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POSTERS (PO)

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11 a 13 de abril de 2025

Sexta-feira, 11 Abril de 2025 | 08:00-09:00

Área de Posters-écran 1 | Sessão de Posters 01 – Caminhos pioneiros em reabilitação cardíaca – inovação e cuidado centrado no doente

PO 1. THE ROLE OF PHASE 3 CARDIAC REHABILITATION IN BOOSTING PEAK VO2 AND PREDICTING CLINICAL SUCCESS

Inês Caldeira Araújo[1], Ana Abrantes[1], Miguel Azaredo Raposo[2], Madalena Lemos Pires[3], Mariana Borges[3], Gonçalo Sá[3], Pedro Alves da Silva[2], Nelson Cunha[2], Inês Aguiar-Ricardo[2], Fausto J. Pinto[2], Ana Abreu[2], Rita Pinto[3]

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Introduction: Recent evidence underscores cardiac rehabilitation (CR) as essential for recovery and functional improvement after cardiovascular events. After completing a phase 2 CR program, patients are encouraged to progress to a phase 3 long-term CR program to optimize their cardiorespiratory fitness. While the cardiopulmonary exercise test (CPET) is a practical tool for evaluating functional gains during CR, its utility in predicting long-term outcomes remains unclear.
Objectives: To assess the association between improvements in VO2 peak after one year of phase 3 CR and clinical outcomes.
Methods: This prospective observational single-center study included patients enrolled in a phase 3 CR program between 2016 and 2024. Clinical, imaging and CPET data were collected at baseline while CPET data was also collected one year after the program. Clinical outcomes included a composite of all-cause mortality, cardiovascular hospitalizations, and urgent care visits. Patients were categorized into 3 groups based on VO2 peak changes: improvement ≥ 5%, stable VO2 peak (< 5% change), and decline > 5%.
Results: A total of 284 patients (78% male, 61 ± 11 years) enrolled in phase 3 CR program. The primary indication for referral was ischemic cardiomyopathy (84%). Common comorbidities included diabetes (18%), active smoking (9%), hypertension (50%), dyslipidemia (46%), atrial fibrillation (7%), and prior stroke (5%). Echocardiographic findings included a mean left ventricular ejection fraction (LVEF) of 54 ± 13% and TAPSE of 21 ± 5 mm. After one year of phase 3 CR, significant improvements in CPET parameters were observed: VO2 peak (22.6 ± 6.6 vs. 24.3 ± 7.4 mL/kg/min,

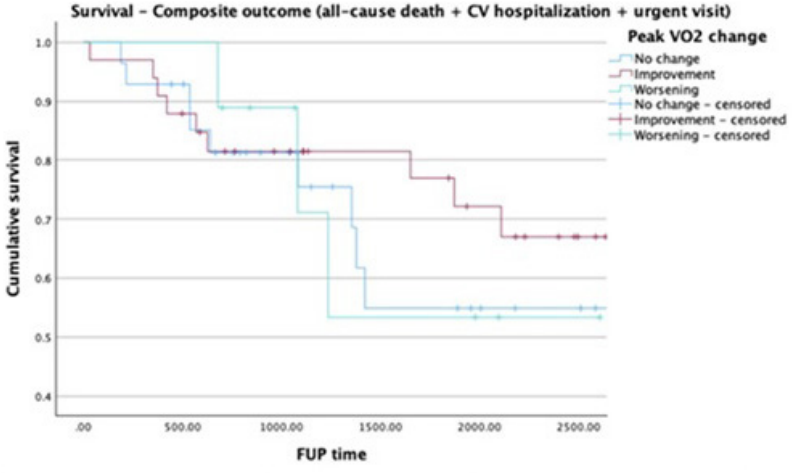

Figure 1: Composite outcome of all-cause mortality, cardiovascular hospitalizations, and urgent care visits in patients with improvement ≥5% VO2 peak, stable VO2 peak (<5% change), and decline >5% VO2 peak after 1 year of CR phase 3.

Figure PO 1

p < 0.001), percentage of predicted VO2 peak (98 ± 19 vs. 105 ± 21%, p < 0.001), and peak PETCO2 (34 ± 4.4 vs. 35 ± 4.9 mmHg, p < 0.001). During a mean follow-up of 3.4 ± 2.4 years, there were 4 deaths, 13 cardiovascular-related hospitalizations, and 34 urgent cardiovascular visits. The mean time to the first composite event was 2.7 ± 1.8 years. Patients with VO2 peak improvement after one year of phase III CR demonstrated a trend toward fewer adverse events compared to those with stable or declining VO2 peak values. Additionally, adverse events were similar between the group with a stable VO2 peak and those with a declining VO2 peak, and both were higher compared to those with VO2 peak improvement (25 vs. 32 vs. 33% of composite outcomes in the improvement, stable, and declining groups, respectively).
Conclusions: Our findings underscore the value of CPET in assessing CR outcomes. Patients showing a ≥ 5% improvement in VO2 peak after one year of phase 3 CR had better clinical outcomes. Importantly, a stable VO2 peak was associated with adverse event rates similar to those with a declining VO2 peak, highlighting the need for continuous monitoring and management.

PO 2. IMPROVEMENT IN CARDIOPULMONARY EXERCISE TEST PARAMETERS PHASE 2 REHABILITATION AND ITS IMPACT ON CLINICAL OUTCOMES

Marta Miguez Vilela[1], Ana Abrantes[1], João Cravo[1], Alda Jordão[2], Edite Caldeira[3], Gisela Afonso[4], Pedro Alves Silva[1], Nelson Cunha[1], Inês Aguiar-Ricardo[1], Fausto Pinto[1], Ana Abreu[1]

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Introduction: Phase II cardiac rehabilitation (CR) programs have shown to enhance functional capacity and clinical outcomes. Cardiopulmonary exercise testing (CPET) is a valuable tool for assessing exercise tolerance and cardiovascular function. However, given the wide range of parameters included in CPET, there is still debate on which specific measures are most reliable for monitoring patient progress during CR.
Objectives: To assess CPET parameters as predictors of adverse events in patients after completing CR.
Methods: Prospective observational single-center study including patients enrolled in a phase II CR program between 2016 and 2024. The program involved assessments by cardiologists, nutritionists and psychologists, with exercise sessions twice a week. A composite outcome of all-cause mortality, cardiovascular hospitalizations and urgent visits was evaluated.
Results: A total of 550 patients (80% male, 63 ± 11 years) completed a phase II CR program. The majority had ischemic cardiomyopathy (83%). Among those with coronary artery disease, 49% had multivessel disease and 29% incomplete revascularization. During the CR program, we observed a statistically significant improvements in several CPET parameters: exercise time (7 minutes and 46 seconds ± 9 seconds to 8 minutes and 25 seconds ± 9 seconds), VO2 peak (15.6 ± 0.3 to 17 ± 0.3 ml/kg/min, p < 0.01),% of predicted VO2 peak (62.2% ± 1.1 to 68.0% ± 1.1 p < 0.01), PETCO2 (33.6 ± 0.3 to 34.4 ± 0.3 p < 0.01), circulatory power (2,661 ± 72.1 to 2,896 ± 79 p < 0.01), VE/VCO2 slope (32.2 ± 0.5 to 30.7 ± 0.4 p < 0.01), workload (100.2W ± 2.7 to 116W ± 3.1 p < 0.01) and peak VO2 at the first threshold (10.7 ± 0.2 to 11.3 ± 0.2 ml/kg/min p < 0.01). During a mean follow-up of 2.97 ± 1.69 years, we registered a total of 21 deaths, 13 of which from cardiovascular causes, alongside 44 admissions for CV causes. The average time to the composite outcome was 1.94 ± 1.23 years. We noted a trend toward a reduced incidence of adverse outcomes in patients that displayed a global improvement in the aforementioned CPET parameters. Of note, an improvement in circulatory power was positively associated with a reduction in the composite outcome of adverse CV events (p < 0.01). Additionally, a statistically significant association was observed between adverse outcomes and a peak VO2 ≤ 15 ml/kg/min (p = 0.02) as well as circulatory power ≤ 1,600 (p = 0.018) at the end of the program. A trend toward worse outcomes was also noted for a VE/VCO2 slope > 33 (p = 0.18) and OUES ≤ 1.4 (p = 0.2) in the post-CR CPET.

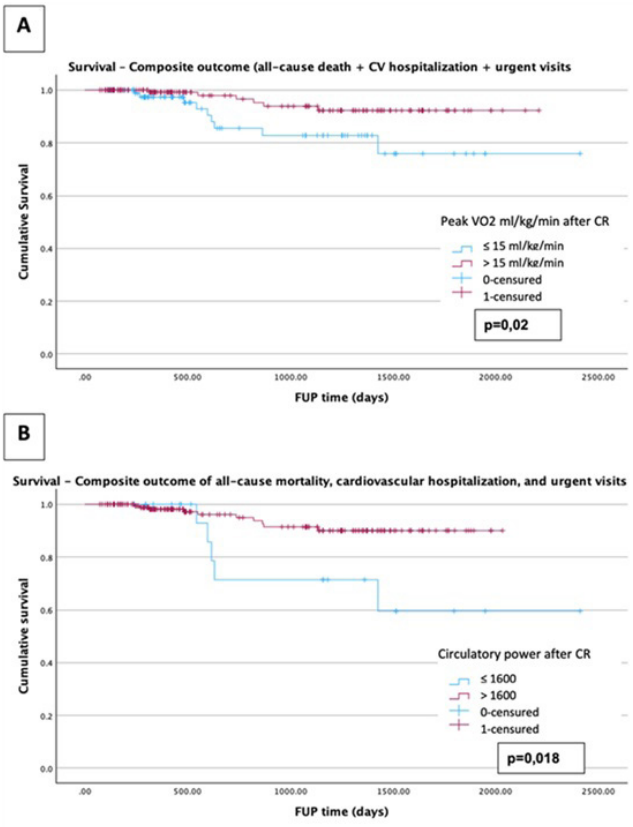

Figure 1. Correlation between the composite outcome of all-cause mortality, cardiovascular hospitalization, and urgent care visits with peak VO2 and circulatory power in the CPET after the CR program. A) Peak VO2 > 15 ml/kg/min (red) vs. peak VO2 ≤ 15 ml/kg/min (blue). B) Circulatory power > 1600 (red) vs. circulatory power ≤ 1600 (blue). Both correlations are statistically significant (p < 0.05)

Conclusions: Identifying high-risk individuals and referring them to phase III rehabilitation is crucial, with CPET parameters proving valuable for risk assessment. Individuals at high CV risk at the end of CR programs can be identified through routinary CPET assessment, warranting a closer clinical follow-up by prolonging the phase II program or by swiftly incorporation in a phase III program.

PO 3. THE CLINICAL AND HOLISTIC IMPACT OF A PROGRAM OF CARDIAC REHABILITATION

Carla Oliveira Ferreira, Hélder Marques, Filipe Silva Vilela, Mónica Dias, Ana Sofia Fernandes, Inês Conde, Cátia Costa Oliveira, Vítor Hugo Pereira

Hospital de Braga.

Introduction: The cardiac rehabilitation program (CR) is an important secondary prevention intervention that lowers cardiovascular morbidity and mortality by 20%. While initially focusing on aerobic exercise, it has now expanded into a multifaceted program that includes risk-factor modification, disease education and psychosocial support. The aim of this study is to analyze the impact of CR in clinical and functional variables using validated scores.
Methods: This study included a sample (n = 57) of patients admitted in a CR from November 2022 to September 2024. It's split into a prospective subsample (n = 17) who were submitted to several questionnaires before and after 12 sessions, to study the impact on quality of life, stress, anxiety,

depression and cognition; an into a retrospective subsample (n = 38) of patients submitted to several questionnaires, before and after CR, to study the impact on adherence to mediterranean diet, self-care and therapeutic adhesion.
Results: The mean age of our sample was 59.6 years, with a mean number of CR sessions of 26 (9-76). Ischemic heart disease was present in 43 (75.5%) of patients and 49.1% had reduced left ventricular ejection fraction (LVEF). The results show significant improvement in LVEF (41.3% [± 11.9] vs. 43% [± 10.2], p = 0.028), pro-BNP (565.5 [45-12,145], p = 0.033), NYAH functional capacity classification (p < 0.001), LDL-cholesterol (92.9 [± 47.3] vs. 68.1 [± 28.1], p = 0.010), quality of life evaluated with Kansas City Cardiomyopathy Questionnaire-23 (71.8 [38.79-100] vs. 80.83 (42.29-93.65), p = 0.008), perceived stress evaluated with Perceived Stress Scale 10 items (16 [6-26] vs. 14 [2-26], p = 0.041) and self-care behaviour evaluated with European Heart Failure Self-care Behaviour-12 items (57.29 [27-98] vs. 87.5 [10-100], p < 0.01) before and after the CR program.
Conclusions: The integration in CR program has shown significant improvement on clinical variables as well as in quality of life, stress, self-care and functional capacity. A deeper knowledge about the effect of the CR might allow the development of new strategies, making the CR a more thorough, individualized and comprehensive tool.

PO 4. IMPACT OF COMPLETING CARDIAC REHABILITATION PROGRAM ON CARDIOVASCULAR EVENTS FOLLOWING ACUTE CORONARY SYNDROME

Adriana Henriques Silva, Cristina Martins, Oliveira Baltazar, Liliana Brochado, Nazar Ilchyshyn, João Mirinha Luz, Diogo Cunha, Tiago Lobão, Lourenço Aguiar, Bárbara Ferreira, Mariana Martinho, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Cardiac rehabilitation (CR) plays a vital role in secondary prevention for individuals recovering from acute coronary syndrome (ACS). Participation in CR programs has been associated with reduced risk of readmission and death. However, adherence to CR remains suboptimal. This study aims to evaluate the occurrence of cardiovascular events (CV) in patients who completed a CR program after ACS compared to those who did not.
Methods: This retrospective study analysed data from patients enrolled in a CR program after ACS between 2018 and 2022 at our centre. Patients were divided into two groups based on CR completion status: those who completed the program and those who did not. We assessed the incidence of CV events (ACS, hospitalization for heart failure, all-cause mortality, and repeat revascularization) during the follow-up period (a minimum of 1 year). Additionally, we evaluated the final metabolic equivalents (METs) achieved by the patients who completed the program.
Results: A total of 168 patients were included. Of these, 114 patients (68%) completed the program, while 54 patients (32%) did not complete the program. The median of follow-up period was 24 [17;28] months. There were no statistically significant differences between the groups in the baseline characteristics, except in the history of smoking (p = 0.03), with a higher proportion of smokers in the group that did not complete the CR program (76 vs. 59%). Regarding the group that completed CR program, there was a statistical association between the final METs and the occurrence of CV events (p = 0.03). Patients who completed the CR program experienced significantly fewer cardiovascular events compared to those who did not complete the program (7 vs. 18.5%, p = 0.02). In the Kaplan-Meier analysis, the mean event-free survival time was 65 months for patients who completed the CR program and 48 months for patients who did not complete the CR program, with statistically significant difference (Log-Rank p < 0.001).
Conclusions: This study demonstrates that completing a CR program following acute coronary syndrome is associated with a lower incidence of cardiovascular events. Additionally, higher final METs achieved during CR were linked to fewer cardiovascular events. These findings emphasize the importance of rehabilitation in secondary prevention and the need to improve adherence.

PO 5. UNLOCKING PHYSICAL POTENTIAL: THE CRUCIAL ROLE OF CARDIAC REHABILITATION IN ENHANCING PHYSICAL CAPACITY

Ana Rita Andrade[1], Ana Abrantes[1], Catarina Gregório[1], Miguel Raposo[1], João Fernandes Pedro[1], Graça Araújo[2], Sandra Miguel Correia[2], José Costa[2], Nelson Cunha[1], Inês Aguiar-Ricardo[1], Fausto J. Pinto[1], Ana Abreu[1]

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Introduction: Cardiac rehabilitation (CR) is a structured program that combines exercise and education to help patients (pts) recovering from cardiac conditions in order to improve their cardiovascular health, enhancing overall well-being and quality of life.
Objectives: To compare cardiopulmonary exercise test (CPET) parameters and 6-minute walking test (6MWT) performance before and after CR program completion.
Methods: Single center prospective study of consecutive pts that completed a center-based CR program from 2015 to April 2023. The CR program includes evaluation by cardiologist physician, nutritionist and psychologist, 2 times weekly supervised exercise sessions, educational sessions. CPET and 6MWT were performed at baseline and after program conclusion. Student T and Pearson correlation tests were for statistical analysis.
Results: We included 446 pts, 81% males, mean age 60 ± 11 years, ischemic cardiomyopathy was the main reason for CR referral followed by dilated and valvular cardiomyopathy in 84%, 6% and 6% of pts respectively. Most pts had hypertension, 72% dyslipidemia, 60% of pts were current or former smokers and 20% diabetics. Most pts were overweight, (median BMI 27 kg/m^2), mean ejection fraction was 49% and median NTproBNP was 478 pg/ml. Overall pts completed on average 14 CR sessions, which corresponds to 92% of scheduled sessions. After CR program pts experienced a significant improvement on CPET parameters with an increase in VO2 peak (17 ± 5 to 19 ± 5 ml/kg/min, p < 0.001), percentage of predicted VO2 peak (66 ± 17 vs. 68 ± 17 ml/kg/min, p < 0.001), O2 pulse (mean 11.7 ± 3 vs. 13 ± 5, p < 0.001), maximum work (12 ± 3 vs. 135 ± 41 W, p < 0.001), duration of CPET (8.5 ± 2 vs. 9 ± 3p < 0.001) and total distance on 6MWT (443 ± 105 vs. 558 ± 113 m, p = < 0.001) and decrease in optimal cardiorespiratory point (OCP) (27 ± 6 vs. 26 ± 6, p = < 0.001), reflecting physical capacity improvement. This improvement was consistent when performing subgroup analysis for gender, people older than 70 years, obese pts (defined as BMI > 30 kg/m^2), ischemic and non-ischemic cardiomyopathy. We found a positive correlation between the program adherence and improvement in VO2 peak, VO2 pulse and OCP (rs 16%, p = 0.045, rs 16% p = 0.042, rs 26% p = 0.001, respectively).
Conclusions: In our population, CR program significantly improved CPET and 6MWT performance enhancing physical fitness and well-being, especially in patients with higher program adherence rates.

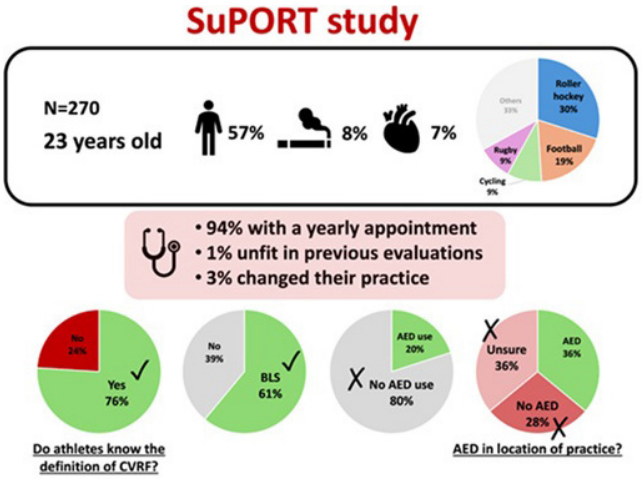
PO 6. AWARENESS OF COMPETITIVE ATHLETES REGARDING CARDIOVASCULAR PROFILE, SPORTS MEDICINE EVALUATION AND EMERGENCY SUPPORT – SUPORT STUDY

Carolina Gonçalves[1], Adriana Vazão[1], André Martins[1], Joana Pereira[1], Mónica Amado[1], Mariana Carvalho[1], Margarida Cabral[1], Fátima Saraiva[1], Hélia Martins[1], Hélder Dores[2]

[1]Centro Hospitalar de Leiria/Hospital de Santo André. [2]Hospital da Luz Lisboa.

Introduction: Pre-participation cardiovascular (CV) screening is of the utmost importance for sudden cardiac death (SCD) prevention. Appropriate emergency medical plans and athletes' awareness regarding SCD are crucial strategies in medical emergencies.
Objectives: To describe the knowledge of competitive athletes regarding pre-participation screening, CV risk profile and emergency life support.
Methods: A questionnaire (https://forms.gle/gxXtjhqN8LBybEdL8) with 36 questions was developed and released online to be completed by

competitive athletes registered in Portuguese sports federations, aged 18 years or older. Its validity was previously tested in 10 athletes.



Results: A total of 270 athletes, with a median age of 23 years, predominantly male (57%), were analyzed. The athletes reported a mean of 13 ± 6.7 years of sports practice, around 75% having 4-6 training sessions per week, mainly involved in roller hockey (30%), football (19%), cycling and rugby (9%). The prevalence of CV risk factors was low, however, 8% were active smokers and 3% had dyslipidemia. A family history of CV disease was reported in 24%, mainly due to acute myocardial infarction and stroke, and for SCD in 2.6%. 24% of athletes did not know the definition of CV risk factors. The great majority (93%) denied having CV disease. Around 94% have a yearly consultation with a sports medicine specialist (49%), mostly organized by the club (74%), 53% underwent exercise stress testing and had 64% at least one transthoracic echocardiogram. Almost 70% and 53% of the athletes recognized the importance of reporting CV symptoms and family history, respectively. Only 1.1% were considered unfit in previous evaluations, and 3% changed their practice due to medical reasons. Almost all the individuals (97%) were familiar with the term sudden cardiac arrest (SCA), and despite 61% having basic life support education, 80% did not know how to use an automated external defibrillator (AED) and 89% did not feel comfortable intervening in these situations. Furthermore, 36% are unsure if an AED is available in their place of practice, while 28% reported the absence of an AED.

Conclusions: Although most of the competitive athletes analyzed underwent regular CV screening and recognize the importance of CV symptoms and family history, there is a gap in knowledge regarding SCA situations. These findings highlight the need for the implementation of educational programs and the availability of AED in sports facilities.

Sexta-feira, 11 Abril de 2025 | 08:00-09:00

Área de Posters-écran 2 | Sessão de Posters 02 – Resultados e avaliação de programas de reabilitação cardíaca – Da prática clínica aos benefícios para o doente

PO 7. SECONDARY PREVENTION AFTER ONE-YEAR OF A CARDIOVASCULAR REHABILITATION PROGRAM - A SINGLE-CENTRE ANALYSIS

Carolina Gonçalves, Margarida Cabral, Mariana Carvalho, Adriana Vazão, André Martins, Joana Pereira, Mónica Amado, Fátima Saraiva, Filipa Januário, Alexandre Antunes

Centro Hospitalar de Leiria/Hospital de Santo André.

Introduction: Cardiovascular rehabilitation (CR) is considered a cornerstone in secondary prevention of cardiovascular (CV) diseases, with class IA recommendations in European guidelines.
Objectives: To describe the one-year impact of the CR program, particularly regarding anthropometric data, smoking cessation and blood analysis.

	TOTAL (N=307)
Sex – Male, n(%)	212(69.1)
Age, years, mean (SD)	58.2(9.3)
Admission diagnosis, n(%)	
STEMI	170(55.4)
NSTEMI	114(37.1)
UA	5(1.6)
Other	18(5.9)
PCI, n(%)	288(93.8)
CABG, n(%)	13(4.2)
Past medical history, n(%)	
Dyslipidemia	238(77.5)
Hypertension	181(59.0)
Active smoker	137(44.6)
History of smoking	85(27.7)
OSA	82(26.7)
Diabetes	72(23.5)
History of CAD	43(14.0)
PAD	18(5.9)
CVD	15(4.9)
ICD	7(2.3)
CRT	3(1.0)
1-year MACE, n(%)	8(2.6)

Table 1. Patient baseline characteristics

CABG - coronary artery bypass grafting; CAD – coronary artery disease; CRT - cardiac resynchronization therapy; CVD – cardiovascular disease; CVD - Cerebrovascular disease; ICD - implantable cardioverter-defibrillator NSTEMI - non-ST-elevation myocardial infarction; PCI - percutaneous coronary intervention; OSA - obstructive sleep apnea; MACE – major adverse cardiac events; PAD – peripheral artery disease; STEMI - ST-elevation myocardial infarction; UA - unstable angina

	T0	T1	FU	N(PAIR T0-FU)	P-VALUE*
BMI, kg/m2, mean (SD)	28.4(4.43)	27.2(4.12)	27.8(4.56)	91	0.005
Abdominal Circumference, mm, mean (SD)	100.6(11.29)	98.9(10.99)	98.6(10.63)	112	<0.001
Smoking cessation, n(%)	-	-	47(34.3)**	-	-
Blood analysis					
LDL-c, mg/dL, median (IQR)	111(46)	60(29)	55(26)	142	<0.001
HDL-c, mg/dL, median (IQR)	43(13)	45(14)	46(16)	141	<0.001
TG, mg/dL, median (IQR)	136(87)	99(48)	104(65)	140	<0.001
HbA1c, %, median (IQR)	5.6(0.7)	5.6(0.6)	5.9(1)	136	0.073

Table 2. Clinical evaluation and blood analysis (baseline - T0, end of CR - T1 and FU)

SD – standard deviation; HbA1c - hemoglobin A1c; HDL - high-density lipoprotein; IQR - interquartile range; LDL - low-density lipoprotein; TG - triglycerides
** p-value T0 vs. FU*
*** percentage calculated from the total number of smokers*

Figure PO 7

Methods: Retrospective single-centre analysis of patients referred to the CR program between 2017 and 2024. Baseline characteristics and major adverse cardiovascular events (MACE) a composite of death, non-fatal myocardial infarction (MI), cardiovascular rehospitalization and stroke - were analysed. Body mass index (BMI), abdominal circumference, lipid profile and hemoglobin A1c (HbA1c) were compared at baseline (T0), end of CR (T1) and one-year follow-up (FU).
Results: A total of 307 patients were included at baseline, 69% male, with a mean age of 58 ± 9 years. Of these, 194 patients (63%) completed phase 2 CR program. The patients were referred to CR mostly after acute coronary syndromes (ACS) (94%), and the remaining were heart failure patients (6%). Around 94% of the ACS patients underwent percutaneous coronary intervention at the index event, and only 4% coronary artery bypass grafting. Dyslipidemia (78%), hypertension (59%) and active smoking (45%) were the most common CV risk factors. Personal background of smoking (28%), obstructive sleep apnea (27%), diabetes (24%), coronary artery disease (14%), peripheral artery disease (6%) and cerebrovascular disease (5%), were also observed. Regarding cardiac devices, 2% and 1% already had an implantable cardioverter-defibrillator and a cardiac resynchronization therapy, respectively. Both BMI (p = 0.005) and abdominal circumference (p < 0.001) were significantly lower at FU. Smoking cessation remained successful in 34% of active smokers. Low-density lipoprotein and triglycerides were significantly lower at FU (p < 0.001), while high-density lipoprotein (HDL) was higher (p < 0.001). HbA1c was already controlled at baseline. These positive results at the end of CR were not lost at one-year FU (p = 0.815, p = 0.081), and HDL improved (p = 0.006). One-year MACE occurred in only 2.6%, mainly due to cardiovascular rehospitalization.
Conclusions: In our CR population, there were significant improvements in anthropometric data, lipid profile, and smoking cessation at the end of phase 2, and the benefits were not lost at the one-year follow-up, highlighting the importance of multidisciplinary programs in secondary prevention, even after phase 2 CR.

