinical and therapeutical factors, and management of these patients should be guided by an estimate of individual risk.
Objectives: To develop a simple predictive model of 1-year mortality in patients admitted for ACS.
Methods: The authors present a retrospective, descriptive and correlational study including all patients admitted for Acute Coronary Syndrome (ACS) in a Cardiology department between the 1st of October 2010 and the 1st of October 2017. A 1-year (1y) follow-up was made through registry consultation and phone call by a Cardiologist. Patients with 1y mortality (1yM) events were studied regarding baseline demographic and clinical characteristics, risk factors and hospitalization data, and a correlational analysis with Chi-square test for categorical variables and t-Student test for continuous variables (confidence level of 95%) was performed. Independent predictors of 1yM were identified through binary logistic regression analysis, using a significance level of 0.05. A discriminatory function was applied, and the Wilks lambda test was used to determine the discriminant score for the studied groups. The authors used SPSS 24.0 for statistical analysis.
Results: A total of 3251 patients were included, 826 (25.4%) of which were female, with a mean age of 65,5 ± 13,4 years. In the studied sample, 268 patients (8.2%) died in the year following hospital discharge; this group had a mean age of 65.6 ± 13.2 years, and 80 (29.9%) were female patients. There was a significant association between 1yM and multiple clinical, therapeutical and laboratorial variables, but after multivariate analysis only age greater than 65 years old (yo) (p = 0.001), previous stroke (p = 0.005), haemoglobin (Hb) < 10 mg/dL (p < 0.001), brain natriuretic peptide (BNP) > 100 pg/mL (p = 0.001), and left ventricular ejection fraction (LVEF) < 50% (p < 0.001) proved to be independent predictors of the studied outcome. Using these variables, the authors developed a scoring model to predict 1yM in patients admitted for ACS with the following formula = 0,002 + (0.736 × age > 65yo) + (0.91 × previous stroke) + (2.562 × Hb < 10) + (0,63 × BNP > 100) – (1.207 × FEVE > 50%). In this function, variables should be substituted by 1 or 0, depending on wheter they are present or not. The discrimination cut-off was 0.57, with a 70.6% sensibility and 75.9% specificity, and a discriminant power of 75.4%.
Conclusions: Defining the mortality risk of ACS patients after discharge represents a real challenge and demands a careful evaluation of multiple factors in an attempt to achieve an accurate estimation of risk. The authors developed a predicting model for 1yM in ACS patients, with a good discriminant power, based on simple variables. The present score will require validation in a larger cohort of ACS patients before it can be applied in a clinical context.

P 245. WILL MY PATIENT WITH ACUTE CORONARY SYNDROME DEVELOP HEART FAILURE?

Raquel Menezes Fernandes[1], Teresa Mota[1], João Bispo[1], Pedro Azevedo[1], João Guedes[1], Daniela Carvalho[1], Dina Bento[2], Nuno Marques[1], Walter Santos[2], Jorge Mimoso[2], Ilídio Jesus[1]

[1]Centro Hospitalar e Universitário do Algarve. [2]Centro Hospitalar do Algarve, EPE / Hospital de Faro.

Introduction: Acute coronary syndrome (ACS) is one of the main precipitating factors of heart failure (HF), worsening the patient's prognosis. This study pretends to determine a predictive score of HF in patients with ACS.
Methods: We conducted a retrospective, descriptive and correlational study including patients admitted with ACS in a Cardiology service from 1st October 2010 to 1st October 2018. Demographic factors, risk factors, antecedents and clinical characteristics were analyzed. The correlation between the categorical variables was performed by the Chi-square test, while the t-Student test was applied to the continuous variables, with a significance level of 95%. Independent predictors of HF were identified through a binary logistic regression analysis, considering p = 0.05. A discriminatory function was applied using the Wilks lambda test to determine the discriminant score of the analized groups. SPSS 24.0 was used for statistical analysis.
Results: 4458 patients were admitted with ACS and 522 (11.7%) developed HF. Of these, 70.9% were over 65 years, 65.1% were male and 45.9% had diabetes *mellitus* (DM). In addition, 51.7% had acute myocardial infarction with ST-segment elevation, 31.9% had left ventricular ejection fraction (LVEF) < 50% and 10.5% developed cardiogenic shock. The in-hospital mortality rate was 19.2%. Age > 65 (p = 0.04), DM (p = 0.025), cardiogenic shock (p < 0.001), absence of sinus rhythm at admission (p = 0.029), BNP > 100 pg/ml (p = 0.008), LVEF < 30% (p = 0.003), LVEF < 50% (p < 0.001) and no previous medication with oral antidiabetic agents (OAA) (p = 0.033) were independent predictors of HF development. We determined a predictive score of HF in patients with ACS, using the formula: 0.49 + 0,383 × (age > 65) + 0.577 × (DM) + 3.638 × (cardiogenic shock) – 0.265 × (sinus rhythm at admission) + 0.487 × (BNP > 100) + 1.475 × (LVEF < 30%) – 1.357 × (LVEF > 50%) – 0,310 × (previous medication with OAA). A cut-off of 0.49 was obtained with 68% sensitivity, 78,4% specificity and 77% discriminative power.
Conclusions: HF is a frequent complication of ACS. We produced a predictive score of HF with a good discriminative power, including age over 65 years, DM, history of medication with OAA, rhythm on admission's electrocardiogram, LVEF < 30%/50%, BNP > 100 pg/ml and cardiogenic shock. By considering clinical variables, it can be used at an early stage of the hospitalization, allowing stratification of the risk of developing HF. It still needs validation to be applied in clinical practice.

P 246. LEFT MAIN PERCUTANEOUS CORONARY INTERVENTION WITH SECOND GENERATION DRUG-ELUTING STENTS

Cátia Costa Oliveira, Carlos Galvão Braga, Isabel Campos, Paulo Medeiros, Carla Rodrigues, Rui Flores, João Costa, Jorge Marques

Hospital de Braga.

Introduction: Improved percutaneous coronary intervention (PCI) has reduced its complications in the treatment of left main (LM) coronary disease.
Objectives: To characterize patients and procedures with LM PCI and to evaluate their outcomes.
Methods: Single-center, retrospective study performed from January 2015 to December 2017 in patients with LM PCI with second-generation drug-eluting stents (n = 67).
Results: Patients with LM PCI were mainly male (68.7%) with median age of 70.1 years. 57.1% of patients were diabetic and 52.% had reduced ejection fraction. Previous CABG was presented in 20.9% (only patient had unprotected LM). The SYNTAX score was low (22 or less) in 56.6%, intermediate (22 to 32) in 30.2% and high (33 or higher) in 13.2%. Distal LM bifurcation PCI was performed in 79.1% and 73% of patients had two-vessel or three-vessel disease. 13.2% of patients with distal disease were treated with a two-stent technique (1 with T-stent, 2 with TAP, and 4 with culotte technique), in which proximal optimization technique (POT) and kissing balloon were always performed. When one-stent technique was used in distal LM, POT was performed in 66.0% and kissing balloon in 25%. Pre and post dilatation were performed in 91.0 and 82.1% of all cases, respectively. Indications for PCI were elective PCI for stable angina (n = 18), stabilized NSTEMI (n = 20), NSTEMI with ongoing instability (n = 10), STEMI (n = 16), and non-culprit lesion treatment after primary-PCI for STEMI (n = 3). 22.4% of patients were in cardiogenic shock. After our first LM PCI guided with intracoronary imaging, 38.6% of the procedures were performed with it. 14.6% of patients died during the hospitalization (1 with stent thrombosis; 9 were in cardiogenic shock). All patients had at least 1 year of follow-up. At follow-up, 13.2% of patients died. 85% of deaths were non-cardiovascular; cardiovascular deaths were due to heart failure. Non-fatal myocardial infarction occurred in 7.5% patients with 2 patients undergoing unplanned PCI (one with LM PCI). Target lesion failure occurred in 4 patients (1 had fatal stent thrombosis; 3 had stent restenosis; 2 were send to CABG and 1 was treated with PCI). One patient had a stroke during hospitalization and other during follow-up.
Conclusions: LM PCI can be considered as an alternative revascularization in urgent situations when surgery cannot be considered. Though it can be a high-risk subset, the results in our population are encouraging.

Segunda-feira, 29 Abril de 2019 | 11H00-12H00

JARDIM INVERNO | POSTERS 5 - ÉCRAN 2 - DOENÇA CORONÁRIA

P 247. EVOLUÇÃO DAS ESTRATÉGIAS DE PREVENÇÃO SECUNDÁRIA PÓS SÍNDROMES CORONÁRIAS AGUDAS NOS ÚLTIMOS ANOS EM PORTUGAL - RESULTADOS DE UM ESTUDO MULTICÊNTRICO A SEIS MESES

Pedro Monteiro, investigadores do estudo PSI-ACS

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

Introdução: Em Portugal, ocorrem anualmente cerca de 15 000 episódios de Síndomes Coronárias Agudas (SCA), estando hoje bem estabelecido que uma parte relevante do prognóstico a médio e longo prazo destes doentes depende das estratégias terapêuticas no momento da alta hospitalar e da sua subsequente otimização.
Objetivos: Avaliar a evolução das estratégias de prevenção secundária seis meses pós SCA nos últimos anos em Portugal.
Métodos: Nos centros participantes, foram identificados 1002 indivíduos consecutivos, maiores de 18 anos e até 75 anos, que tiveram alta há um e dois anos com o diagnóstico de SCA. Para cada doente foi feita uma recolha de dados inicial, focada na medicação da alta (fármacos e doses, por forma a avaliar as práticas clínicas atuais), consultas programadas, inclusão ou não em programas de reabilitação cardíaca e/ou de cessação tabágica, exames e intervenções programadas pós-alta, qualidade de vida (através de questionário padronizado), conhecimentos sobre SCA, risco cardiovascular, estilos de vida saudável, objectivos a atingir segundo as recomendações clínicas, entre outros.
Resultados: Foram incluídos 1002 doentes, 584 do sexo masculino e 418 do sexo feminino, com uma idade média de 67.8 ± 4.3 anos. Os doentes foram agrupados em duas coortes, a Coorte 1 (n = 500), que incluiu doentes internados por SCA há 12-24 meses, e a Coorte 2 (n = 502), que incluiu doentes internados por SCA nos últimos 12 meses. Relativamente ao tipo de SCA, 44.3% eram portadores de STEMI e 55.7% de NST-ACS. No quadro em anexo podem-se comparar as principais características das duas coortes no seguimento a seis meses, disponível para 523 doentes.

Características (%)	Coorte 1 (n = 260)	Coorte 2 (n = 263)
Rehabilitação	3	12
Complicações	8	6
AAS	88	91
Inhibidores P2Y12	55	78
iECA/ARA	77	87
BB	72	88
Estatinas	84	89
Todos os fármacos Classe I	38	61

Conclusões: Na população estudada, verifica-se uma melhoria da utilização da reabilitação cardíaca e do cumprimento da terapêutica seis meses após a alta hospitalar, particularmente no que respeita ao uso da dupla antiagregação plaquetar e do conjunto dos fármacos com indicação classe I nestes doentes.

P 248. PREDICTION OF CORONARY ARTERY BYPASS SURGERY INDICATION IN PATIENTS ADMITTED FOR NON-ST ELEVATION MYOCARDIAL INFARCTION - THE CABG-DAPE2S SCORE

Teresa Faria da Mota[1], Pedro Azevedo[1], Raquel Fernandes[1], João Sousa Bispo[2], João Pedro Guedes[1], Daniela Carvalho Silva[1], Dina Bento[2], Nuno Marques[1], Walter Santos[2], Jorge Mimoso[2], Ilídio de Jesus[1]

[1]Centro Hospitalar e Universitário do Algarve. [2]Centro Hospitalar do Algarve, EPE / Hospital de Faro.

Introduction: A significant number of patients admitted for Non-ST Elevation Myocardial Infarction (NSTEMI) have multivessel complex coronary artery disease (CAD) and benefit from Coronary Artery Bypass Graft surgery (CABG). These patients frequently present high-risk surgical profiles, constituting a challenging group when it comes to balancing ischemic and haemorrhagic risk.
Objectives: To develop a simple predictive risk model of referral to CABG in patients admitted for NSTEMI.
Methods: The authors present a retrospective, descriptive and correlational study including all patients admitted for NSTEMI in a Cardiology department between the 1st of October 2010 and the 1st of October 2018. Demographic profile, clinical characteristics, risk factors and hospitalization data of NSTEMI patients referred to CABG were studied, and a correlational analysis was performed with Chi-square test for categorical variables and t-Student test for continuous variables (confidence level of 95%). Independent predictors of CABG in patients with NSTEMI were identified

through Binary logistic regression analysis, using a significance level of 0,05. A discriminatory function was subsequently applied, and the Wilks lambda test was used to determine the discriminant score for the studied groups. The authors used SPSS 24,0 for statistical analysis.
Results: A total of 2476 patients were included, 668 (27%) of which were female, with a mean age of 68.5 ± 13.4 years. In the studied sample, 273 patients (11%) were proposed to CABG. The authors found a significant association between CABG and multiple clinical, laboratorial and therapeutical variables, but after multivariate analysis only male sex, previous diabetes mellitus, previous angina, previous percutaneous coronary intervention, absence of a normal EKG, ST segment depression at admission, sinus rythm and brain natriuretic peptide (BNP) > 100 pg/mL proved to be independent predictors of referral. Using these variables, the authors developed a risk model to predict CABG referral in NSTEMI patients: –0,614 – (0.756 × female sex) + (0.305 × diabetes) + (0.631 × angina) – (1.513 × previous PCI) + (1.216 × sinus rythm) + (0.672 × ST depression) – (0.806 × normal EKG) + (0.562 × BNP > 100). In this function, variables should be substituted by 1 or 0, depending on wheter the condition they specify is present or absent. The optimal discrimination cut-off was 0.23, with a 64% sensibility and 59% specificity, and a discriminant power of 60%.
Conclusions: Being able to predict referral to surgical revascularization in NSTEMI may help physicians to optimize a specific approach in each patient, in particular with regard to anti-thrombotic strategies. The authors developed a risk predicting model for CABG in NSTEMI patients based on simple clinical and laboratory variables, which will require validation in a larger cohort, before it can be applied in a clinical context.

P 249. PREVALENCE, CLINICAL CHARACTERISTICS AND PROGNOSIS OF PATIENTS REFERRED FOR PRIMARY PCI WITHOUT OBSTRUCTIVE CORONARY DISEASE

Rita Santos[1], Luís Raposo[2], Sérgio Madeira[2], João Brito[2], Mariana Gonçalves[2], Catarina Brízido[2], Nélson Vale[2], Sílvio Leal[2], Pedro Sousa[2], Pedro Araújo Gonçalves[2], Henrique Mesquita Gabriel[2], Rui Campante Teles[2], Manuel Almeida[2], Miguel Mendes[2]

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

Introduction: A proportion of patients with suspected STEMI that are referred for emergent coronary angiography and primary PCI (PPCI) suffer from conditions other than acute coronary obstruction. We aimed to characterize such a population and compare its short-term prognosis with that of confirmed STEMI patients.
Methods: Retrospective analysis of 2226 pts with suspected STEMI referred for emergent invasive coronary angiography in a single PPCI reference hospital between January 2012 and November 2018. Patients with cardiorespiratory arrest were excluded. Baseline, procedural and 30-day outcome data was prospectively collected in a local dedicated Cath-lab database for patients admitted to the reference centre, while data regarding diagnosis and outcome of patients without confirmed STEMI finally admitted to referral institutions was captured from the national health system clinical registry. Baseline characteristics and 30-day mortality were compared between those with and without a definitive diagnosis of STEMI.
Results: 72 pts (3.2%) referred for PPCI presented with non-obstructed coronary arteries. These patients were younger (55 IQR 42-66 *versus* 64 IQR 54-73), had a lower prevalence of hypertension (35% *versus* 58%, p < 0.001), diabetes (10% *versus* 23%, p = 0.006), smoking (36% *versus* 49%, p = 0.041) and of clinical background of coronary artery disease (myocardial infarction or coronary revascularization, p < 0.001). The most common EKG finding was ST elevation in inferior leads (31%), while left bundle brunch block was present in 7 patients (10%). Forty-sixt percent of the patients (n = 33) had a cardiac condition, 37% without coronary involvement. The most frequent final discharge diagnosis were miopericarditis (n = 14; 19%), Takotsubo syndrome (n = 8; 11%), musculoskeletal diseases (n = 6; 8%), myocardial infarction assumed to be due to coronary artery spasm or with spontaneous revascularization (n = 6; 8%), acute heart failure with new onset LBBB (n = 5; 7%), gastro-intestinal diseases (n = 4; 6%) and drug abuse (n = 3; 4%). At 30 days, none of the patients that presented with suspected STEMI died; conversely, patients with confirmed STEMI had an overall 30-day mortality rate of 3.5% (n = 76).
Conclusions: In a contemporary PPCI population, the prevalence of «normal» coronaries (without severe stenosis or complete obstruction) is trivial. A significant proportion of patients (46%) had a cardiac condition mimicking STEMI. The short-term prognosis is good.

P 250. HYPERURICEMIA IN ADDITION TO GRACE SCORE IMPROVES RISK STRATIFICATION IN ACUTE CORONARY SYNDROMES

Inês Pires[1], Luísa Gonçalves[2], Hugo Antunes[2], João Miguel Santos[2], Júlio Gil Pereira[2], José Costa Cabral[2], Inês Almeida[2]

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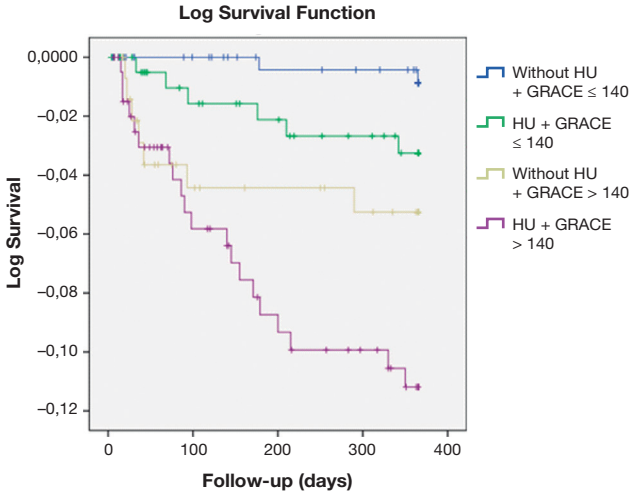
Introduction: Uric acid (UA) is a risk factor for coronary artery disease, and it might be a predictor of outcomes in patients (P) with acute coronary syndromes (ACS). Global Registry of Acute Coronary Events (GRACE) score is an extensively validated tool for risk stratification in these P. The aim of this study is to evaluate the impact of hyperuricemia (HU) in the prognosis of ACS and compare it with the GRACE score.
Methods: This study included all P admitted for ACS between 2007 and 2015 in a Cardiology Department. HU was defined as admission UA levels > 6 mg/dL. In-hospital mortality and all-cause mortality at 12 months after discharge were assessed. Chi-square and Mann-Whitney U tests were used for group comparisons; survival analysis used Kaplan-Meier curves and log-rank tests; and subgroup analysis was performed with an unadjusted Cox model.
Results: 959 P were included (mean age 67.7 ± 12.8y, 71.1% male). HU occurred in 498 P (51.9%). Its presence was associated with older age (p < 0.001); male sex (p = 0.034); arterial hypertension (p < 0.001); obesity (p = 0.006) and chronic kidney disease (p = 0.025). At admission, P with HU had higher heart rate (p = 0.003); higher Killip-Kimball class (p = 0.001); higher plasma concentrations of creatinine (p < 0.001), C-reactive protein (p = 0.003), blood natriuretic peptide (p = 0.010) and triglycerides (p < 0.001); and lower high-density lipoprotein cholesterol levels (p < 0.001). HU was also associated with conservative treatment of ACS (p = 0.005), left main disease (p = 0.037) and longer length of hospital stay (p = 0.009). Univariate logistic regression analysis showed that HU was a predictor of in-hospital mortality (OR: 2.048; 95%CI: 1.048-4.005; p = 0.036). During the follow-up, P with HU had a significantly decreased survival than P with normal UA levels (Kaplan-Meier χ^2: 8.25; p = 0.004). In subgroup analysis, the effect of HU in survival was consistent among P stratified based on gender, age and comorbidities. When P were classified according to serum UA levels and GRACE score, a progressive decline in survival was found in P without HU and GRACE score ≤ 140, P with HU and GRACE score ≤ 140, P without HU and GRACE score > 140, and P with HU and GRACE score > 140 (Kaplan-Meier χ^2: 24.17; p < 0.001) —Fig.



Conclusions: In this study, HU was associated with in-hospital and 12-month follow-up mortality. Its use may allow a better risk stratification in P with ACS, particularly when combined with the most widely used tool, the GRACE score.

P 251. CARDIOGENIC SHOCK IN INTENSIVE MEDICINE CARE: ARE THE «OLD SCORES» STILL USEFUL?

Hugo Miranda[1], Igor Milet[2], Nélson Barros[2], Hélder Leite[2], Isabel Militão[2], Francisco Esteves[2]

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Introduction: Cardiogenic shock (CS) is a state of critical end-organ hypoperfusion due to primary cardiac dysfunction. Several clinical and biological factors have been used for prognosis assessment. Those factors have been recently regrouped into scores combining independent parameters-the Sleeper, CardShock and IABP-SHOCK II score, which aren't used daily in general ICU.
Objectives: Evaluate usefulness of SOFA, APACHE II and SAPS II scores in predicting the outcome in CS patients (P) and identify the most useful one, if applicable.
Methods: Retrospective analysis of P admitted in our general Intensive Care Unit (ICU), with confirmed diagnosis of CS, within a period of 5 years. We analyzed common epidemiological variables, evolution during ICU stay, established therapeutics and outcome. We estimated SOFA, APACHE II and SAPS II score at admission and discharge, when applicable.
Results: 90 P were included. Mean age of 69.59 ± 12.23 years, with a predominance of males (56.7%). Admission SOFA of 10.39 ± 3.19. The main cause of CS was non-ischemic, with only 33.3% caused by acute coronary syndromes. 68.9% needed mechanical invasive ventilation in the first 24h, maximum PEEP used of 8.22 ± 2.76. VCPVG was the most used ventilatory mode, with median weaning time of 3 days. PaO_2/FiO_2 ratio and lactactes at admission of 178.5 and 2.85, respectively. All the P needed aminergic support. Renal replacement therapy was used in 34.4% P. Step-up and step-down in ICU unit in 6.7 and 26.7% of the cases, respectively. Infectious intercurrence (nosocomial infection) in 35.51% cases. Limitation of the therapeutic effort in 42.22% P. At discharge, P presented median ICU stay of 5 days (hospital stay of 10.5 days) with SOFA, APACHE II and SAPS II of 7.6 ± 5.06, 24.5 and 56.61 ± 19.71, respectively. Hospital mortality of 45.6%. We found a statistically significant association between outcome and: 1) admission SOFA (p = 0,006), 2) APACHE II (p < 0,001), 3) SAPS II (p < 0,001). We also point out that after applying a logistic regression only APACHE II (OR: 1,13; IC95%: 1,028-1,253) had relevant prediction power.
Conclusions: In our study, we found that APACHE II was the only score capable of predicting the outcome of our P. It provides an estimate of ICU mortality based on a number of laboratory values and patient signs taking both acute and chronic disease into account.