PO 8. CLINICAL CHALLENGES IN CARDIOVASCULAR REHABILITATION PROGRAMS: PREDICTORS OF DROPOUT – A SINGLE-CENTRE ANALYSIS

Carolina Gonçalves, Margarida Cabral, Mariana Carvalho, Adriana Vazão, André Martins, Joana Pereira, Mónica Amado, Fátima Saraiva, Filipa Januário, Alexandre Antunes

Centro Hospitalar de Leiria/Hospital de Santo André.

Introduction: Cardiovascular rehabilitation (CR) has demonstrated multiple benefits in patient prognosis. However, poor adherence to these programs remains a clinical challenge.
Objectives: To describe the differences between dropout patients (Group 1) and the remaining patients (Group 2) regarding baseline characteristics and findings, and to identify predictors of dropout.
Methods: Retrospective single-centre analysis of patients referred to the CR program between 2017 and 2024. Baseline characteristics, clinical findings, one-year and extended follow-up (FU) major adverse cardiovascular events (MACE) –a composite of death, non-fatal acute myocardial infarction (MI), cardiovascular rehospitalization and stroke– were compared. Quality of life (EuroQoL five-dimensional index), Hospital Anxiety and Depression Scale (HADS), International Physical Activity Questionnaire short form (IPAQsf) (total physical activity METs-minutes/week), exercise testing (ET) in METs (metabolic equivalents), body mass index (BMI), abdominal circumference, lipid profile and hemoglobin A1c at baseline were also compared. Multivariate logistic regression was performed to assess predictors of dropout.
Results: From a total of 259 patients, 67% were male, with a mean age of 58 ± 9.4 years. Admission diagnoses were mainly ST-elevation MI (57%), non-ST-elevation MI (NSTEMI) (37%), and heart failure (4%). Approximately 95% underwent percutaneous coronary intervention at the index event. The past medical history was remarkable for dyslipidemia (78%), hypertension (61%) and active smoking (45%). Around 25% failed to complete CR program (Group 1). Age, past medical history, EuroQoL, IPAQsf and HADS scores, as well as blood analyses, were similar between the groups. Group 1 had more female patients (p < 0.001), fewer NSTEMI cases (p = 0.035) and higher number of heart failure cases (p = 0.007). Furthermore, at baseline, functional capacity in ET measured in METs was significantly lower and BMI was significantly higher in group 1. Both one-year MACE and FU MACE were low and were statistically higher in the dropout group. After multivariate logistic regression, only female sex remained an independent predictor of CR dropout (OR = 8.662, 95%CI: 4.608-16.284, p-value < 0.001).

	TOTAL (N=259)	GROUP 1 (N=65)	GROUP 2 (N=194)	P-VALUE
Sex – Male, n(%)	174(67.2)	20(30.8)	154(79.4)	**<0.001**
Age, years, mean (IQR)	58(9.4)	59(9.1)	58(9.5)	0.315
Admission diagnosis, n(%)				
STEMI	148(57.1)	41(63.1)	107(55.2)	0.264
NSTEMI	96(37.1)	17(26.2)	79(40.7)	**0.035**
UA	4(1.5)	-	4(2.1)	-
Other	11(4.2)	7(10.8)	4(2.1)	**0.007**
PCI, n(%)	245(94.6)	59(90.8)	186(95.9)	0.123
CABG, n(%)	12(4.6)	3(4.6)	9(4.6)	1.000
Past medical history, n(%)				
Dyslipidemia	201(77.6)	46(70.8)	155(79.9)	0.127
Hypertension	157(60.6)	40(61.5)	117(60.3)	0.861
Active smoker	116(44.8)	34(52.3)	82(42.3)	0.159
History of smoking	73(28.2)	15(23.1)	58(29.9)	0.290
OSA	76(29.3)	15(23.1)	61(31.4)	0.200
Diabetes	58(22.4)	13(20.0)	45(23.2)	0.593
History of CAD	37(14.3)	11(16.9)	26(13.4)	0.483
PAD	16(6.2)	6(9.2)	10(5.2)	0.242
CVD	12(4.6)	4(6.2)	8(4.1)	0.503
ICD	4(1.5)	1(1.5)	3(1.5)	1.000
CRT	2(0.8)	2(3.1)	-	-
1 year MACE, n(%)	8(3.1)	6(9.2)	2(1.3)	**0.003**
Follow-up MACE, n(%)	17(6.6)	11(16.9)	6(3.1)	**<0.001**
EuroQoL (baseline)				
EuroQoL-5D index, mean (SD)	0.74(0.2)	0.75(0.3)	0.74(0.2)	0.925
EuroQoL-VAS, %, median (IQR)	70(30)	70(30)	70(30)	0.972
HADS (baseline)				
HADS anxiety, points, mean (SD)	7.0(3.7)	7.2(2.8)	6.9(3.6)	0.642
HADS depression, points, mean (SD)	4.8(3.3)	5.5(3.8)	4.6(3.1)	0.167
Functional capacity (baseline)				
IPAQ, METs, median (IQR)	693(1188)	594(928)	693(1188)	0.344
Exercise testing, METs, mean (SD)	11.2(3.1)	10.1(3.0)	11.4(3.1)	**0.012**
Clinical evaluation (baseline)				
LVEF, %, mean (SD)	52.9(8.8)	51.3(8.9)	53.5(8.7)	0.101
BMI, kg/m2, mean (SD)	27.8(4.2)	29.1(4.9)	27.5(4.9)	**0.024**
Abdominal Circumference, mm, median (IQR)	100.0(13.3)	102.0(10)	98.5(14)	0.105
Blood analysis (baseline)				
LDL-c, mg/dL, mean (SD)	115.4(46.2)	121.2(49.9)	113.6(45.0)	0.275
HDL-c, mg/dL, median (IQR)	43.0(13)	42.0(13)	44.0(14)	0.199
TG, mg/dL, median (IQR)	136.5(88)	149.0(98)	131.5(82)	0.236
HbA1c, %, median (IQR)	5.6(0.7)	5.6(0.6)	5.6(0.8)	0.545

Table 1. Comparison dropout patients (group 1) and the remaing patients (group 2)

Conclusions: In our population, a high proportion of patients completed the CR program. Only female sex was an independent dropout predictor. Identifying risk factors for CR dropout may help in designing tailored interventions for these patients to improve adherence and, consequently, outcomes.

PO 9. AGE-RELATED DIFFERENCES IN CARDIOVASCULAR REHABILITATION PROGRAMS – A SINGLE-CENTRE ANALYSIS

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Introduction: Cardiovascular rehabilitation (CR) consists of a patient-centered multidisciplinary program with multiple benefits in secondary prevention. Misconceptions about older patients may lead to lower referral rates.
Objectives: To describe age-related differences in CR (≤ 50 vs. > 50 years).
Methods: Retrospective single-centre analysis of patients referred to our CR program (2017-2024). Baseline characteristics, major adverse cardiovascular

events (MACE) – a composite of death, non-fatal acute myocardial infarction (MI), cardiovascular rehospitalization and stroke-, quality of life (EuroQoL five-dimensional score), Hospital Anxiety and Depression Scale (HADS), exercise testing (ET) in METs (metabolic equivalents), International Physical Activity Questionnaire short-form (IPAQsf) (total physical activity METs-minutes/week), body mass index (BMI), abdominal circumference, lipid profile and hemoglobin A1c were compared.

	TOTAL (N=307)	≤50 YEARS (N=62)	>50 YEARS (N=245)	P-VALUE
Sex – Male, n(%)	212(69.1)	42(67.7)	170(69.4)	0.802
Admission diagnosis, n(%)				
STEMI	170(55.4)	45(72.6)	125(51.0)	**0.002**
NSTEMI	114(37.1)	15(24.2)	99(40.4)	**0.018**
UA	5(1.6)	1(1.6)	4(1.6)	1.000
Other	18(5.9)	1(1.6)	17(6.9)	0.137
PCI, n(%)	288(93.8)	60(96.8)	228(93.1)	0.384
CABG, n(%)	13(4.2)	1(1.6)	12(4.9)	0.478
Past medical history, n(%)				
Dyslipidemia	238(77.5)	45(72.6)	193(78.8)	0.297
Hypertension	181(59.0)	24(38.7)	157(64.1)	**<0.001**
Active smoker	137(44.6)	41(66.1)	96(39.2)	**<0.001**
History of smoking	85(27.7)	12(19.4)	73(29.8)	0.101
OSA	82(26.7)	11(17.7)	71(29.0)	0.074
Diabetes	72(23.5)	5(8.1)	67(27.3)	**0.001**
History of CAD	43(14.0)	2(3.2)	41(16.7)	**0.006**
PAD	18(5.9)	-	18(7.3)	-
CVD	15(4.9)	-	15(6.1)	-
ICD	7(2.3)	3(4.8)	4(1.6)	0.149
CRT	3(1.0)	1(1.6)	2(0.8)	0.292
1 year MACE, n(%)	8(2.6)	-	8(3.3)	-
Follow-up MACE, n(%)	19(6.2)	-	19(7.8)	-
Dropout rate, n(%)	65(21.2)	9(14.5)	56(22.9)	0.108
EuroQoL (baseline)				
EuroQoL-5D index, mean (SD)	0.75(0.22)	0.71(0.2)	0.76(0.2)	0.274
EuroQoL-VAS, %, mean (SD)	68.1(16.5)	66.1(15.3)	68.6(16.7)	0.384
EuroQoL (end)				
EuroQoL-5D index, mean (SD)	0.81(0.20)	0.80(0.20)	0.81(0.19)	0.839
EuroQoL-VAS, %, mean (SD)	74.8(12.9)	73.8(15.2)	75.1(12.1)	0.587
HADS (baseline)				
HADS anxiety, points, mean (SD)	7.0(3.6)	7.9(3.9)	6.8(3.5)	**0.035**
HADS depression, points, mean (SD)	4.9(3.3)	5.0(3.3)	4.9(3.3)	0.850
Functional capacity (baseline)				
IPAQ, METs, median (IQR)	693(1188)	693(940)	693(1187)	0.399
Exercise testing, METs, mean (SD)	11.1(3.1)	12.4(3.2)	10.7(2.9)	**<0.001**
Functional capacity (end)				
IPAQ, METs, median (IQR)	1093(1527)	1091(1360)	1095(1769)	0.809
Exercise testing, METs, mean (SD)	12.6(3.7)	14.3(3.6)	12.1(3.5)	**<0.001**
ET, METs, ΔEnd-baseline, mean (SD)	1.3(2.9)	1.4(3.6)	1.2(2.7)	0.399
Clinical evaluation (baseline)				
LVEF, %, mean (SD)	52.4(9.1)	51.2(8.1)	52.7(9.3)	0.243
BMI, kg/m2, mean (SD)	27.8(4.2)	27.9(4.3)	27.8(4.1)	0.927
Abdominal Circumference, mm, median (IQR)	100.0(13.0)	99.0(16.0)	100.0(13.0)	0.763
Clinical evaluation (end)				
BMI, kg/m2, mean (SD)	22.4(11.5)	24.7(9.5)	21.7(11.9)	0.162
Abdominal Circumference, mm, median (IQR)	97.0(14.0)	95.0(18.0)	97.5(13.8)	0.640
Blood analysis (baseline)				
LDL-c, mg/dL, mean (SD)	111.7(46.1)	122.3(44.9)	108.9(46.1)	**0.048**
HDL-c, mg/dL, median (IQR)	43.0(13.0)	41.0(12.0)	44.0(13.0)	0.256
TG, mg/dL, median (IQR)	136.0(87.0)	158(87.0)	135(82.0)	0.113
HbA1c, %, median (IQR)	5.6(0.7)	5.5(0.5)	5.7(0.9)	**<0.001**
Blood analysis (end)				
LDL-c, mg/dL, mean (SD)	61.4(23.3)	64.1(22.1)	60.5(23.7)	0.356
HDL-c, mg/dL, median (IQR)	45.0(14.9)	41.0(16.0)	45.5(13.0)	0.157
TG, mg/dL, median (IQR)	99.0(48.0)	86.0(47.0)	102(45.0)	**0.046**
HbA1c, %, median (IQR)	5.6(0.6)	5.4(0.4)	5.7(0.8)	**<0.001**
LDL-c ΔBaseline-end, mg/dL, mean (SD)	54.3(46.7)	61.1(45.8)	52.1(46.9)	0.266
TG ΔBaseline-end, mg/dL, median (IQR)	38.0(77.0)	61.5(66.3)	29.0(80.0)	**0.011**

Table 1. Comparison according to age

Results: From a total of 307 patients, 69% were male and 20% were ≤ 50 years old. Admission diagnoses consisted of ST-elevation MI (STEMI) (55%), non-ST-elevation MI (NSTEMI) (37%), heart failure (6%) and unstable angina (2%). 94% underwent percutaneous coronary intervention at the index event, while 5% underwent coronary artery bypass grafting. Dyslipidemia (78%), hypertension (59%), and active smoking (45%) were the most common risk factors. Both one-year MACE and follow-up MACE were low, occurring only in the older group (3.3%, 7.8%). Younger patients were more commonly diagnosed with STEMI (p = 0.002), while older patients had significantly more NSTEMI (p = 0.0018). Younger patients had lower rates of hypertension (< 0.001), diabetes (0.001) and previous coronary heart disease (p = 0.006). Conversely, they were more frequently smokers (p < 0.001). EuroQoL, HADS depression and IPAQsf scores were similar between groups, except for HADS anxiety, which was higher in younger patients. Although functional capacity in ET was significantly better in younger patients at baseline and at the end of CR (p < 0.001), PE improvements were similar between groups (p = 0.399). Low-density lipoprotein cholesterol (LDL-c) was significantly higher at baseline in younger patients (p = 0.048) and triglycerides (TG) lower at the end (p = 0.046). LDL-c improvements were similar, though TG improvement was greater in the younger group (p = 0.001).

Conclusions: Despite differences in baseline characteristics, CR seems equally beneficial in young and older patients. Nevertheless, tailored programs are of the utmost importance for the success of CR, particularly in frailer patients.

PO 10. EXPLORING PEAK CIRCULATORY POWER AND ITS CORRELATION WITH EXERCISE TEST PARAMETERS IN CARDIAC REHABILITATION

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Introduction: Peak circulatory power (PCP), defined as the product between peak oxygen uptake and peak systolic blood pressure, has been proposed as a surrogate for cardiac power and a reliable prognostic marker in patients with heart failure and coronary artery disease. In cardiac rehabilitation (CR), where improving functional capacity is a key goal, understanding the relationship between PCP and other established Cardiopulmonary Exercise Test (CPET) parameters offers valuable insights for optimizing exercise prescriptions and monitoring progress.

Objectives: To evaluate the relationship between baseline peak circulatory power (PCP) and key CPET parameters in patients undergoing CR.

Methods: Single-center, retrospective observational study. Patients who performed a CPET before the phase II CR program between January 2023 and September 2024 were included. Data were collected by a specialized multidisciplinary team. Correlations between PCP and other CPET parameters were assessed using Pearson's/Spearman's correlation coefficient, as appropriate. Statistical analysis was performed using SPSS 28.0.1.1 software.

Results: A total of 71 patients were included, with a mean age of 57.9 ± 12.9 years and 51/71.8% male. The most common referral criterion to CR was coronary artery disease (49/60.9%), followed by heart failure (17/23.9%), with 21/29.6% presenting reduced left ventricular ejection fraction (LVEF) at baseline. In the pre-CR CPET, the mean peak VO2 was 19.5 ± 6.2 mL/kg/min, the mean maximum systolic blood pressure was 165.3 ± 30.4 mmHg, and the mean PCP was 3,329.0 ± 1,417.7 mmHg·min/mL/kg. PCP significantly differed between patients with LVEF ≤ 40% and those with LVEF > 40% (2,700.9 ± 1,267.7 vs. 3,620.1 ± 1,402.6 mmHg·min/mL/kg, respectively, p = 0.016). Strong positive correlations were found between PCP and physical performance (watts) (r = 0.823, p < 0.001) and metabolic equivalents (METs) (r = 0.890, p < 0.001). Additionally, VO2 at the second anaerobic threshold demonstrated a very strong positive correlation with PCP (r = 0.903, p < 0.001). Moderate positive correlations were observed between PCP and maximum heart rate (HR) (r = 0.533, p < 0.001), VO2 at the first anaerobic threshold (r = 0.624, p < 0.001), and oxygen pulse (r = 0.619, p < 0.001). Conversely, low negative correlations were identified between PCP and respiratory reserve (r = -0.335, p = 0.017) along with VE/VCO2 slope (r = -0.357, p = 0.011).

Conclusions: This study highlights the significant role of PCP in assessing exercise capacity and reinforces its potential utility in stratifying patients, tailoring exercise interventions, and monitoring progress during CR programs. PCP was notably lower in patients with reduced LVEF, emphasizing its sensitivity to cardiac dysfunction. Future studies should evaluate its prognostic implications and broader applicability in clinical practice.

Variables	Correlation coefficient (r)	p-value	Size of correlation
Maximum HR achieved (bpm)	0.533	**<0.001**	Moderate positive
Maximum diastolic blood pressure (mmHg)	0.474	**<0.001**	Low positive
VO2 at the first anaerobic threshold (mL/kg/min)	0.624	**<0.001**	Moderate positive
VO2 at the second anaerobic threshold (mL/kg/min)	0.903	**<0.001**	Very high positive
Oxygen pulse (mL/min)	0.619	**<0.001**	Moderate positive
Respiratory reserve (%)	-0.335	**0.017**	Low negative
VE/VCO2 slope (mL/kg/min)	-0.357	**0.011**	Low negative
Resting PETCO2 (mmHg)	0.382	**0.004**	Low positive
HR at the first anaerobic threshold (bpm)	0.152	0.258	-
HR at the second anaerobic threshold (bpm)	0.584	**<0.001**	Moderate positive
OUES	0.456	**0.019**	Low positive
Physical performance (W)	0.823	**<0.001**	High positive
Metabolic Equivalent (METs)	0.890	**<0.001**	High positive
VO2/Work Rate slope (mL/kg/min/W)	0.186	0.178	-
Left ventricular ejection fraction (%)	0.236	0.070	-
Hemoglobin (g/dL)	0.077	0.571	-
Ferritin (ng/mL)	-0.016	0.929	-

Figure PO 10

PO 11. LONG-TERM IMPACT OF EXERCISE-BASED CARDIAC REHABILITATION ON CARDIORESPIRATORY FITNESS AND PHYSICAL FUNCTION

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Introduction: Cardiac Rehabilitation (CR) is widely recognized as a cornerstone in the management of patients with established cardiovascular disease. One of the challenges in clinical practice is maintaining the benefits acquired during the CR program.
Objectives: Compare contemporary data on cardiorespiratory fitness and physical function tests at the end of Phase II and 12 months following an exercise-based CR program.
Methods: This single-center, retrospective observational study analyzed consecutive patients who completed the 12-month period post-Phase II CR

Cardiorespiratory fitness variables	Post Phase II CRP	12 months post CRP	p-value
Maximum HR achieved (bpm) - mean ± SD	132.4 ± 19.9	119.2 ± 20.0	p=0.116
Percentage of predicted maximum HR (%) - mean ± SD	80.5 ± 9.7	77.9 ± 11.2	p=0.149
Heart rate decreased by 12 bpm or more after one minute of recovery - n (%)	22 (88.0)	21 (84.0)	**p=0.032**
Maximum systolic blood pressure (mmHg) - mean ± SD	162.5 ± 27.3	175.3 ± 36.7	p=0.074
Maximum diastolic blood pressure (mmHg) - mean ± SD	86.0 ± 14.4	89.5 ± 12.7	p=0.255
Peak VO2 (mL/kg/min) - mean ± SD	23.9 ± 7.1	22.4 ± 7.9	**p=0.046**
Percentage of predicted maximum VO2 (%) - mean ± SD	81.5 ± 15.8	79.6 ± 20.8	p=0.470
VO2 at the first anaerobic threshold (mL/kg/min) - mean ± SD	12.3 ± 4.9	10.9 ± 3.9	p=0.303
Percentage of VO2 at the first anaerobic threshold relative to the reference value (%) - mean ± SD	49.6 ± 26.1	39.9 ± 10.7	p=0.196
VO2 at the second anaerobic threshold (mL/kg/min) - mean ± SD	21.3 ± 4.1	19.9 ± 4.3	**p=0.046**
Oxygen pulse (mL/min) - mean ± SD	13.8 ± 3.9	10.9 ± 4.6	p=0.420
Respiratory reserve (%) - mean ± SD	45.7 ± 20.5	44.6 ± 12.2	p=0.819
VE/CO2 slope (mL/kg/min) - median (IQR)	28.0 (8.2)	25.0 (13.6)	p=0.877
Resting PETCO2 (mmHg) - mean ± SD	35.1 ± 4.3	35.6 ± 4.3	p=0.585
HR at the first anaerobic threshold (bpm) - mean ± SD	99.0 ± 13.7	91.5 ± 13.3	**p=0.028**
HR at the second anaerobic threshold (bpm) - mean ± SD	121.4 ± 17.5	118.6 ± 15.5	p=0.379
OUES - median (IQR)	2.0 (1.2)	1.9 (0.9)	p=0.998
Physical performance (W) - mean ± SD	138.9 ± 48.1	130.1 ± 52.6	**p=0.032**
Percentage of watts relative to physical performance (%) - mean ± SD	89.3 ± 20.1	83.5 ± 24.6	**p=0.013**
Qualitative characterization of physical performance			
Normal or elevated - n (%)	19 (76.0)	15 (60.0)	**p=0.005**
Reduced - n (%)	4 (16.0)	9 (36.0)	
Metabolic Equivalent (METs) - median (IQR)	7.1 (2.0)	6.5 (1.8)	p=0.083
VO2/Work Rate slope (mL/kg/min/W) - median (IQR)	10.7 (1.9)	10.9 (1.9)	p=0.061

Table 2. Cardiorespiratory fitness analysis after Phase II and 12 Months of Phase III Exercise-Based Cardiac Rehabilitation.
Bpm - Beats per minute. CRP - Cardiac Rehabilitation Program. HR – Heart rate. IQR - Interquartile Range. METs - Metabolic Equivalent of Task. OUES - Oxygen Uptake Efficiency Slope. PETCO2 - partial pressure of end-tidal CO2. SD - Standard deviation.

Figure PO 11

from June 2023 to August 2024. Data were collected by a specialized multidisciplinary team. Continuous variables were analyzed using paired T-Tests or Wilcoxon signed-rank tests, as appropriate. Categorical variables were analyzed using the Chi-Square test.
Results: The study primarily comprised males (n = 19, 76%), with a mean age of 54.3 ± 14.6 years. The average duration of the Phase II program was 20.0 weeks (IQR 8.0). A statistically significant difference between the means of the two groups was observed regarding Peak VO2 (23.6 ± 7.1 vs. 22.4 ± 7.9 mL/kg/min, *p-value* = 0.046) and VO2 at the second anaerobic threshold (21.3 ± 4.1 vs. 19.9 ± 4.3 mL/kg/min, *p-value* = 0.046). Considering physical performance, significant differences were noted in overall physical performance (138.9 ± 48.1 vs. 130.1 ± 52.6 W, *p-value* = 0.032) and in the percentage of watts relative to physical performance (89.3 ± 20.1 vs. 83.5 ± 24.6%, *p-value* = 0.013), with a statistically significant association in qualitative assessments of physical performance (4/16.0 vs. 9/36.6%, *p-value* = 0.005). In contrast, there were significant improvements in bicipital one-repetition maximum (9.4 ± 2.7 vs. 10.1 ± 2.6 Kg, *p-value* = 0.008) and quadriceps one-repetition maximum (14.6 ± 4.4 vs. 16.4 ± 4.3 Kg, *p-value* = 0.003), while no statistically significant differences were observed in the Timed Up and Go Test (TUG) (6.2 ± 1.2 vs. 6.6 ± 1.5 s, *p-value* = 0.083).
Conclusions: This study indicates that the exercise-based CR program did not fully maintain gains in cardiorespiratory fitness and physical performance in this population. However, the one-repetition maximum values and stable results in the TUG test suggest maintenance of physical function. These findings highlight the need for ongoing support and interventions to sustain rehabilitation benefits and emphasize the importance of further research on quality-of-life outcomes.

PO 12. IMPACT OF STRUCTURED CARDIAC REHABILITATION ON PATIENT OUTCOMES: A PROSPECTIVE COHORT ANALYSIS

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Introduction: Current guidelines provide clear recommendations regarding the benefits of structured cardiac rehabilitation (CR) programs for patients with established cardiovascular disease. Despite the significant advantages associated with CR, maintaining a healthy lifestyle and ensuring medication adherence post-phase II remain key points for achieving optimal clinical outcomes.
Objectives: Evaluate the impact of CR on quality of life, exercise adherence, and medication adherence three months after transitioning to CR in the community.
Methods: This single-center, prospective, observational study included consecutive patients who successfully completed a follow-up period of three months after participating in a supervised, exercise-based CR program conducted from January 2023 to October 2024. Data were collected by a multidisciplinary team, and self-reported medication adherence was cross-verified with prescription records. Continuous variables were analyzed using paired samples T-Tests or Wilcoxon signed-rank tests, as appropriate.
Results: A total of 75 patients were enrolled, with a median age of 62 years (IQR 19.0). The majority of participants were male (52/69.3%), and the primary reason for referral was coronary artery disease (52/69.3%). Regarding medical history, 16 patients (21.3%) were classified as obese (body mass index [BMI] ≥ 30 kg/m^2), while 34 patients (45.3%) were categorized as overweight (BMI 25-29.9 kg/m^2). Following 3 months after the end of phase II CR, no significant differences were observed in the EuroQol 5D-5L questionnaire scores (82.1 ± 13.8 vs. 85.8 ± 13.1, *p-value* = 0.164) or the Duke Activity Status Index (8.9, 2.3 IQR vs. 9.8, 2.3 IQR, *p-value* = 0.193). Most patients (52/69.3%) engaged in exercise more than three times per week, and 72 patients (96.0%) adhered to their medical prescriptions without errors. Overall, exercise tolerance was favourable, with 67 patients (89.3%) reporting no difficulties during exercise, the same proportion (67/89.3%) monitored their blood pressure at least once per week.
Conclusions: These findings indicate that the majority of patients after phase II CR successfully maintain their exercise habits and adhere to prescribed medications. The absence of significant changes in quality-of-life questionnaires suggests that the benefits of structured CR are sustained over time. These results highlight the importance of ongoing support in promoting healthy behaviours following cardiac rehabilitation.

Analyzed variables	Total (n=75)
Weekly exercise habits	
>3 times per week - n (%)	52 (69.3)
2-3 times per week - n (%)	18 (24.0)
Once per week - n (%)	2 (2.7)
None - n (%)	3 (4.0)
Correct medication adherence - n (%)	72 (96.0)
Clinical events	
Hospitalizations - n (%)	2 (2.7)
Emergency department visit - n (%)	1 (1.3)
Exercise tolerance	
No difficulties during exercise - n (%)	67 (89.3)
Difficulties during exercise - n (%)	3 (4.0)
Weekly blood pressure evaluation - n (%)	67 (89.3)

Table 2. Analyzed variables after 3 months of Phase III Exercise-Based Cardiac Rehabilitation.