P 252. NON-CARDIAC COMPLICATIONS IN PATIENTS WITH ACUTE CORONARY SYNDROME IN A HEART INTENSIVE CARE UNIT: EPIDEMIOLOGY, PROGNOSIS AND PREDICTORS

Bruno Cordeiro Piçarra[1], João Pais[1], Ana Rita Santos[1], Mafalda Carrington[2], Diana Coutinho[1], Ana Bernardo[1], Diogo Brás[1], José Aguiar[1]

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Introduction: The presence of non-cardiac complications in patients hospitalized with acute coronary syndrome (ACS) can be an important challenge in the treatment and prognosis of these patients. Currently, information is lacking on its prevalence and prognostic impact in these patients.
Objectives: To determine the prevalence of non-cardiac complications, their impact on prognosis and to identify possible predictors in patients hospitalized with ACS in a Intensive Cardiac Care Unit (ICCU).
Methods: Prospective study, which included all patients consecutively admitted in an ICCU in a 3 years period. We considered 2 groups: Group 1 - patients who developed non-cardiac complications and Group 2 - patients who did not develop non-cardiac complications. The non-cardiac complications evaluated were: infectious (urinary, respiratory or sepsis), hemorrhagic (not related with invasive procedures), renal (acute kidney injury) and neurological disorders (transient ischemic attacks or stroke). We collected demographic data, patient provenience (emergency department (ED), cardiology or medicine ward, general intensive care units (ICU), outpatient clinic or other hospitals), duration of hospitalization and destination of the patient (ambulatory, cardiology ward or death).
Results: Of a total of 851 patients admitted to the ICCU with a diagnosis of ACS, 122 patients (14.3%) developed non-cardiac complications during hospitalization. Their prevalence was: infectious complications, 69.7%; renal, 22.1%; hemorrhagic, 17.2%; and neurological, 8.1%. These patients were older (73.4 ± 11.0 *versus* 66.7 ± 13.5 years, p = 0.001) and more females (38.6% *versus* 28.4%, p = 0.031). In both groups, the majority of patients were admitted to the ED (Group 1: 69.7% *versus* 62.6%, p = ns), with no significant differences in patient provenience. Group 1 patients had a higher prevalence of undetermined acute myocardial infarction (8.3% *versus* 3.1%, p = 0.012), lower unstable angina (2.5% *versus* 10.2%; p = 0.01) with no differences regarding AMI with and without ST elevation. Patients with non-cardiac complications had longer hospitalizations (5.4 ± 3.7 *versus* 2.9 ± 1.6 days), higher mortality (6.5% *versus* 2.6%, p = 0.04) and more transfers to a general intensive care unit (2.4% *versus* 0.0%, p = 0.001).
Conclusions: In patients with ACS, non-cardiac complications are frequent and presented in 14.3% of patients, with infectious complications being the one of the most prevalent. Its incidence appears to be higher in older patients, female and undetermined acute myocardial infarction. The presence of non-cardiac complications is associated with an increase in days of ICCU stay and mortality.

Segunda-feira, 29 Abril de 2019 | 11H00-12H00

JARDIM INVERNO | POSTERS 5 - ÉCRAN 3 - ARRITMOLOGIA

P 253. DO DDD PACEMAKERS INCREASE THE INCIDENCE OF ATRIAL FIBRILLATION?

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Introduction: The development of atrial fibrillation (AF) after pacemaker (PM) implantation has been often observed. Therefore, it is reasonable to question if the presence of a lead in the right atrial appendage would increase the risk or protect against this arrhythmia.
Objectives: Compare patients with DDD and VDD PMs regarding the incidence of AF
Methods: Between January and April of 2018 we observed 543 patients in our pacemaker clinic. We selected 223 consecutive patients with dual chamber PM for atrioventricular block. We excluded those with sick sinus syndrome, prior AF episodes, atrial pacing (AP) ≥ 40% and left ventricular dysfunction. Univariable and multivariable logistic regression models were used to examine the strength of association between risk factors and AF. Cox proportional hazard regression analyses were used to estimate hazard ratios (HR) and 95% confidence intervals (CIs).

Results: We studied 102 patients with VDD and 121 with DDD PMs, median follow-up of 5.7 (3.1-9.7) years *versus* 3.7 (1.6-7.1) years, respectively. Patients with VDD were older (82 [72-86] years *versus* 78 [73-84] years, p = 0.002) and more frequently female (52.0% *versus* 37.7%, p = 0.031). There were no statistically significant differences between groups for other baseline characteristics (hypertension, diabetes, body mass index, stroke, coronary heart disease, CHA_2DS_2-VASC score, P wave duration, atrial volume, percentage of ventricular pacing, resting heart rate). The incidence of AF was higher in DDD group (23.1% *versus* 11.8%, p = 0.008). DDD PM increased the risk of atrial fibrillation (HR: 2.27, 95%CI: 1.08-4.78, p = 0.031) after adjustment for age, gender, hypertension, diabetes, and AP.
Conclusions: In this population of patients, DDD PM was associated with higher incidence of AF, as compared with VDD PM. DDD PM was an independent predictor for occurence of AF episodes, during follow-up.

P 254. TREATING OBSTRUTIVE SLEEP APNEA WITH CONTINUOUS POSITIVE AIRWAY PRESSURE MAY REDUCE THE RISK OF LATE RECURRENCE AFTER AF ABLATION

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

Introduction: Obstrutive Sleep Apnea (OSA) has been strongly associated with the onset and recurrence of atrial fibrillation (AF). Although many OSA patients (pts) are treated with Continuous Positive Airway Pressure (CPAP), its impact on the efficacy of AF catheter-based therapy remains unclear. The aim of the present study is to characterize short and long-term efficacy of AF ablation in pts with OSA who received CPAP.
Methods: Retrospective analysis of pts who underwent polysomnography before pulmonary veins isolation in AF ablation. CPAP treatment was recommended to all pts with moderate/severe OSA. Demographic, clinical, ECG and echocardiographic data were collected from electronic medical files. An external loop recorder (ELR) was employed during the blanking period in all pts. Primary outcome was atrial arrhythmia (AT/AF) and AF recurrence in pts with (group A) and without (group B) OSA, at 3 months (blanking period) and one year after catheter-ablation. Secondary outcomes: duration and burden of AT/AF detected via the ELR.
Results: 167pts were included (55.7% males, mean age 55.9 years, with a follow-up > 1 year after ablation). Mean duration of clinical history of AF (paroxysmal AF: 57.5%) was 56 months, with 22% showing structural heart disease. Ablation was performed with cryoballoon in 34.7% and with radiofrequency in 65.3% of the cases. Group A (21 pts, 12.6%), had higher body mass index (HR: 4.150, 95%CI: 2.131-6.168, p < 0.0001) and higher left atrial volume (HR: 1.878, 95%CI: 1.432-9.451, p = 0.01). ELR data (blanking period) showed a slightly longer duration of AT/AF in OSA pts (mean 15.65 h *versus* 5.99 h, p = 0,19), and a statistically significant higher burden of AT/AF (mean percentage of time with AT/AF: 28.19% *versus* 5.29%, HR: 9.091, 95%CI: 4.578-41.208, p = 0.015). The rate of AT/AF recurrence was similar for both groups during the blanking period (57.1% *versus* 51.4%; p = 0.65). At one year after ablation, AF recurrence and any AT/AF recurrence were not statistically different between groups (19.1% *versus* 28.8%, p = 0.43 and 42.9% *versus* 24.9%, p = 0.56, respectively).
Conclusions: In this cohort, OSA pts treated with CPAP showed short and long-term recurrence of atrial tachyarrhythmias similar to those without OSA. However, when recurrence was observed, OSA pts had a higher arrhythmia burden.

P 255. ATRIAL FIBRILLATION ABLATION WITH REMOTE MAGNETIC NAVIGATION. THE NEW INDICATOR OF CATHETER TIP TO TISSUE CONTACT: A TOOL OR A TOY?

Leonor Parreira[1], Pedro Carmo[2], Diogo Cavaco[3], Joana Pinho[3], Rafael Jerónimo[3], João Carmo[2], Francisco Costa[4], Ana Sofia Soares[3], Salomé Carvalho[3], Katya Reis-Santos[3], Pedro Adragão[2]

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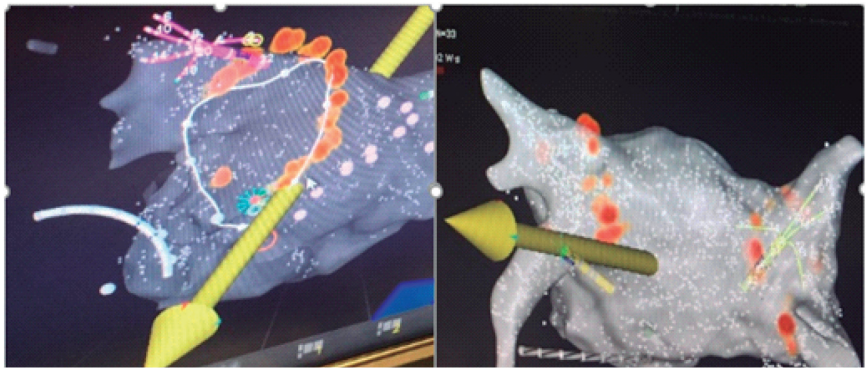
Introduction: Until recently, contact assessment technology was not available for remote magnetic navigation system (MNS) Stereotaxis™. Since May 2017 the e-Contact™ module is available, and it permits a semi-quantitative assessment of the catheter tip-to-tissue contact.

	e-Contact Group (n = 117)	Control Group (n = 129)	P value
Age in years, median (IQR)	48 (40-60)	55 (46-64)	0.853
Female gender, n (%)	39 (33)	43 (33)	> 0.9999
Paroxysmal AF, n (%)	95 (81)	104 (81)	> 0.9999
CHADVASC Score ≥ 2	53 (45%)	67 (51)	0.310
LA volume in ml, median (IQR)	101 (90-120)	111 (94-135)	0.345
Procedure time in min, median (IQR)	146 (127-174)	195 (164-230)	< 0.0001
Radiation dose in mGy, median (IQR)	253 (185-347)	211 (159-315)	0.297
RF duration in sec, median (IQR)	3453 (3320-5316)	3557 (3145-5550)	< 0.0001
Additional lines between PV, n (%)	49 (42)	90 (70)	< 0.0001



P 255 Figure

Objectives: Evaluate the impact of this new contact tool in atrial fibrillation (AF) ablation.
Methods: Since January 2018 we studied all consecutive patients subjected to a first AF ablation using the MNS with the e-Contact module. We excluded redo procedures. A control group of consecutive patients who underwent a first AF ablation between January and December 2016 were included. The level of contact is displayed in a semi-quantitative mode by a starburst with more or less spikes (no contact, medium and optimal), see Figure. In the e-Contact group the RF application was interrupted whenever the contact indicator showed poor contact. The methodology used in AF ablation was ipsilateral pulmonary vein isolation (PVI). We evaluated the CHADSVASC score, left atrium volume and type of AF, total duration of the procedure, RF application time and radiation dose and the need for additional lines between ipsilateral pulmonary veins.
Results: We performed PVI with the e-Contact technology in 117 patients and without e-Contact in 129 patients. The two groups did not differ in age, gender, type of AF AF, CHADSVASC score and LA volume. The success rate for all 4 PVI was 100% in both groups and there were no major complications. In the group with e-Contact additional lines between ipsilateral veins were less frequently needed (42% *versus* 70%, p < 0.0001). There was a significant reduction in the duration of the RF application needed to achieve PVI (3453 [3320-5316] s *versus* 3557 [3145-5550] s, p < 0.0001), that resulted in a shorter duration of the procedure in the e-Contact group (146 [127-174] min *versus* 195 [164-230] min, p < 0.0001). The radiation dose was not significantly different.
Conclusions: In this group of patients the new contact technology proved to be an innovative tool, aiding in the achievement of success, with less RF duration and leading to a shorter duration of the procedure.

P 256. SURGICAL TREATMENT OF ATRIAL FIBRILLATION

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Introduction: AF is the most common cardiac arrhythmia, and its prevalence is increasing at an alarming rate worldwide. It remains one of the major causes of stroke, heart failure, sudden death, and cardiovascular morbidity. Surgical ablation is currently considered an effective treatment for patients with AF, with recent international guidelines advocating it for patients with symptomatic AF be as stand-alone or concomitant surgery. Despite this, it is still underperformed in most centers.
Objectives: To evaluate the early results of an Atrial Fibrillation (AF) ablation surgery program.
Methods: All patients submitted to some form of surgical AF ablation (concomitant or stand-alone) from March 2016 till October 2018 were included in this unicentric retrospective study. The indication for stand-alone surgery was symptomatic AF relapse after catheter ablation, and for concomitant surgery, symptomatic AF associated with structural heart disease. Cryoablation was used in open-right or left atrium surgery and radiofrequency in the other cases. The main primary outcome was establishment and duration of sinus rhythm in the course of follow-up. Mortality and morbidity (stroke, pace-maker implantation) were assessed.
Results: Thirty patients with mean age of 60.7 years (36-75 years) were submitted to surgical AF ablation. AF type was paroxysmal in 12 (40.0%), persistent in 4 (13.3%) and long-standing persistent in 14 (46.7%). Stand-alone AF ablation surgery was performed in 11 patients (36.7%) and in 19 patients (63.3%) was associated with concomitant procedures: mitral surgery (n = 8), tricuspid surgery (n = 3), aortic valve surgery (n = 3), CABG (n = 2) and double valve surgery (n = 3). Regarding complications: two (6.7%) definitive pacemaker implantations were needed and one (3.3%) early death was observed. There were no strokes or late mortality. Sinus rhythm at hospital discharge was present in 25 patients (86.2%). After 6 months 81.0% were in sinus rhythm. Mean follow-up time was 10 months and i the last evaluation 23 patients (76.7%) had no evidence of AF.
Conclusions: Surgical AF ablation is a safe procedure with better results compared with those reported for catheter ablation. We demonstrate that even in an initial phase of a surgical program, results are satisfactory and encouraging. Finally, surgical AF ablation is still an underused procedure which has to grow to keep up with demand of AF treatment.

P 257. MEDICATION ADHERENCE TO DIRECT ANTICOAGULANTS IN PATIENTS WITH NON-VALVULAR AF - A REAL WORLD ANALYSIS

Catarina Brízido, António Miguel Ferreira, Pedro Lopes, Christopher Strong, Gustavo da Rocha Rodrigues, Anaí Durazzo, Daniel Matos, Gustavo Mendes, Francisco Gama, Sara Guerreiro, Sérgio Madeira, Pedro Adragão, Miguel Mendes

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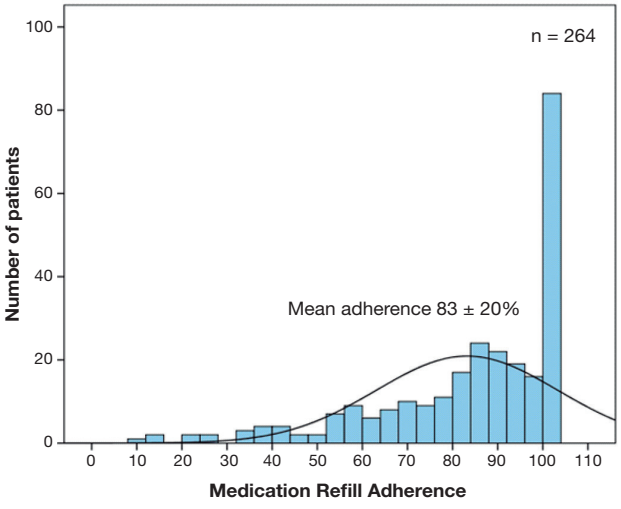
Introduction: Direct oral anticoagulants (DOACs) changed the landscape of atrial fibrillation (AF) treatment, but also brought new challenges in terms of accessibility and compliance. The purpose of this study was to assess medication adherence to DOACs, and its determinants in a population of AF patients.
Methods: In this single-center retrospective study, all the patients with non-valvular AF treated with a DOAC were identified from the outpatient lists of 15 different cardiologists in a tertiary center. Patients were included if a DOAC was first prescribed from April 1st 2016 (onset of mandatory electronic prescription) to August 2018. Electronic prescription platform was used to count the number of pharmacy refills from the day of first prescription to August 31st 2018. Medication refill adherence (MRA) was calculated by dividing the number of pharmacy refills by the number of days under therapy (accounting for drug-specific posology and the number of pills per package). Non-compliance was defined as MRA < 90%.
Results: A total of 264 patients (120 men, mean age 74 ± 12 years) met the inclusion criteria. The median $CHA_2DS_2VAS_C$ score was 3 (IQR: 2-5), while the median HAS-BLED was 1 (IQR: 1-2). Rivaroxaban, apixaban, dabigatran and edoxaban were prescribed in 45%, 41%, 24% and 13% of patients, respectively. Throughout the study period 51 patients (19%) used more than one DOAC. Patients were under DOAC therapy for a median period of 439 days (IQR: 269-638), during which the mean MRA was 83 ± 20% (median MRA: 90%, IQR: 75-100%). Only 84 patients (32%) were fully adherent (Fig.). Overall, 134 of the patients (51%) were classified as non-compliant. In univariate and multivariate analyses, therapy duration (adjusted OR: 1.06 per month, 95%CI: 1.03-1.08, p < 0.001), *bid* posology (adjusted OR: 1.73, 95%CI: 1.08-2.75, p = 0.022), and higher patient copayments (adjusted OR: 2.13, 95%CI: 1.28-3.45, p = 0.003) were independent predictors of non-compliance.



Conclusions: In our population of patients with non-valvular AF treated with DOACs, the mean medication refill adherence was 83%, suggesting that patients may be unprotected or underprotected almost 20% of the time. Therapy duration, *bid* posology and higher patient copayments were independent predictors of non-compliance. Greater efforts should be taken to improve patient accessibility and adherence to DOAC therapy.

P 258. ACUTE AND LONG-TERM SUCCESS OF CATHETER ABLATION OF ATYPICAL ATRIAL FLUTTER IN PATIENTS WITH PREVIOUS PULMONARY VEIN ISOLATION

Pedro Oliveira de Azevedo[1], António Fontes[2], Gustavo Rodrigues[3], Elisabete Vaz[3], Rita Canuto[3], Francisco Costa[3], Pedro Carmo[3], Diogo Cavaco[3], Francisco Morgado[3], Pedro Adragão[3]

[1]Centro Hospitalar e Universitário do Algarve. [2]Hospital do Divino Espírito Santo, Ponta Delgada. [3]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de Santa Cruz.

Introduction: Atypical atrial flutter frequently occurs in patients who have undergone previous medical procedures, such as cardiac surgery or pulmonary vein isolation (PVI) for the treatment of atrial fibrillation. Mapping and ablation of these complex arrhythmias continue to be a challenge and there are few studies addressing this issue.
Objectives: Characterize and evaluate the acute and long-term success of catheter ablation of atypical atrial flutter in patients with previous PVI.
Methods: Retrospective single center analysis of consecutive patients with previous pulmonary vein isolation undergoing catheter ablation of atypical atrial flutter from October 2007 to July 2018. Clinical profiles and procedural details were determined. We evaluated the acute success rate and long-term recurrence of AAF alone or a combination of AAF, atrial flutter or atrial fibrillation.
Results: A total of 59 patients (61% men with mean age 61.9 ± 10.3 years) were included. 54 (91.5%) had previously underwent catheter PVI, 5 (8.5%) had previous surgical radiofrequency PVI and 21 (35.6%) patients had a second catheter PVI procedure. A total of 52 (88.1%) AAF were mappable and distributed as follows: peri-mitral flutter (19, 32.2%), focal reentry through gaps in the prior PVI line (PVI-AAF) (19, 32.2%), LA-roof dependent flutter (11, 18.6%) and right atrium non-CTI flutter (3, 5.1%). High-density activation-sequence mapping was used in 22 (37.3%) of cases. A different AAF circuit after the first set of radiofrequency applications was seen in 13 (22%) patients. Acute success rate was achieved in 38 (64.4%) patients and was more likely to occur in patients with PVI-AAF (84.2% *versus* 15.8%, p = 0.029) and less likely in patients with more than one AAF circuit (25.9% *versus* 75.1%, p < 0,001). Over a mean follow-up of 46.1 ± 35 months, AAF recurred in 15 (25.4%) after a mean of 21.8 months (IQR: 4-35) and 31 (52.5%) had recurrent atrial tachyarrhythmias (atrial fibrillation, AF or AAF). Although not statistically significant, there was a tendency for lower recurrence rate of AAF in patients who achieved sinus rhythm during ablation of the first mapped AAF (18.9% *versus* 38.1%, p = 0,09) or those who had left PV-dependent flutter (12.5% *versus* 28%, p = 0.3).
Conclusions: Catheter ablation of AAF is a complex procedure, with acute success observed in approximately 2 out of 3 patients. AAF involving gaps in prior PVI lines are more likely to be successfully ablated. During follow-up, approximately 25% and 50% had recurrent AAF or atrial tachyarrhythmias (AAF, atrial flutter or atrial fibrillation), respectively. There was a tendency for lower recurrence of AAF in patients who had left PV-dependent flutter or achieved sinus rhythm during ablation of the first mapped AAF.

Segunda-feira, 29 Abril de 2019 | 11H00-12H00

JARDIM INVERNO | POSTERS 5 - ÉCRAN 4 - ARRITMOLOGIA

P 259. INITIAL EXPERIENCE WITH A HIGH-DENSITY GRID-STYLE CATHETER FOR THE MAPPING OF COMPLEX ARRHYTHMOGENIC SUBSTRATES

Mário Martins Oliveira[1], Pedro Silva Cunha[1], Bruno Valente[1], Guilherme Portugal[1], Ana Lousinha[1], Ana Sofia Delgado[1], Margarida Paulo[1], Ana Almeida[2], Nuno Monteiro[1], Rui Cruz Ferreira[1]

[1]Centro Hospitalar de Lisboa Central, EPE / Hospital de Santa Marta. [2]Abbott Portugal.