Quality of Life Questionnaires	Post Phase II CRP	3 months post CRP	p-value
EuroQol 5D-5L - mean ± SD	82.1 ± 13.8	85.8 ± 13.1	p=0.164
Duke Activity Status Index - median (IQR)	8.9 (2.3)	9.8 (2.3)	p=0.193

Table 3. Quality of Life Questionnaires after Phase II and 3 Months of Phase III Exercise-Based Cardiac Rehabilitation.
CRP - Cardiac Rehabilitation Program. IQR - Interquartile Range. SD - Standard deviation.

Figure PO 12

Sexta-feira, 11 Abril de 2025 | 08:00-09:00

Área de Posters-écran 3 | Sessão de Posters 03 – Reabilitação cardíaca ao longo do continuum de cuidados - Da prevenção aos resultados a longo prazo

PO 13. BODY MASS INDEX AS A PREDICTOR OF CLINICAL AND FUNCTIONAL OUTCOMES IN CARDIAC REHABILITATION

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Introduction: Obesity and overweight are established risk factors for cardiovascular disease, impacting both acute and long-term prognoses. During Phase II cardiac rehabilitation (CR), the degree of functional recovery and improvement in quality of life may vary according to Body Mass Index (BMI) categories. A comprehensive understanding of BMI's role in CR outcomes is essential to optimize personalized rehabilitation protocols.
Objectives: This study investigates the influence of BMI on clinical and functional outcomes during Phase II CR, focusing on quality of life (EQ-VAS), functional capacity (METs), and the incidence of major adverse cardiovascular events (MACE).
Methods: A cohort of 269 patients enrolled in Phase II CR was stratified into five BMI categories: underweight, normal weight, overweight, obesity class I, and obesity class II/III. Clinical events (MACE), functional capacity (METs), and quality of life (EQ-VAS) changes were evaluated. Comparative analyses were conducted using descriptive statistics, ANOVA, and Kruskal-Wallis tests. Multivariate regression models adjusted for confounding variables were used to explore the association between BMI categories and clinical outcomes.
Results: BMI was significantly associated with differential outcomes in CR. Patients with overweight and obesity class I showed greater MET improvements compared to those with obesity class II/III. Notably, normal-weight and overweight patients demonstrated significant EQ-VAS gains ($p = 0.014$). The incidence of MACE was markedly higher in the obesity class II/III group (OR = 2.34, 95%CI = 1.45-3.56, $p < 0.01$). Multivariate regression confirmed that obesity class II/III independently predicted reduced functional gains and lower quality of life improvements compared to the normal-weight group.
Conclusions: Patients with elevated BMI, particularly those in obesity class II/III, experience less favourable clinical and functional outcomes during Phase II CR and are at increased risk of MACE. These findings underscore the need for tailored CR strategies to address the unique challenges faced by patients with higher BMI, ultimately enhancing recovery trajectories and reducing cardiovascular risk.

PO 14. INFLUENCE OF CARDIAC REHABILITATION ADHERENCE ON CARDIOVASCULAR OUTCOMES

Mariana Ferreira Carvalho, Carolina Gonçalves, Margarida Cabral, Adriana Vazão, André Martins, Joana Pereira, Mónica Amado, Filipa Januário, Alexandre Antunes

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Introduction: Cardiac rehabilitation (CR) constitutes a fundamental element of secondary prevention in cardiovascular disease management, aimed at enhancing functional recovery and mitigating adverse clinical outcomes. Despite its well-established benefits, non-adherence remains a critical barrier, potentially elevating the risk of major adverse cardiovascular events (MACE). Clarifying the association between CR completion and MACE incidence, while accounting for baseline diagnoses, is essential for optimizing patient care strategies.
Objectives: This investigation sought to determine the relationship between CR completion and MACE occurrence, while assessing whether specific cardiovascular diagnoses (STEMI, NSTEMI, or other conditions) influence MACE rates.
Methods: A retrospective cohort analysis was performed using clinical records of patients enrolled in a structured CR program. Participants were classified into completers and non-completers based on adherence status. Diagnoses were grouped into three categories: STEMI, NSTEMI, and other cardiovascular conditions. MACE, defined as a composite outcome including cardiovascular mortality, non-fatal myocardial infarction, or revascularization, was compared between groups. Statistical evaluation was conducted using chi-square tests to assess associations between CR completion, diagnosis type, and MACE rates, applying a significance threshold of $p < 0.05$.
Results: Among the 214 patients included, 160 successfully completed the CR program, while 54 did not. MACE incidence was significantly lower among completers (1.2%) compared to non-completers (11.1%), yielding a statistically significant difference ($\chi^2 = 8.34$; $p = 0.0039$). MACE rates by diagnosis were 3.9% for STEMI, 2.6% for NSTEMI, and 14.3% for other conditions. However, inter-group differences were not statistically significant ($\chi^2 = 2.57$; $p = 0.462$). These findings suggest that CR completion offers protective benefits against adverse events regardless of diagnosis.
Conclusions: Adherence to CR programs is significantly associated with reduced MACE rates, underscoring the vital role of program completion in secondary cardiovascular prevention. Although diagnosis-specific MACE variations were not statistically significant, enhancing strategies to encourage CR participation is essential to improving long-term patient outcomes. Future research should aim at developing targeted interventions to minimize non-adherence and further explore the influence of distinct cardiovascular diagnoses on prognostic outcomes.

PO 15. PHASE 2 CARDIOVASCULAR REHABILITATION: A STUDY ON POPULATION PROFILES AND OUTCOMES

Nuno Madruga[1], Miguel Raposo[2], Bruno Bento[2], Sílvia Fiúza[2], Daniela Roxo[2], Pedro Alves da Silva[2], Nelson Cunha[2], Inês Aguiar Ricardo[2], Fausto J. Pinto[2], Ana Abreu[2]

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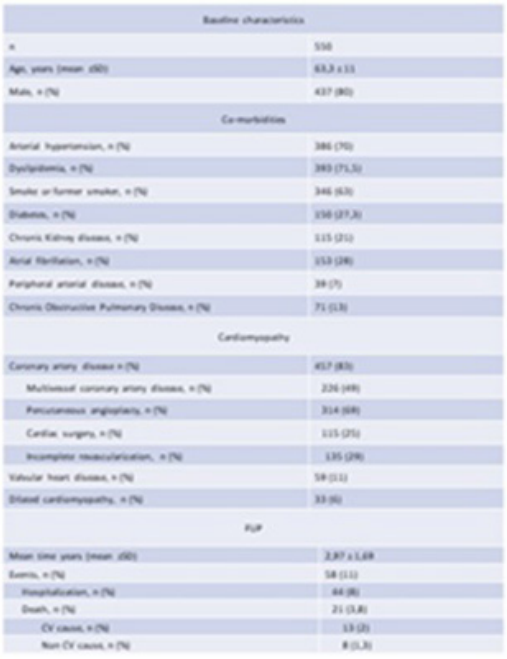
Introduction: Phase II cardiac rehabilitation (CR) programs, integrating exercise, education, and multidisciplinary care, play a key role in improving outcomes for cardiovascular patients. However, the impact on cardiorespiratory test (CPET) and long-term clinical results remains underexplored.
Objectives: To evaluate the impact of a phase II CR program on CPET parameters, cardiovascular risk factors and clinical outcomes.
Methods: Prospective observational single-center study including patients enrolled in a phase II CR program between 2016 and 2024. The program involved assessments by cardiologists, nutritionists and psychologists, with supervised exercise sessions twice a week and educational sessions. Parametric and non-parametric tests were performed as appropriate.
Results: A total of 550 patients (80% male, mean age 63.3 ± 11 years) completed a phase II cardiac rehabilitation (CR) program. The majority had ischemic cardiomyopathy (83%), followed by valvular (11%) and dilated cardiomyopathy (6%). Among coronary artery disease patients, 49% had multivessel disease and 29% had incomplete revascularization. Common comorbidities included hypertension (70%), dyslipidemia (71.5%), smoking (63%), diabetes (27.3%) and chronic kidney disease (21%). At baseline, 50% of patients were in NYHA class II, 34% in class I, and 16% in class III. The median NT-proBNP was 456 (186-1,072) pg/ml and 20% had LVEF < 40%. Patients attended an average of 14 CR sessions (92% of scheduled sessions). Following the CR program, statistically significant improvements in CPET



Baseline characteristics	
n	550
Age, years (mean ±SD)	63,3 ± 11
Male, n (%)	437 (80)
Co-morbidities	
Arterial hypertension, n (%)	386 (70)
Dyslipidemia, n (%)	393 (71,5)
Smoker or former smoker, n (%)	346 (63)
Diabetes, n (%)	150 (27,3)
Chronic Kidney disease, n (%)	115 (21)
Atrial fibrillation, n (%)	153 (28)
Peripheral arterial disease, n (%)	39 (7)
Chronic Obstructive Pulmonary Disease, n (%)	71 (13)
Cardiomyopathy	
Coronary artery disease n (%)	457 (83)
Multivessel coronary artery disease, n (%)	226 (49)
Percutaneous angioplasty, n (%)	314 (69)
Cardiac surgery, n (%)	115 (25)
Incomplete revascularization, n (%)	135 (29)
Valvular heart disease, n (%)	59 (11)
Dilated cardiomyopathy, n (%)	33 (6)
FUP	
Mean time years (mean ±SD)	2,97 ± 1,69
Events, n (%)	58 (11)
Hospitalization, n (%)	44 (8)
Death, n (%)	21 (3,8)
CV cause, n (%)	13 (2)
Non CV cause, n (%)	8 (1,3)

Figure 1. Characteristics of the population enrolled in phase II cardiac rehabilitation and follow-up.

Before and after cardiac rehabilitation			
Parameters	Before CR	After CR	
NYHA			
NYHA I, n (%)	185 (34)	336 (61)	p<0.001
NYHA II, n (%)	272 (50)	148 (27)	p<0.001
NYHA III, n (%)	91 (16)	70 (12)	p<0.001
Echocardiogram			
FEVE <40%, n (%)	109 (20)	50 (9)	p<0.001
FEVE < 50%, n (%)	206 (37)	91(17)	p<0.001
PSAP mmHg (mean ±SD)	31,5 ± 0,9	30 ± 0,9	p<0.001
Lab test			
NT proBNP pg/ml (median, IQR)	456 (186-1072)	232 (105-525)	p<0.001
CT mg/dL (median, IQR)	151 (105-210)	134 (100-180)	p<0.001
HDL mg/dL (mean ±SD)	42 ± 0,1	47 ± 0,5	p<0.001
LDL mg/dL (median, IQR)	90 (60-114)	63 (50-86)	p<0.001
TG mg/dL (median, IQR)	110 (81-151)	99 (78-134)	p<0.001
Hba1c % (mean ±SD)	6,8 ± 0,9	6,1 ± 0,7	p<0.001
CPET			
VO2 peak mL/kg/min (mean ±SD)	15.6 ± 0.3	17.0 ± 0.3	p<0.001
% predicted VO2 peak (mean ±SD)	62.2 ± 1.1	68.0 ± 1.1	p<0.001
PETCO2 (mean ±SD)	33.6 ± 0.3	34.4 ± 0.3	p<0.001
Circulatory power (mean ±SD)	2661 ± 72.1	2896 ± 79	p<0.001
VE/VCO2 slope (mean ±SD)	32.2 ± 0.5	30.7 ± 0.4	p<0.001
Other			
6MWT (mean ±SD)	439 ± 4,7	549 ± 5,9	p=0,2

Figure 2. Clinical, functional, and echocardiographic parameters before and after the cardiac rehabilitation program.

Figure PO 15

were observed: VO2 peak increased from 15.6 ± 0.3 to 17.0 ± 0.3 mL/kg/min (p < 0.01),% predicted VO2 peak increased from 62.2 ± 1.1 to 68.0 ± 1.1 (p < 0.01), PETCO2 improved from 33.6 ± 0.3 to 34.4 ± 0.3 (p < 0.01), circulatory power increased from 2,661 ± 72.1 to 2,896 ± 79 (p < 0.01), and the VE/VCO2 slope decreased from 32.2 ± 0.5 to 30.7 ± 0.4 (p < 0.01). There was also a statistically significant improvement in cardiovascular risk factor control. Total cholesterol decreased (median 151 to 138 mg/dL p < 0.01), LDL cholesterol dropped (median 90 to 63 mg/dL, p < 0.01), triglycerides declined (median 110 to 99 mg/dL, p < 0.01) and HbA1c improved (6.8 ± 0.9% to 6.1 ± 0.7%, p < 0.01). Additionally, after the CR program, the number of patients with LVEF below 50% decreased from 206 to 91. Clinically, most patients were in NYHA class I after rehabilitation, with an improvement in NT-proBNP levels and a trend toward enhanced functional capacity as assessed by the 6-minute walk test. The mean follow-up duration was 2.97 ± 1.69 years. During this period, 44 patients (8%) were hospitalized and 21 patients (4%) died, 13 of whom due to cardiovascular causes. The mean time to the first composite event was 1.94 ± 1.23 years.

Conclusions: These results highlight the importance of CR in improving both functional capacity and clinical outcomes in patients with cardiovascular disease.

PO 16. ADHERENCE TO PHASE 3 CARDIAC REHABILITATION: PREDICTORS AND OUTCOMES

Catarina Sena Silva[1], Ana Abrantes[1], Marta Vilela[1], Madalena Lemos Pires[2], Mariana Borges[2], Gonçalo Sá[2], Pedro Alves da Silva[1], Nelson Cunha[1], Inês Aguiar-Ricardo[1], Fausto J. Pinto[1], Ana Abreu[1], Rita Pinto[2]

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Introduction: Cardiac rehabilitation (CR) plays a vital role in enhancing recovery and long-term outcomes for patients following cardiovascular events. Adherence to CR programs often varies, which may influence their effectiveness, making it crucial to identify factors that predict adherence and improve outcomes.

Objectives: To evaluate predictors of adherence to phase 3 CR and the impact of adherence on clinical outcomes.

Methods: Retrospective observational single-center study including patients enrolled in a phase 3 CR program between 2016 and 2024. We analyzed social characteristics, cardiovascular risk factors, clinical indications for referral and data from lab tests, transthoracic echocardiography and cardiopulmonary exercise testing. Adherence to the program was established based on whether patients were still in the program at the time of data collection (2024). Clinical outcomes were measured using a composite of all-cause mortality, cardiovascular hospitalizations and urgent care visits.

Results: A total of 284 patients (78% male, 61.2 ± 11.1 years) completed a phase 3 CR program. Common comorbidities included hypertension (50%), dyslipidemia (46%), diabetes (18%), active smoking (9%), atrial fibrillation (7%) and prior stroke (5%). Most of referrals were due to ischemic cardiomyopathy (84%). Regarding social and demographic factors, 60% of patients had attended college, with 32% holding at least a master's degree. A substantial portion of the cohort were employed (47%), while 39% were retired and 4% were unemployed. Most patients lived close to the phase 3 CR facility, with 62% reporting a travel time of less than 30 minutes. Additionally, 69% of patients were married. At the time of data collection, 68% of patients remained active in the phase 3 CR program, while 32% had dropped out. The primary reasons for dropout were incompatibility with work schedules (8%), significant changes in health status (7%) and the COVID-19 pandemic (7%). No statistically significant correlation was found between social and demographic factors (such as education level, profession, or distance from home to the rehabilitation facility) and dropout rates, except for marital status. Adherence was significantly higher in patients who were married compared to those who were single or widowed (p = 0.028). During a mean follow-up of 3.4 ± 2.4 years, there were 4 deaths, 13 cardiovascular-related hospitalizations and 34 urgent cardiovascular visits. A statistically significant association was found between dropout and adverse events (p = 0.028), with a trend toward better outcomes for patients who remained active in the program (p = 0.2).

Conclusions: Our findings reveal no clear association between sociodemographic factors and adherence to phase 3 CR. However, there was

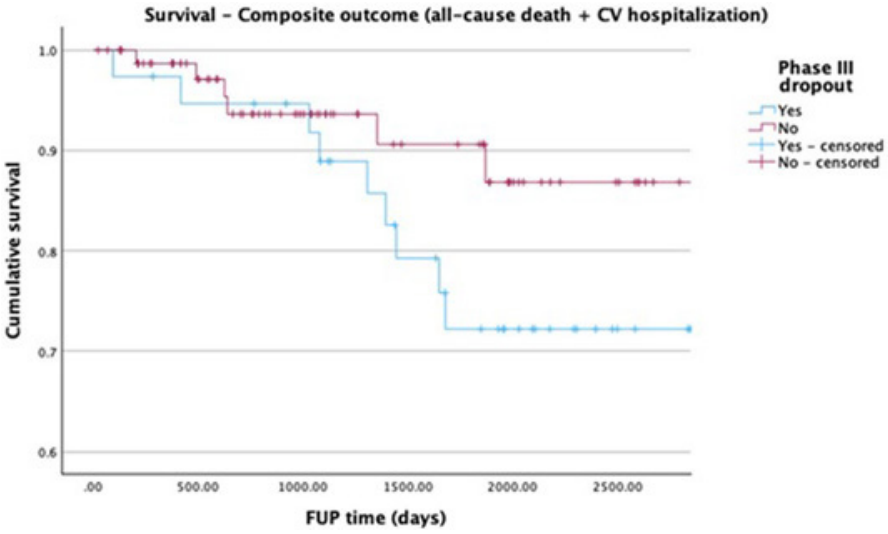

Figure PO 16

an association between adherence and improved clinical outcomes. Therefore, it is essential to promote adherence for all patients.

PO 17. ROLE OF PHASE 3 CARDIAC REHABILITATION IN IMPROVING CARDIORESPIRATORY FITNESS

Catarina Sena Silva[1], Miguel Azeredo Raposo[1], João Cravo[1], Madalena Lemos Pires[2], Mariana Borges[2], Gonçalo Sá[2], Pedro Alves da Silva[1], Nelson Cunha[1], Inês Aguiar-Ricardo[1], Fausto J. Pinto[1], Ana Abreu[1], Rita Pinto[2]

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Introduction: The cardiopulmonary exercise test (CPET) is nowadays considered the gold standard method to evaluate patients' cardiorespiratory fitness. It is an integral part of a structured cardiac rehabilitation (CR) phase 3 program, allowing tailored exercise training prescription for each patient. However, more studies are needed to better quantify CPET parameters improvements in long-term exercise-based CR programs.
Objectives: To compare CPET parameters and subsequent cardiorespiratory fitness gains in patients enrolled in a structured exercise-based phase 3 CR program at baseline and at 1 year follow-up.
Methods: Single center prospective cohort study of patients enrolled an exercise-based phase 3 CR program (2 or 3 times per week, 60 min/session, aerobic and strength training) between 2016 and 2024. CPET were performed in symptom limited ramp protocol 10-20W/min in a cycle-ergometer at baseline and at 1 year follow-up. Parametric and non-parametric tests were performed as appropriate.
Results: We included 284 patients, 78% males, 61 ± 11 years, where 82% of patients participated 3 times per week in the CR program and 188 patients (67%) completed a previous phase 2 CR program. Regarding CPET parameters, our data shows that at 1 year follow-up there was a substantial improvement in CPET parameters such as: maximum load (149 ± 50 vs. 165 ± 59 W, $p < 0.001$), VO2 at first ventilatory threshold (14.7 ± 3.8 vs. 16.3 ± 4.7 mL/kg/min, $p < 0.001$), VO2 peak (22.6 ± 6.6 vs. 24.3 ± 7.4 mL/kg/min, $p < 0.001$), percentage of predicted VO2 peak (98 ± 19 vs. 105 ± 21%, $p < 0.001$), peak PETCO2 (34 ± 4.4 vs. 35 ± 4.9 mmHg, $p < 0.001$). Finally, a Wilcoxon test indicated a statistically significant reduction in VE/VCO2 slope at follow-up ($Z = -2.3$, $p = 0.022$). This improvement was consistent in the older population (above 70 years old) and in patients who did not complete a previous phase 2 program.
Conclusions: Our results showed an improvement in CPET parameters and cardiorespiratory fitness at 1 year follow-up highlighting the importance to participate in a long-term phase 3 CR program.

PO 18. CARDIAC REHABILITATION PHASE 3 – WHO ARE THEY?

Rodrigo Afonso[1], Miguel Azaredo Raposo[1], Catarina Gregório[1], Madalena Lemos Pires[2], Mariana Borges[2], Gonçalo Sá[2], Pedro Alves da Silva[1], Nelson Cunha[1], Inês Aguiar-Ricardo[1], Fausto J. Pinto[1], Rita Pinto[2], Ana Abreu[1]

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Introduction: Cardiac Rehabilitation (CR) Phase 3 acts as an extension to Phase 2, encompassing a very heterogeneous patient population with structured exercise, nutrition counselling and educational sessions and an already established benefit in health outcomes among patients with cardiovascular diseases.
Objectives: To characterize the patient population enrolled in a structured phase 3 CR program.
Methods: Single centre prospective cohort study of patients enrolled in a phase 3 CR program between 2016 and 2024. We analysed the demographic and social characteristics, risk factors, clinical indications for referral and baseline echocardiogram data. A composite outcome of all-cause deaths, cardiovascular (CV) hospitalizations and urgent visits was analysed.
Results: We included 284 patients, 78% male, 61 ± 11 years. Mean follow-up time was 3.4 ± 2.4 years. Concerning social and demographic characteristics: 69% of patients were married, 47% were employed in a full-time job and 39% were already retired. Only 4% were unemployed. At least 60% of our patients had attended college, of which 32% had at least a master's degree. The majority of patients lived nearby the phase 3 CR facility with up to 62% of patients reporting a travel duration from their home to the facility inferior to 30 minutes. Most of the patients (53%) reported previous physical activity experience from recreational to competitive sports. About 67% of our population transitioned from phase 2. The number of sessions per week varied from 2 to 3, with 82% of patients participating in phase 3 activities 3 times per week. At the time of data collection, we reported high levels of adherence to the program with 64% of the total patients enrolled still being active in phase 3 CR activities. The two main reasons for dropout were: incompatibility with work schedule (8%); change in health status (7%) and the COVID-19 pandemic (7%). Regarding risk factors, 18% of patients had diabetes, 9% were active smokers, 50% had hypertension, 46% had dyslipidemia, 7% had atrial fibrillation, 5% had a history of stroke. The main

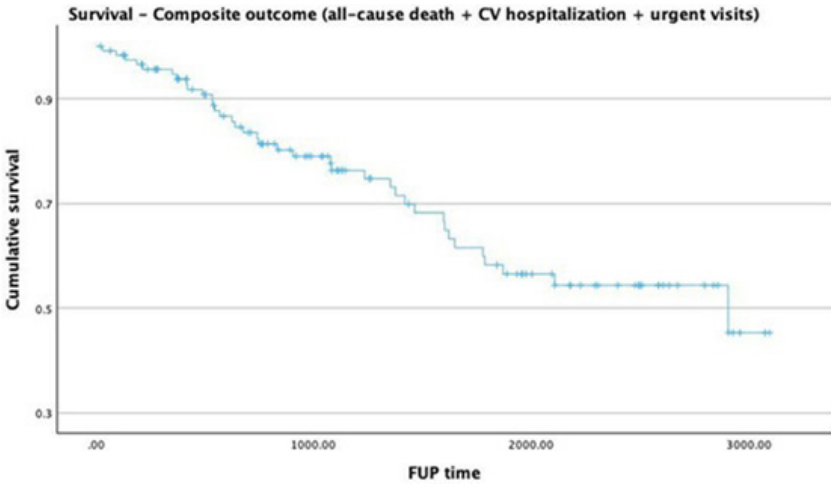

Figure PO 18

clinical indication for referral was ischemic cardiomyopathy (84% of patients). Echocardiogram data were as followed: Left ventricular ejection fraction (54 ± 13%) and TAPSE (21 ± 5 mm). Finally, there were a total of 4 deaths, 13 hospitalizations due to CV causes and 34 urgent visits to the emergency department due to CV causes throughout follow-up. The mean time to a first composite event was 2.7 ± 1.8 years.

Conclusions: Our data encompasses a wide range of patient population characteristics enrolled in a phase 3 CR program. Characterizing this population is crucial for tailoring interventions, enhancing adherence, and optimizing outcomes. Personalized approaches and strict risk factor control remain essential to minimize adverse events and promote sustained cardiovascular health.

Sexta-feira, 11 Abril de 2025 | 08:00-09:00

Área de Posters-écran 4 | Sessão de Posters 04 – Amiloidose e aorta

PO 19. ASSOCIATION OF AN ATTR CARDIOMYOPATHY RISK SCORE WITH CARDIAC AND KIDNEY OUTCOMES AMONG PATIENTS WITH CHRONIC KIDNEY DISEASE – INSIGHTS FROM CRIC

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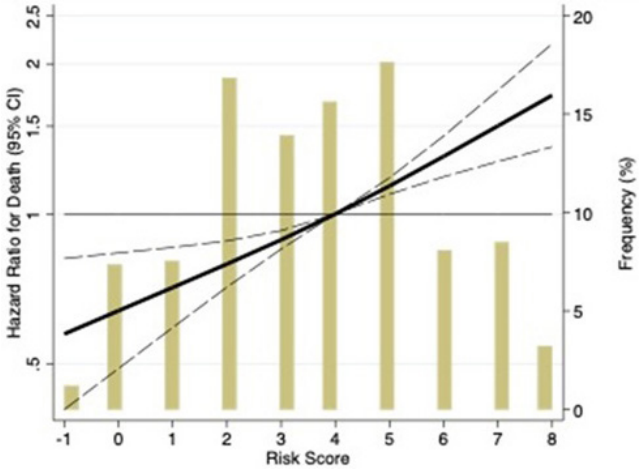
[1]Centro Hospitalar Universitário de S. João, EPE. [2]Cardiovascular Division, Brigham and Women's Hospital, Boston, MA, USA and Harvard Medical School, Boston, MA, USA. [3]The George Institute for Global Health, University of New South Wales, Sydney, Australia and Department of Renal Medicine, Royal North Shore Hospital, Sydney, Australia. [4]Harvard Medical School, Boston, MA, USA and Renal Division, Department of Medicine, Brigham and Women's Hospital, Boston, MA, USA.