Introduction: High-resolution 3D mapping has emerged as a strategy to to improve comprehension and treatment of complex cardiac arrhythmias (CCA). A high-density grid-style mapping catheter, with equidistant electrode spacing enabling a number of bipole configurations along and across the splines, was recently introduced to improve substrate mapping and directionality.
Objectives: to analyze procedural data and acute success rates in CCA using a high-density, grid-style catheter.
Methods: Procedure data collected over an initial period of 4 months, in a single center, using a high-density, grid-style mapping cateter (*Advisor HD Grid*) in patients (P) with CCA. Point collection, mapping/procedure time, radiofrequency (RF) time, fluoroscopy time, complications, and acute outcomes were recorded.
Results: We studied 12 cases with the following CCA: ventricular tachycardia (VT) in adults with repaired Tetralogy of Fallot (n = 4), ischemic VT (n = 2), atrial fibrillation (AF, redo and structural heart disease – n = 3); atypical atrial flutter (structural heart disease - n = 3). The HD Wave configuration was utilized in all cases, collecting an average of 23,372 points (atrial arrhythmias - 21,849, ventricular arrhythmias - 23,976; p = ns). Overall mapping and procedure times were 60 ± 44 and 192 ± 59 minutes (min), respectively. VT ablation was performed endocardial in the right ventricle (3 cases) and left ventricle (2 cases). In VT P the ablation consisted in modification of the arrhythmogenic substrate, targeting scar dechanneling, areas of slow conduction, late potentials, regions of pace-match, mid-diastolic potentials, and early activation. At the end of the procedure, P had no inducibility of the clinical VT. In atrial flutter P, voltage and activation maps were obtained, the arrhythmia was interrupted during ablation, and not inducible. In AF P, all pulmonary veins were successfully isolated (in one redo case, reconduction gaps were identified and eliminated). There were no procedure complications. RF and fluoroscopy times were 24 ± 10 min and 12 ± 9 min, respectively.
Conclusions: Initial experience with this innovative high-density mapping catheter resulted in a very large number of points collection, both in the atria and ventricles, that resulted in a high rate of acute success, with acceptable mapping and procedure duration, and no complications.

P 260. IS THERE A ROLE FOR IMPLANTABLE LOOP RECORDERS IN RISK STRATIFICATION OF PERCEIVED LOW RISK BRUGADA SYNDROME PATIENTS?

Dinis Mesquita[1], Lenor Parreira[1], Rita Marinheiro[1], Pedro Carmo[2], Pedro Amador[1], Diogo Cavaco[2], Elisabete Vaz[2], José Farinha[1], Francisco Morgado[2], Francisco Costa[2], Pedro Adragão[2]

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Introduction: Brugada Syndrome (BS) is a heterogeneous channelopathy which predisposes patients to arrhythmic sudden death. Risk stratification of asymptomatic patients has changed over the years and current strategies are far from perfect, as numerous patients receiving ICDs never have ventricular arrhythmias and some aborted sudden death patients didn't have criteria for ICD implant.
Objectives: We aim to understand the usefulness of implantable loop recorders (ILR) in BS patients perceived to be at low risk, in the refinement of risk stratification for sudden death.
Methods: ILR was implanted in low risk BS patients: asymptomatic with spontaneous type 1 ECG pattern and a negative electrophysiologic study (EPS) and asymptomatic with drug induced type 1 ECG pattern and a negative EPS. These were compared to a group of patients that had ICD implant according to IIb indication as stated in the current ventricular arrhythmias ESC guidelines of 2015. All patients had regular follow up with device interrogation for the identification of sustained and non-sustained ventricular arrhythmias (VA).
Results: A cohort of 16 patients had an ILR and 13 patients were implanted with an ICD (patients characteristics are displayed in Table). In the ILR group, during mean follow up time of 12.8 (IQR: 8.5-49.1) months, no patients had VA arrhythmias documented. In the ICD group, during follow up of 42.6 (IQR: 8.6-65.3) months, 4 patients had non sustained VA (p = 0.03 between groups) with 3 patients having appropriate ICD therapy for sustained VA (p = 0.0140

between groups). The mean follow up time was significantly shorter in the ILR than in the ICD group (p = 0.0011).

	ILR (n = 16)	ICD (n = 13)	p
Age	35,8 (22.8-41.8)	50,8 (47-55)	0,0004
Male gender, years (mean age; IQR)	14 (87,5%)	12 (92,3%)	0,99
Follow up, months (mean; IQR)	12,8 (7.3-13.7)	42,6 (8.6-65.3)	0,0011
Type 1 ECG	6 (37,5%)	12 (92,3%)	0,005
Type 2 ECG	10 (62,5%)	1 (7,7%)	
Non sustained VA	0	4 (30,8%)	0,03
Sustained VA	0	3 (23,1%)	0,03

Conclusions: During follow up, patients with VA had a mean time to first appropriate ICD therapy of 49.8 months. Patients with sustained VA had previously non-sustained VA, thus continuous monitoring of patients with BS is useful for risk stratification.

P 261. CATHETER ABLATION FOR PATIENTS WITH ATRIAL FIBRILLATION AND TACHYCARDIA INDUCED CARDIOMYOPATHY

Joana M. Ribeiro[1], Pedro Sousa[2], Rogério Teixeira[1], Luís Puga[1], Alexandrina Siserman[1], José Pedro Sousa[1], Carolina Saleiro[1], Diana Campos[1], Luís Elvas[2], Lino Gonçalves[1]

[1]Centro Hospitalar e Universitário de Coimbra, EPE / Hospital Geral. [2]Centro Hospitalar e Universitário de Coimbra / Hospitais da Universidade de Coimbra.

Introduction and objectives: Catheter ablation (CA) for atrial fibrillation (AF) has been shown to improve outcomes in patients with heart failure (HF) with reduced ejection fraction. We aimed to assess the impact of CA for AF in the subset of patients with tachycardia induced cardiomyopathy (TIC).
Methods: Cohort analysis of all patients subjected to CA for AF due to TIC. We included in the study patients with a left ventricle ejection fraction (LVEF) < 50[J1]%, while in AF, with no other apparent cause for systolic dysfunction. The primary endpoint was improvement in LVEF and the secondary endpoint was need for antiarrhythmic drugs after CA.
Results: Our population consisted of 19 patients, mostly male (78%) with a median age of 60 years (interquartile range (IQR) 52-68). Median follow-up time was 9 months (IQR: 4.2-11.8). Median LVEF while in AF was 40% (IQR: 35-40) and median New York Heart Association at baseline was 2 (IQR: 2-2.25). Thirty-two per cent of the patients presented with paroxysmal AF, while the remaining 68% had persistent AF. Mean time from AF diagnosis to CA was 4 years (IQR: 2.5-7.5) and 79% of the patients had been subjected to at least one electrical cardioversion. Before CA 79% of patients were medicated with antiarrhythmic drugs, while the remaining had a formal contraindication to all antiarrhythmic drugs or did not tolerate such therapy. At the beginning of the procedure, 53% of the patients were in sinus rhythm. Pulmonary vein isolation was performed in all patients, and additional ablation points were necessary in 32%. Whenever AF persisted or was induced at the end of the procedure, electrical cardioversion was performed (53%). One procedure-related complication (post-procedural pericarditis, without the need for hospital admission) occurred in one patient. Overall AF recurrence during follow-up was 32%, while AF recurrence after the first 3 months was 29%. AF was recurrent only in patients initially presenting with persistent AF. At last follow-up 56% of the patients were free of antiarrhythmic drugs. Median LVEF improved from 40% (IQR: 35-30) to 57% (IQR: 55-61[C2], p < 0.01) and 94% reported improvement of symptoms.
Conclusions: Our results showed that catheter ablation for atrial fibrillation in patients with tachycardia induced cardiomyopathy improves left ventricle ejection fraction, while reducing the need for antiarrhythmic medication. However, our cohort is very small, and this data requires further validation.

P 262. DOES 3-D MAPPING SYSTEM REDUCE RADIATION EXPOSURE COMPARATIVE TO CONVENTIONAL APPROACH IN CAVOTRICUSPID ISTHMUS ABLATION PROCEDURE?

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Introduction: Cavotricuspid isthmus ablation in patients (pts) with atrial flutter is a common therapy. The conventional cavotricuspid isthmus ablation approach using fluoroscopy for catheter visualization and navigation is associated with radiation exposure to both patients and healthcare personnel. Nowadays, using a 3D-mapping system has been associated with a reduction in fluoroscopy time and radiation exposure at similar rates of acute procedural success, however, makes the procedure more expensive.
Objectives: To compare conventional 2D fluoroscopy and 3D-mapping system approaches during cavotricuspid isthmus ablation in pts with atrial flutter regarding fluoroscopy and procedure times as well as success, recurrence and complications rates.
Methods: A single-centre retrospective study was performed, including all cavotricuspid isthmus ablation procedures performed during 2007-2009/2018 period. Were excluded 8 pts with non-cavotricuspid isthmus-dependent atrial flutter and 8 pts that were submitted to ablation of the pulmonary veins in addition to cavotricuspid isthmus ablation in the same procedure.
Results: Were included 134 procedures, performed in 120 pts (97 males, mean age 64 ± 11 years, mean ChadsVasc 2 ± 1.4). The procedure was performed mainly due to heart failure symptoms (49%; 66 cases). At the beginning of the procedure, 58 pts were in spontaneous atrial flutter rhythm. In 65 cases (48.5%), the ablation procedure was performed using a conventional 2D fluoroscopy and the remain procedures were performed using a 3D-mapping system (91% NavX system, 9% CARTO system).The median fluoroscopy time was 8.7 ± 8 min without significantly differences between conventional 2D fluoroscopy (10 ± 8.2 min) and 3D-mapping system approaches (8.8 ± 8.5 min) (p = 0.16). The median procedure time was 90 ± 30 min, without significantly differences between conventional 2D fluoroscopy (90 ± 30 min) and 3D-mapping system (120 ± 30 min) techniques (p = 0.61).Complications during hospital stay occurred in 4 pts (ischemic stroke: 1 pt; permanent pacemaker implantation: 3 pts), without differences between groups (p = 0.17). The success rate was 98.5% and did not significantly differ between approaches (p = 0.23).Was analysed the follow-up of 113 procedures. During a mean follow-up of 41 ± 38 months, recurrence rate of atrial flutter was 20.4%, similar in both groups (p = 0.56).
Conclusions: In this study, the introduction of a 3D-mapping system did not result in a significant reduction of both total fluoroscopy and procedure times comparing to conventional 2D fluoroscopy, and was observed similar success, recurrence and complications rates between techniques.

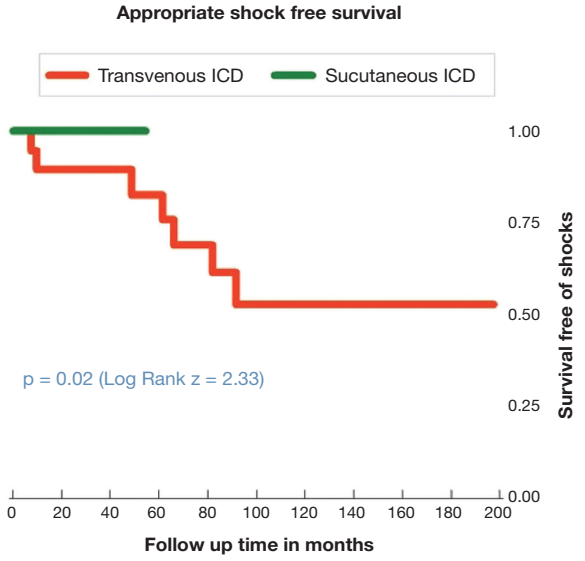
P 263. DOES TRANSVENOUS ICD LEADS INCREMENT THE RISK OF VENTRICULAR ARRHYTHMIAS IN BRUGADA SYNDROME PATIENTS WHEN COMPARED TO SUBCUTANEOUS ICDS?

Dinis Mesquita[1], Leonor Parreira[1], Pedro Carmo[2], Rita Marinheiro[1], Pedro Amador[1], Diogo Cavaco[2], Elisabete Vaz[2], José Farinha[1], Francisco Morgado[2], Francisco Costa[2], Pedro Adragão[2]

[1]Centro Hospitalar de Setúbal, EPE / Hospital de São Bernardo. [2]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de Santa Cruz.

Introduction: Brugada Syndrome (BS) is a channelopathy which predisposes patients to sustained ventricular arrhythmias (VA) and sudden death. Implantable cardio-defibrillators (ICDs) are offered to survivors of aborted sudden death and to high risk patients in primary prevention.
Objectives: To understand if the use of a transvenous ICD lead is associated with an increased risk of sustained VA and ICD shocks due to mechanical induced ventricular ectopic beats following implant.
Methods: We analyzed a population of BS patients with ICD implanted in three hospital centers. Patients had ICD implanted either for secondary

prevention (aborted arrhythmic sudden death) or for primary prevention (syncope and spontaneous or induced type 1 ECG pattern or a positive electrophysiologic study (EPS) in asymptomatic type 1 ECG pattern patients). We compared the incidence of VA and appropriate shocks in patients with transvenous ICD (group A) and sICD (group B) during follow up.
Results: In a cohort of 33 patients (81.8% male) with a mean age of 49.7 (IQR: 42-59), 28 patients (84.8%) had ICD implant for primary prevention. Symptoms (syncope) were documented in 17 patients (51.5%), type 1 spontaneous ECG pattern in 30 (90.9%) and an EPS was performed and positive in 19 (57.6%). Nine patients (27.2%) had non sustained VA on device interrogation, one patient had an arrhythmic storm and 2 patients had epicardial right outflow tract ablation. There were no significant differences between baseline group characteristics except for follow up duration (89.6; IQR: 15.2-108.4 months in group A and 22; IQR: 12.6-54.5 months in group B; p = 0.0007). During a mean follow up of 62.4 (IQR: 15.3-105.8) months, appropriate shocks occurred in 7 patients (21.2%) of transvenous ICD group (and none in the sICD group). Kaplan-Meier estimates of the probability of survival free of ICD shocks was higher in sICD group (log-rank z = 2.33; p = 0.02) (Fig.). The mean time for the first ICD therapy was 52.4 (IQR: 29.1-74.1) months.



Conclusions: In this group of BS patients with ICD implanted for primary or secondary prevention, there was a long latency time for the first ICD therapy (52 months). There was no evidence that the implant of a transvenous ICD lead could precipitate sustained VA in Brugada patients following implant.

P 264. CARDIAC RESYNCHRONIZATION THERAPY EVALUATION IN PATIENTS IN SINUS RHYTHM COMPARED WITH PATIENTS WITH ATRIAL FIBRILLATION

A. Briosa[1], A.R. Pereira[1], A. Marques[1], D. Sebaiti[1], S. Alegria[1], A.C. Gomes[1], R. Miranda[1], S. Almeida[1], L. Brandão[2], Hélder Pereira[1]

[1]Hospital Garcia de Orta, EPE. [2]Hospital Garcia de Orta.

Introduction: Heart failure (HF) and atrial fibrillation (AF) are two increasingly prevalent conditions that frequently coexist. Cardiac Resynchronization Therapy (CRT) has shown to improve the outcome in selected patients with HF, however AF may have a negative impact on this population.
Objectives: To characterize patients (pts) who were submitted to CRT implantation in SR *versus* AF and to analyse the differences in long term outcomes (responders, hospitalizations and mortality) between both groups.
Methods: Retrospective study of a single center analyzing patients submitted to CRT implantation in the last 6 years (2012-2018). Clinical and imaging data were collected, as well as long term outcomes concerning hospitalization, mortality and response. Responders were defined as pts who improved ≥ 1 NYHA class or/and > 10% left ventricular ejection fraction (LVEF).
Results: We analysed 103 pts, 65% males with mean age of 70 ± 10 years, with optimized medical treatment. Non ischemic cardiomyopathy was present in 74.5% of pts. 68.1% pts had QRS > 150 ms and 80.9% had left bundle brunch block (LBBB). Mean LVEF was 27.9 ± 7.5%, mean left ventricular end-diastolic volume índex (LVEDVI) was 113 ± 38 ml/m². By the time of CRT implantation, 67% of pts were in SR (n = 69) and 33% had AF (13.6% with paroxystic AF and 19.4% with persistent AF), and NYHA class 3 was present in 56.3% of pts. 76.7% of pts were considered responders. Subsequent hospitalizations occurred in 18.4%, and 11 pts died. 5 were submitted to atrialventricular node (AVN) ablation (4.9%). After implantation, pts with AF rhythm had less biventricular pacing percentage (BIV) (p < 0.001) and higher functional class (p = 0.007). Although there were no difference between both groups concerning HF hospitalizations (p = 0.699), AF hospitalizations (p = 0.597), mortality due to HF (p = 0.253) and overall survival (log-rank = 0.187, p = 0.66), pts with AF were considered less responders (61.5% *versus* 83.3%, p = 0,028). When comparing pts with AF submitted to NAV ablation and AF not submited to ablation, there was a tendency for an improved response in pts undergoing NAV ablation.
Conclusions: The proportion of responders to CRT implantation was lower in AF pts, although no differences in hospitalizations, mortality and overall survival were found between SR and AF pts. Given the lower number of NAV ablation in AF pts receiving CRT in our center, this could explain the lower rate of responders in this population compared with pts in SR.

Segunda-feira, 29 Abril de 2019 | 11H00-12H00

JARDIM INVERNO | POSTERS 5 - ÉCRAN 5 - INSUFICIÊNCIA CARDÍACA

P 265. A REAL-WORLD ANALYSIS OF ACUTE DECOMPENSATED HEART FAILURE OUTCOMES IN MORE THAN 1000 PATIENTS IN PORTUGAL: A LOWER 30-DAY READMISSION RATE THAN EXPECTED

Patrícia Alves, Ana Vera Marinho, José Paulo Almeida, Tatiana Gonçalves, Marta F. Costa, Mafalda Ferreira, Rui Baptista, Susana Costa, Fátima Franco, Isabel Fonseca, Lino Gonçalves

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

Introduction: Acute decompensated heart failure (ADHF) is the first cause of hospitalization among elderly patients. We aimed to characterize the characteristics and outcomes of a large contemporaneous cohort of ADHF patients admitted to our emergency department (ED).
Methods: We conducted a retrospective, observational study of all 1057 patients admitted to our ED with a discharge diagnosis of ADHF from November 2016 to December 2017. Baseline clinical data and outcomes (in-hospital, 30-day and follow-up [median period of 5 —IQR: 3-11— months] all-cause mortality and readmissions) were determined.
Results: Mean age was 78 ± 10 years and 53% were male; of the 1057 patients, half (53%) were hospitalized. The median admission length was 9 (IQR: 5-15) days and in-hospital mortality was 12.7%. Median BNP values were 739 (IQR: 381-1486) pg/mL and mean creatinine 1.43 ± 0.8 mg/dL. After discharge, all-cause readmission at 30 days was 8% and related to previous admission length [higher with shorter previous admission length (< 5 days), lower with 5-10 days and again higher with admission length above 10 days] (Figs. 1 and 2). All-cause mortality at 30 days was 15%, with age (HR: 1.4, 95%CI: 1.1-1.9, p = 0.04] and creatinine (HR: 2.3, 95%CI: 1.3-5.3, p = 0.04) as positive predictors. Follow-up (median 5 month) readmission rate for previously hospitalized patients was 30% and its only predictor was left ventricular ejection fraction (LVEF) (HR: 0.93, 95%CI: 0.91-0.96, p = 0.05). Follow-up all-cause mortality was 28% and was predicted by age (HR: 1.4, 95%CI: 1.2-1.7, p < 0.01) and creatinine (HR: 1., 95%CI: 1.1-1.9,

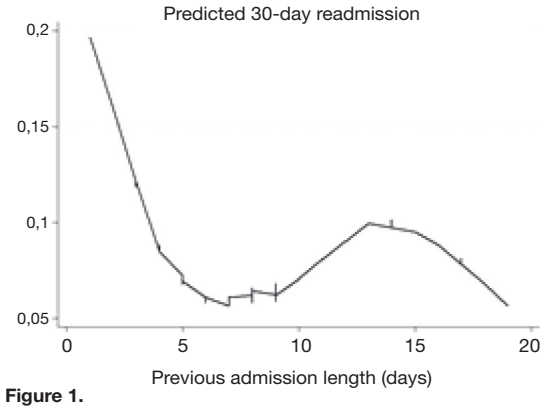
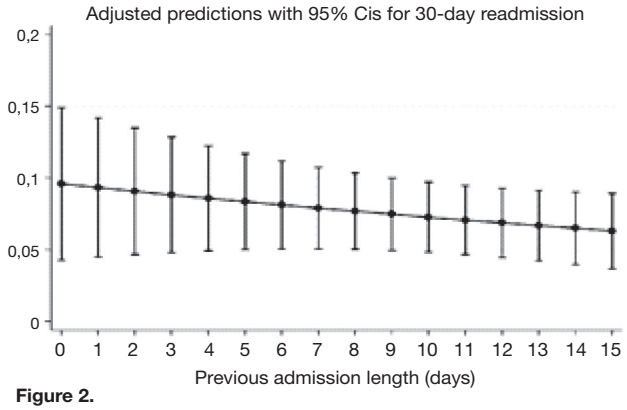


Figure 1.



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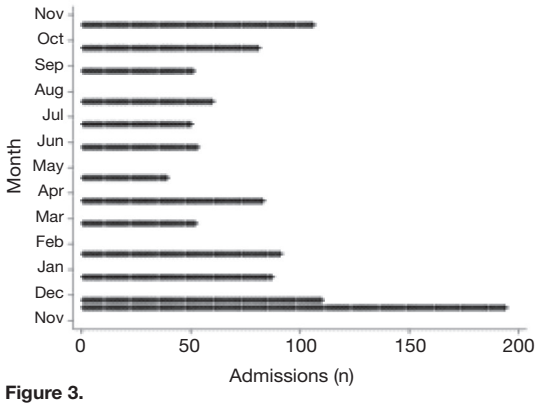

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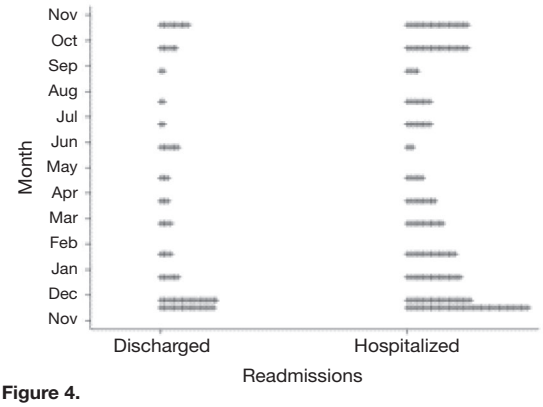

Figure 4.

P 265 Figure

p < 0.01). Of the 47% patients that were directly discharged from the ED, 14% were readmitted at 30 days. Predictors for 30-day readmission were BNP (OR: 1.5, 95%CI: 1.1-1.8, p = 0.02) and C-reactive protein (CRP) [HR: 1.9, 95%CI: 1.2-1.8, p = 0.01). In this group, 30-day mortality was 5% and only predicted by creatinine [HR: 2.5, 95%CI: 1.1-4.8, p = 0.04). Follow-up all-cause readmission was 32% and predicted by LVEF (HR: 0.91, 95%CI: 0.90-0.93, p < 0.01); all-cause mortality was 15% and was predicted by CRP (HR: 1.15, 95%CI: 1.0-1.3, p < 0.01) and BNP (HR: 1.3, 95%CI: 1.1-1.5, p < 0.01). Comparing the characteristics of admitted *versus* discharged ADHF patients, patients with a prior hospitalization had a lower 30-day readmission rate (8% *versus* 14%, p = 0.01), same overall readmission rate (30% *versus* 32%), but a higher 30-day mortality (15% *versus* 5%, p < 0.01) and overall mortality (28% *versus* 15%, p < 0.01). Admissions were higher during the winter season (Fig. 3). Only a minority of ED readmissions was discharged (Fig. 4).

Conclusions: Half of patients admitted to the ED were hospitalized. Of these, only 8% are readmitted within 30 days. In-hospital mortality is high. Among discharged patients directly from the ED, 1 in 7 were readmitted at 30-days. We also report a very high seasonality regarding ADHF admission rate.

P 266. FREQUENCY AND PREDICTORS OF MORTALITY IN ARRHYTHMIA-INDUCED CARDIOMYOPATHY: A DIAGNOSIS NOT TO BE MISSED

Sofia Alegria[1], Ana Marques[1], Ana Rita Pereira[2], Alexandra Briosa[1], Daniel Sebaiti[2], Ana Rita Almeida[1], Rita Miranda[2], Sofia Almeida[2], Luís Brandão[2], Otília Simões[2], Hélder Pereira[1]

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Introduction: Arrhythmia-induced cardiomyopathy (AIC) is characterized by left ventricular (LV) systolic dysfunction caused by arrhythmia which is reversible once the arrhythmia is properly controlled. There is scarce scientific evidence regarding the clinical features and therapeutic implications of this condition.

Objectives: To characterize the population of patients with suspected AIC and to determine predictors of recovery of LV systolic function and of all-cause mortality.

Methods: Retrospective analysis of patients admitted in a Cardiology department with a probable diagnosis of AIC between 2012 and June 2018. Logistic and Cox regression analyses were used to determine predictors of recovery of LV systolic function (improvement of LV ejection fraction - EF of ≥ 10%) and of mortality, respectively.

Results: Fifty-eight patients were included, with a mean age of 62 ± 10 years, and male predominance (66%). The most common associated arrhythmia was AF (50%), followed by atrial flutter (AFL - 26%), both AF and AFL (19%) and other tachyarrhythmias (5%). The mean body mass index was 29 ± 5 kg/m^2, the prevalence of arterial hypertension was 56.9%, cerebrovascular disease 13% and hypothyroidism 9%. On admission most patients were on functional class III or IV (61 and 23%, respectively), the median NT-proBNP was 2511 pg/mL, the mean LV EF was 28 ± 10%, 54% had a dilated LV, 87% a dilated left atrium and 68% right ventricular systolic dysfunction. During follow-up (median 637 days), 84% of patients converted to sinus rhythm (SR); 50% were submitted to electric cardioversion, 17% to pharmacological conversion and 41% to catheter ablation (success rate of 88%). Among patients who converted to SR, 52% had recurrence of AF or AFL during follow-up. On reassessment (median 257 days after admission) 60% of the patients were in SR, and the heart rate (HR) was controlled in 93% (median HR: 70 bpm). There was an improvement in functional class (4% in class III and none in class IV), NT-proBNP (median 639 pg/mL), and LV systolic function (88% had recovery and 60% normalization of systolic function - mean LV EF 51 ± 10%). Recovery of LV function was associated with both SR and controlled HR in reassessment. On multivariate logistic regression analysis, the predictors of recovery of LV function were the presence of hypothyroidism and the mean HR on reassessment, with an increase in HR by 1 bpm associated with a reduction of 9% in the likelihood of recovery. During follow-up 17% of patients died and the independent predictors of all-cause mortality were an history of cerebrovascular disease and absence of recovery of LV function.

Conclusions: In our population AIC was more commonly associated with AF, and patients usually presented with severe symptoms and LV systolic

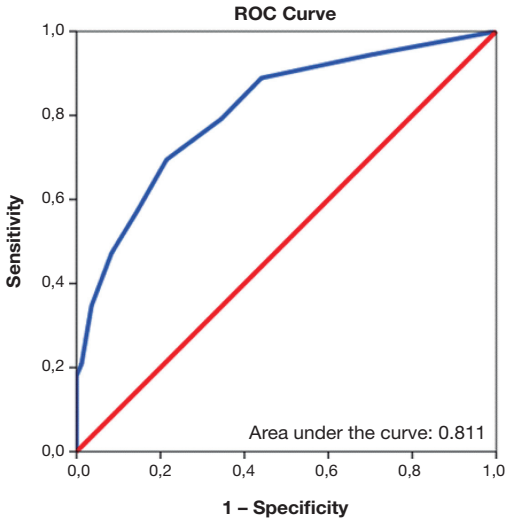
dysfunction. Both maintaining SR and controlling the HR are important for the recovery of LV systolic function, which was a predictor of survival in this population.

P 267. PREDICTING READMISSIONS IN PATIENTS WITH HEART FAILURE: A NOVEL AND EASY-TO-APPLY SCORING MODEL

Inês Aguiar Ricardo, João R. Agostinho, Joana Rigueira, Rafael Santos, Afonso Nunes-Ferreira, Tiago Rodrigues, Nelson Cunha, Pedro António, Mónica Mendes Pedro, Fátima Veiga, Fausto J. Pinto, Dulce Brito

Serviço de Cardiologia, Departamento Coração e Vasos, CHULN, CCUL, Faculdade de Medicina, Universidade de Lisboa, Lisboa.

Introduction: Acute heart failure (HF) is the main cause of hospitalization in patients (pts) > 65 years. Readmission (reH) rates are high in this population, being a relevant cause of impaired quality of life, and a main negative prognostic determinant. The identification of pts at a higher risk of reH is at utmost relevance.
Objectives: Development of an easy-to-apply score, useful for prediction of all-cause reH during the first year after discharge (index-hospitalization for acute HF).
Methods: Retrospective study with prospective data registry of consecutive pts discharged after an index-hospitalization due to acute HF. All pts were submitted to clinical, laboratorial, electrocardiographic and echocardiographic evaluations. Cox Regression was used to analyse predictors of readmission; ROC curve method and Kaplan-Meier survival analysis were used to evaluate score efficacy.
Results: 156 pts were included (mean age: 68.1 ± 12.4 years, 60.1% males). The mean LVEF was 36.4 ± 15.9% (LVEF < 40% in 60.3%). 70 (44.8%) pts were discharged in NYHA I functional class, 51.9% in class II and 3.2% in class III. Mean follow-up time was 11.1 ± 2.6 months. The reH rate during follow-up was 46.2% and the mortality rate (all-causes) was 10.3%. Previous ischemic stroke (iS) (HR: 2.3, CI: 1.3-4.1, p = 0.004), history of malignancy (hNeo) (HR: 2.6, CI: 1.4-4.9, p = 0.025), on-admission values of hemoglobin (Hb) < 12 g/dL (HR: 2.3, CI: 1.4-3.6, p = 0.001), total bilirubin (TBil) > 1.2 mg/dL (HR: 2.1, CI: 1.2-3.5, p = 0.007), alkaline phosphatase (ALP) > 105 U/L (HR: 2.0, CI: 1.2-3.3, p = 0.027) and thyroid-stimulating hormone (TSH) > 4.1 µU/mL (HR: 2.3, CI: 1.4-3.6, p = 0.003), and values of NTproBNP > 4250 pg/mL (HR: 2.1, CI: 1.1-4.1, p = 0.011) and blood nitrogen urea (BUN) > 67 mg/dL (HR: 3.3, CI: 2.0-5.6, p = 0.004) at-discharge were independent predictors of reH. A length of stay (LOS) > 17 days (HR: 2.1, CI: 1.2-3.4, p = 0.028) was also an independent predictor of reH. According to the HR was attributed 1 point to iS, Hb < 12 g/dL, TBil > 1.2 mg/dL, ALP > 105 U/L, TSH > 4.1 µU/mL, NTproBNP > 4250 pg/mL and LOS > 17days; and 1.5 points to BUN > 67mg/dL and hNeo, with a maximum score of 10 points. This model showed a good accuracy to predict reH during the first year after discharge (AUC: 0.81). Based on tercile distribution the population was classified as low-risk (score ≤ 1; reH rate: 13.2%), intermediate-risk (score > 1 and < 3; reH rate: 48%) and high-risk (score ≥ 3; reH rate: 77.4%). ub-group analysis based on LVEF is shown in Figure 1. The score kept a good accuracy to discriminate between low-risk, intermediate-risk and high-risk pts.



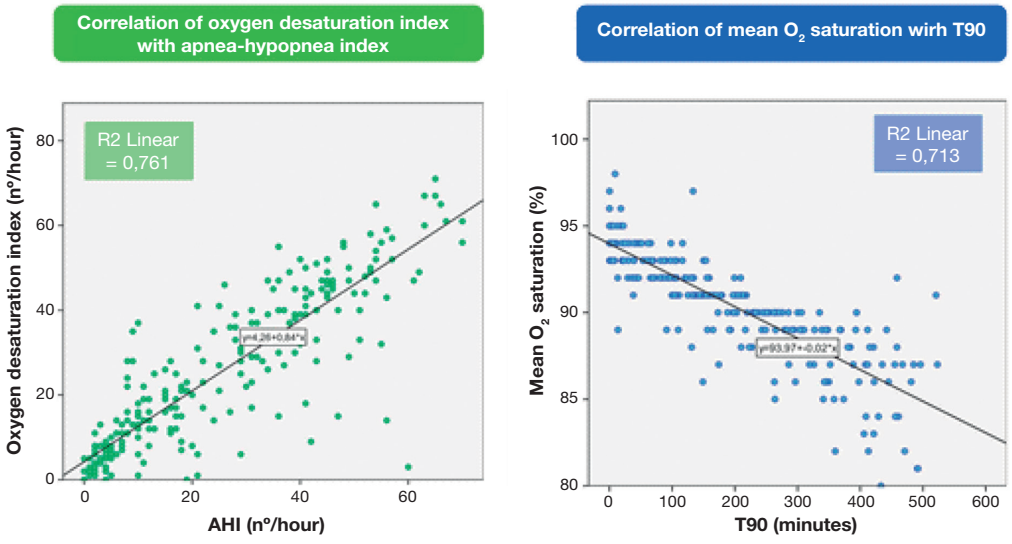
Conclusions: This new scoring model showed good accuracy in predicting all-cause readmissions during the first year after discharge. As it is based on clinical and laboratorial standard parameters, it may be a useful and easy-to-apply tool for the identification of HF patients requiring a closer follow-up after discharge.

P 268. SLEEP APNEA SCREENING IN HEART FAILURE: AN EXPLORATORY ANALYSIS

Gonçalo Lopes da Cunha[1], Bruno Rocha[1], Rita Ventura Gomes[2], Joana Duarte[3], Rui Morais[4], Inês Araújo[4], Cândida Fonseca[4]

[1]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de Santa Cruz. [2]Hospital de Vila Franca de Xira. [3]Hospital Fernando Fonseca, EPE. [4]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de S. Francisco Xavier.

Introduction: Sleep Apnea (SA) is increasingly recognized in patients with Heart Failure (HF). Nocturnal polysomnography (PSG) is the gold-standard



P 268 Figure

to diagnose SA. Portable devices have also been validated in HF cohorts either in chronic or acute settings. The main goals of this investigation were to determine the correlation between clinical, laboratory and respiratory measurements with the presence of SA, defined as apnea-hypopnea index (AHI) > 15/h, and with desaturation time with SpO_2 < 90% (T90) = 22 min, a strong mortality predictor in HF with reduced ejection fraction (HFrEF).
Methods: This work is based on a single-center retrospective cohort of consecutive patients hospitalized for decompensated HF from 2013 to 2018. All patients were assessed with ApneaLink™ screening portable device the day before discharge. HF was defined as recommended by the European Society of Cardiology guidelines. Similar to SERVE-HF trial, HFrEF and HF with preserved ejection fraction (HFpEF) were defined by a left ventricular ejection fraction (LVEF) = 45% or > 45%, respectively.
Results: A total of 228 patients were included in the analysis. SA was present in 135 (59.2%) patients. Mean age was 75.3 ± 10.5 years, 51.1% were female, and 58.8% had HFpEF. Hypertension (81.8%), atrial fibrillation (57.7%) and diabetes *mellitus* (45.8%) were the most frequently observed comorbidities. Median NT-proBNP was 2093 ± 3037 pg/mL, mean AHI was 24.5 ± 19.2/h, mean O_2 desaturation index (ODI) was 24.4 ± 21.0/h and mean T90 was 169.6 ± 151.2 min. In multivariate models, ODI, gender and ischemic etiology of HF were predictors of AHI > 15/h (R^2: 65.8%), with ODI being the strongest predictor (standardized coefficient 64.8%). The cut-off of ODI = 14.50/h had sensitivity of 90.5% and specificity of 83.8% to predict AHI > 15/h (area under the curve [AUC]: 0.933, p < 0.001). Similarly, mean SpO_2 was the only predictor of T90 = 22 min (R^2: 65.8%). The cut-off of mean SpO_2 = 92.50% had sensitivity of 94.7% and specificity of 84.4% to predict T90 = 22 min (AUC: 0.944, p < 0.001).
Conclusions: SA was strongly predicted by ODI in a cohort of patients with recently compensated HF. Likewise, T90 = 22 min was highly predicted by mean SpO_2. One may wonder whether simple pulse oximetry ODI and mean SpO_2 measurements can be routinely used for SA screening, since PSG and portable devices are not widely available. This hypothesis is worth being prospectively assessed.

P 269. LEVOSIMENDAN WITH OTHER INOTROPES: SHOULD YOU COMBINE THEM?

Bruno M. Rocha[1], Gonçalo Cunha[1], Rita Gomes[2], Inês Araújo[3], Cândida Fonseca[3]

[1]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de Santa Cruz. [2]Hospital Vila Franca de Xira. [3]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de S. Francisco Xavier.

Introduction: Levosimendan, an intravenous inotrope, may be used in selected patients with acute Heart Failure (HF). However, given its vasodilator properties, it is not suitable to treat those with hypotension (systolic blood pressure [SBP] < 85 mmHg) or cardiogenic shock, unless combined with other inotropes. Albeit common practice, such strategy is poorly investigated and may be not without risk. The main goals of this study were to determine the differences between patients receiving levosimendan *versus* levosimendan with another inotrope/vasopressor drug.
Methods: This work is based on a single-center HF care unit cohort assessing all patients who received levosimendan due to profile B (wet and warm) or C (wet and cold) acute HF. All definitions are as per the European Society of Cardiology recommendations on HF.
Results: From 2012 to 2018, a total of 88 patients received either combined inotropes (26.1%) or isolated levosimendan (73.9%). Mean age was 66.7 ± 12.0 years and mean left ventricular ejection fraction was 28.6 ± 11.6%. Other than diabetes (13.0% *versus* 53.8%, p = 0.010), there were no significant differences in baseline demographics between groups. Patients who received combined inotropes were significantly more likely to present with cardiogenic shock (47.6% *versus* 9.8%, p = 0.001) and to have lower mean arterial pressures at 1-h (75 ± 10 *versus* 81 ± 10 mmHg, p = 0.025) and 2-h (74 ± 8 *versus* 81 ± 13 mmHg, p = 0.033) after starting levosimendan. Minimum SBP during levosimendan infusion was significantly lower in this group (82 ± 9 *versus* 92 ± 12 mmHg, p = 0.002). Differences in levosimendan suspension (26.1% *versus* 7.9%, p = 0.061) and supraventricular tachycardia (40.9% *versus* 21.0%, p = 0.068) were not statistically significant. Also, no differences were noted in maximum levosimendan dose achieved, heart rate, urinary output or laboratory evaluation between groups. Finally, there was no difference in intra-hospital mortality (26.1% *versus* 13.8%, p = 0.205).
Conclusions: In a dedicated HF unit, approximately 1 in every 4 patients who received levosimendan had it combined with another inotrope. There were no significant differences between groups on levosimendan suspension, adverse events or intra-hospital mortality, despite an expected dimer prognosis in patients receiving combined inotropes (noted by a significantly higher rate of cardiogenic shock). Levosimendan with another inotrope appears to be a useful and safe association in acute HF, yet this hypothesis warrants further investigation.

P 270. DEFINING IRON DEFICIENCY IN ACUTE HEART FAILURE: PRELIMINARY RESULTS

Bruno M. Rocha[1], Gonçalo Cunha[1], Joana Duarte[2], Rita Gomes[3], Inês Araújo[4], Cândida Fonseca[4]

[1]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de Santa Cruz. [2]Hospital Fernando Fonseca, EPE. [3]Hospital Vila Franca de Xira. [4]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de S. Francisco Xavier.

Introduction: Iron Deficiency (ID) is defined in Heart Failure (HF) as absolute (ferritin < 100 µg/L) or relative (ferritin 100-300 µg/L and transferrin saturation [TSAT] < 20%). In symptomatic chronic HF patients with ID and reduced left ventricular ejection fraction (LVEF), intravenous (IV) iron improves symptoms and may reduce hospitalizations. However, these results should not be extrapolated to acute HF, as the definition is based on markers strongly influenced by inflammation and potentially by plasma volume status. The main goals of this study are to assess the variation of iron status and determine whether current ID definition is adequate to identify patients for correction at discharge.

Table P 269. Subpopulation demographics

	Levosimendan (n=65)	Levosimendan + Vasopressor (n=23)	p-value*
Demographics			
Age, mean±SD	68 ± 12	71 ± 12	0,243
Male sex, N (%)	47 (72,3%)	15 (65,2%)	0,522
Hospitalization, median±IQR (days)	11 ± 11	12 ± 13	0,543
LVEF, mean±SD	28 ± 13	29 ± 8	0,781
Type of HF			
HFrEF, N (%)	54 (85,7%)	22 (95,7%)	0,100
HFmrEF, N (%)	2 (3,2%)	1 (4,3%)	
HFpEF, N (%)	7 (11,1%)	0 (0,0%)	
Etiology			
Ischemic, N (%)	34 (54,0%)	11 (47,8%)	0,853
Hypertensive, N (%)	5 (7,9%)	1 (4,3%)	

Table P 269. Subpopulation demographics (cont.)

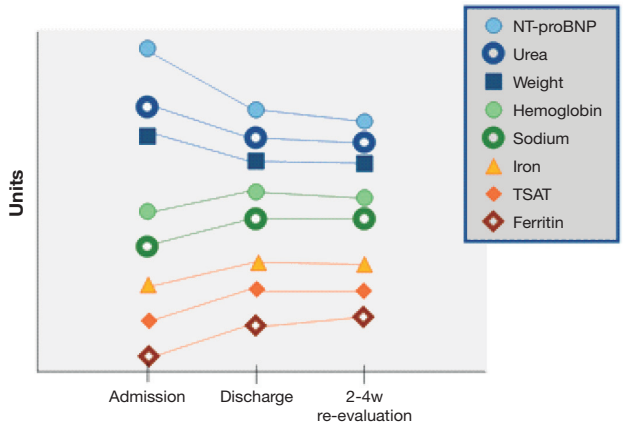
	Levosimendan (n=65)	Levosimendan + Vasopressor (n=23)	p-value*
Comorbidities			
Hypertension, N (%)	44 (67,7%)	13 (56,5%)	0,335
DM, N (%)	35 (53,8%)	3 (13,0%)	0,010
Previous MI, N (%)	24 (37,5%)	11 (47,8%)	0,386
CAD, N (%)	35 (53,8%)	13 (56,5%)	0,825
PAD, N (%)	4 (6,2%)	2 (8,7%)	0,649
Stroke, N (%)	7 (10,8%)	3 (13,0%)	0,717
Known AF, N (%)	31 (47,7%)	13 (56,5%)	0,467
ICD, N (%)	18 (27,7%)	4 (17,4%)	0,327
Acute setting			
Cardiogenic Shock**, N (%)	6 (9,8%)	10 (47,6%)	0,001
Noradrenaline, N (%)	0 (0)	12 (54,5%)	0,000
Dobutamine. N (%)	0 (0)	1 (4,5%)	
Dopamine, (%)	0 (0)	7 (31,8%)	
Other, N (%)	0 (0)	2 (9,2%)	
Vasopressor, median±IQR (days)	0 (0)	2 (3)	0,000
Levosimendan			
Bolus, N (%)	12 (21,4%)	4 (25,0%)	0,743
Maximum dose achieved, N (%)	48 (82,8%)	14 (82,4%)	0,978
Suspension, N (%)	5 (7,9%)	6 (26,1%)	0,061
SR, N (%)	20 (42,6%)	5 (29,4%)	0,563
AF, N (%)	20 (42,6%)	8 (47,1%)	
Pacing, N (%)	7 (14,9%)	4 (23,5%)	
Hemodynamics during levosimendan			
MAP at 0 hours, mean±SD	81 ± 9	77 ± 12	0,146
MAP at 1 hour, mean±SD	81 ± 10	75 ± 10	0,025
MAP at 2 hours, mean±SD	81 ± 13	74 ± 8	0,033
MAP at 24 hours, mean±SD	76 ± 11	72 ± 11	0,137
Minimum systolic pressure, mean±SD	92 ± 12	82 ± 9	0,002
Minimum diastolic pressure, mean±SD	46 ± 8	44 ± 7	0,283
Heart Rate variation, mean±SD	14 ± 10	17 ± 10	0,334
Urinary Output, mean±SD	3219 ± 1674	2875 ± 1756	0,424
Laboratory Evaluation			
Creatinine before, median±IQR	1,5 ± 0,9	1,6 ± 1,3	0,803
Creatinine after, median±IQR	1,4 ± 1,0	1,4 ± 1,0	0,891
ALT before, median±IQR	37,0 ± 61,0	29,0 ± 36,0	0,586
ALT after, median±IQR	35,0 ± 132,0	30,0 ± 558,0	0,696
Potassium before, mean±SD	4,3 ± 0,7	4,5 ± 0,5	0,133
Potassium after, mean±SD	4,1 ± 0,6	4,4 ± 0,6	0,041
Magnesium before, median±IQR	2,0 ± 0,5	1,9 ± 0,4	0,870
Magnesium after, median±IQR	2,4 ± 0,6	2,3 ± 0,7	0,859
Supplementation			
Potassium, N (%)	49 (75,4%)	12 (54,5%)	0,065
Magnesium, N (%)	54 (83,1%)	17 (77,3%)	0,538
Adverse Events			
Tachydysrhythmia, N (%)	13 (21,0%)	9 (40,9%)	0,205
Intrahospitalar death, N (%)	9 (13,8%)	6 (26,1%)	0,484
CV Death at 30-days, N (%)	0 (0)	0 (0)	0,093
CV Hospitalization at 30-days, N (%)	7 (12,10%)	1 (5,90%)	0,176

AF = Atrial Fibrillation; CAD = Coronary Artery Disease; CV = Cardiovascular; CRT = Cardiac Resynchronization Therapy; CRT-D = CRT with defibrillator; CRT-P = CRT with pacemaker; DM = Diabetes; ICD = Implantable Cardiac Device; IQR = Interquartile Range; MAP = Mean Arterial Pressure; PAD = Peripheral Artery Disease; PM = Pacemaker; SD = Standard Deviation; SR = Sinus Rhythm. *Where the Chi-Square (2x2) test was violated, the exact Fisher's exact test was performed. Where the Chi-Square (2x3 or 2x4) test was violated, the likelihood ratio is reported. **Definition as recommended per European Society of Cardiology guidelines on HF (2016).