Transthyretin amyloid cardiomyopathy (ATTR-CM) is thought to be an underdiagnosed cause of heart failure, especially among those with HF with preserved ejection fraction (HFpEF). A clinical risk-score to predict ATTR-CM has been validated among patients with HFpEF, but its utility among patients with chronic kidney disease is unclear. We applied a 6-variable risk score (age, sex, hypertension, ejection fraction, relative wall thickness, posterior wall thickness; range -1 to +10) to participants of the Chronic Renal Insufficiency Cohort with available 1-year echocardiographic data (n = 2.718) and calculated the prevalence of a high-risk score (6 points). Using Cox regression models, landmarked at 1-year, we explored the adjusted association of a high vs. low-risk score with development of atrial fibrillation (AF), HF, stroke, myocardial infarction (MI), a kidney composite (kidney failure, ≥ 50% decline in estimated glomerular filtration rate (eGFR), eGFR15 mL/min/1.73 m^2), and all-cause mortality. The median score was 4 [2, 5]; 539 (19.8%) had a high-risk score for ATTR-CM, which was associated with a higher adjusted risk of AF (hazard ratio [HR] 1.87, 95% confidence interval [CI] 1.48, 2.35), HF (HR 1.63, 95%CI 1.27, 2.08), MI (HR 1.82, 95%CI 1.33, 2.49) and all-cause mortality (HR 1.60, 95%CI 1.37, 1.87). There was a trend towards a higher risk of stroke with high (vs low) risk score (HR 1.47, 95%CI 0.94, 2.29) but no association with kidney composite (HR 1.01, 95%CI 0.82, 1.23). Using a restricted cubic spline, a monotonic association of higher risk score with all-cause mortality was evident (Figure 1). 1 in 5 individuals with CKD in CRIC appear to have a high predicted risk for ATTR-CM. A high-risk score was prognostic for adverse cardiac outcomes and death, but not for a kidney composite outcome. Future studies to examine the true prevalence and to determine the optimal screening pathways for ATTR-CM among patients with CKD are warranted.



PO 20. FUNCTIONAL CAPACITY ASSESSMENT FOR TAFAMIDIS TREATMENT IN CARDIAC AMYLOIDOSIS PATIENTS

Bruno Delgado, Célia Neto, Ana Pereira

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

Introduction: Cardiac amyloidosis is a disease characterized by abnormal deposition of amyloid proteins in the myocardium, causing progressive

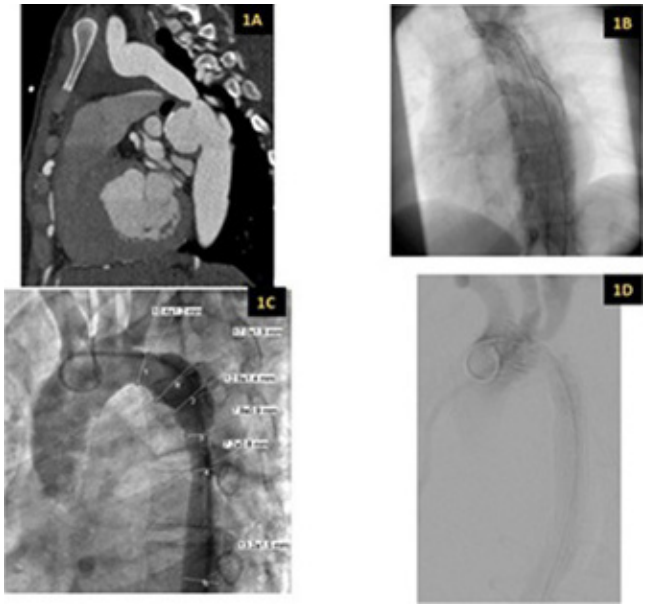
cardiac dysfunction. This deposition of amyloid substance can lead to symptoms such as dyspnea, activity intolerance, oedema and dysrhythmias. There are different types of cardiac amyloidosis, depending on the type of amyloid protein involved. The two most common types are transthyretin-associated cardiac amyloidosis (ATTR) and light chain-associated cardiac amyloidosis (LDA). Tafamidis is a drug that has been used in the treatment of cardiac amyloidosis, being a stabilizer of amyloid transthyretin (TTR), allowing to reduce the formation of amyloid substance and the progression of the disease. The six-minute walk test is a test used to assess the functional capacity of patients with cardiac amyloidosis before starting to take tafamidis and as a follow-up test to assess the functional evolution of the patient under pharmacological treatment. This test can provide information about exercise tolerance and disease progression over time.
Objectives: To evaluate functional capacity of cardiac amyloidosis patients before starting tafamidis treatment alongside with home-based cardiac rehabilitation program.
Methods: The prescription of tafamidis requires an extensive evaluation of several parameters, being one of those the functional capacity of the patient. In this study the functional capacity was assessed by the 6-minute walking test, according to the ATS guidelines. Patients were consecutively recruited for treatment and prior to this, a 6-minute walking teste was performed. After starting the medication and according to the functional capacity, a home-based cardiac rehabilitation program was also recommended. At one year, a follow-up will be performed.
Results: A total of 28 patients were evaluated, being 2 females. The mean age was 78 years old and 52% of the patients presented a reduction of left ventricular ejection fraction, being the mean score of ejection fraction 42%. Patients walked a mean distance of 362 meters at the six-minute walking test. The cut off distance to be selected for medication is 100 meters, and all of the patients walked more than that. Regarding the pro-BNP values, patients presented a mean value of 2,635. To all of them a home-based cardiac rehabilitation program was prescribed.
Conclusions: All the selected patients were elected for treatment. At one year follow up another functional evaluation will be performed, and several contacts will be done in order to accompany the evolution of the patients.

PO 21. TEVAR PLUS BALLOON EXPANDABLE STENT: A NOVEL HYBRID ENDOVASCULAR APPROACH FOR COMPLEX COARCTATION OF AORTA REPAIR

Francisco Barbas de Albuquerque, Lídia de Sousa, Petra Loureiro, Gonçalo Alves, José Diogo Ferreira Martins

Hospital de Santa Marta.

Introduction: Coarctation of the aorta (CoA) is a common congenital heart defect, typically treated with balloon-expandable stents. In rare cases, it can lead to complex aortic aneurysms and dissections, presenting challenges for balloon expandable stents. While surgery has been the primary treatment for such cases, advancements in interventional cardiology offer minimally invasive options. A hybrid approach combining thoracic endovascular aortic repair (TEVAR) with conventional balloon expandable stents may serve as a viable alternative for such cases.
Objectives: To describe two clinical cases of complex CoA where a hybrid endovascular approach using simultaneous TEVAR and balloon-expandable stents was performed.
Methods: A single-center descriptive study of two consecutive patients that performed a hybrid endovascular repair of complex CoA.
Results: Patient 1. A 36-year-old male presented with severe uncontrolled hypertension. During investigation, transthoracic echocardiographic (TTE) revealed a gradient of 89 mmHg in the descending aorta. Cardiac-CT scan confirmed a critical CoA (5.2 × 5 mm least diameter) 40 mm after left subclavian artery origin. A calcified aortic aneurysm (43 × 36 mm) after CoAo was observed (Figure 1A). After Heart Team discussion, the patient was accepted for percutaneous intervention. An endovascular hybrid approach was conducted, with a Zenith Alpha Thoracic Endovascular Graft Alpha 39 × 15 mm implantation for aneurysm exclusion followed by a stent BeGraft 37 × 22 mm for CoAo correction. The final angiography showed no stenosis, endoleaks (figure 1B) or residual gradient. Patient 2. An 18-year-old female with a past medical history of CoA of percutaneous angioplasty in an outside institution was referred to our center with reCoA and a suspected aneurysm. Angiography revealed an aneurysm between the left subclavian artery and the aortic isthmus (17 mm of max diameter and 24 mm of length), a long-segment (32 mm) CoA and multiple dissected sites between the left subclavian artery and aortic isthmus (figure 1C). After Heart Team discussion, the patient was admitted to percutaneous intervention. An endovascular hybrid approach was conducted. First, a TEVAR Zenith 24 × 24 × 10 was implanted, followed by a BeGraft 16 × 18 mm stent in the long-segment stenosis. The final angiography showed no stenosis, endoleaks (figure 1D), or residual gradient.



Conclusions: We present two complex cases of CoAo where a hybrid endovascular approach was successfully conducted. This technique adds the benefit of self-expanding stents which exclude the aneurysm and high-radial strength balloon expandable stents which treat the stenosis. No complications were reported. These cases highlight a novel, minimally invasive technique to be implemented in these challenging clinical scenarios.

PO 22. CHARACTERISATION OF PRE-INTERVENTION OUTCOMES IN VERY OLD PATIENTS WITH SEVERE AORTIC STENOSIS

Adriana Vazão, Mónica Amado, Carolina Gonçalves, André Martins, Joana Pereira, Mariana Carvalho, Margarida Cabral, João Carvalho, Luís Graça Santos, Hélia Martins

ULSR Leiria.

Introduction: Severe aortic stenosis (SAS) prevalence is increasing due to population aging and transcatheter aortic valve implantation (TAVI) is the preferred treatment option in older patients (pts).
Objectives: To characterize pre-intervention outcomes in very old pts (aged > 85 years) with SAS awaiting TAVI.
Methods: Retrospective cohort study of SAS pts who consecutively underwent pre-TAVI cardiac computed tomography (CCT) protocol (June 2022 -September 2024). Demographic data, clinical characteristics, transthoracic echocardiography (TTE), coronary angiography (CAG) and CCT parameters were collected. Pts were followed from the date of the CCT until aortic valve replacement (AVR), death, or December 1, 2024, whichever occurred first (median follow-up: 8 months). Our pre-intervention endpoint was a composite of cardiovascular (CV) hospitalization, including due to heart failure (HF), all-cause mortality, and major adverse cardiovascular events (MACE), consisting of CV mortality, non-fatal acute myocardial infarction (AMI) and stroke. Pts aged ≥ 85 years (group 1) were compared to those aged < 85 years (group 2).

	Total (n=189)	Group 1 (n= 52)	Group 2 (n=137)	p-value
Male sex (%)	98 (52)	29 (56)	69 (50)	0,507 (a)
Past medical history				
Overweight/Obesity (%)	138 (73)	39 (75)	99 (72)	0,705 (a)
Body mass index (kg/m2) – mean ± SD	**28 ± 5**	**27 ± 4**	**29 ± 5**	**0,038 (c)**
Diabetes Mellitus (%)	**73 (39)**	**13 (25)**	**60 (44)**	**0,018 (a)**
Dyslipidemia (%)	136 (72)	36 (69)	100 (73)	0,607 (a)
Hypertension (%)	155 (82)	41 (79)	114 (83)	0,485 (a)
History of smoking (%)	22 (12)	5 (10)	17 (12)	0,593 (a)
Atrial Fibrillation/Atrial Flutter (%)	57 (30)	18 (35)	39 (29)	0,411 (a)
History of cancer (%)	20 (11)	6 (12)	14 (10)	0,792 (a)
Chronic kidney disease (CKD) (%)	19 (10)	6 (12)	13 (10)	0,676 (a)
Symptoms				
Heart failure (%)	140 (74)	36 (72)	104 (77)	0,531 (a)
New York Heart Association class III-IV (%)	**50 (27)**	**6 (12)**	**44 (33)**	**0,005 (a)**
Fatigue (%)	157 (83)	42 (84)	115 (85)	0,842 (a)
Exertional angina (%)	27 (14)	10 (20)	17 (13)	0,205 (a)
Syncope (%)	20 (11)	5 (10)	15 (11)	0,829 (a)
Cardiac Computed Tomography parameters				
Left ventricular Ejection Fraction (%) – mean ± SD	**63±11**	**66±10**	**61±11**	**0,033 (c)**
Mitral annulus calcification (%)	**28 (15)**	**12 (23)**	**16 (12)**	**0,049 (a)**
Pre-intervention outcomes (%) – N= 182	47 (25,8)	17 (35,4)	30 (22,4)	0,125 (a)
Cardiovascular hospitalization (%)	35 (19)	11 (21)	24 (18)	0,566 (a)
Heart failure hospitalization (%)	21 (11)	8 (15)	13 (10)	0,249 (a)
Major adverse cardiovascular events (MACE) (%)	9 (5)	2 (4)	7 (5)	1,000 (b)
Non-fatal AMI (%)	1 (0,5)	-	1 (1)	-
Non-fatal Stroke (%)	4 (2)	-	4 (3)	-
CV mortality (%)	8 (4)	4 (8)	4 (3)	0,219 (b)
All-cause mortality (%)	20 (11)	9 (17)	11 (8)	0,064 (a)

Fig. 1 – Baseline characteristics and pre-intervention outcomes (a – chi-square test; b- Fisher's exact test; c- T-student test)

Figure PO 22

Results: A total of 189 pts underwent pre-TAVI CCT (98 males [52%]; mean age 81 ± 5 years). Of these, 52 pts (28%) were aged ≥ 85 years (Group 1). Group 1 had a lower body mass index (27 ± 4 vs. 29 ± 5 kg/m^2, p = 0.038) and less frequent diabetes (25 vs 44%, p = 0.018) but more frequent pacemaker implantation (23 vs7%, p = 0.001). CCT parameters were similar, except for a higher estimated left ventricular ejection fraction (LVEF) in Group 1 (66 ± 10 vs. 61 ± 11%, p = 0.033) and greater prevalence of mitral annulus calcification (23 vs. 12%, p = 0.049). Group 1 had less severe clinical presentation, including fewer New York Heart Association (NYHA) Class III-IV symptoms (12 vs. 33%, p = 0.005). CAG revealed less frequent multivessel coronary artery disease (CAD) in Group 1 (25 vs. 58%, p = 0.042) among pts with obstructive CAD. Overall, regarding treatment status, 7 pts were deemed unfit/declined TAVI, 16 had not completed pre-TAVI study, 9 were awaiting decision, 75 were awaiting intervention (69 for TAVI, 6 for surgical AVR [SAVR]), and 79 had undergone the treatment (74 TAVI, 5 SAVR). The median time from CCT to intervention was 9 [4-14] months. Pre-intervention outcomes were CV hospitalization (n = 35), HF hospitalization (n = 21), MACE [n = 9, including non-fatal strokes (n = 4) and AMIs (n = 1)], and all-cause mortality (n = 20, including 8 CV-related deaths [40%]). No significant differences were observed in pre-intervention outcomes between the groups, however with a non-significant trend to higher all-cause mortality in group 1 (Figure 1).
Conclusions: In our study, although very old pts awaiting TAVI presented less severe clinical presentation, lower diabetes prevalence, comparable pre-intervention hospitalization rates and CV events, a trend towards higher all-cause mortality was observed.

PO 23. AORTIC VALVE REPLACEMENT IN OCTOGENARIANS: IMPACT ON AGE-EXPECTED SURVIVAL

Rui Cerqueira[1], Francisca Saraiva[1], Cândida Gonçalves[1], Lívia Torres[1], Inês Sousa[1], Sílvia Diaz[1], Mário Jorge Amorim[2], Paulo Pinho[2], António Barros[1], André Lourenço[1], Adelino Leite-Moreira[1]

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Introduction: Despite the growing use of transcatheter aortic valve implantation, the steady increase in life expectancy also makes the surgical aortic valve replacement (AVR) an increasingly used procedure.

Objectives: To compare the survival of octogenarian patients undergoing isolated AVR with sex, race and aged-matched general population. Also to describe the need for reoperation and short-term hemodynamic data with Trifecta bioprosthesis in a single-center Tertiary Hospital.
Methods: This is a longitudinal, retrospective, single-center study, including a consecutive sample of patients aged over 80 years who underwent isolated AVR surgery with Trifecta bioprosthesis, between 2011 and 2019. The primary outcome was long-term all-causes mortality (collected from the National Registry in December 2022). Hospital mortality was defined as death during hospitalization or up to 30 days after surgery. The survival curve in the octogenarian cohort (observed) was compared with the curve in the general population (expected), the latter collected from National Life tables from the National Institute of Statistics, specifically for the study's follow-up period (2011-2022). The software provided by the Massachusetts General Hospital Biostatistics Center and the R package "OneSampleLogRankTest" were used to compare the curves and apply the Log-Rank test and standardized mortality rate (matched for sex and age). The mean follow-up time was 4.5 years, and the maximum time was 10.2 years. Hemodynamic data were collected from the 1st transthoracic echocardiogram performed at a mean of 4 months postoperatively.
Results: We included 163 octogenarian patients (mean age 82, maximum 89 years). The median European System for Cardiac Operative Risk Evaluation (EuroSCORE) II was 2.36 (minimum: 0.98% and maximum: 13.16%). Most patients were female (67%), and the main pathology was aortic stenosis (87%). One-third of the patients had NYHA III-IV classification. Hospital mortality was 6%. After excluding these patients, the survival rate of the cohort undergoing AVR vs. expected in the population at 1st, 3rd, 5th, and 10th years were 93.5 vs. 93.7%, 86.3 vs. 79.5%, 67.8 vs. 63.4%, and 24.8 vs. 25.3%, respectively. The standardized mortality rate (0.92) revealed no significant differences between the observed and expected (confidence interval: 0.70-1.21, p = 0.49). Only one patient underwent a transcatheter valve-in-valve procedure due to structural valve deterioration at 4 years of follow-up. In the follow-up echocardiogram, the mean aortic valve gradient was 11 ± 4 mmHg, and the functional area was 2.0 ± 0.4 cm^2.
Conclusions: In a clinical scenario of our service, AVR surgery proved to be effective in the octogenarian cohort, as it was close to that expected in the national population. The study also reinforced the good hemodynamic profile of the prosthesis analyzed in this sample.

PO 24. TRANSFORMING MULTIMODAL STETHOSCOPE SIGNAL QUALITY: THE ROLE OF OPERATOR TRAINING AND FEEDBACK IN ECG AND PCG CLARITY

André Lobo[1], Marta Catarina Almeida[1], Cátia Costa[1], Cristina Oliveira[1], Daniel Proaño-Guevara[2], Hugo Silva[3], Francesco Renna[4], Francisco Sampaio[1], Ricardo Fontes-Carvalho[1]

[1]Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE. [2]INESC TEC. [3]Instituto de Telecomunicações. [4]INESC TEC; Faculdade de Ciências da Universidade do Porto.

Introduction: The acquisition of high-quality multimodal auscultation signals, including electrocardiography (ECG) and phonocardiography (PCG), has emerged as a promising tool for cardiovascular disease (CVD) screening, especially when combined with artificial intelligence automatic analysis. Capturing high-quality signals reliably is critical for its application in clinical practice. However, the quality of signal acquisition depends heavily on operator proficiency. Differences in experience and training significantly affect the clarity of key cardiac landmarks, such as the QRS complex and T-wave (ECG) and the S1 and S2 sounds (PCG), which must be distinguished from background noise. This study evaluates the feasibility of achieving adequate signal quality using a multimodal stethoscope and investigates whether targeted training and feedback can enhance operators' performance.
Methods: This study evaluated ECG and PCG acquisitions using Rijuven's Cardiosleeve, a device capable of recording ECG and PCG simultaneously. PCG acquisition was the primary focus, with ECG recorded opportunistically. Acquisitions were grouped by operator experience and training level: Group 1 (acquisitions 1-50) included experienced operators blinded to signal quality; Group 2 (acquisitions 51-144) comprised inexperienced operators without feedback on signal quality; and Group 3 (acquisitions 145-190) consisted of operators who received a small amount of specialized training and regular feedback. An external reviewer scored each acquisition on a 0-5 scale, assessing the presence and clarity of key cardiac landmarks relative to background noise. For ECG, the QRS complex and T-wave were evaluated, while for PCG, the S1 and S2 sounds were analyzed. Scores of 3 or higher indicated the presence of key landmarks, albeit with varying noise.
Results: Group 1 achieved moderate signal quality (ECG Score: mean = 1.73, SD = 1.39; PCG Score: mean = 2.53, SD = 1.65), performing better than Group 2 (ECG Score: mean = 0.59, SD = 0.87; PCG Score: mean = 1.04, SD = 1.49), where most ECG signals were unusable. Group 3, with a small amount of training and feedback, achieved the highest signal quality (ECG Score: mean = 3.02, SD = 1.66; PCG Score: mean = 2.78, SD = 1.50), significantly outperforming the other groups.
Conclusions: While multimodal auscultation has potential, achieving good clarity of key cardiac landmarks remains challenging. Even experienced operators often faced difficulties due to noise, highlighting the complexity of signal acquisition. However, notable improvements observed with minimal training and feedback demonstrate the feasibility of improving signal quality with targeted interventions. Enhanced training programs and robust feedback systems could make this technology a reliable tool in clinical practice.

Sexta-feira, 11 Abril de 2025 | 09:00-10:30

Área de Posters-écran 1| Sessão de Posters 05 – TAVI 1

PO 25. OUTCOMES WITH PLUG-BASED VERSUS SUTURE-BASED VASCULAR CLOSURE DEVICE AFTER TRANSFEMORAL TRANSCATHETER AORTIC VALVE REPLACEMENT: A META-ANALYSIS OF RANDOMIZED CLINICAL TRIALS

Capela Pascoal[1], Ocílio Gonçalves[2], Hilária Faria[3], Barbara Masiero[4], Mohamed Doma[5], Antonino Francisco[1], Giovana Faria[6], Lucas Bendaham[7], Lorena Bahia[8], Mauer Gonçalves[1], Shirley Enríquez[9]

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Introduction: Mixed results have been obtained in studies comparing plug-based (MANTA) with suture-based (ProStar XL and ProGlide) vascular closure

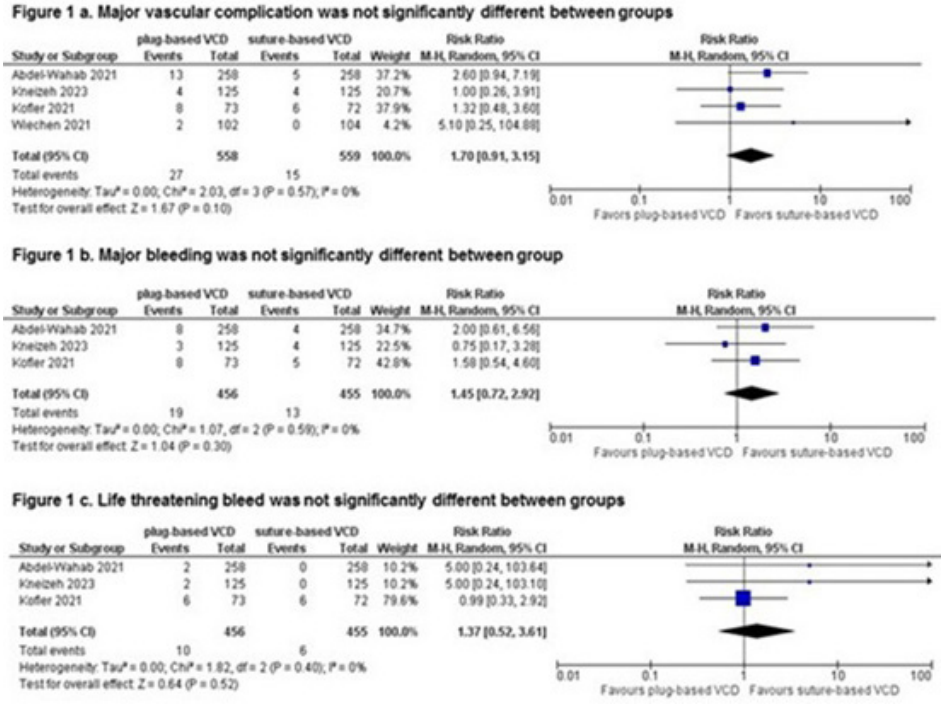

Figure PO 25

devices (VCDs) for closing large-caliber access after transcatheter aortic valve replacement (TAVR). Question: Are plug-based vascular closure devices superior to suture-based devices in terms of adverse cardiovascular events in patients undergoing TAVR?
Methods: PubMed, Scopus and Cochrane database were searched for randomized controlled trials that compared MANTA with ProStar XL or ProGlide for closing large-caliber access after TAVR and reported the outcomes of (1) major vascular complications; (2) minor vascular complications; (3) major or minor bleeding; and (4) life threatening bleed. Heterogeneity was examined with I^2 statistics. A random-effects model was used for outcomes with high heterogeneity.
Results: We included 4 RCTs with 717 patients, of whom 358 (49.9%) underwent MANTA. Major vascular complication (RR 1.70; 95%CI 0.91 - 3.15; p = 0.10; Figure 1a), minor vascular complication (RR 1.10; 95%CI 0.63 - 1.92; p = 0.73), major bleeding (RR 0.45; 95%CI 0.72 - 2.92; p = 0.30; Figure 1b) and life threatening bleed (RR 1.37; 95%CI 0.52 - 3.61; p = 0.52; Figure 1c) was not significantly different between plug-based VDC and suture-based VDC.
Conclusions: The vascular closure devices plug-based are a safe and feasible option for vascular access closure in patients undergoing transfemoral TAVR.

PO 26. VASCULAR COMPLICATIONS AFTER MANTA VASCULAR CLOSURE DEVICE FOLLOWING TRANSCATHETER AORTIC VALVE IMPLANTATION

Tomás M. Carlos, Mafalda Griné, Diogo Fernandes, Joana Guimarães, Gonçalo Terleira Batista, Tatiana Santos, Bernardo Resende, Luísa Gomes Rocha, Luís Leite, Marco Costa, Lino Gonçalves

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

Introduction: Vascular complications are common and serious adverse events following transcatheter aortic valve implantation (TAVI), with incidence ranging from 5% to 20%. Recent advances, such as the MANTA vascular closure device (MANTA-VCD), aim to reduce these complications. This study aimed to evaluate vascular complications associated with main arterial access after TAVI, focusing on the performance of the MANTA-VCD system.
Methods: We conducted a retrospective, single-centre study of patients who underwent TAVI between March 2020 and September 2023. Patients who did not use the MANTA-CVD system for main arterial access closure were excluded. Baseline characteristics were assessed, and the primary outcome was the incidence of vascular complications. Potential predictors were analysed using binary logistic regression.

Table 2. Predictors of primary access vascular complications following closure with MANTA system, after TAVI.

Predictors	Odds Ratio (OR)	95% Confidence Interval	*p*-value
Female gender	2.49	1.18-5.29	**0.017**
Right femoral artery access	1.05	0.38-2.87	0.930
Left femoral artery access	3.152	1.495-6.644	**0.003**
CKD under dialysis	9.74	1.56-60.83	**0.015**

CKD – chronic kidney disease; OR – odds ratio; TAVI – transcatheter aortic valve implantation. Statistically significant results are highlighted in **bold.**

Results: In our cohort of 628 patients, 604 (96.1%) used the MANTA-VCD system for arterial access closure. The mean age was 81.6 ± 6.0 years, with a balanced gender distribution. Cardiovascular risk factors were common, with 83.4% having arterial hypertension and 70.7% dyslipidaemia. The right common femoral artery was the most used access site (71.9%). Vascular complications occurred in 35 patients (5.8%), with local hematomas or bleeding requiring transfusion as the most common events. Among these, 65.7% were female, 88.6% had arterial hypertension, and 80.0% had dyslipidaemia. The right common femoral artery was the most frequently affected site (60%), although left common femoral artery showed statistically significant higher prevalence of complications (p = 0.001). Dialysis patients also had a notable prevalence among those with complications (5.7%). Binary logistic regression identified female gender (OR 2.49; CI 1.18-5.29; p = 0.017), dialytic treatment (OR 9.74; CI 1.56-60.83, p = 0.015) and left common femoral artery access (OR 5.47, CI 1.69-17.7, p = 0.005) as potential predictors of vascular complications.
Conclusions: The use of the MANTA-CVD system for main arterial access closure in TAVI was associated with a low rate of vascular complications (5.8%), aligning with previously reported outcomes and supporting its safety and efficacy. Female gender, dialysis and less commonly used primary access sites emerged as predictors of vascular complications, highlighting the importance of targeted evaluation in these subgroups.