Methods: This is a prospective multicenter study involving tertiary referral hospitals. Patients were assessed for inclusion if they were aged ≥ 18 years with «wet and warm» decompensated HF, as per European Society of Cardiology guidelines, and increased natriuretic peptides. The main exclusion criteria were recent iron or erythropoietin intake, increased inflammation (i.e., C-reactive protein > 5 mg/dL or infection) and significant hemorrhage. Iron status and clinical signs of congestion were assessed at enrollment, discharge (euvolemia) and 2-4 weeks after discharge (reevaluation). A single-center 3-month preliminary results are here reported.

Results: A total of 22 patients were included in this analysis. Mean age was 70.6 ± 14.2 years, most were male (54.5%) with ischemic (36.4%) or hypertensive (40.9%) HF. Mean LVEF was 44.4 ± 17.8%. ID had a tendency to decrease from enrollment to discharge (68.1% *versus* 33.3%; p = 0.07) but not from discharge to reevaluation (33.3% *versus* 37.5%; p = 1.000). Ferritin, TSAT and serum iron were significantly higher from enrollment to discharge (p = 0.013; p = 0.017; p = 0.005, respectively), as were sodium and hemoglobin (p = 0.037; p = 0.016), and stable 2-4 weeks later (all p ≥ 0.05). Additionally, weight, urea and NT-proBNP were significantly lower from

enrollment to discharge (p = 0.001; p = 0.014; p = 0.005, respectively) and stable from discharge to reevaluation (all p ≥ 0.05).



Conclusions: Iron status in HF patients is strongly influenced by congestion. ID prevalence has a tendency to be overestimated in acute decompensated HF. Current definition appears to be appropriate with euvolemia, thus implying that ID identification and ensuing correction could be adequate at discharge. These preliminary results may be further strengthened with increasing enrollment.

Segunda-feira, 29 Abril de 2019 | 11H00-12H00

JARDIM INVERNO | POSTERS 5 - ÉCRAN 6 - INSUFICIÊNCIA CARDÍACA

P 271. REAL WORLD IMMUNOMODULATION: WHAT RESULTS?

Bebiana Faria[1], Filipa Almeida[2], Margarida Oliveira[3], Pedro von Hafe[3], Geraldo Dias[3], Ana Filipa Cardoso[2], Sílvia Ribeiro[2], António Lourenço[3]

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Introduction: Heart failure (HF) has an increasing prevalence with high morbility and mortality. Sacubitril/valsartan is the first of the class of angiotensin receptor-neprilysin inhibitors (ARNI) and was shown to be superior to enalapril in patients with reduced fraction ejection (FE) with a very significant reduction of cardiovascular events including mortality.
Objectives and methods: The purpose of this study was assess if there are significant differences before and after the onset of the ARNI in the clinical set, by NYHA functional class, change in the pBNP value and change in the number of clinical events, defined as total number of arrivals to the emergency department and hospital admissions during the past year. A retrospective cohort study that included all patients observed, between 2 january and 5 December 2018, in advanced HF consultation (HFC) with indication for onset ARNI (LVEF ≤ 35% and NYHA functional class ≥ 2). Clinical and analytical data were collected and statistical analysis was performed with IBM SPSS 20.
Results: Of the total number of patients observed in the HFC, 69 fulfilled the criteria for therapy with ARNI. Of these patients, 78.3% were males with a mean age of 67 ± 10 years. The average value of LVEF was 22% ± 5%. The most frequent HF etiology was ischemic heart disease (49%) followed by dilated cardiomyopathy (45%). The majority of patients were, on the date of the last clinical evaluation, in class NYHA III (48%) and NYHA II (45%). Only 7% were in class NYHA IV. Thirty-five percent (n = 24) of the total patients were treated with ARNI, 38% with the maximum dose (97/103 mg) and 33% with the minimum dose (24/26 mg), with a treatment mean time of 207 days. In the group of the patients with ARNI 67% reported a significant improvement in NYHA functional class (p = 0.003). The majority of patients who did not report improvement of functional class were in NYHA class II before ARNI onset. In relation to the analytical evaluation with pBNP, there was a significant difference between the pretreatment mean value (3385 ng/mL) and posttreatment (1861 ng/mL) (p = 0.004), with an average reduction of 35% from baseline value of pBNP. We observed a total of 36 events. Of all the patients who presented events, 72% were not medicated with ARNI. There was no significant difference between the number of events between ARNI and non-ARNI patients, although, of all the patients with ARNI 45% presented events comparatively to a 58% in group of patients without ARNI. We also observed a significant reduction in the number of hospitalization days in patients with ARNI *versus* non-ARNI (11 *versus* 19 days) (p = 0.036).
Conclusions: Patients under ARNI showed a significant improvement in NYHA functional class and reduction of pBNP. We observed a significant reduction in the total number of hospitalization days in patients with ARNI, but no difference was observed in the number of events, possibly explained by treatment mean time of only 207 days.

P 272. USE OF SACUBITRIL-VALSARTAN IN HEART FAILURE WITH REDUCED EJECTION FRACTION: REAL WORLD EXPERIENCE

Fernanda Ferreira[1], Sérgio Manuel Ferreira Cristina[1], Ana Filipa Pereira Raposo[1], Elizabeth Maciel de Albuquerque[2], Inês Nabais[1], Carla Matias[1], Marta Afonso Nogueira[1], Rafael Vasconcellos[3], Gonçalo Proença[4]

[1]Hospital de Cascais. [2]Amil Serviços Médicos S.A. [3]United Health Group. [4]HPP Hospital de Cascais.

Introduction: Sacubitril/valsartan (Sac/Val) significantly reduces hospitalizations and mortality of heart failure patients (pts) with reduced ejection fraction (HFrEF). Considering that real world evidence are still scarce, it's important to report our experience regarding safety and efficacy of this drug, after approximately one year of its introduction in Portugal. **Methods:** From November 2017 to November 2018, 73 patients (pts) were switched from Angiotensin-Converting Enzyme Inhibitor/Angiotensin Receptor Blocker (ACEI-ARB) to Sac/Val. Data of 58 pts (79% men), with ischemic aetiology (60%) and left ventricular ejection fraction (LVEF) of 29.5 ± 6.8% were retrospectively analyzed. Mean age was 70.5 ± 12.5 years old. At the start of therapy with Sac/Val, 57% of pts were in NYHA class II, 33% in NYHA class III and 5% in NYHA class IV. Mean NTproBNP before the switch of therapy was 5043 pg/mL. Concerning ESC guideline Class I Recommendation for HF therapy, 93% of pts were using betablockers, 91% ACEI/ARB, 60% mineralocorticoid/aldosterone receptor antagonist, 74% loop diuretics, and 17% ivabradine. Ten percent had CRT and 22% ICD. In 25 pts (43.1%), initial Sac/Val dose of 24/25 mg bid was not augmented. In 41.4% of pts was possible to achieve an intermediary dose of 49/51 mg bid and in 15,5% the maximum dose was achieved. Clinical efficacy (HF hospitalization, death, NYHA class improvement), safety (arterial pressure, serum potassium, creatinine), NTproBNP and echocardiographic (LVEF) parameters were analyzed.
Results: There was improvement of NYHA class, with no pts remaining in NYHA class IV. One pt had worsened NYHA class from II to III. Among remaining pts, 29 (50%) improved NYHA class. There were 2 unplanned hospitalizations for HF after switch of therapy, and there was 1 death of refractory HF. About safety concerns, there were no major event associated with therapy switch: mean arterial pressure was 126.9 ± 17.5 mmHg, serum potassium (4.6 ± 0.4 mmol/L) and renal function (CR 1.2 ± 0.4 mg/dL) remained stable. There wasn't any report of angioedema. LVEF after switch therapy improved from 29.5 ± 6.8 to 36.2 ± 8.9%.
Conclusions: Therapy with Sac/Val, when associated to other ESC guideline Class I Recommendation HF therapies, was effective in improving NYHA class and reducing hospitalizations being associated to low risk of complications.

P 273. IN-HOSPITAL MANAGEMENT OF DISEASE MODIFYING DRUGS IN HEART FAILURE WITH REDUCED EJECTION FRACTION - AN OPPORTUNITY TO IMPROVE?

Inês Nabais[1], Inês Lopes da Costa[2], Inês Egídio de Sousa[3], Francisco Adragão[4], Patrícia Moniz[3], Luís Campos[3], Inês Araújo[3], Cândida Fonseca[3]

[1]Hospital de Cascais. [2]Hospital de São José. [3]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de S. Francisco Xavier. [4]Centro Hospitalar e Universitário do Algarve.

Introduction: Heart failure (HF) is a syndrome with high morbimortality and its prevalence continues to grow. New therapeutic options are an opportunity to change the natural history of the disease. Guidelines recommend in-hospital maintenance or initiation of all disease-modifying drugs (DMD), with titration as much as possible before discharge.
Objectives: To analyse in-hospital management of DMD in HF with reduced ejection fraction (HFrEF) patients admitted in an Acute Heart Failure Unit (AHFU).
Methods: Retrospective study of consecutive hospitalizations due to acutely decompensated HF, over one year, examining hospital databases. HFrEF patients discharged from the AHFU were selected to evaluate medication at admission, in-hospital and at discharge.
Results: From the 181 AHFU admitted patients, 76 HFrEF were included. At admission 68.4% were on renin-angiotensine-aldosterone inhibitor (RASi) —50.0% ACEi, 9.2% ARB, 9.2% ARNI; 72.4% on beta blocker (BB) and 65.8% on mineralocorticoid receptor antagonists (MRA). At discharge 77.6% were on RASi —57.9% ACEi; 9.2% ARB; 10.5% ARNI—; 85.5% on BB and 77.6% on MRA; 57.9% were on triple DMD therapy and 10.5% on Ivabradine. Regarding ACEi: 34.1% started, 18.2% increased and 27.3% maintained ambulatory dose; Regarding ARB: 14.3% started, 14.3% increased and 42.9% maintained ambulatory dose. Regarding ARNI: 25% started, 23.5% increased and 50% maintained ambulatory dose. Although during hospitalization all DMD were titrated to patients maximum tolerated dose, at discharge most patients on RASi (83.1%) and BB (80.0%) were not on maximum doses according to guidelines, while on MRA only few patients (27.1%) didn't reach maximum doses. Very few patients needed to reduce or suspend DMD medication at admission —5.8% reduced and 21.2% suspended RASi, mainly due to low blood pressure (50.0%) and renal disease (30.0%); 12.7% reduced and 10.9% suspended BB mainly due to low blood pressure (38.9%) and bradycardia (22.2%); 6% both reduced and suspended MRA mainly due to renal disease (60.0%).

Percentage of DMD on patients with HFrEF at admissionand discharge from an Acute Heart Failure Unit

	Admission	Discharged
ACEi	50%	57.9%
ARB	9.2%	9.2%
ARNI	9.2%	10.5%
BB	72.4%	85.5%
MRA	65.2%	67.8%

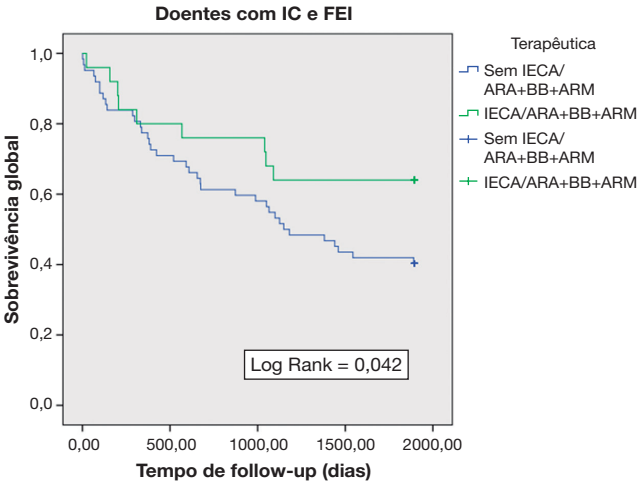
Conclusions: While being a predictor of bad prognosis, hospitalization was an opportunity to optimize HFrEF treatment. At discharge patients' DMDs maximum tolerated doses, were frequently inferior to guideline's recommended maximum dosages. Although in line with other real-life registries and even trials, titration should always be re-challenged in an early post-discharge assessment.

P 274. IMPACTO DOS ANTAGONISTAS NEURO-HORMONAIS NA INSUFICIÊNCIA CARDÍACA COM FRAÇÃO DE EJEÇÃO INTERMÉDIA

António Xavier Fontes, Cátia Serena, Luís Oliveira, Sara Moura Ferreira, Carla Almeida, Carina Machado, Raquel Dourado, Emília Santos, Nuno pelicano, Anabela Tavares, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introdução: A inclusão de doentes (dts) com insuficiência cardíaca (IC) com fração de ejeção intermédia (FEI) nos ensaios clínicos focados no manejo dos dts com fração de ejeção preservada, contribuiu para que as atuais recomendações da Sociedade Europeia de Cardiologia apresentem estratégias terapêuticas semelhantes nestes dois grupos. Porém, a taxa de prescrição de inibidores da enzima de conversão da angiotensina (IECA), antagonistas dos recetores da angiotensina (ARA), antagonistas dos recetores mineralocorticóides (ARM) e bloqueadores beta-adrenérgicos (BB) é elevada nos dts com FEI.
Objetivos: Avaliar a utilização e impacto prognóstico dos antagonistas neuro-hormonais (ANH) nos dts com IC e FEI.
Métodos: Estudo retrospetivo, que incluiu dts consecutivamente internados num centro, durante o ano de 2012, com o diagnóstico principal de IC descompensada e fração de ejeção entre os 40 e os 49%. Realizado *follow-up* até 5 anos. Foram avaliadas características clínicas e dos exames complementares de diagnóstico efetuados. Os *endpoints* foram definidos como mortalidade global, mortalidade por IC e número de hospitalizações por IC.
Resultados: Dos 255 dts incluídos, 87 (34,8%) apresentavam FEI, sendo a maioria do sexo feminino (54,1%). Obteve-se um tempo de seguimento completo a 5 anos em 98% dos casos, com uma mortalidade cumulativa de 50,0% nos homens e 55,3% nas mulheres (p = 0,620).Os dts com FEI apresentavam taxas de utilização de 77% de IECA/ARA, 52,9% BB e 33,3% ARM e uma mortalidade cumulativa de 52,9%. Nenhuma das classes farmacológicas individualmente mostrou benefício em termos de *endpoints*. Quando utilizadas as três classes em simultâneo (29% dos dts) obteve-se um benefício em termos de mortalidade global aos cinco anos (36% *versus* 60,0%, p = 0,045) e no número de hospitalizações por IC (1 [0-1] *versus* 1 [0-3], p = 0,046), no entanto não se observou benefício na mortalidade por IC. A figura ilustra as curvas de sobrevivência global ao longo dos cinco anos.



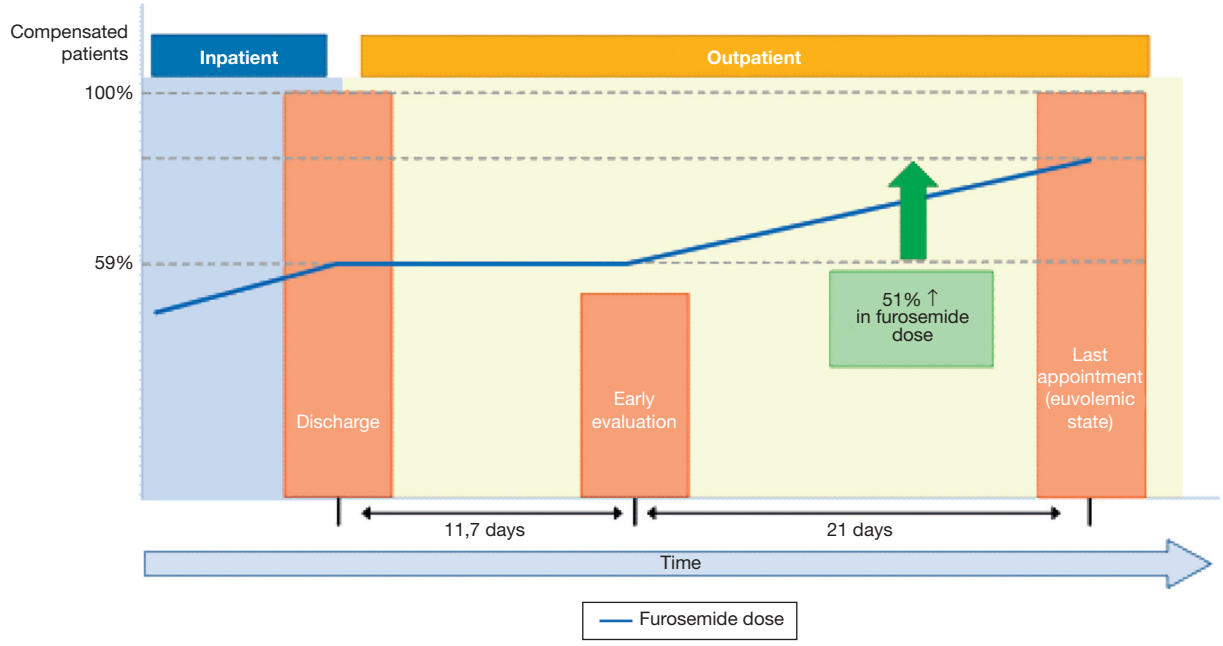
Conclusões: Na nossa população, dts tratados conjuntamente com IECA/ARA, BB e ARM apresentaram uma mortalidade aos cinco anos mais reduzida e menor número de hospitalizações por IC. Estes resultados sugerem benefícios na utilização dos ANH nos casos de FEI, semelhantes aos dts com fração de ejeção reduzida.

P 275. EARLY REEVALUATION AFTER ACUTE HEART FAILURE: EXPERIENCE FROM A DEDICATED CLINIC

Gonçalo Lopes da Cunha[1], Bruno Rocha[1], Rita Ventura Gomes[2], Rui Morais[3], Luís Campos[3], Susana Quintão[3], Inês Araújo[3], Cândida Fonseca[3]

[1]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de Santa Cruz. [2]Hospital de Vila Franca de Xira. [3]Centro Hospitalar de Lisboa Ocidental, EPE / Hospital de S. Francisco Xavier.

Introduction: Heart failure (HF) is an increasingly prevalent syndrome, with high morbidity, mortality and burdening costs. About half of the direct costs are due to hospitalizations. According to the European registries, 30-day hospitalization rate is approximately 25%. Patients are at increased risk for readmission within this period, the so-called vulnerable phase. The



P 275 Figure

European Society of Cardiology guidelines recommend early reevaluation in order to reduce HF readmissions. However, evidence supporting the benefits of such strategy is yet scarce. Therefore, we aimed to study the usefulness of post-discharge early reevaluation of our HF management program.

Methods: This was a single-center retrospective cohort study enrolling consecutive patients admitted to an acute HF unit due to decompensated HF from May to August 2018.

Results: A total of 53 patients were admitted to the HF unit with acute decompensation. Thirty-one (58%) were male, mean age was 77 ± 11 years and most had ischemic (35.8%) or hypertensive (26.4%) HF. Reduced, mid-range and preserved ejection fraction was observed in 55.7%, 7.7% and 36.5% of the cases, respectively. Acute phenotypes were as follows: wet and warm in 89%, wet and cold in 9% and dry and cold in 2%. During hospital stay, 2 patients were transferred and 5 died. Of the remaining 46 patients, 86.9% were referred to our early reevaluation HF management program. Two patients missed this appointment, thus being excluded from further analysis. When assessing the remaining 44 patients, mean time to day Hospital re-evaluation was 11.7 ± 4.6 days. On the first appointment, 18 (41%) were congestive, of which 50% received intravenous furosemide. Their mean weight gain from discharge to evaluation was 3.0 ± 2.0 kg. Patients were again compensated after a median time of 7 ± 17 days and 2.0 ± 2.0 appointments, with a 51.0% ± 40.7% increase of mean oral dose of furosemide, i.e., 43 ± 31.6 mg compared to the previous dose. The rate of HF readmissions at 30-days was 0%.

Conclusions: Almost half of the patients were congestive at early reevaluation, of which roughly half needed IV diuretics for compensation before definite oral dose readjustment. These findings emphasize the importance of early post discharge reevaluation for adequate stabilization of HF during the vulnerable phase, thus reducing re-hospitalizations.

P 276. RENAL DYSFUNCTION AS A PREDICTOR OF POOR OUTCOMES IN OLDER PATIENTS WITH HEART FAILURE: WHICH FORMULA TO USE?

Inês Pires[1], Hugo Antunes[2], Luísa Gonçalves[2], João Miguel Santos[2], Júlio Gil Pereira[2], Davide Moreira[2], José Costa Cabral[2], Inês Almeida[2]

[1]Centro Hospitalar de S. João, EPE. [2]Centro Hospitalar Tondela-Viseu, EPE / Hospital de São Teotónio, EPE.

Introduction: Renal dysfunction (RD) is a predictor of adverse outcomes in heart failure (HF). There are several equations to estimate glomerular filtration rate (eGFR), namely the recent Berlin Initiative Study creatinine-based (BIS) formula, developed in ≥ 70 years old patients (P); the chronic kidney disease epidemiology collaboration creatinine-based (CKD-EPI) formula; and the Modification of Diet in Renal Disease (MDRD) formula. This study compares different eGFR equations in the prediction of adverse outcomes in older P with HF.

Methods: All P with ≥ 70 years admitted for acute HF in a Cardiology Department during 7 years were included. Admission creatinine levels were used to calculate eGFR, using BIS, CKD-EPI and MDRD formulas. P were classified into normal renal function/mild RD if eGFR ≥ 60 mL/min/1.73 m^2 or moderate/severe RD if eGFR < 60 mL/min/1.73 m^2. The follow-up (FU) was of 24 months. The primary endpoint (EP) was a composite of all-cause mortality or hospitalization for HF. Statistical analysis used chi-square, Mc Nemar and Mann-Whitney U tests; Kaplan-Meier curves and log-rank tests; Cox proportional hazards regression; and ROC curves to estimate the area under the curve (AUC) for the 3 eGFR formulas.

Results: 815 P were studied (54.2% female, mean age 81.1 ± 6.2 years). eGFR mean values as measured by the BIS, CKD-EPI and MDRD formulas were 45.95 ± 16.59, 50.85 ± 21.37 and 56.57 ± 25.73 mL/min/1.73 m^2, respectively. The prevalence of eGFR < 60 mL/min/1.73 m^2 was different with the 3 formulas: 80.6% with BIS, 66.7% with CKD-EPI and 60% with MDRD (p < 0.001).Mortality during FU was 9.6%, and was associated with older age (p < 0.001); chronic obstructive pulmonary disease (p < 0.001); lower systolic blood pressure (p = 0.005); lower hemoglobin (p = 0.027) and albumin (p = 0.021) levels; higher urea (p = 0.049), potassium (p = 0.012) and blood natriuretic peptide (p < 0.001) levels. Mortality was associated with lower eGFR calculated with BIS (p = 0.035), but not with CKD-EPI (p = 0.096) or MDRD (p = 0.152) equations. In survival analysis, there was a significant decrease in primary EP in P with eGFR ≥ 60 mL/min/1.73 m^2 using BIS (p = 0.002), CKD-EPI (p < 0.001) and MDRD (p = 0.001) formulas. The unadjusted hazard ratio for reduction in primary EP was 0.984 (p < 0.001) for BIS, 0.988 (p < 0.001) for CKD-EPI and 0.991 (p = 0.001) for MDRD. The BIS equation showed the best discriminatory power of the 3 formulas for prediction of both primary EP (AUC: 0.609, 95%CI: 0.566-0.650) and mortality during FU (AUC: 0.574, 95%CI: 0.531-0.616), and outperformed all other equations (p < 0.001 in all comparisons).

Conclusions: In this study, BIS eGFR equation was a predictor of primary EP and mortality during FU in older P with acute HF, and had the best predictive power, when compared to other commonly used formulas. Therefore, BIS should be considered to estimate renal function in these P, as its use could translate into better risk prediction.

Segunda-feira, 29 Abril de 2019 | 11H00-12H00

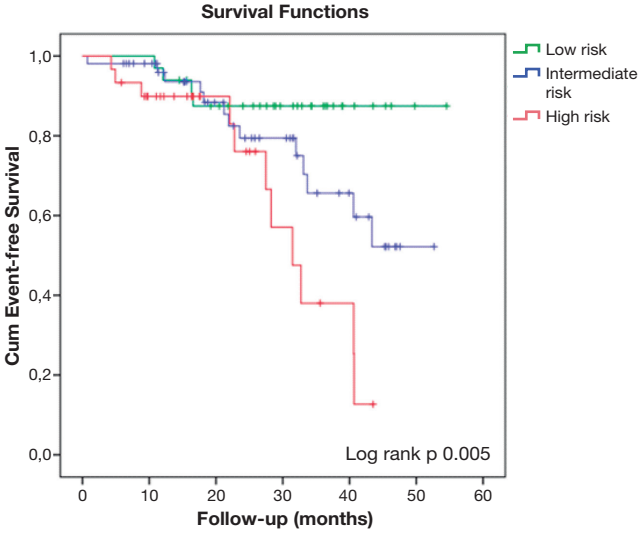
JARDIM INVERNO | POSTERS 5 - ÉCRAN 7 - IMAGIOLOGIA CARDIOVASCULAR

P 277. RISK STRATIFICATION OF HEART FAILURE PATIENTS SUBMITTED TO CARDIAC RESYNCHRONIZATION THERAPY USING A COMBINATION OF RENAL FUNCTION AND 123I-MIBG SCINTIGRAPHY

Rita Ilhão Moreira[1], Ana Abreu[2], Madalena Coutinho Cruz[1], Inês Rodrigues[1], Guilherme Portugal[1], Tânia Mano[1], Luís Oliveira[1], Mário Oliveira[1], Pedro Silva Cunha[1], Vanessa Santos[1], Helena Santa Clara[1], Miguel Mota Carmo[1], Rui Cruz Ferreira[1]

[1]Centro Hospitalar de Lisboa Central, EPE / Hospital de Santa Marta. [2]Centro Hospitalar de Lisboa Norte, EPE / Hospital de Santa Maria.

Introduction: Renal dysfunction and cardiac autonomic denervation as assessed by ^{123}I-metaiodobenzylguanidine (^{123}I-mIBG) scintigraphy are both associated with poor prognosis in heart failure (HF) patients (pts). However, their incremental prognostic values in HF pts undergoing cardiac resynchronization therapy (CRT) is unclear.
Objectives: We sought to assess the prognostic value of baseline renal dysfunction and cardiac autonomic denervation among CRT pts.
Methods: Prospective unicentric study including consecutive HF pts submitted to CRT who underwent clinical, laboratorial, echocardiographic and scintigraphic assessment before and 6 months after device implantation. Renal dysfunction was defined as pre-implantation estimated glomerular filtration rate (eGFR) below 60 mL/min/1.73 m^2. Cardiac autonomic denervation was defined as pre-implantation ^{123}I-mIBG late heart-to mediastinum (HMR) below 1.4. Patients were classified into 3 groups: high (both renal dysfunction and autonomic denervation), intermediate (either renal dysfunction or autonomic denervation) or low risk (neither renal dysfunction nor autonomic denervation). Composite outcome was defined as cardiac mortality, cardiac transplant or heart failure hospitalization.



Results: A total of 119 patients were included (69.23 ± 11.38 years; 68.1% male; 74.8% in class III of NYHA classification; 31.4% with ischemic cardiomyopathy; LV ejection fraction [LVEF] 26.03 ± 6.99%; 35% with atrial fibrillation). During follow-up (mean 25.5 ± 12.9 months), composite endpoint was documented in 29 pts (24.4%), corresponding to 11.5% per year. Multivariate Cox proportional hazards regression showed that eGFR and late HMR were independent predictors of composite outcome (HR: 0.983, 95%CI: 0.970-0.997, p 0.017 and HR: 0.066, 95%CI: 0.005-0.880, p = 0.040, respectively). The composite endpoint of pts in high, intermediate and low risk groups according to renal and autonomic dysfunction was 36.7%, 24.5% and 12.1%, respectively (HR: 22.487, 95%CI: 3.155-160.262, p = 0.002) (Fig.). Late HMR remained an important independent predictor of prognosis in the sub-group of pts with renal dysfunction (HR: 0.002, 95%CI: 0.001-0.753, p = 0.040).
Conclusions: Combined baseline renal dysfunction and cardiac autonomic denervation provide a significant prognostic value among CRT pts.

P 278. ISCHEMIA IN DOBUTAMINE STRESS ECHOCARDIOGRAPHY - WHEN DOES IT OCCUR?

Vera Ferreira, Luísa Moura Branco, Ana Galrinho, Pedro Rio, Sílvia Aguiar Rosa, Ana Leal, Duarte Cacela, Alexandra Castelo, Pedro Garcia Brás, Tânia Branco Mano, João Pedro Reis, Rui Cruz Ferreira

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

Introduction: The assessment of new wall motion abnormalities using dobutamine stress echocardiography (DSE) improves the sensitivity to detect coronary artery disease (CAD) and the stratification of cardiac events.
Objectives: To evaluate predisposing factors to myocardial ischemia during DSE.
Methods: 220 patients (P) who underwent consecutive DSE for suspected coronary artery disease (CAD) between 2013 and 2017. P with significant valvular disease were excluded from this study. P were divided according to DSE result: positive (+) and negative (-). We evaluated clinical and echocardiographic characteristics and determined predictors for myocardial ischemia. Mean age was 64.8 ± 12.0 years, with 143 men (65%).
Results: 88 P (46.3%) were included in +DSE and 102 P (53.7%) in -DSE. 30 P were excluded due to an inconclusive DSE. +DSE had more male (79.5% *versus* 55.9%; p = 0.001), dyslipidemia (80.5% *versus* 62.0%; p = 0.006), prior myocardial infarction (MI) (48.3% *versus* 25.8%; p = 0.002), prior percutaneous coronary intervention (38.6% *versus* 23.5%; p = 0.025), prior coronary bypass graft (CABG) (20.5% *versus* 2.9%; p = 0.001) and antiplatelet therapy (76.7% *versus* 62.5%, p = 0.041). +DSE P had smaller ejection fraction (EF) (EF < 50% +DSE 63.6 *versus* 17.4% in -DSE; p = 0.001), larger left ventricular (LV) end-systolic and end-diastolic dimensions (38.4 ± 9.3 *versus* 29.1 ± 6.9 mm; p < 0.0005 and 55.8 ± 7.3 *versus* 49.9 ± 5.9 mm; p < 0.0005), larger left atrial dimension (41.6 ± 5.3 *versus* 38.5 ± 6.2 mm; p = 0.007) and higher pulmonary artery pressure (34.7 ± 12.0 *versus* 29.7 ± 7.3 mmHg; p = 0.047). In +DSE, 75% P had resting wall motions abnormalities (WMA) (vs 16.7% in -DSE; p < 0.0005) and the mean peak wall motion score index was 1.47 ± 0.36 (vs 1.04 ± 0.13 in -DSE; p- < 0.0005). Mean resting global longitudinal strain (GLS) was smaller in +DSE (-15.0 ± 4.3 *versus* -17.9 ± 3.9 in -DSE; p = 0.033) as well as mean peak GLS (-14.7 ± 4.1 *versus* -19.0 ± 3.5; p = 0.010). Significant intraventricular gradient (IVG > 20 mmHg) was exhibited in 36.3% in -DSE (vs 9.1% in +DSE; p < 0.0005). In multivariate analysis, independent predictors for ischemia in DSE were dyslipidemia (OR: 3.26; p = 0.011), prior CABG (OR: 5.83; p = 0.039), absence of IVG (OR: 0.30; p = 0.032) and rWMA (OR: 7.24; p < 0.0005).
Conclusions: Predictors for ischemia in patients underwent DSE were the presence of risk factors (dyslipidemia), occurrence of previous coronary events (prior CABG and resting wall motion abnormalities) and the absence of intraventricular gradient.

P 279. SIMPSON'S TRIPLANE *VERSUS* BIPLANE FOR LEFT VENTRICLE EJECTION FRACTION AFTER MYOCARDIAL INFARCTION

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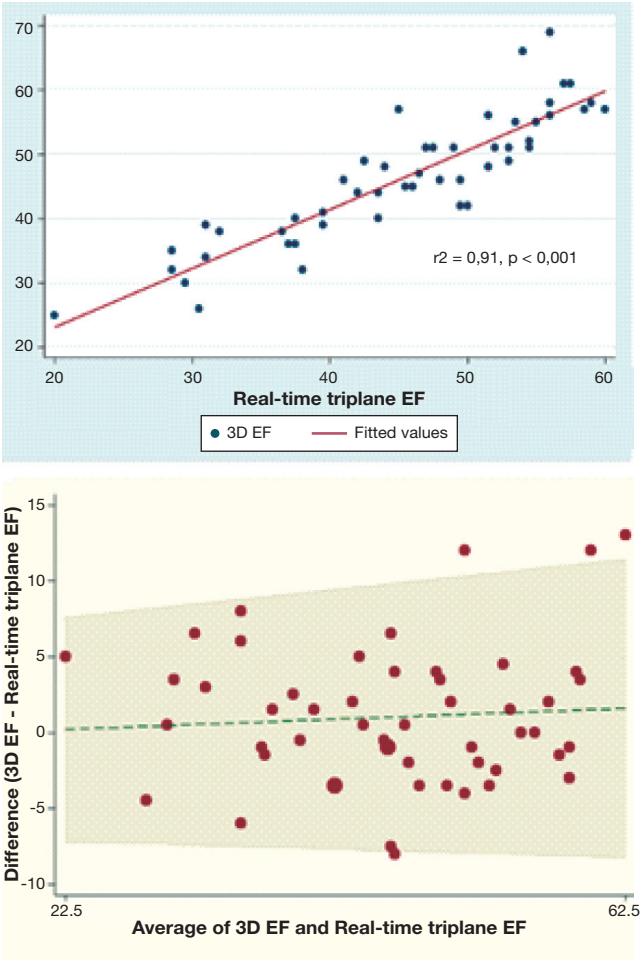
Introduction: Simpson's biplane (SBP) ignores the apical long-axis plane. It is estimated that 40% of myocardial infarction (MI)-related segmental

VARIABLE	N = 52
MALES. N (%)	43 (82.7)
AGE, YO (MEAN ± SD)	58.8 ± 11.1
HR, BPM (MEAN ± SD)	63 ± 10.7
MI LOCATION	
ANTERIOR, N (%)	23 (44.2)
INFERIOR, N (%)	12 (23.1)
LATERAL, N (%)	7 (13.5)
MULTIVESSEL, N (%)	10 (20.2)
EF BP EX: 1, % (MEAN ± SD)	44.6 ± 10.3
EDV BP EX: 1, ML (P50, IQR)	123, 106-206
ESV BP EX: 1, ML (P50, IQR)	62, 53-97
EF RT3P EX: 1, % (MEAN ± SD)	47.9 ± 16.6
EDV RT3P EX: 1, ML (P50, IQR)	129, 105-168
ESV RT3P EX: 1, ML (P50, IQR)	72, 50-101
EF BP EX: 2,% (MEAN ± SD)	46.8 ± 11.3
EDV BP EX: 2, ML (P50, IQR)	126, 92-159
ESV BP EX: 2, ML (P50, IQR)	59, 46-83
EF RT3P EX: 2, % (MEAN ± SD)	44.8 ± 9.74
EDV RT3P EX: 2, ML (P50, IQR)	124, 94-157
ESV RT3P EX: 2, ML (P50, IQR)	61, 45-88
EF 3D, % (MEAN ± SD)	46.4 ± 9.9
EDV 3D, ML (P50, IQR)	120, 89-149
ESV 3D, ML (P50, IQR)	58, 42-44



P 279 Figure

abnormalities are located in this plane. The real-time triplane (RT3P) overcomes this issue, allowing to obtain all apical views simultaneously, at the same cardiac cycle. This method could be a more precise and reliable alternative to SBP in ejection fraction (EF) quantification in this setting.
Objectives: The authors aimed to compare EF assessed by two quantification methods, SBP and RT3P, using quantitative three-dimensional echocardiography (3DE) as the reference method, in patients with MI.
Methods: We have prospectively gathered data from 52 adult patients, which had recent or past history of MI. Exclusion criteria were the presence of atrial fibrillation, unknown coronary anatomy, significant valvular disease, left branch block, ventricular pacing and poor definition of endocardial borders. Estimation of EF by SBP, RT3P and 3DE was performed in all patients and gathered by two experienced operators. The two operators were blinded for the coronary angiography results before volume quantification. They were also blinded for their own measurements, as well as for the other operator's measurements. Spearman's correlation and linear regression were performed for correlation analysis. Bland-Altman plot was used for agreement assessment among the different methods. Interobserver agreement was assessed by Cohen's kappa.
Results: Patient characteristics are shown in table 1. EF calculation was feasible in all patients. EF was 44.6 ± 10.3% by SBP, 47.9 ± 16.6% by RT3P and 46.4 ± 9.9% by 3DE. There were excellent correlations between EF measured by SBP *versus* 3DE and RT3P *versus* 3DE (r: 0.813 and r: 0.9, respectively). Linear regression between SBP *versus* 3DE and RT3P *versus* 3DE revealed strong agreement (r^2: 0.82 and r^2: 0.91, respectively). Test of equality between two correlation coefficients confirmed that EF by RT3P method is significantly more correlated with the reference method, compared with EF by SBP (p = 0.004). We have also performed a further analysis to study this results in special subsets. In anterior MI subset, EF by RT3P correlated by 0.909 with 3DE, *versus* 0.826 from EF by SBP (p = 0.019). In inferior MI subset, EF by RT3P correlated by 0.779 with the reference method, *versus* 0.706 from EF by SBP (p = 0.246).
Conclusions: Estimation of EF using SBP and RT3P methods by experienced operators strongly correlate with EF determined by 3DE. The RT3P method showed the strongest correlation between the two methods, which may point to its usefulness in the evaluation of EF in patients with anterior wall motion abnormalities after myocardial infarction.

P 280. LEFT VENTRICULAR TORSION IN SEVERE VALVULAR DISEASE

André Azul Freitas, João Ferreira, Letícia Bento, Valdirene Gonçalves, Cátia Ferreira, James Milner, Patrícia Alves, Vera Martinho, Rui Baptista, Elisabete Jorge, Rui Martins, Lino Gonçalves

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Introduction: Left Ventricular (LV) torsion is an important component of LV performance. With the development of speckle tracking echocardiography, it became possible and feasible to measure rotation and twisting with a high degree of accuracy. No standard normal values are defined for peak torsion, although mean values around 10° are found in normal subjects with a slight increase with age. In this study we aimed to evaluate torsion in the different types of severe valvular disease.

Methods: We conducted a retrospective, observational study including patients with severe valvular disease with suitable images for torsion analysis. We included 61 patients (21 with severe aortic stenosis (AS), 20 with severe aortic regurgitation (AR) and 20 with severe mitral regurgitation (MR). Circumferential basal and apical strain was performed, and peak torsion was calculated. Results were compared between groups and were related with echocardiographic parameters, including left ventricle ejection fraction (LVEF).
Results: Mean age was 70.3 ± 13.6 years with a male preponderance (66%). Mean LVEF was within normal range in the aortic valve disease group; no significant difference was found in LVEF between AS and AR patients (57% ± 7.7% *versus* 55% ± 9.7%, p = 0.57). In comparison with the aortic disease group, MR patients had a reduced LVEF (48% ± 17.3% *versus* 56% ± 8.7%, p = 0.05). Mean peak torsion was 8.9 ± 5.1° in AS, 12.6 ± 4.9° in AR and 7.9 ± 3.2° in MR (p = 0.004). Comparing with aortic valve disease patients, MR patients had a reduced mean peak torsion (7.9 ± 3.2° *versus* 10.7 ± 5.3°, p = 0.03). In relation with patients with AS, those with AR had a higher peak torsion (12.6 ± 4.9° *versus* 8.9 ± 5.1°, p = 0.024) and a higher left ventricle end-diastolic volume (87.3 ± 29.1 $mL.m^{-2}$ *versus* 64.5 ± 24.9 $mL.m^{-2}$, p = 0.011). Circumferential apical strain showed a negative correlation with peak torsion (r^2: 0.203, p = 0.006) and with LVEF (r^2: 0.290, p < 0.001). Peak torsion did not demonstrate any significant correlation neither LVEF nor circumferential basal strain.
Conclusions: LV function and peak torsion are more associated with apical than basal circumferential movement. Aortic valve disease is responsible for LV torsion variations in patients with normal ejection fraction, showing an increase in AR and a reduction in AS. In MR patients a reduced LVEF could entails a decrease in peak torsion.

P 281. CARDIAC MAGNETIC RESONANCE EVALUATION AND RISK STRATIFICATION OF PATIENTS WITH CONFIRMED OR SUSPECTED ARRHYTHMIAS

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Introduction: The etiological diagnosis of cardiac arrhythmias is often difficult. Cardiac Magnetic Resonance (CMR) is the gold standard exam for anatomical and functional cardiac evaluation and it may be indicated in patients with ventricular arrhythmias when echocardiography does not provide an accurate assessment of left and right ventricles (LV,RV).
Objectives: The aim of this study was to determine the impact of CMR in the diagnosis and stratification of arrhythmic risk in patients with confirmed or suspected arrhythmia, as well as to describe the changes observed.
Methods: We performed a prospective registry over a 5-year period of all the patients with arrhythmias who underwent CMR for diagnostic and risk stratification purposes. We followed a protocol to evaluate both anatomically and functionally the ventricles and to look for the presence of late gadolinium enhancement (LGE).
Results: A total of 78 patients were included, of which 65% were male and a mean age of 46 ± 17 years-old was observed. The indications for CMR evaluation of patients with confirmed or suspected arrhythmias were: 33% (n = 26) of the patients had very frequent premature ventricular complexes (PVC), 23% (n = 18) had sustained ventricular tachycardia (VT), 17% (n = 13) suspected structural heart disease with high arrhythmic potential, 12% (n = 9) unexplained recurrent syncope, 6% (n = 5) supraventricular tachycardia, 5% (n = 4) non-sustained VT and 4% (n = 3) aborted sudden cardiac death. Depressed ventricular ejection fraction (< 50%) was present in 9% (n = 7) for the LV and in 14% (n = 11)for the RV. Dilation of the LV was found in 24% of the patients (n = 19, mean LV volume: 115 ± 4 ml/m^2) and RV dilation was present in only 1 patient who had right ventricle arrhythmogenic dysplasia (RVAD) (RV volume: 152 ml/m^2). Cardiac synchronization artifacts due to the presence of very frequent PVC compromised the calculation of volumes in only 4% (n = 3) of the patients. In total, 6% (n = 5) had interventricular septum hypertrophy (mean 15 ± 6 g/m^2), 10% (n = 8) had a slight prolapse of the anterior leaflet of the mitral valve and 19% (n = 15) had a dilated left auricle. LGE was present in 13% (n = 10) and slight pericardium effusion was detected in 12% (n = 9). CMR was considered normal in 65% (n = 51), in 15% (n = 12) we found nonspecific changes deserving follow-up and in 20% (n = 15) it was possible to establish a diagnosis which was previously unknown: 5% (n = 4) had hypertrophic cardiomyopathy, 4% (n = 3) LV non-compaction, 4% (n = 3) a myocarditis sequelae, 3% (n = 2) RVAD, 3% (n = 2) a myocardial infarction scar and 1 had non-ischemic dilated cardiomyopathy.
Conclusions: CMR is a technique with high spatial resolution, feasible and safe, which allowed an increase in diagnosis in 20% of the patients, thus contributing to the risk stratification of our study population with suspected high arrhythmic potential when the first-line complementary exams were inconclusive.

P 282. PREDICTORS OF CARDIAC EVENTS OCCURRENCE AFTER A NON-POSITIVE EXERCISE ECHOCARDIOGRAPHY IN PATIENTS PREVIOUSLY SUBMITTED TO PERCUTANEOUS CORONARY ANGIOPLASTY

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Introduction: Stress testing following percutaneous coronary intervention (PCI) can identify myocardial ischemia resulting from in-stent restenosis, progression of coronary lesions in arteries that were not revascularized, or de novo lesions.
Objectives: To determine prognostic value and predictors of cardiac events occurrence after a non-positive exercise echocardiography (EE) in pts previously submitted to PCI.
Methods: Retrospective single-center study that included pts previously submitted to PCI that performed EE between 2008-2017 that was not positive for myocardial ischemia. A cardiac event was assumed when coronary revascularization during follow-up (FUP) was performed. Statistical analysis applying Kaplan Meier and Cox regression was performed.
Results: Were selected 389 pts (84% male, mean age 62 ± 9 years). Almost 78% of these had 1 or 2 vessels with coronary artery disease (CAD) and 60% of the pts had been submitted to complete percutaneous revascularization. EE was negative in 63% and inconclusive in 37%. The main indication for EE performance was chest pain (34%). At the time of EE performance, 115 pts did not stop antianginal therapy with beta blocker therapy. Most pts (91%) had preserved left ventricular ejection fraction (LVEF). The mean exercise time achieved was 7.6 ± 6.2 minutes and the mean METS achieved were 8.5 ± 2.5. Although it was the main indication for the test performance, only 4.1% referred chest pain during treadmill exercise. A positive ischemic response during electrocardiography monitoring was observed in 3.3% of the cases. During a mean FUP of 50 ± 33 months, cardiac events occurred in 68 (17.5%) pts, conferring a negative predictive value of 82.5%. PCI was performed in 65 (16.7%) pts and surgical myocardial revascularization in 3 (0.8%) pts, mainly due to stable CAD (65%). An acute coronary syndrome occurred in 23 (6%) pts. In unadjusted Cox regression, systemic hypertension, chronic renal disease, the number of vessels with CAD, LVEF, wall motion score index and an inconclusive test were positively and significantly associated with events occurrence. After covariate adjustment, systemic hypertension (HR 2.07, CI 1.10-3.91, p = 0.025), the number of vessels with CAD (2 vessels: HR: 1.37, CI: 0.75-2.30, p = 0.304; 3 vessels: HR: 2.59, CI: 1.38-4.87, p = 0.003) and an inconclusive test (HR: 1.67, CI: 1.03-2.70, p = 0.039) remained significantly associated with cardiac events occurrence. Cardiac event-free survival rates at 1, 2, 3, 4 and 5 years were 96.5±0.9%, 93.5 ± 1.4%, 88.3 ± 1.9%, 83.0 ± 2.3% and 79.5 ± 2.6%, respectively.
Conclusions: The prognostic value of non-positive treadmill EE in pts previously submitted to PCI was excellent, with high levels of event-free survival rates. The factors associated with cardiac events occurrence in these population were the extent of vessels with CAD, systemic hypertension and an inconclusive result.