PO 27. EARLY DISCHARGE SAFETY IN TAVI PATIENTS WITH NEW-ONSET LEFT BUNDLE BRANCH BLOCK

Rita Louro, António Almeida, Orlando Luquengo, Rafael Viana, Marta Figueiredo, Miguel Carias, Conceição Patinho, David Neves, Ângela Bento, Renato Fernandes, Gustavo Sá Mendes, Lino Patrício

Hospital Évora.

Introduction: Transcatheter Aortic Valve Implantation (TAVI) is now the first-line therapeutic approach for a growing number of patients. However, conduction system disturbances and the need for a permanent pacemaker (PPM) are well-known complications. Among these, new onset left bundle branch block (LBBB) is recognised as a harmful sign of complications during follow-up in this subgroup of patients, raising concerns among clinicians, the reason leading to delay in discharge.
Methods: Retrospective analysis of data consecutive collected prospectively, assessed TAVI patients, from a single centre, focusing on conduction complications and pacemaker implantation. Patients who died during hospitalization, those with a pre-existing PPM, and those who required a PPM during hospitalization were excluded. The aim was to compare patients with new-onset LBBB with a control group (absence of new-onset LBBB). The primary outcome was the incidence of readmission leading to PPM at 1 month and 6 months follow-up (FUP) and the secondary outcome was length of hospital stay.
Results: From a total of 300 patients undergoing TAVI, 33 patients had new-onset LBBB and 190 remaining were attributed the control group. At 1-month FUP, 1 (3.0%) patient with new-onset LBBB patients had readmission leading to PPM, comparing with 3 (1.1%) in the control group, which was not significant (p value 0.383). At 6 months FUP, was also not significant (p-value 0.159), with a total of 2 (6.1%) patients with new-onset LBBB needing PPM, and 3 (1.6%) in the control group. Patients with new-onset LBBB had a median stay of 3.00 (IQR 3) days and the control group of 3.00 (IQR 4), without significance (p-value 0.546).
Conclusions: The results of cohort results demonstrate that patient discharge was conducted safely and without delay, as the length of hospital stay was not significantly prolonged in patients with new-onset LBBB and a similar rate of readmission leading to PPM compared to the rest of the population. In summary, these findings support the feasibility of implementing early discharge protocols for TAVI patients with new-onset LBBB.

PO 28. OPTIMIZING TAVI – SHOULD PREEMPTIVE PACING BE CONSIDERED IN ADVANCED CONDUCTION DISEASE?

Rita Barbosa Sousa, Afonso Félix de Oliveira, Joana Certo Pereira, Samuel Azevedo, Márcia Presume, André Garcia, Rui Gomes, João Brito, Pedro Gonçalves, Rui Campante Teles, Manuel Almeida

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

Introduction: Permanent pacemaker implantation (PPM) is the most common complication of transcatheter aortic valve replacement (TAVI), often leading to prolonged hospitalization. While preemptive PPM before TAVI is not currently recommended as a routine in patients with advanced conduction disease, this procedure has been rarely employed in selected high-risk cases. In order to understand the potential advantages of

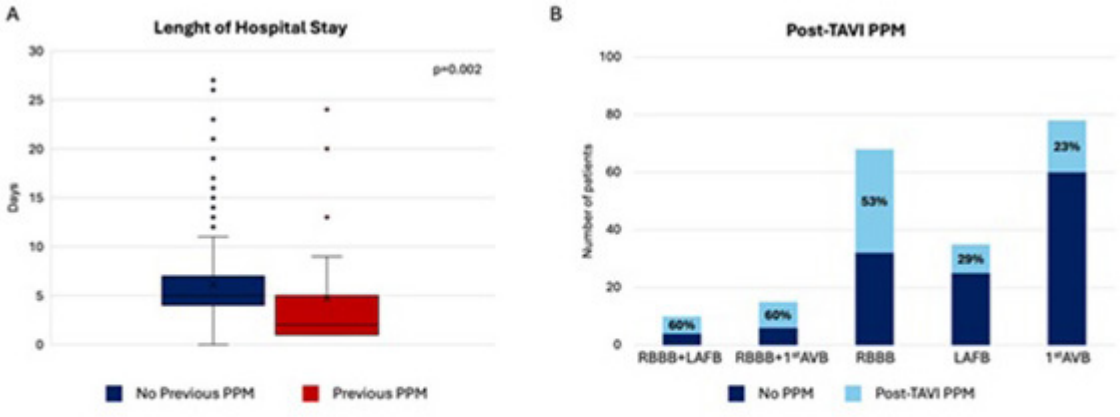

Figure 1 – (A) Hospitalization duration is longer in patients without previous pacemaker implantation (5.0 [4.0–7.0] days vs. 2.0 [1.0–5.0] days, p=0.002). **(B)** Percentage of patients requiring PPM after TAVI based on pre-existing electrophysiological alterations. AVB, atrioventricular block; LAFB, left anterior fascicular block; PPM, permanent pacemaker implantation; RBBB, right bundle branch block; TAVI, transcatheter aortic valve replacement.

Figure PO 28

preemptive PPM, we have compared the in-hospital outcomes of patients undergoing TAVI with and without PPM.

Methods: This single-center retrospective study included patients undergoing elective TAVI between January 2022 and October 2024. We analyzed pre- and post-procedural electrophysiological alterations and clinical complications, including cases of prophylactic PPM, as well as length of hospitalisation.

Results: A total of 515 patients were included, with a median age of 83.0 (IQR 79.0-87.0) years, 53.0% (n = 273) male. Self-expandable valves were implanted in 74.0% (n = 381) and PPM was present before the TAVI procedure in 11.3% (n = 58). Patients without prior PPM (n = 457) experienced longer hospital stays (5.0 [4.0-7.0] days vs. 2.0 [1.0-5.0] days, p = 0.002), primarily due to electrophysiological complications, which were observed in 193 (42.2%) patients and lead to the implantation of PPM in 94 (20.6%). Most common electrophysiological complications were prolonged complete atrioventricular block (AVB) (n = 63, 13.8%), new onset left bundle branch block (n = 50, 10.9%) and intermittent AVB (n = 15, 3.3%). Urgent PPM complications included cardiac tamponade (n = 1, 0.2%), infection (n = 1, 0.2%), and hematoma (n = 1, 0.2%). There were no significant differences in infection rates (3.5 vs. 8.6%, p = 0.063), although numerically higher in the previous PPM group. There were also no differences in stroke or transient ischemic attack (2.8 vs. 3.4%, p = 0.797), vascular access complications (12.5 vs. 10.3%, p = 0.641) or in-hospital mortality (1.1 vs. 0.0%, p = 0.423). Among patients with pre-existing right bundle branch block (RBBB) (n = 68), 52.9% (n = 36) required PPM, with risk increasing in the presence of additional predictors such as left anterior fascicular block (LAFB) (60.0%, n = 6) or first-degree AVB (60%, n = 9). Five patients received preemptive PPM, primarily due to RBBB with LAFB (n = 4, 80%), with or without first-degree AVB.

Conclusions: Conduction disturbances post-TAVI are associated with significantly prolonged hospitalization compared to patients with previous PPM. Long-term follow-up was not available but adverse events have also been described in the literature. Preemptive PPM may have a role in selected high-risk patients undergoing TAVI.

PO 29. INITIAL EXPERIENCE WITH EVOLUT FX: HOW DOES IT MEASURE UP?

Catarina Gregório, Miguel Raposo, Ana Abrantes, Marta Vilela, Diogo Ferreira, João Cravo, Miguel Nobre Menezes, João Silva Marques, Claúdia Jorge, Pedro Carrilho Ferreira, Fausto J. Pinto, Pedro Cardoso

Department of Cardiology, Hospital de Santa Maria (ULSSM), CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: The Evolut FX system represents the latest generation of self-expandable aortic valves (SEV). Evidence on real-world results is still building.

Objectives: To describe the initial experience with the latest generation of Evolut self-expandable aortic valves and compare it to the previous generation (Evolut Pro +) regarding intra-hospital outcomes.

Methods: We compared results from the first 50 pts submitted to TAVI with Evolut FX (EFX) devices with the last 50 pts receiving an Evolut Pro + (EPP) valve in a single centre, from 2023 to 2024. Clinical, and echocardiographic data were collected and analyzed. For statistical analysis independent sample T tests, Mann-Whitney and Chi-square tests were applied.

Fig 1. Evolut FX vs Evolut Pro +

Baseline characteristics	FX (n=50)	Pro + (n= 50)	p value
Age - median (IQR)	83.6(8)	80.7(11)	NS
BMI - mean±SD	26.2±4.7	27.5±5.9	NS
Females - %	54%	58%	NS
Hypertension - %	49%	45%	NS
Atrial fibrillation - %	24%	30%	NS
Diabetes mellitus (insulin dependent) - %	38%	36%	NS
CKD - %	34%	20%	NS
LVEF % - median (IQR)	58.8(8)	57.5(15)	NS
EuroSCORE 2 - median (IQR)	3.1(1.8)	3+(1.5)	NS
Baseline PQ interval ms - median (IQR)	180(38)	177(38)	NS
Baseline QRS interval ms - median (IQR)	95.5(36)	94(16)	NS
Complete left bundle branch block - %	16%	12%	NS
Complete right bundle branch block - %	2%	8%	NS

Discharge TTEcho	FX (n=50)	Pro + (n= 50)	p value
Maximum AV gradient - mean±SD	16.6(11)	19(11)	NS
Mean AV gradient - mean±SD	8.2(3.5)	9.2(4.6)	NS
Doppler velocity index - mean±SD	0.67(0.16)	0.65(0.11)	NS

Outcomes	FX (n=50)	Pro + (n= 50)	p value
Death during 1st month - n	2	0	NS
Intra-hospitalar stroke - n	1	2	NS
Arterial vascular complications - n	3	3	NS
Intra-hospitalar pacemaker implantation - n	12	19	NS (0.17)

Figure PO 29

Results: From the first 50 consecutive pts treated with EFX, 54% were female with a median age of 83.6 (IQR = 8) years. Regarding the last 50 consecutive pts treated with the EPP, 58% were female, with a median age of 80.7 (IQR = 11) years. There were no significant differences between groups pertaining baseline demographics, comorbidities, electrocardiographic data (Fig 1). Comparing the EFX to EPP population: echocardiographic evaluation at discharge, maximum (16.6 vs. 19 mmHg) and mean (8.2 vs. 9.2 mmHg) transvalvular gradients and doppler velocity index (0.67 vs. 0.65) showed no significative difference. Index admission pacemaker implantation (12 vs. 19) showed no statistically significant difference. All-cause death in the first month (2 vs. 0), stroke during index admission (2 vs. 1) and incidence of arterial vascular complications (3 for both groups) were also not significatively different.
Conclusions: Our initial experience with the Evolut FX demonstrates comparable intra-hospital outcomes to its predecessor, the Evolut Pro. There seems to be a signal directing towards a lower rate of permanent pacemaker implantation, albeit not statistically significant in our small population. Larger studies are necessary to confirm these results and evaluate long-term outcomes.

PO 30. PROGNOSTIC VALUE OF QRS VARIATION FOLLOWING TAVI: A PREDICTOR OF LEFT VENTRICULAR DYSFUNCTION AND MORTALITY AT 1-YEAR FOLLOW UP

Catarina Lagoas Pohle[1], André Lobo[2], Marta Catarina Almeida[2], Pedro Braga[2], Daniel Caeiro[2], Ricardo Fontes-Carvalho[2]

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

Introduction: Conduction abnormalities are common following TAVI, with post-TAVI QRS duration (QRSd) often studied as a predictor of adverse outcomes. However, the prognostic significance of QRSd variation —the change from baseline QRSd to post-TAVI QRSd— has received less attention. This study aims to evaluate the relationship between QRS variation and adverse outcomes and compares its prognostic utility with post-TAVI QRSd alone.
Methods: A single-center retrospective analysis was conducted on TAVI patients from 2015 to 2021, excluding those with prior pacemakers or with insufficient data. Primary endpoint was a composite of worsening left ventricular ejection fraction (LVEF) at 1 year (defined as a reduction of more than 10 percentage points from pre-TAVI to 1-year follow-up (FUP)) and all-cause mortality at 1year FUP.
Results: A total of 296 patients were included (mean age 80 ± 7 years). Prior to TAVI, 5.1% (n = 15) of patients had pre-existing left bundle branch block (LBBB) and 7.4% (n = 22) had pre-existing right bundle branch block (RBBB). During in-hospital stay following TAVI, 33.8% (n = 100) of patients developed new-onset LBBB, 1.4% (n = 4) developed RBBB, and 11.2% (n = 29) required pacemaker implantation. Median QRSd increased from 101 ms (IQR 27) before TAVI to 126 ms (IQR 50) immediately after the procedure, and to 114 ms (IQR 49) at discharge, with a mean inicial QRSd increase of 19 ± 26 ms and 18 ± 26 ms at discharge. One year after TAVI, patients with new-onset sustained rhythm disturbances had a significantly lower mean LVEF (50.0%, IQR 14.8) compared to those without rhythm disturbances (58.0%, IQR 8.0; p < 0.001). In the univariate analysis for the primary endpoint, QRSd variation at discharge demonstrated the highest predictive value (Wald 11.383, p = 0.001), followed by new onset persistent LBBB at 1-year FUP (Wald 9.141, p = 0.002) and QRSd variation immediately after TAVI (Wald 6.609, p = 0.010). QRSd immediately after TAVI or at discharge did not show statistical significance as predictors of the primary outcome (p = 0.188 and p = 0.062, respectively), as presented in Table 1. QRSd variation at discharge was the only independent predictor of the composite endpoint of worsening LVEF and all-cause mortality at 1-year follow-up. Each 1-ms increase in QRSd variation was associated with a 3.8% higher odds of reaching the composite endpoint (OR 1.038, 95%CI 1.009-1.069; Wald Chi-Square = 6.520; p = 0.011).
Conclusions: This study highlights the QRSd variation may offer a dynamic assessment of risk, particularly for LVEF worsening and mortality at 1-year FUP, especially in comparison to QRSd alone. The identification of optimal QRSd variation thresholds could help enhance clinical decision-making and patient outcomes.

PO 31. CLINICAL PROFILING ON CLUSTERING TAVI PATIENTS: MULTIVARIATE ANALYSIS OF RISK FACTORS, CLINICAL PRESENTATION, AND OUTCOME ASSOCIATION

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Introduction: Despite advances in transcatheter aortic valve implantation (TAVI), patient outcomes remain variable due to the complex interplay of multiple risk factors. Although these factors are well-established predictors, the combined effect of their interactions on clinical outcomes remains challenging to predict. This study aims to stratify TAVI patients according to clinical and risk factor variables, identify distinct risk profile clusters, and examine their association with outcomes.
Methods: A retrospective analysis of 300 patients who underwent TAVI was conducted. A two-step cluster analysis was performed to group patients based on clinical presentation and risk factors. Two clusters were identified: Cluster 1 and Cluster 2. The primary endpoint included death at 30 days,

Table 1 – Univariate and Multivariate Analysis of the primary endpoint (Composite of worsening of left ventricular ejection fraction and death at 1 year follow up after TAVI)

	Univariate Analysis			Multivariate Analysis		
	Odds ratio (95% CI)	Wald	P value	Odds ratio (95% CI)	Wald	P value
QRSd immediately after TAVI	1.006 (0.997 - 1.015)	1.734	0.188			
QRSd at discharge	1.009 (1.000 - 1.019)	3.475	0.062			
New onset LBBB after TAVI	0.512 (0.227 - 1.152)	2.621	0.105			
Persistent new onset LBBB at 1year	0.240 (0.095 - 0.605)	9.141	**0.002**	0.825 (0.230 - 2.959)	0.087	0.768
QRSd variation immediately after TAVI	1.023 (1.005 - 1.041)	6.609	**0.010**	0.987 (0.958 - 1.017)	0.710	0.399
QRSd variation at discharge	1.030 (1.013 - 1.048)	11.383	**0.001**	1.038 (1.009 - 1.069)	6.520	**0.011**

Footnote: LBBB - left bundle branch block, QRSd - QRS duration; TAVI - transaortic valve implantation

Figure PO 30

stroke, and hospital readmission within one year. Baseline characteristics, procedural variables, and outcomes were compared between clusters.
Results: Among 300 TAVI patients, Cluster 1 (n = 182) and Cluster 2 (n = 32) exhibited similar age and gender distribution, with a mean age of 82 ± 5 and 83 ± 5 years (p = 0.6) and females in 54% and 50% (p = 0.7), respectively. Comorbidities such as diabetes, chronic kidney disease, and atrial fibrillation were comparable between groups (Table 1). Yet, Cluster 1 had a higher prevalence of severe symptoms (NYHA class > 2 in 52 vs. 25%, p = 0.005), previous hospitalization for aortic stenosis (28 vs. 3%, p = 0.03), and significant mitral regurgitation (30 vs. 12%, p = 0.05). Cluster 1 also exhibited a shorter waiting period (48 [24-72] vs. 93 [47-139], p = 0.03), potentially reflecting prioritization based on disease presentation severity. Cluster 1 was associated with significantly better outcomes despite a higher symptomatic burden. Outcome analysis revealed that Cluster 2 was associated with worse outcomes, including higher 30-day and 1-year mortalities (12 vs. 2%, p < 0.001 and 29 vs. 7%, p < 0.001) and stroke (6 vs. 0.5%, p < 0.01). Hospital readmission rates were also significantly higher in Cluster 2 (16 vs. 0.5%, p < 0.001). Symptomatic burden with hospitalization may result in an earlier TAVI, as a shorter waiting time is associated with better outcomes.

	Total (n=300)	Cluster1 (n=182)	Cluster 2 (n=32)	*p-value*
Age,				
Mean, SD	82±5	82+6	83+5	p=0,6
Median, IQR	82, 8	82, 7	84,10	
Female, (%)	54%	54%	50%	p=0,7
Katz score > 4 (%)	96%	97%	94%	p=0,6
STS score				
Mean, SD	5,2±4,5	4,9±4,2	5,8±4,3	p=0,3
Median, IQR	3,8, 4,3	3,7, 3,6	4,0±5,5	
STS score high risk (>8)	17%	13%	22%	p=0,2
Euroscore	2,32, 2,4	2,2, 2	2,6, 2	p=0.5
Hospital Admission due to AS	22%	28%	3%	**p=0,03**
NYHA > 2	51%	52%	25%	**p=0,005**
Comorbidities				
HTN	86%	85%	88%	p=0,7
DM	35%	36%	41%	p=0,6
CAD	21%	16%	25%	p=0.2
COPD/OSA	11%	10%	16%	p=0,3
GFR < 30ml/kg/m2	11%	11%	16%	p=0,5
Atrial fibrillation	22%	24%	19%	p=0,5
MI	9%	9%	13%	p=0,5
PCI	14%	12%	22%	p=0,1
Stroke	8%	8%	18%	p=0,07
ECG				
1st AV Block	12%	11%	13%	p=0,8
LBBB	9%	8%	7%	p=0,8
RBBB	7%	6%	16%	**p=0,05**
TTE				
Mean gradient (mmHg)	48±14	49±13	46±15	p=0,2
AVA (cm2)	0,7±0,2	0,7±0,2	0,8±0,2	p=0,08
LVEF (%)	56±11	55±10	57±10	p=0,7
LVEF < 40%	13%	10%	10%	p=0,9
SPAP > 40mmHg	54%	64%	43%	p=0,03
Significant MR	30%	30%	12%	**p=0,05**
CCTA				
Aortic calcium score	721±88			p=0,3
Min femoral diameter (mm)	7,3, 1,8	7,0, 1,9	7,3, 1,6	p=0,3
Laboratory findings				
Hemoglobin	12,2±1,9	12,3±1,8	12,1±2,2	p=0,8
Serum creatinine	1,2, 0,6	1,0, 0,6	1,0, 0,8	p=0,9
NTproBNP	526±284	510±269	657±291	p=0,09
TAVI waiting time (days)	60, 101,	48, 98	93, 92	**p=0,03**
	Total (n=300)	**Cluster 1** (n=182)	**Cluster 2** (n=32)	***p-value***
Death, stroke and hospital readmission	25%	12%	100%	p<0,001
Death at 30 days	3,7%	1%	6%	p=0,05
Death at 1 year	12%	7%	29%	p<0,001
Stroke	2,8%	0,5%	16%	p<0,001
Hospital admission	17%	13%	88%	p<0,01
Pacemaker implantation	20%	21%	23%	p=0,9
Vascular complication	7,8%	5,5%	9,4%	p=0,4

Conclusions: Multivariate clustering of clinical presentation and risk factors successfully identified two distinct clusters of profiles with divergent TAVI outcomes. Notably, despite having more symptomatic disease (as indicated by a higher NYHA class) and a history of hospitalization, patients were associated with better outcomes. The shorter waiting period highlights the potential benefit of earlier intervention for more symptomatic patients. In contrast, Cluster 2 patients experienced higher mortality, stroke, and hospital readmission rates, possibly reflecting the detrimental impact of delays. Earlier prioritization of symptomatic patients for TAVI could significantly improve clinical outcomes.

PO 32. A COMPARISON OF SELF-EXPANDING AND BALLOON-EXPANDABLE VALVES IN PACEMAKER IMPLANTATION RATES IN TAVI

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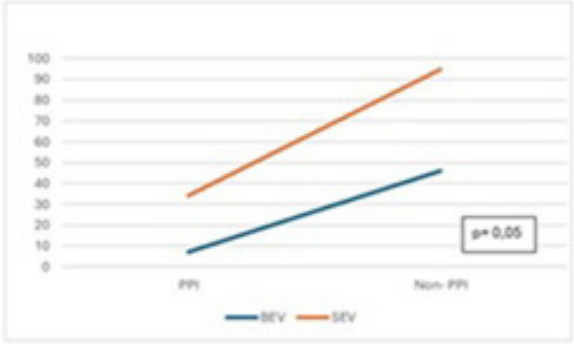
Introduction: Permanent pacemaker implantation (PPI) is a common complication after transcatheter aortic valve implantation (TAVI), with incidence rates ranging from 10% to 30%. While PPI rates have declined due to advances in TAVI techniques, the risk differences between self-expanding valves (SEVs) and balloon-expandable valves (BEVs) remain unclear. Some studies associate SEVs, like the Evolut series, with higher PPI risk than BEVs, like the SAPIEN series, but results are inconsistent. Factors such as valve oversizing, calcifications, and anatomical variations also contribute to conduction disturbances. The comparative risk of PPI between SEVs and BEVs requires further investigation.
Objectives: We aimed to evaluate the relationship between pacemaker implantation rates in BEVs and SEVs in patients undergoing TAVI within the immediate postoperative period (up to 1 week). Additionally, it assessed the correlation between PPI and factors such as aortic valve oversizing and native aortic valve calcium.

Outcomes	PPI (=41)	Non-PPI (n=140)	p-value
Age (years)	82,34 ± 0,98	81,66 ± 0,52	0,62
QRS (ms)	118 ± 4	105 ± 2	0,136
LBBB	3	14	0,616
RBBB	15	11	**0,001**
1st Degree AVB	8	23	**0,02**
AF	20	43	**0,035**
Pre-dilatation	33	103	0,273
Post-dilatation	25	68	0,130
Prosthetic valve size	27 ± 0,5	26 ± 0,2	0,127
Valve oversize area	31	103	0,382
Calcium score (Agatston units)	2181 ± 211	2195 ± 108	0,965



Methods: We retrospectively analyzed records of 184 patients without prior permanent pacemakers who underwent TAVI in 2024. BEVs were implanted in 29.9% of cases (8 Myval and 47 Sapien 3/Ultra), while SEVs were used in

70% of patients, including 34 Portico, 35 ACURATE, 58 CoreValve Evolut R/Pro, and 2 Vienna. Population analyses: Baseline characteristics were similar between patients receiving BEVs or SEVs. PR intervals > 200 ms did not differ significantly (p = 0.16). Right bundle branch block (RBBB) was present in 39 BEV patients (16%) and 6 SEV patients (10.7%) (p = 0.319), while left bundle branch block (LBBB) rates were also similar (p = 0.972). Aortic valve calcium scores were comparable (BEV: 2716 ± 172 vs. SEV: 1,973 ± 110 Agatston units, p = 0.871). Although valve oversize was greater in SEVs, the difference was not statistically significant. Outcomes: PPI rates were significantly higher in SEVs than BEVs during early follow-up (7 vs. 34, p = 0.05). Independent predictors for pacemaker implantation included RBBB, first-degree AV block, and atrial fibrillation, with significant associations (RBBB: 15 vs. 11, p = 0.001; AVB: 8 vs, 23, p = 0.02; AF: 20 vs. 43, p = 0.035). No associations were found between PPI rates and pre-/post-dilation, valve oversize, or calcium score.

Conclusions: BEVs had lower pacemaker implantation rates in the early post-TAVI period. While SEVs offer flexibility for complex anatomies, their higher PPI risk should be weighed, especially in patients prone to conduction disturbances.

PO 33. COMPARATIVE ANALYSIS OF DEVICE PERFORMANCE AND PACEMAKER IMPLANTATION RATES IN SUPRA-ANULAR AND INTRA-ANULAR TAVR VALVES IN PATIENTS WITH SMALL AORTIC ANNULI

Mariana Caetano Coelho, Miguel Antunes, Fernando Nascimento Ferreira, Francisco Albuquerque, Miguel Figueiredo, Francisco Cardoso, António Fiarresga, Rúben Baptista Ramos, Inês Rodrigues, Rui Ferreira, Duarte Nuno Cacela

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Introduction: Transcatheter aortic valve replacement (TAVR) has evolved from a treatment for inoperable patients to the gold standard for managing severe aortic stenosis (AS) in high and intermediate-risk patients, and more recently, in low-risk patients. A small aortic annulus (SAA), common in elderly women, increases the risk of prosthesis-patient mismatch (PPM). The leaflet mounting design, whether supra-annular (SAV) or intra-annular (IAV), influences outcomes, with SAVs offering better hemodynamics.

Objectives: We aimed to compare the hemodynamic and clinical performance between two SAVs (Medtronic CoreValve Evolut R, Evolut PRO, and Boston Acurate) and two IAVs (Abbott Portico and Edwards SAPIEN 3) in patients with a SAA (area ≤ 400 mm^2), during a follow-up of 4.3 years.