Segunda-feira, 29 Abril de 2019 | 11H00-12H00

JARDIM INVERNO | POSTERS 5 - ÉCRAN 8 - DOENÇA VALVULAR

P 283. TAVI: REAL LIFE RESULTS

Sara Pereira, Miguel Nobre-Menezes, Pedro Carrilho-Ferreira, Cláudia Jorge, Eduardo Infante-Oliveira, Joana Rigueira, Inês Aguiar-Ricardo, Afonso Nunes-Ferreira, Tiago Rodrigues, Nelson Cunha, Pedro S. Morais, Fausto J. Pinto, Pedro Canas da Silva

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Introduction: Transcatheter aortic valve implantation (TAVI) is a less invasive alternative to surgical aorthic valve replacement of particular interest in patients with moderate to high surgical risk.
Objectives: Our study intends to present the results of TAVI in a high-volume center.
Methods: We performed a retrospective unicentric study of patients consecutively submitted to TAVI from September 2012 to October 2018. Demographic, clinical, imagiological (echocardiographic and coronary computer tomography angiographic) data, procedure characteristics and patient outcomes were analised.
Results: During the period, 440 patients were submited to TAVI (median age 81 ± 7.1 years, 55% women). The most frequent comorbid conditions were coronary heart disease (35.2%), 28% had previous percutaneous angioplasty and 7% previous surgical revascularization), diabetes *mellitus* (29%) and chronic kidney disease (27.9%). The median euroscore II was 4.53 ± 3.8% and STS de 6.4 ± 5.3%. Left bundle branch block was present in 14.8% of the patients previously to the procedure. Severe aortic stenosis (95.6%) was the most frequent indication, followed by aortic regurgitation (2.5%). Some patients (1.6%) had disfunction of the previous prosthetic valve and were submitted to valve-in-valve TAVI. The mean left ventricular ejection fraction of the left vetricle was 56.5 ± 11.9%, with a mean gradient of 49.8 ± 14.2% and a mean aortic valve area of 0.66 ± 0.34 cm^2. The most frequent approach was transfemoral (94.3%), followed by transapical (4.5%). One patient was submitted to transaortic procedure. Sapien® (60.2%) and CoreValve® (36.1%) were the most implanted prostheses. We observed 30-day and 1-year mortality-rates of 4% (n = 19) and 10% (n = 44), respectively. Five patients died during the procedure. The overall mortality rate was 29% (n = 129, mean follow-up 660 ± 692 days). The following complications (and respective relative frequency) were documented: haemorrhage (18.6%-3% life threatening, 5% major and 10.6% minor), acute kidney injury (37.3%-5% with AKIN classification ≥ 2), stroke/transient ischemic attack (3.6%, of which 8 patients with major stroke, 6 with incapacitant sequelae), vascular complications (17.5%, 5% major). One patient suffered peri-procedure acute myocardial infarction and 18.9% needed pacemaker implantation after the intervention. Only one patient presented severe periprosthetic leak on 2-year follow-up echocardiogram, moderate leaks being present in 2.3% of the cases We observed no significant raise in the transprothesic gradients during the follow-up.
Conclusions: We observed inferior complication rates when compared to those described in the literature. Our findings reinforce the safety and effectiveness of TAVI.

P 284. CARDIAC DAMAGE IN SEVERE AORTIC STENOSIS - VALVE INTERVENTION CAN STILL SAVE THE DAY

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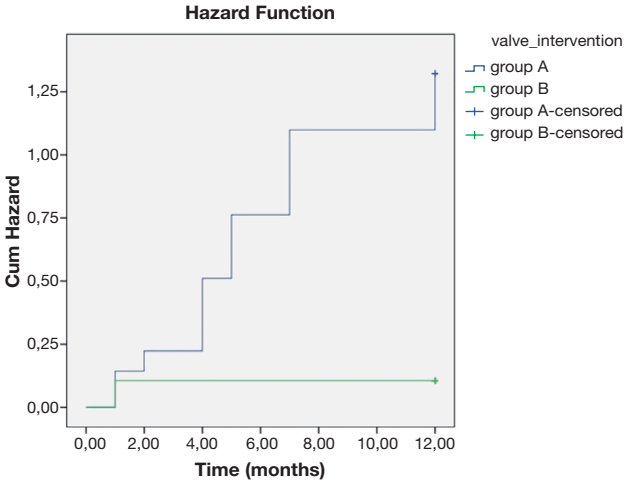
Hospital Distrital de Santarém, EPE.

Introduction: Severe aortic stenosis (SAS) encloses an adverse prognosis when a conservative approach is chosen. Main indications for valve intervention (VI) (either percutaneous or surgical) include the presence of symptoms or a reduction in left ventricular ejection fraction (LVEF). However, even after VI, some patients (pts) -are left with the burden of heart failure (HF), without major improvement of prognosis: probably, these pts are left with a relevant extent of «cardiac damage», as suggested by Génereux et al.. Pts with pulmonary hypertension (PH) usually have the worst prognosis, putting the benefits of VI into question in this population.
Objectives: evaluate the prognosis of pts with SAS and PH and the potential benefits of VI.
Methods: retrospective study of a population with severe aortic stenosis, divided in 2 groups: group A - under conservative treatment (either due to patient refusal of VI, Heart Team refusal for VI or asymptomatic and normal LVEF); group B - underwent VI. Primary endpoint was: hospital admission for cardiovascular causes or death during 12 months follow-up (group A) or during 12 months follow-up after VI (group B). Statistical analysis of clinical and echocardiographic data was made.
Results: we included 72 patients, mean age 79.09 ± 6.35 years, 58.3% were female. The majority had history of hypertension (80.6%), and less than half had type 2 diabetes *mellitus* and coronary artery disease (43.1% and 26.4%, respectively). Most of them (81.7%) were symptomatic, mainly presenting with HF (76.4%). Less than a quarter (23.6%) had LVEF < 50%; 34.7% had evidence of PH and 23.6% of right ventricular dysfunction. About half of the pts (52.8%) underwent VI, mainly surgical valve replacement (76.31%). Pts undergoing VI were younger (group A 79.57 ± 7.32 *versus* group B 78.25 ± 5.06 years, p = 0.006) and had higher creatinine clearance (group A 46.86 ± 17.69 *versus* group B 57 ± 30.33 mL/min, p = 0.018).The mortality rate during follow-up was 19.2%. About one third of the pts reached the endpoint (26.4%), mostly pts with systemic hypertension (p = 0.007), PH (p = 0.044) and pts from group A (p = 0.001). Only PH (odds ratio = 6.24 [95%CI: 1.22-31.85], p = 0.013) and absence of VI (group A) (odds ratio: 7.69 [95%CI: 1.62-58.80], p = 0.028) were independent predictors of the endpoint. Considering only pts with PH, absence of VI significantly decreased time to endpoint (group A 6,67 ± 1.11 months *versus* group B 10,9 ± 1.04 months, p = 0.005).



Conclusions: VI is essential to improve the adverse prognosis of pts with SAS. Despite their worse prognosis, pts with PH still benefit from VI, with a relevant improvement in survival and quality of life.

P 285. ATRIOVENTRICULAR GROOVE DISRUPTION FOLLOWING MITRAL VALVE REPLACEMENT: A «LIFE OR DEATH» SURGICAL CHALLENGE

Manuela Gouveia Silva, Carolina Rodrigues, Rui Cerejo, Nuno Banazol, Pedro Coelho, José Fragata

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Introduction and objectives: Atrioventricular groove disruption (AVGD) or type I posterior ventricular rupture following mitral valve replacement (MVR) is a rare but catastrophic complication with a mortality rate as high as 75%. Incidence ranges from 0.5% to 2%, with few series reported in the literature.

Multiple factors such as heavy mitral annular calcification, posterior leaflet resection, increased tissue friablity, reoperations and global frailty in the eldery population, have been associated with AVGD. We report our surgical experience in AVGD correction.
Methods: A single-center retrospective review of all consecutive patients with AVGD following MVR in the past decade was performed. Two surgical strategies have been applied, namely, the internal reapir with explantation of the prothesis, reconstruction of the AVG using a felt patch and prothesis reimplantation, and the the external approach using autologous or heterologous pericardial patch, felt-reinforced suturing and biological glue application. Both techniques implied reinstitution of cardiopulmonary bypass, cardioplegic arrest and complete decompression of the heart.
Results: Between January of 2007 and October of 2018, 395 patients underwent isolated MVR in our hospital and AVGD occured in 5 patients (1.3%). Average age in this subgroup of patients was 72.8 years (range, 66-80 years), and all female gender. Sixty percent (3 of 5) of the AVGD were early ruptures, detected intraoperatively and 2 patients (40%) had a delayed rupture diagnosed in the first postoperative day. Internal repair was performed in 3 patients: one delayed rupture and 2 early ruptures, one of the later combined with the external technique and an adicional safenous vein bypass grafting to the first obtuse marginal due to the injury of the circunflex artery. The external strategy was applied in the remainer 2 patients. An intraaortic ballon pump was used in 3 patients. Two patients died intraoperatively, both who underwent isolated internal repair, and survival rate at discharge was 60% (3 of 5). Currently, all three patients remain alive.
Conclusions: AVGD is a dreadful, highly lethal and, probably, an underestimated complication of MVR. The ideal repair technique remains a matter of debate. Patient individual evaluation and risk assessment are crucial in decision making. Despite our small serie of patients, we consider the external approach an effective repair strategy for rescue of AVGD.

P 286. SEVERE AORTIC STENOSIS IN A REAL-WORLD SETTING

Rita Ventura Gomes[1], João Pais[2], Bruno Rocha[3], Ana Rita Pereira[4], Daniel Sebaiti[4], Ana Marques[4], Inês Cruz[4], Isabel João[4], Hélder Pereira[4], Ana Rita Almeida[4]

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Introduction: Severe aortic stenosis (SAS) is now frequently diagnosed in asymptomatic patients (AP). Unlike symptomatic patients (SP), AP have a low risk of complications and intervention is seldom indicated. The current guidelines recommend aortic valve replacement (AVR) for SP with SAS.
Objectives: To evaluate the baseline characteristics, therapeutic strategies and the long-term outcomes of SP and AP with SAS in a real-world setting.
Methods: Retrospective cohort study of AP and SP pts with SAS (mean transvalvular pressure gradient (MG) ≥ 40 mmHg or a peak transvalvular velocity (PTV) ≥ 4.0 m/s), with both preserved and reduced left ventricular ejection fraction (LVEF), who were examined in our echo lab between January 2015 and December 2016. Median follow-up (FU) 2.6 years (IQR 2.2-2.9). The primary outcome was a composite of cardiovascular death or heart failure hospitalization.
Results: 150 pts with SAS were included (age 76.6 ± 9.0years, 28.0% men; aortic valve area 0.72 ± 0.18 cm^2; PTV 4.3 m/s, IQR 4.1-4.7; MG 44.0 mmHg, IQR 40.0-53.5; LVEF 57.2 ± 10.4%). Symptoms were documented in 97 pts. The SP had more SAS (PTV 4.5 ± 0.5 *versus* 4.3 ± 0.4 m/s, p < 0.0001; MG 46.7, IQR 41.0-57.5 *versus* 41.8, IQR 39.0-45.0 mmHg, p = 0.001). AVR (surgical n = 63; TAVI n = 12) was performed in 67.0% (n = 65) SP and 18.9% (n = 10) AP (p < 0.0001), while the remainder with a formal indication (n = 36, 35.6%) were managed conservatively. Four AP (57.1%) did not undergo AVR, although they had indication (2 pts refused, 1 died, 1 due to comorbidities). The AVR was not performed in the SP group mostly due to comorbidities (n = 12, 37.5%) and refusal (n = 9, 28.1%). Thirty pts (20%) had at least one event of the primary outcome. There were no differences in the SP and AP groups (22.7% *versus* 15.1%, p = 0,267). However, SP and AP who underwent to AVR had fewer events (9.3% *versus* 30.7%, p = 0.001). Pts with at least one event had less AVR (76.7% *versus* 23.3%, p = 0.001), higher estimated PASP (47.9 ± 17.4 *versus* 37.4 ± 14.9 mmHg, p = 0.007) and lower TAPSE (19.6 ± 4.6 *versus* 22.5 ± 4.1 mm, p = 0.02). Only the AVR was predictive of the outcome (HR 0.127, CI 0.02-0.821, p = 0.03).
Conclusions: In a real-world experience, SAS has a high rate of adverse events. Few differences were observed between SP and AP. The AVR had a significant impact in the outcome, regardless of symptoms, thus implying that selected AP may as well benefit from this intervention. Nonetheless, in a real-world setting, more than one-third of the patients with a formal indication for intervention was conservatively treated.

P 287. MITRAL VALVE REPAIR SURGERY - OUTCOMES IN A TERTIARY CENTER

Pedro Garcia Brás, Luísa Moura Branco, Pedro Coelho, Vera Ferreira, Alexandra Castelo, Ana Galrinho, Ana Teresa Timóteo, Nuno Banazol, Rui Rodrigues, José Fragata, Rui Cruz Ferreira

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Introduction: Mitral valve regurgitation (MVR) represents the second most frequent valvular heart disease. MV surgical repair is often the preferred treatment when MV anatomy is suitable.
Objectives: To characterize the population who underwent MV repair surgery and evaluate the outcomes of residual MVR, all-cause mortality and functional classification.
Methods: Retrospective analysis of 262 patients (P) admitted between 2008 and 2017 for MV repair surgery. P who undergone simultaneous coronary artery bypass graft (CABG) surgery, atrial fibrillation (AF) surgery and tricuspid valve repair were also included. P with endocarditis, P who underwent simultaneous aortic valve replacement and P with rheumatic predominant MV stenosis were excluded, the remaining 204 P were analysed. Clinical and echocardiographic characteristics were evaluated in a mean follow-up of 30 months.
Results: 204 P, 67.2% male, mean age 62 ± 14 years. The most frequent etiology was organic (80.4%), mostly of degenerative cause (89.7%). Functional etiology was present in 19.6%, mostly ischemic (72.4%). 16.8% underwent simultaneous CABG, 12.3% tricuspid valve repair and 7.8% AF ablation. Hypertension was significantly associated with functional etiology (90% *versus* 72.8%, p = 0.022), as well as hypercholesterolemia (80% *versus* 48.2%, p < 0.001) and diabetes *mellitus* (32.5% *versus* 10.4%, p < 0.001). Baseline left ventricular ejection fraction (LVEF) was > 50% in 78.4%, reduced (30-50%) 18.1% and poor (< 30%) in 3.4%. Functional etiology was significantly associated with LVEF < 50% (70% *versus* 9.1%, p < 0.001). 161P (78.9%) had MV prolapse: 120P (74.5%) posterior, 29P (18%) anterior and 7.4% (12P) of both leaflets. P2 was the most frequently involved scallop, in 92P (57.1%), followed by P3, in 41P (25.4%). There was MV chordae rupture in 94P (58.3%). Post-surgery echocardiography revealed that 93.8% had mild or no residual MVR. 30-day mortality rate was 0%. There was MVR recurrence with MV replacement surgery in 15P (7.5%), mean time 37.1 months. All-cause mortality was registered in 28P (13.7%), with a mean time of 43.7 months after MV surgery. Of the P without MVR recurrence or mortality, 111P (70%) were in NYHA class I, 41P (26%) in NYHA class II and 6P (4%) in NYHA class III. 6P were lost to follow-up. Upon echocardiographic revaluation there was no residual MVR in 53P (39%), mild MVR in 67P (49%) and moderate MVR in 16P (11.8%).
Conclusions: In P who underwent MV repair surgery, there was 7.5% recurrence rate with follow-up MV replacement surgery and an all-cause mortality of 13.7%. In a mean follow-up of 30 months, 70% of P were in NYHA I class and there was none or mild residual MVR in 88% of P.

P 288. AORTIC VALVE SURGERY IN OCTOGENARIANS

Renata Raimundo[1], Francisca A. Saraiva[2], Soraia Moreira[2], Rui J. Cerqueira[2], André Lourenço[2], Mário J. Amorim[2], Jorge Almeida[2], Paulo Pinho[2], Adelino Leite-moreira[1]

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Introduction: The number of octogenarians referred to aortic valve replacement (AVR) is growing due to aging of population.

Objectives: To evaluate early outcomes and survival after AVR surgery in octogenarians.
Methods: Single-center retrospective cohort study including consecutive AVR surgery in octogenarian patients with last-generation bioprostheses implanted from 2009 to 2016 in a. Absolute and relative frequencies and mean or median were used to sample characterization. Mid-term cumulative survival estimate was done using Kaplan-Meier curve. Median follow-up time was 28 months (maximum 91 months).
Results: We included 205 patients with mean age of 82 ± 2 years, 55% being female. Median of euroscore II was 4.3 (1.1-50.6), being significantly higher in patients with multiple procedures (n = 106, 6.6% (2.0 to 50.6) *versus* n = 99, 2.8% (1.1 to 20.3), p < 0.001). The most common risk factors were arterial hypertension (84.4%) and dyslipidemia (63.4%). Only 14.6% patients had history of smoking. During surgery two patients required intraortic balloon pump (IABP). In the immediate postoperative period, inotropic support (≥ 2 amines, or IABP) was required in 47 (22.9%) patients and 12.4% needed prolonged ventilation (> 24 hours). De novo atrial fibrillation episodes occurred in 82 (51.3%) patients, and 8 (3.9%) patients suffered a clinically relevant stroke. Complete heart block occurred in 26 (12.8%) individuals and 11 (5.6%) required implantation of permanent pacemaker (for all cause). Worsening of renal function (postoperative 50% increasing considering basal creatinine) occurred in 9 (4.4%) patients. The median of hospital stay was 9 days (3 to 115 days). One patient underwent early reoperation (30 days post-implant) due to endocarditis. Intra-operative mortality was 0% and 30-days mortality was 5.8% (3.0% *versus* 8.5% in isolated *versus* multiple procedures, p = 0.096). The 1-, 3- and 5-years cumulative survival were 88%, 75% and 58% respectively.
Conclusions: Our findings support the benefit of surgical AVR in octogenarians, considering the low incidence of complications and reasonable mid-term survival.

Segunda-feira, 29 Abril de 2019 | 11H00-12H00

JARDIM INVERNO | POSTERS 5 - ÉCRAN 9 - DOENÇA CORONÁRIA

P 289. ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION IN WOMEN: LATER DIAGNOSIS, WORST OUTCOME?

Carla Marques Pires[1], Paulo Medeiros[1], Cátia Oliveira[1], Isabel Durães Campos[1], Rui Flores[1], Ana Sofia Ferreira[2], João Costa[1], Carlos Galvão Braga[1], Nuno Antunes[1], Jorge Marques[1]

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Introduction: There are gender-specific differences in the presentation and the outcomes of patients (pts) with ST-segment elevation infarction (STEMI). Although ischaemic heart disease develops on average 7 to 10 years later in women compare with men, it remains a leading cause of death in women and both genders must be managed in a similar way.
Objectives: To compare the time from symptoms onset to STEMI diagnosis, in-hospital mortality and one-year mortality between genders.
Methods: We analysed retrospectively 1215 STEMI pts admitted in our coronary care unit from June 2011 to May 2016. They were divided in two groups: group 1- STEMI pts of the female gender (n = 267, 21.97%); group 2-STEMI pts of the male gender (n = 948, 78.03%). For each group we evaluated the clinical characteristics and we compared the time from symptoms onset to STEMI diagnosis. We also compared the in-hospital mortality and the one-year mortality between genders.
Results: STEMI patients of the female gender were older (69.4 ± 13.8 years *versus* 59.7 ± 12.7 years; p < 0.001), had a higher prevalence of some cardiovascular risk factors, as hypertension (62.6% *versus* 47.9%; p < 0.001) and diabetes (31.4% *versus* 18.6%; p < 0.001), and a lower prevalence of smoking habits (14.2% *versus* 64.3%, p < 0.001). There were not statistically significant differences regarding body mass index, hypercholesterolemia, cerebrovascular disease and previous myocardial infarction. The time from symptoms onset to STEMI diagnosis was significantly higher in the female gender (126 ± 168 min *versus* 105 ± 144 min; p-0.026). We observed a higher in-hospital mortality in STEMI pts of the female gender (10.1% *versus* 3.5%; p < 0.001). However, when adjusted to the confounding factors the gender was not a predictor of in-hospital mortality (OR adjusted = 1.054; p-0.882). In addition, we evaluated the one-year mortality after discharge and found no statistically significant difference among genders (7.1% *versus* 9.2%; p-0.296).
Conclusions: In this STEMI population the time to diagnosis was significantly delayed in the female gender, making a lower clinical suspicion threshold probably advisable in women. Older age and a higher comorbidities burden can explain the higher in-hospital mortality in this group.

P 290. ST ELEVATION MYOCARDIAL INFARCTION - MAKES DIFFERENCE BEING A WOMAN?