Results: Primary outcomes included device success, and hemodynamic characteristics evaluated by echocardiography, including moderate/severe paravalvular leak (PVL), residual mean gradient, and PPM. Secondary outcomes focused on permanent pacemaker implantation (PPI). Study Population: We included 94 patients who underwent TAVR using either SAV (n = 53) or IAV (n = 41) between 2016 and 2022. The majority were women in both groups with a mean age of 79.6 ± 8.3 years and 81.1 ± 6.5 years, respectively. The cohort was well balanced, including the Society of Thoracic Surgeons mortality score, which showed no significant difference between groups (mean score 4.19 ± 0.38 vs. 4.85 ± 0.67, p = 0.097), respectively. Outcomes: No significant difference was found in residual mean gradients (14.8 ± 1.3 vs. 15.3 ± 1.2, p = 0.855) or PPM rates (1.98 ± 0.16 vs. 2 ± 0.23, p = 0.416). However, PPI was significantly higher in the IAV group (0 vs. 10, p = 0.05). The Sapien3 valve was more stenotic than the Portico valve (maximum velocity: 2.02 ± 0.14 vs. 1.77 ± 0.07, p = 0.011; maximum gradient: 18.2 ± 2.2 vs. 13.2 ± 1, p = 0.012; mean gradient: 10.1 ± 1.3 vs. 7.5 ± 0.6, p = 0.037). No significant difference in PPM rates or pacemaker implantation was found between the two IAV valves. No differences were seen between SAVs versus Portico valves in gradients (14.9 ± 1.3 vs. 13.2 ± 1, p = 0.094) or valve areas (2 ± 0.16 vs. 2.2 ± 0.4, p = 0.203), but PPI was lower with Medtronic valves (0 vs. 5, p = 0.011).

Conclusions: IAVs and SAVs demonstrate similar hemodynamic performance and dysfunction after 4.3 years in patients with SAA. The Portico valve in IAVs shows more favourable outcomes, while PPI rates were higher in the IAV group.

Sexta-feira, 11 Abril de 2025 | 09:00-10:30

Área de Posters-écran 2 | Sessão de Posters 06 – Amiloidose cardíaca

PO 34. A COMPREHENSIVE CHARACTERIZATION OF FAMILIAL AMYLOID POLYNEUROPATHY PATIENTS WITH PACEMAKER IMPLANTATION

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Outcomes	SAV (n=53)	IAV (n= 41)	p-value
Device Success	41 (100%)	26 (93%)	0,24
Max Velocity (m/s)	1,88 ± 0,1	1,87 ± 0.07	0,93
Max Gradient (mmHg)	14,8 ± 1,3	15,3 ± 1,2	0,855
Mean Gradient (mmHg)	8,65 ± 0,91	8,58 ± 0,67	0,635
AVA (cm^2)	1,98 ± 0,16	2 ± 0,23	0,416
Paravalvular Leak	13	21	0,918
Mild	9	15	
Moderate	4	6	
PPI	0	10	0,05
Valve Size	25,3 ± 0,4	24,2 ± 0,23	0,008

Outcomes	Sapiens 3 (n= 17)	Portico (n=24)	p-value
Max Velocity (m/s)	2,02 ± 0,14	1,77 ± 0.07	0,011
Max Gradient (mmHg)	18,2 ± 2,2	13,2 ± 1	0,012
Mean Gradient (mmHg)	10,1 ± 1,3	7,5 ± 0,6	0,037
AVA (cm^2)	1,8 ± 0,24	2,2 ± 0,4	0,405
Paravalvular Leak	9	12	0,853
Mild	9	12	
Moderate	0	0	
PPI	5	5	0,529

Outcomes	Evolut R/ Evolut Pro/ Acurate (n=53)	Portico (n=24)	p-value
Max Velocity (m/s)	1,88 ± 0.10	1,77 ± 0.07	0,234
Max Gradient (mmHg)	14,9 ± 1,3	13,2 ± 1	0,094
Mean Gradient (mmHg)	8,6 ± 0,9	7,5 ± 0,6	0,161
AVA (cm^2)	2 ± 0,16	2,2 ± 0,4	0,203
Paravalvular Leak	13	12	0,085
Mild	9	8	
Moderate	4	4	
PPI	0	5	0,011

Figure PO 33

Introduction: Familial amyloid polyneuropathy (FAP) is an autosomal dominant disorder caused by transthyretin (TTR) gene mutations, typically ATTR Val30Met, leading to systemic amyloid deposition and multi-organ dysfunction. These patients often present with early neuropathy, but cardiovascular manifestations are also common, particularly conduction disturbances. The aim of this study was to characterize FAP patients with a pacemaker, including disease stage at implantation and indications, and to evaluate treatment outcomes.
Methods: Retrospective analysis of FAP patients with pacemaker implantation followed at a referral center in Portugal. Data was collected from clinical, electrocardiographic and echocardiographic records. Descriptive and inferential statistics were performed.
Results: A total of 212 patients with FAP treated with a pacemaker were included (59.9% male, median age of 37 ± 14 years at the time of pacemaker implantation), during a mean follow-up period of 11 ± 6.5 years. 96.7% of the patients carried the ATTR Val30Met mutation and 67.9% underwent liver transplantation after a median disease duration of 4.0 ± 3.2 years. At baseline, 23.1% had hypertension, 2.8% diabetes mellitus, 11.8% dyslipidemia, and 35.8% were smokers (current or past). At the time of pacemaker implantation, 86.3% presented with polyneuropathy, mostly in Coutinho stage 1 (80.7%), 9.0% had cardiomyopathy, and 38.7% had some form of conduction disturbance. Regarding the indication for pacemaker, 69.3% underwent prophylactic implantation prior to liver transplantation, 7.1% was due to sinoatrial disease, and 23.6% due to atrioventricular block. During follow-up, 46.2% of the patients who underwent prophylactic implantation, progressed or developed conduction disturbances, with 21.2% becoming pacemaker-dependent after a median of 12 ± 6.3 years. Pacemaker complications included lead displacement (1.9%), over- and undersensing (3.3%), and infections requiring extraction (2.8%). Death occurred in 36.8% of cases (median age of 53 ± 12.8 years).
Conclusions: In conclusion, most patients underwent pacemaker implantation at a young age and in the early stages of polyneuropathy (Coutinho stage 1), primarily as a prophylactic measure in the context of liver transplantation. Despite this approach, a significant proportion developed advanced conduction disturbances over time. Nevertheless, the rate of pacemaker-related complications remained low, highlighting the safety and feasibility of this strategy.

PO 35. CLINICAL OUTCOMES IN FAMILIAL AMYLOID POLYNEUROPATHY PATIENTS: THE EFFECT OF PACEMAKER IMPLANTATION

Diana Ribeiro, André Alexandre, David Sá Couto, Mariana Pereira Santos, Pedro Monteiro, Tiago Peixoto, Sara Lopes Fernandes, Bruno Brochado, Hipólito Reis, Severo Torres

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Introduction: Familial amyloid polyneuropathy (FAP) is an autosomal dominant disorder with possible cardiac involvement, including rhythm and conduction disturbances. Pacemakers are frequently needed, but there is still no evidence or specific guidelines regarding indications in this group of patients. In addition to conventional indications, several centers have performed prophylactic implantations in pre-surgical scenarios and/or followed a lower threshold for implantation. The aim of this study was to compare the progression of the disease's various manifestations between PAF patients with and without pacemaker implantation.
Methods: A retrospective study of FAP patients followed at a referral center in Portugal was performed using data from clinical, electrocardiographic, and echocardiographic records, with descriptive and comparative statistical methods applied for analysis.
Results: A total of 296 FAP patients were included, 71.6% with pacemakers and 58.1% male. The mean age at pacemaker implantation was 41.5 ± 14.0 years. Of the pacemaker implants, 69.2% were prophylactic, 23.7% for atrioventricular block, and 7.1% for sinus node dysfunction. Diabetes (11.9 vs. 2.8%; p = 0.002) and dyslipidemia (25.0 vs. 11.8%; p = 0.006) were more prevalent in non-pacemaker patients, while hypertension (31.0 vs. 23.1%; p = 0.162) and smoking (34.5 vs. 35.8%; p = 0.830) did not differ significantly. Symptom onset was later in non-pacemaker patients (46.9 vs. 36.5 years; p < 0.001). More patients with pacemakers were in stage 1 of Coutinho's (p < 0.001). Polyneuropathy was more common in pacemaker patients (p < 0.001), while cardiomyopathy was slightly more frequent in non-pacemaker patients, but the difference was not significant (p = 0.880). Conduction abnormalities were observed in 35.1% of patients, with a higher prevalence in pacemaker carriers (38.7 vs. 26.2%, p = 0.042). During an 11 ± 6.5 years follow-up, conduction disturbances (47.1 vs. 30.1%; p = 0.008) and polyneuropathy (94.7 vs. 74.7%; p < 0.001) were more frequently observed in pacemaker patients, and no significant differences in cardiomyopathy were observed (24.5 vs. 14.6%; p = 0.066). Mortality was higher in non-pacemaker patients, though not significantly (40.5 vs. 36.8%; p = 0.556).
Conclusions: While pacemaker patients had more conduction disturbances and polyneuropathy, cardiomyopathy progression was similar between groups. Mortality was higher in non-pacemaker patients, but not significantly, suggesting pacemaker implantation aids symptom management but other factors affect survival.

PO 36. MULTIPARAMETRIC ECHOCARDIOGRAPHY SCORES FOR TRANSTHYRETIN CARDIAC AMYLOIDOSIS DIAGNOSIS – IS THE INCREASED WALL THICKNESS SCORE APPROPRIATE?

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ULSR Leiria.

Introduction: Transthyretin cardiac amyloidosis (ATTR-CA) is a restrictive cardiomyopathy increasingly diagnosed in elderly patients (pts) with heart failure. While echocardiography serves as the primary imaging tool, diagnostic challenges often arise in identifying ATTR-CA. Multiparametric echocardiography scores may enhance diagnostic accuracy.
Objectives: Evaluate the diagnostic accuracy of the Increased Wall Thickness (IWT) score in detecting ATTR-CA among pts referred to a Cardiomyopathy Clinic (CC) at a regional hospital in Portugal for suspected CA.
Methods: Retrospective single-center study of adult pts followed from 2018 to 2024. The inclusion criteria comprised pts aged 60 yrs or older with left ventricular wall thickness ≥ 12 mm and at least one cardiac/extracardiac red flag for CA. We collected data regarding clinical characteristics and the five echocardiographic variables used for calculating the IWT score (Table 1). The IWT score was calculated for all pts, and categorized as low (IWT ≤ 2), intermediate (3 < IWT < 7) and high (IWT ≥ 8) diagnostic probability for ATTR-CA. Pts were classified in the ATTR-CA group (Group 1) and the non-ATTR-CA group (Group 2) according to the ESC algorithm for ATTR-CA diagnosis. Group comparisons were performed.
Results: 96 pts were included; median age was 79 yrs (IQR 10) and 74 pts (77%) were male. After diagnostic workup, 52 pts (54%) had ATTR-CA confirmed (group 1), of which 51 (98%) had wild-type ATTR-CA. Group 1 pts were older (81 [IQR 8] vs. 78 [IQR 10] yrs, p = 0.006) and more frequently had overweight (58 vs. 32%, p = 0.011), hyperuricemia (50 vs. 16%, p < 0.001) and chronic kidney disease (62 vs. 39%, p = 0.025). Valvular heart disease was less common in the former group (23 vs. 50%, p = 0.003). Group 1 pts showed greater interventricular septum thickness (18.5 ± 3.2 vs. 15.7 ± 2.8 mm, p < 0.001) and IWT scores (8 [IQR 3] vs. 4 [IQR 4], p < 0.001). Despite providing intermediate diagnostic probability in a significant proportion of pts, IWT score revealed adequate discrimination value for the presence of ATTR-CA (area under ROC curve 0.91, 95%CI 0.85-0.97, p < 0.001), with a sensitivity of 67% and specificity of 96% for a score higher than 7.5.
Conclusions: In our population, the IWT score is a useful predictive tool for ATTR-CA. Given the increasing number of pts referred to our CC, this echocardiographic score could help identify those who should undergo further diagnostic workup to exclude ATTR-CA.

	Total (n=96)	Group 1 (n=52)	Group 2 (n=44)	p-value
Male gender – n (%)	74 (77)	48 (92)	26 (59)	**<0.001[a]**
Age at diagnosis (yrs) – median (IQR)	79 (10)	81 (8)	78 (10)	**0.006[b]**
Past medical history – n (%)				
Overweight	44 (46)	30 (58)	14 (32)	**0.011[a]**
Hypertension	81 (84)	42 (80)	39 (89)	0.290[a]
Dyslipidemia	77 (80)	40 (77)	37 (84)	0.380[a]
Atrial fibrillation	67 (70)	39 (75)	28 (64)	0.227[a]
History of CAD	20 (21)	8 (15)	12 (27)	0.153[a]
Diabetes mellitus	41 (43)	24 (46)	17 (39)	0.458[a]
History of smoking	4 (4)	1 (2)	3 (7)	0.093[a]
Hyperuricemia	33 (34)	26 (50)	7 (16)	**<0.001[a]**
Chronic kidney disease	49 (51)	32 (62)	17 (39)	**0.025[a]**
Asthma	4 (4)	2 (4)	2 (5)	1.000[a]
COPD	19 (20)	13 (25)	6 (14)	0.164[a]
Obstructive sleep apnea	18 (19)	9 (17)	9 (20)	0.694[a]
Prior MI	8 (8)	6 (12)	2 (5)	0.282[a]
Ischemic stroke/TIA	12 (13)	7 (13)	5 (11)	0.757[a]
Valvular heart disease	34 (35)	12 (23)	22 (50)	**0.003[a]**
Hypothyroidism	22 (23)	13 (25)	9 (20)	0.598[a]
IWT score variables				
RWT – median (IQR)	0.62 (0.19)	0.70 (0.17)	0.54 (0.12)	**<0.001[b]**
TAPSE (mm) – mean (SD)	19.31 (4.37)	17.97 (4.00)	20.89 (4.30)	**<0.001[c]**
E/e' ratio – median (IQR)	14.88 (1.03)	17.00 (7.00)	13.06 (6.00)	**<0.001[b]**
LS (%) – mean (SD)	-11.43 (3.94)	-9.77 (2.94)	-13.39 (4.09)	**<0.001[c]**
SAB – median (IQR)	4.20 (5.29)	6.65 (7.00)	2.75 (3.00)	**<0.001[b]**
IWT score				
Total scoring – median (IQR)	7 (4)	8 (3)	4 (4)	**<0.001[b]**
Low probability of CA – n (%)	15 (16)	2 (4)	13 (30)	**<0.001[a]**
Intermediate probability of CA – n (%)	44 (46)	15 (29)	29 (66)	**<0.001[a]**
High probability of CA – n (%)	37 (39)	35 (67)	2 (5)	**<0.001[a]**
Other echocardiographic variables				
IVSd (mm) – mean (SD)	17.20 (3.30)	18.52 (3.16)	15.65 (2.75)	**<0.001[c]**
LVPWd (mm) – median (IQR)	14.40 (3.93)	15.84 (3.00)	12.72 (2.00)	**<0.001[b]**
LVEF (%) – median (IQR)	54.15 (9.99)	53.0 (15.0)	58.5 (12.0)	**0.002[b]**

Table 1. Patient baseline characteristics and echocardiographic variables. Statistical analysis: [a]Chi-square test, [b]Mann-Whitney U test, [c]t-student test. Abbreviations: **CA** - cardiac amyloidosis, **CAD** - coronary artery disease, **COPD** - chronic obstructive pulmonary disease, **E/e'** - E-wave/e'-wave, **IVSd** - interventricular septum thickness end diastole, **IWT** - increased wall thickness, **LS** - longitudinal strain, **LVEF** - left ventricular ejection fraction, **LVPWd** - left ventricular posterior wall end diastole, **MI** - myocardial infarction, **RWT** - relative wall thickness, **SAB** - septal longitudinal systolic apex-to-base ratio, **TAPSE** - tricuspid annular plane systolic excursion, **TIA** - transient ischemic attack.

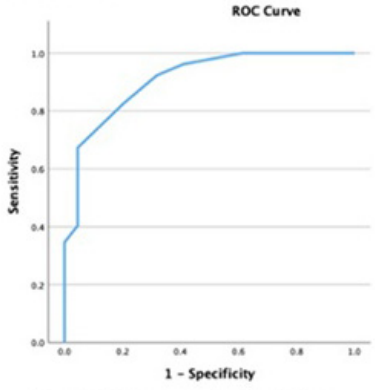

Figure 1. ROC curve analysis for IWT score.

Figure PO 36

PO 37. TRANSTHYRETIN AMYLOID CARDIOMYOPATHY (ATTR-CM) CARDIOGENOMICS: A TERTIARY CENTRE EXPERIENCE

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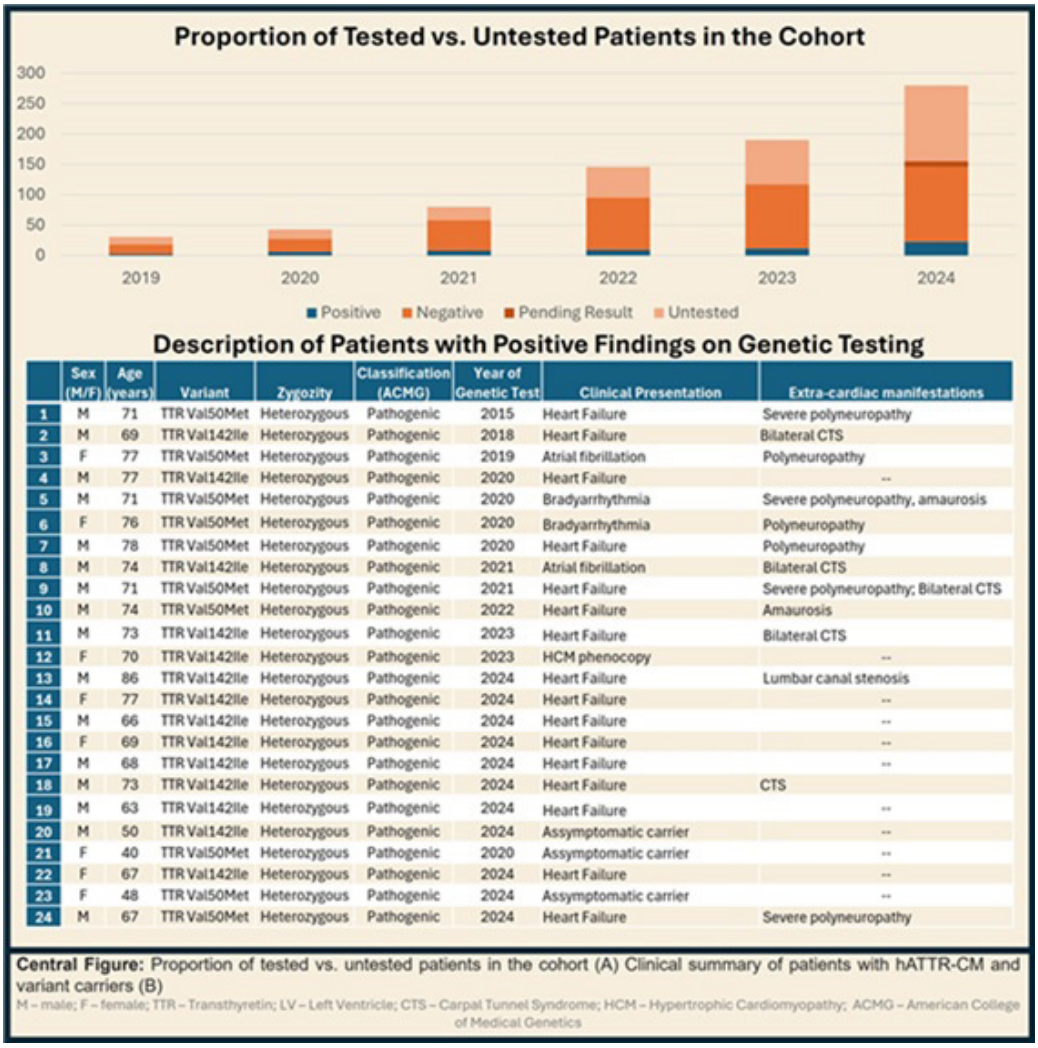
Introduction: ATTR-CM results from the accumulation of wild-type (wtATTR-CM) or mutated/variant (hATTR-CM) transthyretin in the heart. The differentiation between these two subtypes often supports the use of specific treatments and family counselling/screening. Our main goal was to assess the temporal trends of genetic testing in patients with ATTR-CM.

Methods: We performed a study enrolling consecutive patients with ATTR-CM since the inception of a dedicated rare disease primary cardiomyopathy program in our centre. The diagnosis of cardiac amyloidosis and the amyloid subtype was confirmed according to the algorithm of Gilmore and colleagues. Genetic testing for transthyretin variants was performed using next-generation sequencing from blood samples collected from each patient after written informed consent, as per site protocol. Further molecular confirmation of the variants was performed by standard Sanger sequencing. All transthyretin (TTR)



Description of Patients with Positive Findings on Genetic Testing

	Sex (M/F)	Age (years)	Variant	Zygozity	Classification (ACMG)	Year of Genetic Test	Clinical Presentation	Extra-cardiac manifestations
1	M	71	TTR Val50Met	Heterozygous	Pathogenic	2015	Heart Failure	Severe polyneuropathy
2	M	69	TTR Val142Ile	Heterozygous	Pathogenic	2018	Heart Failure	Bilateral CTS
3	F	77	TTR Val50Met	Heterozygous	Pathogenic	2019	Atrial fibrillation	Polyneuropathy
4	M	77	TTR Val142Ile	Heterozygous	Pathogenic	2020	Heart Failure	--
5	M	71	TTR Val50Met	Heterozygous	Pathogenic	2020	Bradyarrhythmia	Severe polyneuropathy, amaurosis
6	F	76	TTR Val50Met	Heterozygous	Pathogenic	2020	Bradyarrhythmia	Polyneuropathy
7	M	78	TTR Val50Met	Heterozygous	Pathogenic	2020	Heart Failure	Polyneuropathy
8	M	74	TTR Val142Ile	Heterozygous	Pathogenic	2021	Atrial fibrillation	Bilateral CTS
9	M	71	TTR Val50Met	Heterozygous	Pathogenic	2021	Heart Failure	Severe polyneuropathy; Bilateral CTS
10	M	74	TTR Val50Met	Heterozygous	Pathogenic	2022	Heart Failure	Amaurosis
11	M	73	TTR Val142Ile	Heterozygous	Pathogenic	2023	Heart Failure	Bilateral CTS
12	F	70	TTR Val142Ile	Heterozygous	Pathogenic	2023	HCM phenocopy	--
13	M	86	TTR Val142Ile	Heterozygous	Pathogenic	2024	Heart Failure	Lumbar canal stenosis
14	F	77	TTR Val142Ile	Heterozygous	Pathogenic	2024	Heart Failure	--
15	M	66	TTR Val142Ile	Heterozygous	Pathogenic	2024	Heart Failure	--
16	F	69	TTR Val142Ile	Heterozygous	Pathogenic	2024	Heart Failure	--
17	M	68	TTR Val142Ile	Heterozygous	Pathogenic	2024	Heart Failure	--
18	M	73	TTR Val142Ile	Heterozygous	Pathogenic	2024	Heart Failure	CTS
19	M	63	TTR Val142Ile	Heterozygous	Pathogenic	2024	Heart Failure	--
20	M	50	TTR Val142Ile	Heterozygous	Pathogenic	2024	Assymptomatic carrier	--
21	F	40	TTR Val50Met	Heterozygous	Pathogenic	2020	Assymptomatic carrier	--
22	F	67	TTR Val142Ile	Heterozygous	Pathogenic	2024	Heart Failure	--
23	F	48	TTR Val50Met	Heterozygous	Pathogenic	2024	Assymptomatic carrier	--
24	M	67	TTR Val50Met	Heterozygous	Pathogenic	2024	Heart Failure	Severe polyneuropathy

Central Figure: Proportion of tested vs. untested patients in the cohort (A) Clinical summary of patients with hATTR-CM and variant carriers (B)
M – male; F – female; TTR – Transthyretin; LV – Left Ventricle; CTS – Carpal Tunnel Syndrome; HCM – Hypertrophic Cardiomyopathy; ACMG – American College of Medical Genetics

Figure PO 37

variants are classified as per the American College of Medical Genetics and Genomics Guidelines.

Results: A total of 280 patients with confirmed ATTR-CM were included, which accounts for a mean of 47 new diagnosis per year (31, 12, 37, 66, 44 and 58 diagnoses in 2019, 2020, 2021, 2022, 2023 and 2024, respectively). Of these, 157 patients (56% of the cohort, age 81 ± 8 years, 75% male) performed genetic testing, of which 150 have received results. This corresponds to an average of 27 genetic tests requests per year. When analysed per year, 58%, 63%, 73%, 65%, 62% and 55% of the patients in the cohort in 2019, 2020, 2021, 2022, 2023 and 2024, respectively, were genetically tested. The absolute amount of genetic testing requests increased from the start of the program. Pathogenic variants in the TTR gene were found in 21 patients, median age 71 (IQR 67-75) years old at the time of diagnosis. Moreover, 3 individuals are followed as asymptomatic carriers detected through family screening. The most frequently identified mutations were the Val142Ile (14 patients) and Val50Met variants (10 patients). Compared with wtATTR-CM, patients with hATTR-CM were younger (median age 71 (IQR 67-75) *vs.* 83 (78-87) years; $p < 0.001$). No significant differences were found in the prevalence of hATTR-CM in males *vs.* females and patients with vs. without extracardiac manifestations. Clinical presentation is summarized in Figure 1.

Conclusions: Over the last years, routine TTR genetic testing is becoming standard-of-care for patients with ATTR-CM. In our cohort, a positive causal gene variant was found 14% of the cases. The identification of hATTR-CM often promoted personalized approach with directed therapies and cascade family screening.

PO 38. ATTR-CM UNDER THE MICROSCOPE: COMPARING REAL-WORLD WITH TRIAL OUTCOMES

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Introduction: Transthyretin amyloid cardiomyopathy (ATTR-CM) is a progressive and life-threatening disease that leads to heart failure and increased mortality. Pivotal clinical trials - ATTR-ACT, HELIOS-B, and ATTRibute-CM - have provided robust evidence supporting the efficacy of TTR stabilizers or synthesis inhibitors in reducing mortality and cardiovascular events.

Objectives: To compare the cardiovascular outcomes of a real-World cohort of patients with ATTR-CM under tafamidis treatment with those reported in the ATTR-CM pivotal trials.