João Guedes[1], Pedro Azevedo[2], João Bispo[2], Teresa Mota[2], Raquel Menezes Fernandes[2], Nuno Marques[2], Walter Santos[1], Jorge Mimoso[1], Ilídio de Jesus[2]

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Introduction: ST elevation myocardial infarction (STEMI) in women has been associated to poor prognosis in several studies and records.
Objectives: Evaluate the differences of STEMI treatment between men and women and to assess the impact of the female sex (FS) in prognosis.
Methods: Retrospetive and multicenter study, based on a national register from 30/10/2010 to 09/19/2017. All patients with STEMI were included. Two groups were established, men and women. It was carried out univariate and multivariate analysis of clinical history, hospitalization dat and treatment strategies.
Results: Analysis identified 6757 patients, 5094 men (75.4%) and 1663 women (24.6%). Women, comparing with men, had higher age (70 *versus* 61years, p < 0.01), were less frequently: pre-hospital medical transport, admission by STEMI network and admission directly in the catheterization laboratory (cath lab). Women were less frequently subjected to reperfusion therapy (76.5% *versus* 85,1%, p < 0.01), had higher times symptoms-balloon and door-to-balloon (D-B). In coronary angiography radial access coronary was used less often and women were submitted to coronary angioplasty (PCI) with less frequently than men (80.4% *versus* 89,2%, p < 0.01). The left ventricular ejection fraction (LVEF) < 50% was more frequent in women and the rate of complications (intra-aortic balloon, temporary pacemaker, mechanical ventilation, congestive heart failure (HF), cardiogenic shock, atrial fibrillation, mechanical complication, AV block and major bleeding). FS was associated to an increase in intra-hospital mortality (IHM) (9,2 *versus* 3,8%, p < 0.01), stroke (1.8% *versus* 0,5%, p < 0.01) and MACE (composite endpoint: IHM, re-infarction, nonfatal stroke (11.2% *versus* 5.0% p < 0.01). In multivariate analysis the FS was not an independent predictor (IP) of IHM (p = 0.6; OR 0.73-1.75), MACE (p = 0.4; 0.81-1.67), HF (p = 0.2; OR 0.94-1.40), re-infarction (p = 0.5; OR 0.33-1.70), and LVEF < 50% (p < 0.01; OR 1.99-8.66) and was IP of stroke (p < 0.01; OR 1.99-8.66). FS was IP to not be admitted by STEMI network (p < 0.01, OR 0.58-0.79), not be admitted directly in the cath lab (p = 0.03, OR CI 0.73-0.98), had a time D-B > 90 min (p < 0.01, 1.07-1.47), and do not perform reperfusion (p = 0.04, 0.70-0.99) and PCI (p < 0.01, 0.44-0.83).
Conclusions: In patients with STEMI: Female sex was associated with worse prognosis and greater number of complications; Female sex was not a IP of poor prognosis (death, MACE, re-infarction, HF, LVEF < 50%), except for the increase rate of stroke; Being women was IP to not be admitted by STEMI network, not be admitted directly in the cath lab, had a time P-B > 90min and do not perform reperfusion and PCI. All these factors known to negatively influence the prognosis of STEMI; In this study, we can conclude that in this population the worst prognosis associated with female sex is not due to the genre itself, but the worst treatment given to women with STEMI.

P 291. PATTERNS OF ACCESS TO MEDICAL CARE IN ACUTE MYOCARDIAL INFARCTION

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Introduction: Despite the recommendations, a significant proportion of patients [pts] with acute myocardial infarction [AMI] do not activate the Emergency Medical Systems [EMS] («INEM» in Portugal), thus placing themselves in situations of greater and unnecessary risk.
Objectives: To determine the type of access to medical care in AMI and to evaluate why some patients [pts] do not use the EMS.
Methods: It was conducted a prospective survey study of pts with AMI, admitted between June and December of 2018, which included a questionnaire (performed in the first 24 h of admission) and consultation of the clinical records.
Results: 95 pts, of whom 73% were male, with a mean age of 63.8 years (95% CI: 61.2-66.5) were initially evaluated. 94.4% of the pts considered that in the presence of symptoms suggestive of AMI, EMS should be activated. However, 47.4% (n = 45) did not call the EMS and constituted this study population. The time from the symptoms onset to FMC was longer than 24 h in 22.2% and in those who took < 24 hours, the mean delay was 153 minutes (95% CI: 113-192). The FMC was: emergency department of public (51.2%) and private (25.6%) hospitals, family doctor (16.3%) and private physician (7%). These pts sought the FMC alone in 20.9% and accompanied in 79.1% and the transport used was: personal car in 81.4% (driving in 28.6%; conducted by third person in 71.4%), public transport in 11.6%, taxi in 4.7% and walking in 2.3%. Although the majority of these pts (82.2%) had typical chest pain, the main reason for not calling the EMS was thinking the condition wasn't serious enough (65.9%). Other reasons were: EMS would take longer - 17.1%; symptoms would pass - 9.8%; other - 7.3%.
Conclusions: Unfortunately, there is a significant proportion of pts with AMI that do not use the EMS and directly seek medical care and this was principally due to an underestimation of the severity of the disease. Implementation of educational programs is imperative, to ensure more appropriate use of the EMS.

P 292. LIPOPROTEIN (A) AS A PREDICTOR OF CARDIOVASCULAR ADVERSE EVENTS IN CORONARY ARTERY DISEASE

M. Raquel Santos[1], Andreia Pereira[1], Flávio Mendonça[1], Adriano Sousa[1], Joel Monteiro[1], Micaela Neto[1], Ana Célia[1], Sónia Freitas[1], Eva Henriques[1], Ilídio Ornelas[1], António Drumond[1], Isabel Mendonça[1], Palma dos Reis[2]

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Introduction: Ischemic cardiovascular disease remains a leading cause of morbidity and mortality despite implementation of lifestyle measures and the existence of drugs to reduce classical risk factors, namely hypertension and high levels of LDL cholesterol. It is necessary to identify other causal risk factors and potential therapeutic targets. Lipoprotein a (Lpa) seems a likely candidate. Several studies suggested an association between elevated Lpa levels and acute myocardial infarction, stroke and aortic valve stenosis.
Objectives: To evaluate the influence of Lpa in major adverse coronary events (MACE) of coronary artery disease (CAD) patients.
Methods: Study analyses of 1607 subjects selected from GENEMACOR study population, with at least one > 75% coronary stenosis by angiography (median age 53.3 ± 8 and 78.9% men). $\chi 2$ and T student tests were used to analyze the demographic, laboratorial, angiographic and anthropometric characteristics of the population according to Lpa level. Lipoprotein a was determined by immunoturbidimetry. High Lpa level (Lpa > 30mg/dl) was evaluated as an independent risk predictor of adverse events by cox regression analysis. Adverse cardiovascular events were followed by a mean of 4.5 ± 3.6 years.
Results: Lpa median value was 18.9 (P25 9.4-P75 59.9). 956 patients (80.1% men) had Lpa < 30mg/dl and and 651 (77.1% men) had Lpa > 30 mg/dl. Patients with high levels of Lpa were more diabetic, hypertensive, obese and presented higher levels of LDL, total cholesterol and ApoB. 35.2% patients with elevated Lpa *versus* 26.7% patients with lower Lpa had adverse events (p = 0.042). Patients with higher Lpa presented a HR 1.2, 95% CI: 1.01-1.44, p = 0.04) of developing an adverse event.
Conclusions: In our population Lpa higher than 30 mg/dl was associated with adverse prognosis and increased occurrence of MACE. Knowledge about the interaction between Lpa and other risk factors may allow the identification of patients with increased cardiovascular risk in order to implement strategies to mitigate this risk.

P 293. RELATION OF BILIRUBIN AND CORONARY ARTERY DISEASE SEVERITY IN NON ST ELEVATION MYOCARDIAL INFARCTION

João Gameiro[1], Simone Costa[2], Liliana Reis[2], Diana Campos[2], Carolina Saleiro[2], José Sousa[2], Joana Ribeiro[2], Luís Puga[2], Marta Madeira[2], Joana Silva[2], Lino Gonçalves[2]

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Introduction: Oxidation is an important process in atherosclerosis. More recent evidence suggests that bilirubin is a potent physiological antioxidant that may provide important protection against atherosclerosis and inflammation. In previous studies, bilirubin levels were associated with the severity of coronary disease in patients with ST elevation myocardial infarction (STEMI), as well as short-term outcomes but not long-term outcomes. The association between bilirubin and non-STEMI (NSTEMI) is unknown.
Objectives: The aim of this study is to access the relation between bilirubin levels and severity of atherosclerosis, using the SYNTAX score (SYscore), in patients with NSTEMI, and to determine if bilirubin at admission is an independent predictor of all-cause mortality in this population.
Methods: We included 446 patients (P) with NSTEMI who were admitted to the coronary intensive care unit (CICU), in one cardiology department from January 2010 to December 2016. Blood samples for laboratory analysis were drawn on admission to the CICU and the SYscore was calculated in the cath lab. The study population was divided into tertiles according to the SYscore, and high syntax group (n = 147) - G1 - was defined as a value in the third tertile (> 15), and low syntax group (n = 299) - G2 - as a value in the lower 2 tertiles (< 15).
Results: In our sample, the mean age was 69 ± 12 years old, with 72.4% male P. There was no difference in the sex distribution (p = 0.425), prevalence of hypertension (p = 0.084), dyslipidemia (p = 0.499) or smoking (p = 0.145) between G1 and G2. In G1 there were more diabetic patients (G1 44.9% *versus* G2 33.4%, p = 0.019) and chronic renal failure patients (G1 31.3% *versus* G2 17.1%, p = 0.001). There was no difference in the levels of bilirubin in the 2 groups (G1 10.7 mmol/l *versus* G2 11.5 mmol/l, p = 0.214) and there was only a very weak negative correlation between bilirubin levels and SYscore results (Spearman correlation, rs = -0.034). No differences were seen in all-cause mortality rates (p = 0.678), heart failure admission rates (p = 0.567) or in-hospital mortality rates (p = 0.765) between the high and low bilirubin groups.
Conclusions: In opposition with STEMI patients, low bilirubin levels on admission are not significantly correlated with high syntax score in patients with NSTEMI. No differences were found in all-cause mortality, in-hospital mortality or heart failure admission between high and low bilirubin groups.

P 294. AORTIC VALVE BALLOON VALVULOPLASTY IN PATIENTS ADMITTED FOR CARDIOGENIC SHOCK WITH SEVERE AORTIC STENOSIS: A RETROSPECTIVE ANALYSIS OF 14 CASES

Miguel Lourenço Varela[1], Pedro Teixeira[2], Marta Ponte[2], Daniel Caeiro[2], Adelaide V. Dias[2], Alberto Rodrigues[2], Pedro Braga[2]

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Aortic balloon valvuloplasty (ABV), introduced in 1986, quickly loss its wide adoption due to the high incidence of re-estenosis after the

procedure and also due to improved skills in transcatheter aortic valve implantation (TAVI). It has seen a reemergence in the last few years has a bailout therapy in critical care patients presenting with cardiogenic shock (CS) and severe aortic stenosis (AS), who are temporarily unable to tolerate such a procedure as TAVI or surgery for valve replacement. We did a retrospective analysis of every ABV performed between 1/01/2008 and 30/11/2018 in our hospital and identified those admitted to the Cardiac Intensive Care Unit due to cardiogenic shock with severe aortic stenosis. Procedures were categorized as emergent (within 24 h after decision to intervene) and urgent (24 h after the decision was made but before discharge). During this period, of 98 ABV performed, 14 were made in patients with CS with severe AS, 9 of them being emergent. The average age of patients was 76.2 ± 7.2 years, 6 of them female. Mean peak trans-aortic gradients before ABV was 73.13 ± 31.27 mmHg in emergent cases and 43 ± 14.78 mmHg in urgent cases. On the day of ABV, mean euroscore II and Sequential Organ Failure (SOFA) were, respectively, 19 ± 7% and 9.9 ± 3.4 in emergent cases and 11 ± 5% and 4.8 ± 4.2 in urgent cases. In patients deemed emergent, there was a tendency for a decrease in SOFA in the days following the procedure, although not statistically significant ($p > 0.05$). Noteworthy aortic regurgitation did not occur in any patient, neither there were any major post-procedure complications. 30-day mortality was 33% in emergent cases and 0% in urgent cases. In emergent cases, 4 were later submitted to TAVI and 1 had surgery for aortic valve replacement surgery. Only 1 patient in the urgent group was regarded as a candidate for TAVI. Emergent cases presented with higher scores of severity and procedure risk, having also greater mortality. However, this group had the most individuals later deemed fit for procedures, hence presenting status of patients does not influence their condition once the acute event has been treated. ABV as bailout treatment may be safe in patients presenting with CS and severe AS, allowing patient survival for elective definitive treatment.

Segunda-feira, 29 Abril de 2019 | 11H00-12H00

JARDIM INVERNO | POSTERS 5 - ÉCRAN 10 - ECONOMIA NA SAÚDE / SAÚDE PÚBLICA

P 295. PRESENT AND FUTURE ECONOMIC IMPACT OF TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI) IN PORTUGAL NATIONAL HEALTHCARE SYSTEM

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Centro Hospitalar de Vila Nova de Gaia / Espinho.

Introduction: TAVI has changed the treatment paradigm for inoperable, high and gradually intermediate risk aortic stenosis (AS) patients. In Portugal, TAVI penetration rate is still low. There is a lack of health economics information regarding the impact of TAVI in the national healthcare system.
Objectives: To perform an economic analysis of the present and future impact of TAVI in Portugal and propose health policy recommendations for a specific reimbursement model.
Methods: The current fixed costs of a TAVI procedure were calculated using the 2017 hospital data information collected from a portuguese terciary centre. To estimate the variable costs we retrospectively analyzed the risk and complications associated with the procedure. Penetration rates were determined using the Portuguese National Registry of TAVI, which were compared with other EU countries data. To predict the future demand for the technology, three scenarios (S) were built according to the Portuguese demography, disease incidence and expected expansion of TAVI clinical indications (S1-TAVI penetration according to current guidelines; S2-indications expanded to intermediate risk patients; S3-low risk patients).
Results: The total cost of TAVI in Portugal was 22,134.5 € with the self-expanding valve (SEV) and 23,321.5 € with the balloon-expanding valves (BEV). Most of this cost (SEV 74.5% *versus* BEV 83.6%) was driven by the prosthesis price. The total cost of hospitalization was significantly lower compared to other countries (eg. US $ 78,542). The risks of complications were slightly lower with the BEV (296.2 € *versus* 337.4 €), albeit not sufficient to reduce the total cost because it's prevalence was low. There was an exponential increase in TAVI procedures within the last 5 years; in 2017, 120 TAVI were performed in our centre. Indeed, the penetration rate in Portugal (53 procedures/million in 2017) increased in the last five years but is still much lower than in most EU countries (eg. Germany 227/million). Based on current guidelines (S1), the expected penetration rate should be 189/million, which can significantly increase if the current indications expands towards lower risk patients (S2: +28% increase to 241 procedures/million; S3: +107% increase to 391 procedures/million). The current reimbursement model can compromise the anticipated future, taking in consideration, for example, that nowadays it covers only 10.3% of TAVI total cost.
Conclusions: The number of TAVI procedures increased exponentially and are associated with a significant economic impact in Portugal. The future demand for TAVI may increase from 53 to 241 (S2) and 391 (S3) procedures/million habitants. The current model of reimbursement is however misadjusted to this reality. An independent line of hospital reimbursement should be created that can increase patient's access to the technology and control costs, while maintaining good quality of care.

P 296. INDIRECT COSTS OF ACUTE MYOCARDIAL INFARCTION IN PORTUGAL

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Introduction: Cardiovascular diseases are the main cause of death in Portugal. The high incidence of acute myocardial infarction (AMI) is also a major problem, particularly due to the economic burden caused by productivity loss (indirect costs) associated with temporary absence from work, not yet sufficiently studied in Portugal. It was our objective to quantify indirect costs of AMI in the first year after admission.
Methods: All consecutive patients admitted in a single center with < 66 years (official retirement age) during the year 2017 that survived to discharge were included in the present study. Employment status on admission was assessed in every patient. In each employed patient, working at the time of admission, the monthly wage was estimated from market wage rates from national public sources (grossed up by social security contributions) according to gender and age. A day-cost was calculated to assess the cost of temporary absence from work. The duration of temporary absence from work was assessed by a follow-up contact at 30-day and up to one-year after admission in a follow-up evaluation. The total cost of temporary absence from work was calculated in this sample and results were applied for the total number of AMI in Portugal during the year 2016 (last available national data).
Results: We included 219 patients (54 ± 7 years, 83% males), from which, 66.2% were actively working, 16.4% early-retired, 11.9% unemployed and 5.5% in long-term exit from work due to non-cardiac disease. In our sample, mean monthly labor cost was 1193 euros (46 euros/day). Median number of days absent from work were 34 days (31 days in men and 52 days in women). In total, we had 10,679 days of absence from work in this population with a total cost of 475,367.20 euros. In 2016, there were 4133 patients with < 66 years admitted in Portugal due to AMI that survived to discharge. Thus, we estimate an indirect cost in Portugal of 8,971,199.26 euros in the first year after AMI.
Conclusions: In Portugal, the burden of indirect costs after an AMI is close to nine million euros during the first year after AMI. Strategies to improve time of return to work are very important to lower these costs.

P 297.

P 298. GENDER EQUALITY IN ACUTE CORONARY SYNDROME: MODERN TIMES, OLD HABITS?

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Introduction: Historically, women with acute coronary syndrome (ACS) have worse outcomes compared with men. Differences in clinical, demographic characteristics and treatment may explain this result. In recent times with new diagnostic capabilities and revascularization therapies this panorama may be changing.
Methods: Single-center retrospective study comparing gender differences in ACS patients from 2012 to 2017. Two groups were formed comparing women and men: Group A: years 2012 to 2014 and group B: years 2015 to 2017.
Results: From 2012 to 2017 we identified 1091 patients with ACS. Of them 356 (32.6%) were women and NSTEMI (60%) was the most frequent type of ACS in this group. Women with ACS were older than men (73 *versus* 66 years) had more arterial hypertension (83.4% *versus* 68.3%, p < 0.001), diabetes *mellitus* (46.3% *versus* 30.9%, p < 0.001) and were less frequently smokers (6.5% *versus* 25.3%, p < 0.01). Dyspnea as the predominant symptom was more frequent in women (10.4% *versus* 5.2% p, = 0.002) who had fewer coronary invasive angiography (63.2% *versus* 74.7%, p < 0.001) and the result was more frequently non obstructive disease (9.8% *versus* 3.3%, p < 0.001). In-hospital mortality was greater in the women group (7.9% *versus* 3.7%, p = 0.005). There were no differences between groups in hospitalization or cardiovascular mortality over 1-year follow-up. When comparing Group A with Group B there were differences in hospitalization at 1 year (Group A 15.4% *versus* 9.3%, p = 0.029, Group B 11% *versus* 12.4%, p = 0.766), in-hospital women mortality (Group A 9.5% *versus* 3.6%, p = 0.005, Group B 5.8 *versus* 3.8%, p = 0.346) and coronary invasive angiography (Group A 61.2% *versus* 80.2%, p < 0.001 *versus* Group B 65.8 *versus* 68.5%, p = 0,606).
Conclusions: Different demographic and clinical presentation as well as in-hospital and 1-year outcomes were present in our study population. While in Group A threre were significant gender differences regarding hospitalization and in-hospital mortality, those differences faded away in Group B. Efforts should be made to lessen gender differences in treatment and assistance knowing the different demographical and clinical patient profile.

P 299. DIRECT COSTS OF HEART FAILURE IN A PORTUGUESE POPULATION

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Introduction: Heart failure (HF) is a global public health issue. Its economic impact in the Autonomous Region of Madeira (ARM) is unknown. Due to the condition's high prevalence and healthcare utilization, profiling its costs is fundamental for improved disease management.
Objectives: To estimate the direct costs related to HF in the ARM.
Methods: A prevalence-based cost-of-illness approach was adopted to estimate direct costs of heart failure over a 12 month period from the healthcare system perspective. Prevalence estimates were derived from previous published study. Hospitalization and emergency department (ED) episodes were identified by the International Classification of Diseases 9th edition. Patterns of ambulatory visits and diagnostic tests in the hospital and primary care setting were derived from previous reported research and regional health system data. Medication use was also derived from this study. Costs were based on Diagnosis Related Groups and from the Portuguese official national health system tariffs.
Results: There was a 4.93% prevalence of HF in 2014 in individuals aged above 25 years, equivalent to an estimated 9201 patients. Of these, 4140 were symptomatic (NYHA ≥ II) and hence considered healthcare consumers. We identified 426 admissions with primary diagnosis of HF, 5.5% of total cardiovascular admissions. There were 16,850 primary care ambulatory visits, 857 ED visits and 13,414 internal medicine and cardiology ambulatory visits. Total direct costs were € 4,089,540. Hospital-related care summed 56% of total costs, of which 49% related to hospitalization. Primary care costs accounted for 22%, medication (20%) and long term care (2%). Average annual cost per patient was €987,81.
Conclusions: Total costs amounted to 0.1% of gross domestic product and 1.2% of the healthcare budget of the Autonomous Region of Madeira. This finding is in line with other reports from developed countries. HF is a costly syndrome for ARM, and this research adds information about the disease that was until now unknown. Population ageing is likely to continue to drive increasing costs. These results can help policy making by identifying the financial burden of HF for the healthcare public provider in the ARM. Since it defined several cost components, this study can aid in the implementation of measures to improve disease management in the regional setting and reduce the major driver of costs which is hospitalization.

P 300. QUALITY OF LIFE ASSESSMENT IN SELF-REPORTED MYOCARDIAL INFARCTION PATIENTS

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Introduction: Quality of life (QOL) assessment is very important in chronic diseases, because it can be used to assess quality of care and the social and economic burden of those diseases. It was our objective to assess health-

related quality of life in patients with a previous myocardial infarction (MI) and to translate that information into an econometric index for subsequent economic analysis.

Methods: The study was conducted in a very large database representative of the Portuguese population developed for epidemiological studies that included individuals aged 18 or more. Chronic diseases, including MI in the past, were self-reported in a standardized questionnaire that was applied in every individual. A sociodemographic characteristics were also included in the questionnaire. QOL was assessed with EuroQol (EQ-5D-3L). Descriptive statistics, Student's t test and chi-square test were used in statistical analysis. Linear regression analysis was used to identify factors associated with QOL. Comparisons were also made with normative data from the Portuguese population.

Results: In our sample, 1.1% of patients reported a previous MI, 9.3 ± 8.3 years before the interview. These patients were older, less often females, with lower income and lower levels of education and more often from urban areas. Respondents with self-reported MI assigned a lower self-perception ofÂ their health status in all domains, but more significant in self-care, daily activities and pain/discomfort. These results were significantly worst when compared to the Portuguese population. The EQ-5D-3L mean index in patients with MI is 0.73 ± 0.34, significantly lower compared to patients without MI (0.78 ± 0.29, $p < 0.001$). Also, the number of chronic diseases is significantly higher in patients with MI (5.0 ± 2.2 *versus* 1.7 ± 1.8 diseases, $p < 0.001$). In multivariate analysis, previous MI was not independently associated with QOL (standardized coefficient = 0.004, $p = 0.742$), being strictly related to age ($p < 0.001$), gender ($p < 0.001$) and number of associated co-morbidities ($p < 0.001$).

Conclusions: The presence of self-reported MI in the past has a significant impact on self-perceived health status and on the quality of life, that is however associated with age, gender and associated co-morbidities.