Methods: Single-center, perspective, single-arm observational study of consecutive patients with ATTR-CM treated with tafamidis 61 mg. Their clinical, laboratorial and echocardiographic characteristics were collected and compared with data from the three studies using Student's t Test. The

	Our population (n=89)	ATTR-ACT (n=264)	HELIOS-B (n=326)	ATTRibute-CM (n=421)
Males, n (%)	76 (85)	241 (91)	299 (92)	384 (91)
Age, mean (SD or IQR)	78.6 (11)	74.5 (7)	77 (65-85)	77.4 (6.5)
ATTRwt, n (%)	37 (42)	201 (76)	289 (89)	380 (90)
NYHA class, n (%) I II III	27 (30) 49 (55) 13 (15)	24 (9) 162 (61) 78 (30)	49 (15) 250 (77) 27 (8)	51 (12) 293 (70) 77 (18)
NYHA class, mean (SD)	1.8 (0.7)	2.2 (0.8)	1.9 (0.8)	1.5 (0.7)
NTproBNP, mean (SD or IQR), pg/mL	2639.3 (4267.5)	2995.9 (1751.5, 4861.5)	2021 (1138-3312)	2946 (2226)
KCCQ, points, mean	52.1 (26.4)	62.3	63.3	61.1

Table 1 – Clinical characteristics at baseline for the study population compared with the pivotal trials populations

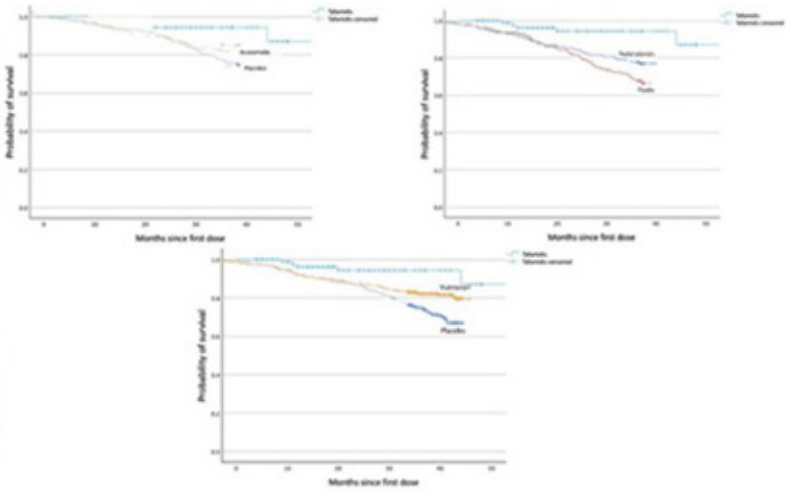

Figure 1- Comparative analysis of all-cause mortality between the study population and pivotal trials

Figure PO 38

endpoint of all-cause mortality at 24 months was assessed using the Kaplan-Meier survival curve.

Results: 89 patients were included (76 males, 39 with hereditary ATTR and 37 with wild-type ATTR). The real-World population was older (mean age 78.6 ± 10.7 years, p < 0.001) and had better functional capacity (p < 0.001) when compared to the ATTR-ACT study population. However, it appeared to have a slightly worse functional capacity when compared to the ATTRibute-CM population (p < 0.001). This real-World cohort is composed of a significantly higher rate of patients with hereditary ATTR (p < 0.001), which may be explained by the endemicity of p.Val50Met mutation in Portugal. The KCCQ-OS score at follow-up was worse in the real-World population compared to the ATTR-ACT (p < 0.001), HELIOS-B (p < 0.001) and ATTRibute-CM studies (p < 0.001) populations. There were no statistically significant differences in NT-proBNP levels between groups (p = NS). During a follow-up of 27.4 ± 2.1 months, there were 7 hospitalizations for heart failure in the real-World population, 5 patients died, 3 due to cardiovascular causes. The all-cause mortality rate at 27 months was 26% in ATTR-CM, 18% in ATTRibute-CM and 12% in HELIOS-B, while in this real-World cohort it was 5.6%.

Conclusions: This study data shows that patients selected for ATTR-CM disease modifying therapy in the real-World present clinical characteristics similar to those included in the pivotal trials. This suggests that patient selection has followed the trials' inclusion criteria. Despite having worse quality of life - which does not seem to be explained by disease severity - this real-World population had better survival when compared to the trials' populations.

PO 39. NAVIGATING TAFAMIDIS OUTCOMES ACROSS DIFFERENT DISEASE SEVERITIES IN ATTR-CM

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Introduction: In the ATTR-ACT trial, tafamidis 61 mg was proved to be beneficial in patients with confirmed TTR amyloid cardiomyopathy (ATTR-CM) and NT-proBNP levels ≥ 600 pg/mL, emphasizing the pivotal role of NT-proBNP as a prognostic marker. This threshold remains a widely adopted prescribing criterion in many healthcare centers.

Objectives: To evaluate the impact of tafamidis 61 mg on clinical outcomes in ATTR-CM patients with NT-proBNP levels < 600 pg/mL and ≥ 600 pg/mL.

Methods: Single-center retrospective study of ATTR-CM patients receiving tafamidis 61 mg, categorized into two groups based on NT-proBNP levels: < 600 pg/mL and ≥ 600 pg/mL. Demographic characteristics and echocardiographic parameters were collected. Continuous variables were compared using the Student's T-test, and categorical variables were compared using Chi-square tests.

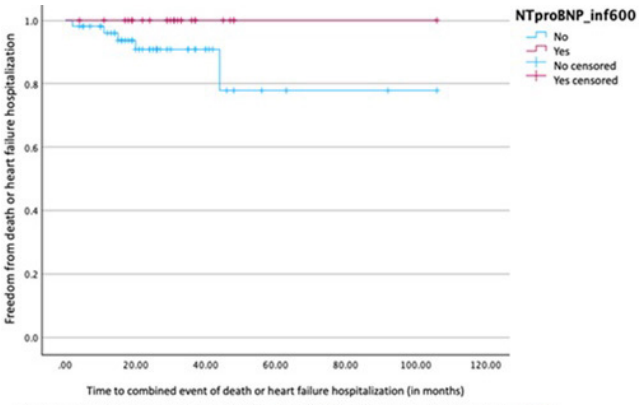

Figure 1: Mortality analysis according to NTproBNP levels above or below 600 pg/ml

Results: Among the 98 ATTR-CM patients (79 males, mean age: 78.6 ± 10.7 years), 25 had NTproBNP levels < 600 pg/mL, while 73 had NTproBNP levels ≥ 600 pg/mL at the time of diagnosis. All patients in the NTproBNp < 600 pg/mL group had hereditary ATTR and classified as NYHA I (25 vs. 3 patients in the NTproBNP ≥ 600 pg/mL group; p < 0.001), had an earlier symptom onset age (63.2 ± 3.4 vs. 77.4 ± 8.5; p < 0.001), with initial manifestations including polyneuropathy, gastrointestinal or genitourinary symptoms, compared to the predominance of heart failure symptoms in the NTproBNP ≥ 600 pg/mL group. These patients exhibited lower troponin T (30.8 ± 7.4 vs. 55.7 ± 5.6; p < 0.001), milder left ventricular wall thickness (IVS: 13.7 ± 0.7 vs. 17.4 ± 0.4 mm; p < 0.001), better right ventricular function (TAPSE: 21.4 ± 0.7 vs. 18.2 ± 0.6 mm; p < 0.001), and lower filling pressures (E/e': 10.4 ± 0.9 vs. 17.2 ± 1.1, p < 0.001). Fewer patients in this group were on furosemide therapy (6 vs. 39; p < 0.001). During the 24.9 ± 2.1 months follow-up, the NTproBNp < 600 pg/mL group appeared to benefit from the initiation of the drug, with a reduction in left ventricular mass (T0:119.1 ± 10.8 vs. T1:95.8 ± 4.3 g/m^2; p = 0.023). No statistically significant differences were observed in NTproBNP or troponin T levels during the follow-up. However, a decline in functional capacity was noted (NYHA I 14, NYHA II 9, NYHA III 1 patients). Despite the progression in functional class, patients in this group did not experience cardiovascular-related hospitalizations or cardiovascular death events during the follow-up period (p = 0.056).

Conclusions: The use of tafamidis in patients with NTproBNp < 600 pg/mL appears to have a protective effect on disease progression suggesting that this cut-off should not be used as a factor for disease modifying treatment exclusion.

PO 40. NON-CONVENTIONAL VERSUS CONVENTIONAL PACING IN CARDIAC AMYLOIDOSIS: IMPACT ON CLINICAL, ELECTRICAL, AND FUNCTIONAL OUTCOMES

Maria Rita Giestas Lima, Rita Carvalho, Francisco Moscoso Costa, Sérgio Maltês, Gustavo Rodrigues, Pedro Galvão Santos, Pedro Carmo, Isabel Santos, Bruno Rocha, Carlos Aguiar, Diogo Cavaco, Pedro Adragão

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

Introduction: Cardiac amyloidosis (CA) is linked to conduction disturbances requiring pacing therapy, which includes conventional permanent pacemaker (PPM) or cardiac resynchronization therapy (CRT). Left bundle branch area pacing (LBBAP) is an alternative, offering physiological pacing. Limited evidence compares the outcomes of conventional (PPM) vs. non-conventional pacing (CRT or LBBAP) in CA. Thus, we aimed to evaluate these modalities of pacing in these patients.
Methods: Single-centre retrospective study of consecutive CA patients who had a pacemaker implantation and classified as conventional (PPM group) and non-conventional pacing (CRT and LBBAP groups). Baseline clinical, laboratory, and echocardiographic data were collected pre- and post-implantation and differences were evaluated between groups. Basal ECG on routine ambulatory evaluation was used to measure baseline QRS intervals.
Results: Among 312 CA patients, 50 (16%) received a device implantation (mean age 84 ± 6 years, 80% male, mean left ventricle ejection fraction [LVEF] 46 ± 13%): 32 (64%) underwent PPM, 12 (24%) CRT and 6 (12%) LBBAP. The primary indication for PPM was complete heart block (n = 22), while CRT was primarily indicated for complete heart block and LVEF < 50% (n = 5) and LBBAP for complete heart block (n = 3). At baseline, CRT and LBBAP patients were more likely to have more symptoms of heart failure (p = 0.049), complete LBBB (p = 0.028), wider QRS (127 ± 25 *vs.* 156 ± 24 *vs.* 132 [104-147] ms for PPM/CRT/LBBAP, respectively; p = 0.003) and more intraventricular desynchrony (p = 0.001). Following implantation, pacing dependency was similar across all three groups during the follow-up (pacing percentage of 76 ± 31 *vs.* 98 ± 1 *vs.* 88 ± 9% for PPM/CRT/LBBAP, respectively; p = 0.054). At a median follow-up of 24 months, CRT and LBBAP patients had more pronounced improvement in NYHA (p = 0.005) (Figure 1A) and less intraventricular desynchrony (p = 0.004). CRT patients had a greater reduction in QRS (+27 vs. -8 vs. +24 ms for PPM, CRT and LBBAP, respectively; p = 0.002) (Figure 1B). No significant differences were noted in NT-proBNP, LVEF or LV global longitudinal strain (Figure 1C-D).
Conclusions: In a real-world cohort of patients with CA, the different pacing modalities were mostly applied according to guidelines recommendations. Accordingly, baseline features differed between groups, with patients undergoing CRT and LBBAP displaying markers of more severe disease. CRT was associated with an improvement in symptoms and LV desynchrony. LBBAP was associated with an increase in QRS duration similar to that observed in PPM, likely due to the infiltrative nature of CA and septal thickening, which may compromise the LBBAP results.

PO 41. RIGHT VENTRICULAR FUNCTION ANALYSIS IN WILD-TYPE TRANSTHYRETIN AMYLOID CARDIOMYOPATHY: IDENTIFYING THE BEST PREDICTOR OF PATIENT OUTCOMES

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Introduction: Wild-type transthyretin amyloid cardiomyopathy (wtATTR-CM) is an increasingly recognized pathology associated with global cardiac infiltration by amyloid fibrils, including the right ventricle. Right ventricular dysfunction is common in wtATTR-CM and is a predictor of poorer outcomes. Although multiple echocardiographic parameters can assess right ventricular dysfunction, identifying the most reliable parameter for predicting prognosis can be valuable for better patient management.
Objectives: To determine which right ventricular echocardiographic parameter is the most reliable predictor of adverse outcomes in wtATTR-CM patients.
Methods: Baseline echocardiographic parameters were compared between patients who reached the primary endpoint and those who did not. The primary endpoint was the composite endpoint of heart failure hospitalization and all-cause mortality. Regression analyses were used to determine the independent predictors of the primary endpoint.
Results: A total of 111 patients were included in the study (74% males; mean age 81 ± 5 years). Median follow-up was 31 [IQR 16-39] months. Four echocardiographic parameters were analysed: S' wave, Fractional Area Change (FAC), and Tricuspid Annular Plane Systolic Excursion (TAPSE) and Right Ventricular Global Longitudinal Strain (RVGLS). Patients who reached the primary endpoint showed significantly worse values for all analyzed parameters: S': 9.66 ± 2.90 vs. 12.16 ± 3.6%, p < 0.001; FAC: 16.12 ± 4.73 vs. 18.59 ± 4.33%,

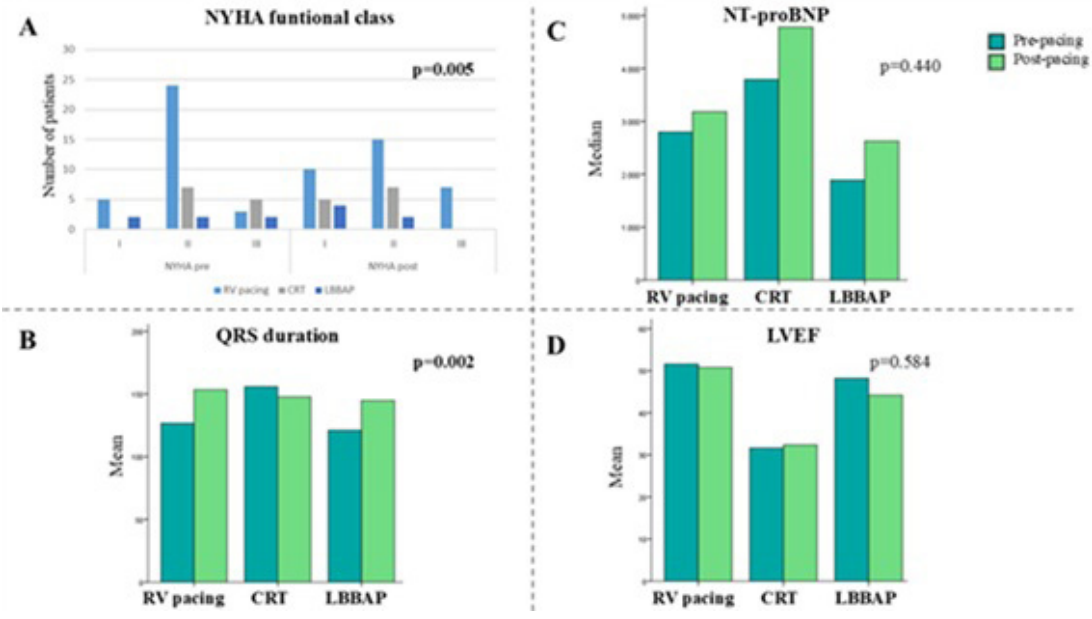


Figure PO 40

p = 0.007; TAPSE: 32.12 ± 9.42 mm vs. 39.21 ± 9.23 mm, p < 0.001; RVGLS: -10.50 ± 4.09 vs. -12.72 ± 4.64%, p = 0.011; ROC analysis identified the best cutoffs for S' (≤ 11 m/s), FAC (≤ 39.1%), TAPSE (≤ 18.7%) and RVGLS (≥ -14.5%). On multivariate regression analysis, FAC was the only independent predictor of the composite endpoint (HR 3.98, 95%CI 1.36-11.63, p = 0.012).

Conclusions: FAC emerged as the most reliable echocardiographic parameter for predicting adverse outcomes in wtATTR-CM patients, highlighting its potential as a valuable tool in clinical decision-making.

PO 42. PREDICTORS OF MAJOR ADVERSE CARDIOVASCULAR EVENTS IN PATIENTS WITH WILD-TYPE TRANSTHYRETIN AMYLOID CARDIOMYOPATHY: INSIGHTS FROM A REGIONAL HOSPITAL EXPERIENCE

André Manuel Faustino Martins, Joana Pereira, Mónica Amado, Adriana Vazão, Carolina Gonçalves, Mariana Carvalho, Margarida Cabral, Célia Domingues, Catarina Ruivo, Hélia Martins

ULSR Leiria.

Introduction: Transthyretin cardiac amyloidosis (ATTR-CA) results from the deposition of amyloid fibrils in the myocardium, leading to restrictive cardiomyopathy and reduced myocardial contractile reserve. This progressive process often results in symptomatic chronic heart failure (HF) and, eventually, death.

Objectives: Identify predictors of extended major adverse cardiovascular events (MACE) in patients (pts) with ATTR-CA followed at a Cardiomyopathy Clinic (CC) in a regional hospital in Portugal.

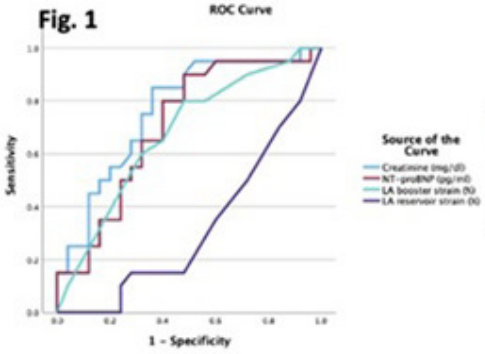
Methods: Retrospective single-center study of pts diagnosed with wild-type ATTR-CA per ESC algorithm from 2018 to 2024. Clinical, echocardiographic, electrocardiographic and analytical data were collected at the time of diagnosis (table 1). The occurrence of extended MACE, defined as cardiovascular (CV) mortality, myocardial infarction, stroke and HF hospitalizations, was assessed 18 months after diagnosis. Pts who suffered MACE (group 1) were compared with those who did not (group 2).

Results: 45 pts were included (80 ± 6yrs, 91% male), of whom 20 (44%) had MACE (group 1). Group 1 pts more frequently had atrial fibrillation (AF) (95 vs. 48%, p < 0.001), chronic kidney disease (CKD) (80 vs. 44%, p = 0.014) and chronic obstructive pulmonary disease (COPD) (40 vs. 12%, p = 0.041). After

Table 1.

	Total (n=45)	Group 1 (n=20)	Group 2 (n=25)	p-value
Male gender – n (%)	41 (91)	18 (90)	23 (92)	1.000[a]
Age at diagnosis(yrs) – mean (SD)	80 (6)	81 (6)	80 (6)	0.492[b]
Past medical history – n (%)				
Overweight	28 (62)	13 (65)	15 (60)	0.731[a]
Hypertension	38 (84)	19 (95)	19 (76)	0.120[a]
Dyslipidemia	35 (78)	17 (85)	18 (72)	0.473[a]
Atrial fibrillation	31 (69)	19 (95)	12 (48)	**<0.001[a]**
History of CAD	7 (16)	3 (15)	4 (16)	1.000[a]
Diabetes mellitus	20 (44)	10 (50)	10 (40)	0.502[a]
Hyperuricemia	21 (47)	10 (50)	11 (44)	0.688[a]
Chronic kidney disease	27 (60)	16 (80)	11 (44)	**0.014[a]**
Asthma	2 (4)	1 (5)	1 (4)	1.000[a]
COPD	11 (24)	8 (40)	3 (12)	**0.041[a]**
Obstructive sleep apnea	7 (16)	2 (4)	5 (20)	0.437[a]
Prior MI	5 (11)	3 (15)	2 (8)	0.642[a]
Ischemic stroke/TIA	9 (20)	3 (15)	6 (24)	1.000[a]
Valvular heart disease	10 (22)	6 (30)	4 (16)	0.301[a]
Hypothyroidism	11 (24)	6 (30)	5 (20)	0.500[a]
Echocardiographic parameters				
LVEF (%) – mean (SD)	51 (9)	52 (8)	52 (10)	0.758[c]
IVSd (mm) – mean (SD)	18.5 (3.3)	18.4 (2.8)	18.8 (3.7)	0.645[c]
LVPWd (mm) – mean (SD)	16.0 (2.7)	15.6 (2.1)	16.5 (3.3)	0.323[c]
LV mass index (g/m²) – mean (SD)	197.5 (49.1)	184.8 (35.0)	210.0 (56.7)	0.112[c]
LVESV index (ml/m²) – median (IQR)	23.3 (15.5)	22.0 (19.5)	22.5 (8.2)	0.802[b]
LVEDV index (ml/m²) – mean (SD)	53.3 (18.3)	50.4 (14.2)	53.9 (22.1)	0.472[c]
RWT – mean (SD)	0.72 (0.17)	0.70 (0.11)	0.75 (0.23)	0.308[c]
TAPSE (mm) – mean (SD)	18.2 (3.9)	18.42 (3.9)	18.03 (4.0)	0.747[c]
E/e' ratio – mean (SD)	18.1 (6.5)	17.3 (6.8)	19.1 (6.5)	0.296[c]
LS (%) – mean (SD)	-9.6 (3.0)	-9.7 (2.6)	-9.8 (3.6)	0.969[c]
SAB – median (IQR)	7.0 (7.7)	6.7 (7.2)	7.3 (8.1)	0.982[c]
PSAP (mmHg)* – median (IQR)	41 (15)	44 (18)	38 (15)	0.060[b]
LA volume index (ml/m²) – mean (SD)	66.3 (15.9)	64.4 (13.2)	65.6 (17.7)	0.812[c]
LA reservoir strain (%) – median (IQR)	6.0 (6.0)	5.5 (3.0)	7.0 (8.0)	**0.039[b]**
LA booster strain (%) – median (IQR)	-1.0 (5.0)	0.0 (2.0)	-3.0 (6.0)	**0.049[b]**
LA conduit strain (%) – mean (SD)	-5.4 (2.9)	-4.9 (2.5)	-5.8 (3.2)	0.479[c]
Electrocardiographic parameters				
Atrial fibrillation – n (%)	24 (53)	15 (75)	9 (36)	**0.009[a]**
Pacemaker rhythm – n (%)	6 (13)	4 (20)	2 (8)	0.383[a]
Sinus Rhythm – n (%)	15 (33)	1 (5)	14 (56)	**0.016[a]**
QRS width (ms)** – mean (SD)	122 (33)	128 (34)	117 (32)	0.312[a]
Low voltage criteria** – n (%)	30 (67)	11 (55)	19 (76)	0.444[a]
AV-Block** – n (%)	9 (20)	8 (40)	1 (4)	**0.012[a]**
LBBB** – n (%)	5 (11)	1 (5)	4 (16)	0.631[a]
RBBB** – n (%)	8 (18)	5 (25)	3 (12)	0.235[a]
Bifascicular block** – n (%)	7 (16)	5 (25)	2 (8)	0.101[a]
Analytical parameters				
NT-proBNP (pg/ml) – mean (SD)	4756.0 (3104.2)	5655.0 (3006.4)	4029.5 (2927.1)	**0.028[c]**
hs-TnI (pg/ml) – median (IQR)	93.0 (182.6)	106.8 (364.5)	78.7 (340.9)	0.275[b]
Creatinine (mg/dl) – median (IQR)	1.37 (0.60)	1.57 (0.65)	1.20 (0.49)	**0.003[b]**

Figure PO 42



Variables	AUC	p-value
Creatinine (mg/dl)	0.764	<0.001
NT-proBNP (pg/ml)	0.705	0.009
LA booster strain (%)	0.675	0.030
LA reservoir strain (%)	0.320	0.024

Table 1. Patient baseline characteristics. Fig. 1. ROC curve analysis. Statistical analysis: [a]Chi-square test, [b]Mann-Whitney U test, [c]t-student test. *5 missing values in the total population. **Only patients without a pacemaker. Abbreviations: **AV** - atrioventricular, **CAD** - coronary artery disease, **CI** - confidence interval, **COPD** - chronic obstructive pulmonary disease, **E/e'** - E-wave/e'-wave, **hs-TnI** - high-sensitivity troponin I, **IQR** - interquartile range, **IVSd** interventricular septum thickness end diastole, **IWT** - increased wall thickness, **LA** - left atrial, **LBBB** - left bundle branch block, **LS** - longitudinal strain, **LVEDV** - Left ventricular end diastolic volume, **LVEF** - left ventricular ejection fraction, **LVESV** - left ventricular end systolic volume, **LVPWd** - left ventricular posterior wall end diastole, **MI** - myocardial infarction, **OR** - odds ratio, **PSAP** - pulmonary artery systolic pressure, **RBBB** - right bundle branch block, **RWT** - relative wall thickness, **SAB** - septal longitudinal systolic apex-to-base ratio, **SD** - standard deviation, **TAPSE** - tricuspid annular plane systolic excursion, **TIA** - transient ischemic attack.

Figure PO 42 ***(Cont.)***

multivariate logistic regression of these 3 comorbidities, only AF (OR 24.83, CI 95% 2.31-266.46, p = 0.008) and CKD (OR 7.55, 95%CI 1.51-37.66, p = 0.014) remained independent predictors of MACE. Regarding echocardiographic variables, group 1 pts demonstrated lower left atrial (LA) reservoir strain (LASr) [5.5 (IQR 3) vs. 7.0% (IQR 8); p = 0.039] and LA contractile strain (LASct) [0.0 (IQR 2) vs. -3.0% (IQR 6); p = 0.026]. Additionally, group 1 more often had atrioventricular block (40 vs. 4%, p = 0.012) and showed significantly higher NT-proBNP levels (5,655 ± 3,006 vs. 4,030 ± 2,927 pg/mL, p = 0.028). ROC analysis identified cut-offs for predicting MACE in ATTR-CA pts: creatinine ≥ 1.25 mg/dl (AUC 0.764, sensitivity (S) 85%, specificity (E) 64%), NT-proBNP ≥ 3,220 pg/ml (AUC 0.705, S 90%, E 52%), and LASct ≥ -2.5% (AUC 0.675, S 80%, E 52%). The primary driver of 18-month MACE was HF hospitalizations (86%), followed by CV mortality (14%).
Conclusions: In this ATTR-CA population, pts with extended MACE had lower LASr and LASct values and higher NT-proBNP levels at diagnosis. Assessing these parameters may help predict adverse outcomes. Additionally, AF and CKD were identified as independent risk factors for MACE.

Sexta-feira, 11 Abril de 2025 | 09:00-10:30

Área de Posters-écran 3 | Sessão de Posters 07 – Doenças cardiovasculares - lesão renal aguda e inflamação

PO 43. ACUTE KIDNEY INJURY, THE WORST NIGHTMARE IN PATIENTS WITH MYOCARDIAL INFARCTION AND CARDIOGENIC SHOCK

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Introduction: Cardiogenic shock (CS) in patients with acute coronary syndromes (ACS) is one of the most challenging situations in a cardiac intensive care unit due to the high complexity and mortality associated. There are several cardiac and non-cardiac factors that could impact the mortality rate in this group – identifying them can be an important advantage in the outcome of ACS with CS.

Objectives: This study aims to determine predictors of mortality in patients admitted with ACS complicated with CS.
Methods: We retrospectively analysed patients admitted with ACS to our institution over a 7-year period and selected those who presented with CS. We recorded demographic data, personal history, heart rate (HR), blood pressure, ECG data, existence of mechanical complications and laboratory data. Multivariate regression analysis was performed to identify predictors of in-hospital mortality and eliminate cofounders. An increase in creatinine of 0.3 mg/dL and > 50% compared to baseline value was defined as AKI.
Results: We documented 419 patients with ACS who evolved in CS. They were predominantly male (63.2%) with a mean age of 72 ± 13 years. Regarding personal history, 71.8% had arterial hypertension, 56.0% had dyslipidemia, 33.8% diabetes mellitus and 22.0% were smokers. In this population, we documented 39.6% (n = 166) of in-hospital mortality. Multivariate linear regression revealed a statistically significant association between mortality and AKI [b = 1.339; OR 3.82 (CI: 2.39-6.10); p < 0.001)] and the existence of mechanical complications [b = 1.143; OR 3.14 (CI 1.40-7.04); p = 0.006]. Other associations that were statistically significant, but with b < 1.0 were age ≥ 75 years-old (p = 0.001), HR ≥ 100 bpm (p = 0.021) and Hb at admission < 12.0 mg/dL (p = 0.020). AKI was revealed as the strongest predictor of in-hospital mortality in ACS with CS. There were no other statistically significant variables associated with mortality.
Conclusions: There are multiple factors that impact mortality rates in patients with ACS that progresses to CS, however the presence of acute kidney injury was the strongest independent predictor. Therefore, a swift recognition and approach of AKI may benefit the outcome of patients with ACS complicated with CS.

PO 44. CONTRAST VOLUME TO CREATININE CLEARANCE RATIO - A STRONG PREDICTOR OF CONTRAST INDUCED NEPHROPATHY IN PATIENTS UNDERGOING PERCUTANEOUS INTERVENTION

Francisco Rodrigues Dos Santos, Gonçalo Ferreira, João Gouveia Fiuza, Mariana Duarte Almeida, Vanda Devesa Neto, Oliver Kungel, António Costa, Inês Fiuza Pires

USL Viseu Dão-Lafões.

Introduction: Contrast-induced nephropathy (CIN) is a common complication following percutaneous coronary intervention (PCI) and it is associated with a worse prognosis. There are predictive factors of CIN, such as chronic kidney disease, but it can also affect individuals with normal renal function. In this study, we aim to assess if a ratio with volume of iodinated contrast (Vc) and creatinine clearance (ClCr) can predict the occurrence of CIN in patients with normal renal function.

Methods: We developed a retrospective analysis of patients who underwent elective or urgent PCI between January 1, 2019, and May 31, 2024. Patients with creatinine clearance (ClCr) > 60 mL/min, calculated using the Cockroft-Gault formula, and pre procedure serum creatinine (SCr) ≤ 1.2 mg/dL were included. According to literature, a Vc/ClCr ratio ≥ 4 was considered high, therefore, patients were divided into two groups accordingly. CIN was defined as an increase in SCr of ≥ 0.5 mg/dL or 0.25% increase from basal levels and the relationship between Vc/ClCr and CIN was then analysed, using the Chi-square and Mann-Whitney U tests and multivariate logistic regression.
Results: 487 patients were included, 59.1% (n = 289) were men, with a mean age of 66.62 ± 10.33 years and 31.4% (n = 153) diabetic. Mean ClCr was 91.92 ml/min/1.73 m^2 ± 28.26 and an average dose of iodinated contrast used of 208.61 ± 2.48 ml. 9% (n = 44) patients developed CIN. Vc/ClCr ratio > 4 was observed in 14.8% (n = 72) patients, 41.7% of diabetics vs. 29.6% in the Vc/ClCr < 4 group, 33.3% with anaemia vs. 21.0% in the group with the lower contrast dose. After analysis with Chi-square test, a statistically significant association between the presence of CIN and Vc/ClCr > 4 appeared (χ^2 = 41.666, p < 0.001), with patients with CIN showing a markedly higher prevalence of Vc/ClCr > 4 (47.7%) compared to those without CIN (11.5%). Multivariate logistic regression analysis supported the previous results (OR: 7.018, 95%CI: 3.629-13.573, p = 0.001), These findings thus support an increased risk of CIN in this patient group, independent of other variables.
Conclusions: This study highlights the likely impact of the volume of iodinated contrast used during percutaneous coronary intervention on the development of CIN, further demonstrating a real risk of this complication even in patients with good renal function at admission. It also emphasizes the need to adopt preventive strategies, particularly minimizing the volume of contrast used to the necessary minimum.

PO 45. RETHINKING AKI RISK: BEYOND CONTRAST VOLUME IN ACUTE MYOCARDIAL INFARCTION

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Introduction: Acute kidney injury (AKI) is a frequent complication following acute myocardial infarction (AMI), influenced by multiple factors and associated to prolonged hospital stays and worse outcomes. While contrast volume used in coronary angiography is traditionally considered a key risk factor, its significance in contemporary clinical practice remains controversial. The purpose of this study was to assess predictive factors for AKI and to evaluate the prognostic value of the presence and grade of AKI in AMI patients.
Methods: Retrospective analysis including consecutive AMI patients admitted to a Cardiology Department from November 2021 to October 2022. Demographic characteristics, cardiovascular risk factors, serial creatinine levels (at admission, 24- and 48- hours post-coronary angiography), hs-TnI, NT-proBNP, and other laboratory parameters were collected. AKI presence and severity were classified using the AKIN criteria. Logistic regression models were employed to identify predictors of AKI.
Results: 375 patients were included (72% male), of which 7.7% had previous history of chronic kidney disease (CKD). 10.7% of patients developed AKI (7.5% AKIN I, 1.9% AKIN II and 2.4% AKIN III). Patient characteristics are described in Table 1. Patients with CKD had 5.26 times higher odds of developing AKI (OR = 5.26 [95%CI: 2.37-13.00]; p < 0.001). Patients on angiotensin converting enzyme inhibitors or angiotensin receptor blockers had higher odds of AKI (OR = 2.10 [95%CI: 1.06-4.20]; p = 0.03), as did those on insulin therapy (OR = 3.04 [95%CI: 1.13-8.19]; p = 0.04). Killip class was significantly associated with the presence of AKI (p < 0.001), with higher prevalence of AKI in Killip classes III and IV. Overall, mean contrast volume did not differ significantly between AKI and non-AKI groups. However, when analysing AKIN stages, we found contrast volume to be higher in patients with AKIN III (p = 0.013). Results of logistic regression are shown in table 2. On multivariate analysis, NTproBNP was the only independent predictor of AKI, remaining a strong predictor even when adjusted for the most relevant baseline clinical and laboratory parameters (Wald = 14.093; p < 0.001). Patients with AKI had higher in-hospital mortality (OR = 6.673 [95%CI: 2.011 to 22.144]; p = 0.005).

Table 1: A- Comparison between the AKI group Non-AKI group; **B -** Univariate and Multivariate analysis of Predictors of Acute Kidney Injury (AKI) in AMI Patients

A

	AKI (n=40)	Non-AKI (n=335)	p value
Age in years, mean (SD)	72.0 (13.8)	65.4 (11.9)	**0.001**
Male , n (%)	26 (65.0)	244 (72.8)	0.351
Hypertension, n (%)	33 (82.5)	231 (69)	0.098
Dyslipidemia, n (%)	24 (60)	169 (50.4)*	0.316
Type 2 Diabetes Mellitus, n (%)	24 (60)	169 (50.4)*	0.316
Obesity, n (%)	7 (17.5)	77 (23.0)*	0.549
CKD, n (%)	10 (25.0)	19 (5.7)	**<0.001**
Smokers, n (%)	8 (20)	105 (31.3)	0.150
ACEi/ARB, n (%)	25 (62.5)*	146 (43.6)*	**0.041**
Insulin Therapy, n (%)	6 (15)*	18 (5.4)*	**0.035**
Oral antidiabetic therapy, n (%)	15 (37.5)*	78 (23.3)*	0.080
Contrast volume, mean (SD)	166.6 (91.7)	172.1 (72.0)	0.687
Creatinine (admission), median (IQR)	1.27 (1.01)	0.88 (0.33)	**<0.001**
Urea (admission), median (IQR)	51.5 (51.3)	36.0 (15.8)	**0.020**
Troponin I (admission), median (IQR)	1305 (17614)	425 (3409)	**0.047**
Troponin I (maximal), median (IQR)	26557 (68986)	17999 (37367)	**0.039**
LDL-cholesterol, median (IQR)	99.5 (59.3)	114.5 (61.0)	**0.017**
Total cholesterol, median (IQR)	168.5 (71.0)	178.0 (69.5)	**0.035**
NTproBNP, median (IQR)	4185 (14032)	1118 (2359)	**<0.001**
Glycosylated hemoglobin , median (IQR)	6.15 (1.08)	5.8 (0.78)	**0.016**

Footnote: AKI - Acute kidney injury. CKD - Chronic kidney disease. ACEi - Angiotensin-converting enzyme inhibitors. ARB - Angiotensin receptor blockers.
IQR - Interquartile Range. SD - Standard deviation.
*missing values

B

	Univariate Analysis			Multivariate Analysis		
	Odds ratio (95% CI)	Wald	P value	Odds ratio (95% CI)	Wald	P value
Contrast volume	0.999 (0.995-1.003)	0.162	0.687			
Age	1.051 (1.021-1.082)	11.097	**0.001**	1.017 (0.981-1.055)	0.833	0.361
Creatinine (admission)	1.364 (1.074-1.731)	6.505	**0.011**	1.228 (0.782-1.928)	0.793	0.373
Urea	1.015 (1.005-1.025)	8.145	**0.004**	0.993 (0.973-1.013)	0.466	0.495
NT-proBNP	1.000 (1.000-1.000)	29.898	**<0.001**	1.000 (1.000-1.000)	14.093	**<0.001**
LDL cholesterol	0.989 (0.981-0.998)	6.120	**0.013**	0.987 (0.961-1.013)	1.022	0.312
Total cholesterol	0.992 (0.985-0.999)	5.333	**0.021**	1.009 (0.986-1.033)	0.631	0.427

Conclusions: These findings suggest the need to focus on intrinsic patient factors rather than contrast volume alone when assessing AKI risk. In particular, NT-proBNP, as a surrogate for congestion, may be a good predictor of AKI after AMI. The fact that AKI was associated with increased in-hospital mortality underscores the need for targeted prevention and management strategies.

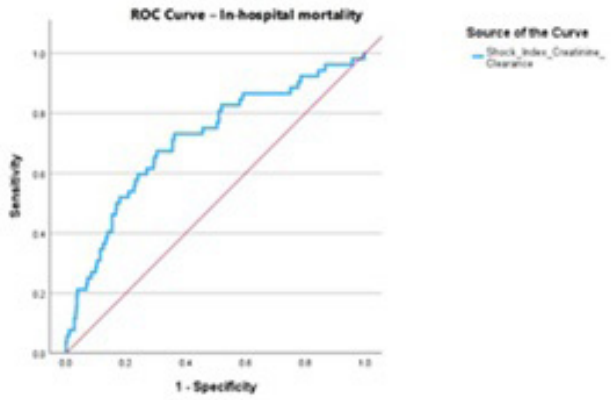
PO 46. SHOCK INDEX-CREATININE CLEARANCE IN ACUTE CORONARY SYNDROME

Oliver Correia Kungel, Vanda Neto, Gonçalo Ferreira, Francisco Santos, Mariana Almeida, João Fiuza, Davide Moreira, António Costa

USL Viseu Dão-Lafões.

Introduction: Shock Index-Creatinine Clearance score (SI-C) is a recently developed version of the shock index. These updated score includes renal function and has already been used in ST-Elevation Myocardial Infarction patients. However, its utility in predicting outcomes for patients with Acute Coronary Syndrome (ACS) remains unclear. The aim of this study was to evaluate the interaction between SI-C and the in-hospital mortality in ACS patients.

Methods: A retrospective analysis of 528 patients admitted to a Cardiology ward diagnosed with ACS. Patients with chronic kidney disease were not included in this analysis. The SI-C was calculated from the data collected from the patient admission to the emergency room. The primary endpoint was defined as in-hospitality mortality. Analysis of significance was conducted using Chi-square analysis and Mann-Whitney U test. Receiver Operating Characteristic (ROC) curve analysis was conducted to evaluate the performance of SI-C in predicting the primary outcome. Patients were stratified into two groups based on the optimal cut-off value determined from ROC curve.
Results: Mean patient age was 65.3 (± 13.7) years; 78% were male; 9.8% of the patients died during hospital stay. No differences were found between SI-C regarding the presence of type 2 diabetes mellitus (p = 0.41), arterial hypertension (p = 0.49), dyslipidemia (p = 0.45), smoking habits (p = 0.48), obesity (p = 0.49) and previous coronary artery disease (p = 0.29). The SI-C score was significantly higher in the group of patients who deceased during hospital stay (15 ± 26 vs. -14 ± 19, p < 0.01). The predictive value of SI-C for in-hospitality mortality was good (area under the curve = 0.711, 95%CI: 0.633-0.789, p < 0.001). After categorization of the SI-C, a high SI-C score (≥ 20) was associated with an odds ratio of 3.89 (2.09-7.30; 95%CI).



Conclusions: SI-C had a good predictive value in-hospitality mortality of patients after ACS, particularly with a score ≥ 20.

PO 47. THE HEART-KIDNEY CONNECTION: ACUTE KIDNEY INJURY IN CARDIOGENIC SHOCK

Rita Barbosa Sousa, Rui Gomes, C. Santos-Jorge, Rita Almeida Carvalho, Débora Sá, Miguel Sobral Domingues, Ana Rita Bello, João Presume, Catarina Brízido, Christopher Strong, Jorge Ferreira, António Tralhão

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

Introduction: Acute kidney injury (AKI) is a common complication in critically ill patients, with its impact on sepsis well-documented. In the setting of cardiogenic shock (CS), reduced renal perfusion and increased venous congestion, among other factors, may lead to varying degrees of renal dysfunction. However, its consequences remain insufficiently documented. We aimed to characterize the incidence and outcomes at hospitalization and at 1 year follow-up in patients with AKI associated with CS.
Methods: Single center retrospective analysis of consecutive patients admitted to a cardiac intensive care unit (CICU) between 2016 and 2023 with CS. AKI was defined by either KDIGO criteria based on serum creatinine (AKI-Cr) or urine output (AKI-UO) within 48 hours of admission. Time-to-event analysis evaluated all-cause mortality, with subgroups compared by Log-Rank test. Exclusion criteria were end-stage kidney disease, unknown prior renal status and lack of data due to early death.
Results: A total of 262 patients were included (66 ± 16 years, 66% males), with 23.3% (n = 61) having previous chronic kidney disease (CKD). AKI occurred in 79.4% (n = 208), with 73.7% (n = 193) meeting AKI-Cr criteria. AKI-UO were available for 238 patients, of whom 60.1% (n = 143) fulfilled criteria. Distribution of AKI stages is shown in Figure 1A. Continuous renal replacement therapy (CRRT) was required in 18.7% (n = 49), primarily due to volume overload (n = 41; 83.7%). Compared to patients without AKI, those with AKI, particularly those requiring CRRT (AKI-CRRT) were older (60 [47-68] vs. 70 [61-79] vs. 70 [50-82] years; p = 0.001), more likely to have previous CKD (3.7% [n = 2] vs. 24.0% [n = 38] vs. 42.9% [n = 21]; p < 0.001) and to require invasive mechanical ventilation (38.9% [n = 21] vs. 60.4% [n = 96] vs. 75.5% [n = 37]; p < 0.001). No significant differences were found in mechanical circulatory support use, contrast volume administered or CICU length of stay. In-hospital mortality was significantly higher in patients with AKI and AKI-CRRT (24.1% [n = 13] vs. 50.3% [n = 80] vs. 61.2% [n = 30]; p < 0.001). One-year mortality was 45.6% (n = 140): 37.7% (n = 20) without AKI, 56.2% (n = 86) with AKI and 67.3% (n = 33) with AKI-CRRT (p = 0.007; Figure 1B), with 6 patients lost to

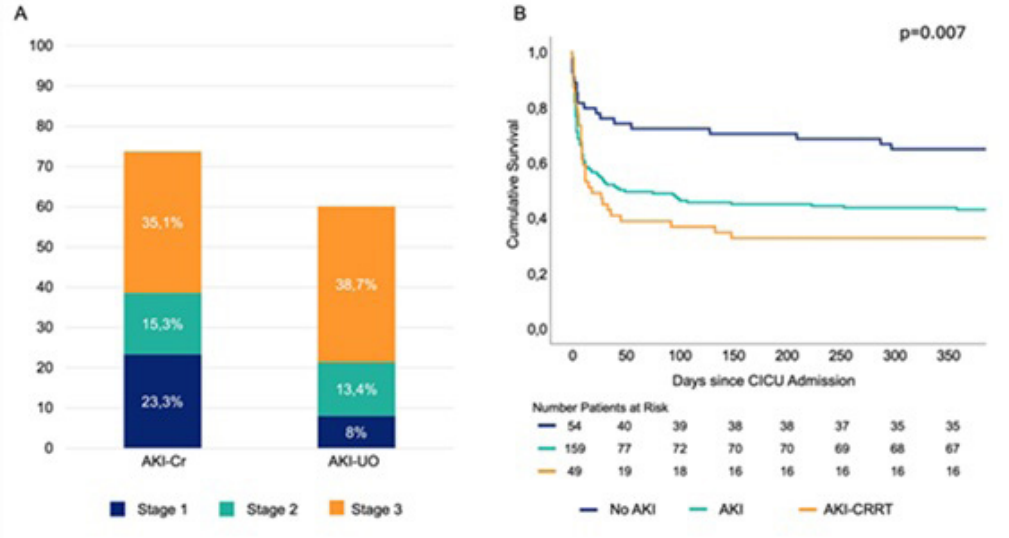


Figure 1 – (A) Distribution of AKI stages according to serum creatinine (AKI-Cr) and urine output (AKI-UO). **(B)** Kaplan-Meier estimates of all-cause mortality at one year of follow-up for patients without AKI, with AKI and AKI requiring CRRT defined by either AKI-Cr or AKI-UO criteria during CICU admission.

Figure PO 47

follow-up. Both models showed similar discriminative power for this outcome (p = 0.837), with C-statistics of 0.67 (95%CI: 0.61-0.73) for AKI-Cr and 0.67 (95%CI: 0.60-0.73) for AKI-UO. Among 116 patients who survived 1 year, 3 (2.6%) remained on chronic dialysis. Blood analyses were available for 97 survivors, of whom 81 (83.5%) recovered baseline renal function, while 16 (16.5%) experienced persistent reduction in renal function.
Conclusions: AKI is a highly prevalent condition in CS and is associated with both baseline clinical severity and worse outcomes. Among survivors, most recover their renal function during follow-up while a small fraction will require chronic dialysis.

PO 48. LIPOPROTEIN A AND CARDIOVASCULAR RISK IN ACUTE MYOCARDIAL INFARCTION: WHAT HAVE WE LEARNED IN 5 YEARS?

Cátia Oliveira, Ana Pinho, Catarina Marques, Luís Santos, Miguel Rocha, Helena Moreira, Pedro Palma, Bernardo Cruz, Emanuel Oliveira, Joana Gonçalves, Paulo Araújo, Rui André Rodrigues

Centro Hospitalar Universitário do Porto EPE.

Introduction: Lipoprotein(a) [Lp(a)] has emerged as a potential independent marker of cardiovascular risk, particularly in pts with atherosclerotic cardiovascular disease. However, its clinical utility, especially in the context of acute coronary syndrome (ACS), remains underexplored. This study aims to assess Lp(a) levels in ACS pts and evaluate their association with clinical outcomes and lipid management.
Methods: This retrospective study analyzed pts admitted with acute coronary syndrome (ACS) at a tertiary care center between 2020 and 2023, with Lp(a) testing performed at admission. Baseline characteristics, clinical outcomes, lipid management, and treatment regimens were reviewed.

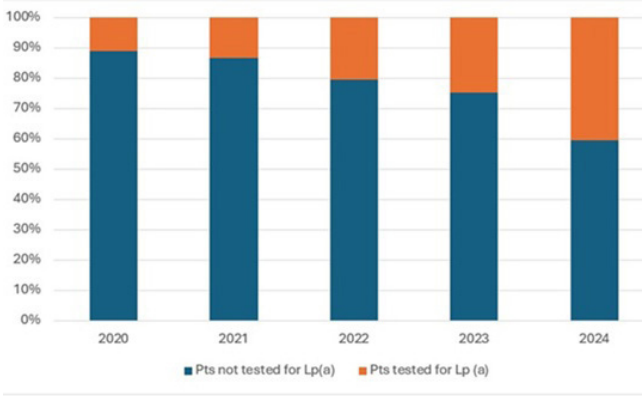


Figure 1. Evolution of lipoprotein A testing in acute coronary syndrome patients

Results: A total of 225 pts were included, with a median age of 56.8 years and a median follow-up of 26 months. The cohort included 18.6% females, and 96% had ≥ 1 cardiovascular risk factor (CVRF). 56.9% of pts had Lp(a) ≥ 30 mg/dL, with a median Lp(a) of 36.6 mg/dL. Testing frequency of Lp(a) improved over time, though less than half of ACS pts were tested in the final year of the study (Figure 1). No significant differences were observed in Lp(a) levels concerning sex, age, CVRF, family history of premature coronary heart disease, or previous cv events. Notably, higher Lp(a) levels were associated with increased use of pre-AMI antidyslipidemic treatments (p < 0.01) and higher-intensity lipid-lowering regimens (p < 0.01). In-hospital outcomes showed no significant differences except for a higher incidence of multivessel coronary disease in pts with elevated Lp(a) (p = 0.02). During follow-up, pts with higher Lp(a) levels experienced worse cardiovascular outcomes, including increased CV death and CV-related hospitalizations (median Lp(a) of 65.9 mg/dL vs. 34.8 mg/dL; p = 0.028). The incidence of recurrent ACS and heart failure hospitalization was 5.4% and 4.1%, respectively. Higher Lp(a) levels were also associated with worse lipid control during follow-up, with more pts failing to achieve LDL-C targets (median Lp(a) of 48.3 mg/dL vs. 26.1 mg/dL in LDL-targeted pts, p < 0.01). Genetic testing for familial hypercholesterolemia was performed in 5.8% of the cohort and was more common in pts with higher Lp(a) (median Lp(a) of 96.7 mg/dL vs. 34.9 mg/dL, p = 0.009).
Conclusions: Our study highlights the growing recognition of Lp(a) as a CV risk marker in ACS patients. Despite improvements in testing, Lp(a) remains underutilized in clinical practice. Elevated Lp(a) levels were associated with worse lipid control and worse CV outcomes, even with high-intensity lipid-lowering therapy. Genetic testing, while more common in pts with elevated Lp(a), remains insufficient. These findings emphasize the need for improved assessment and personalized management of pts with high Lp(a) levels. Larger studies with longer follow-up are needed to develop targeted therapeutic strategies for this high-risk group.

PO 49. PREVALENCE OF HIGH LIPOPROTEIN (A) LEVELS IN PATIENTS WITH PREMATURE MYOCARDIAL INFARCTION: SYSTEMATIC REVIEW

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Introduction: Young patients with acute myocardial infarction (MI) represent a unique population, often lacking the traditional cardiovascular risk factors typically present in older individuals. In this group, genetic factors, such as elevated lipoprotein(a) [Lp(a)] levels, may play a pivotal role in the development of premature atherosclerotic cardiovascular disease (ASCVD). Elevated Lp(a) exerts proatherogenic, prothrombotic and proinflammatory effects, accelerating the progression of ASCVD. While studies trying to address the relevance of Lp(a) are undergoing, it is very important to acknowledge the dimension of the contribution of Lp(a) in this population.
Objectives: This systematic review aims to estimate the prevalence of elevated Lp(a) levels in patients with premature MI.
Methods: A systematic search was conducted in PubMed/MEDLINE and Cochrane CENTRAL, complemented by manual reference checks. The review included all types of studies (interventional and observational, cross-sectional or longitudinal, including randomized controlled trials, cohort, case-control and cross-sectional studies) that provided data about the proportion of patients with premature MI, defined as under 55 years old in men and under 65 years old in women, and elevated Lp(a). The outcome of interest was the prevalence of elevated Lp(a) levels. A random effects meta-analysis was performed to derive pooled estimates of frequency and corresponding 95% confidence intervals.
Results: 352 studies were screened, and 13 studies fulfilled the inclusion criteria. These studies enrolled a total of 2841 premature MI patients. Three different cut-off values were identified for elevated Lp(a): 20 mg/dL (n = 1), 30 mg/dL (n = 11) and 50 mg/dL (n = 1). Overall, 39.09% (95%CI 30.10-48.46) of premature MI patients had elevated Lp(a). Specifically, at the 20 mg/dL cut-off, 70% of patients had elevated Lp(a), which decreased to 39% at the 30 mg/dL cut-off and further dropped to 16% at the 50 mg/dL cut-off.
Conclusions: This systematic review revealed that the prevalence of elevated Lp(a) in young patients with MI was around 40%. These findings suggest that elevated Lp(a) may significantly contribute to premature cardiovascular events.

PO 50. LIPOPROTEIN(A) LEVELS IN ACUTE MYOCARDIAL INFARCTION PATIENTS AND THEIR ASSOCIATIONS WITH PRIOR EVENTS AND CORONARY ARTERY DISEASE SEVERITY: A REAL-WORLD COHORT STUDY

Samuel Azevedo, Rita Barbosa Sousa, Débora Silva Correia, André Moniz Garcia, C. Santos-Jorge, Márcia Presume, Rui Gomes, Isabel Fonseca, Marisa Trabulo, João Figueira, Manuel Sousa Almeida, Jorge Ferreira

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

Introduction: Lipoprotein(a) [Lp(a)] is a recognized independent risk factor for atherosclerotic cardiovascular diseases, including coronary artery

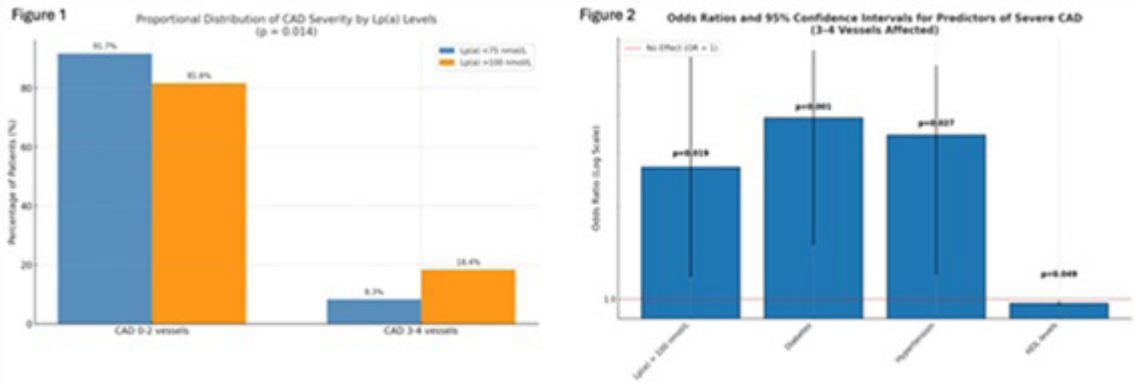

Figure PO 50

disease (CAD). The objective of this study is to explore the association between serum levels of Lp(a) and previous myocardial infarction (MI) and/or coronary revascularization and the extension of obstructive CAD in patients with acute MI undergoing coronary angiography.

Methods: All consecutive patients with MI who underwent coronary angiography and Lp(a) measurement between May 2023 and October 2024 were included. Patient data were either registered prospectively or completed retrospectively using electronic health records. Lp(a) levels were measured via immunoturbidimetric assay and categorized as < 75 nmol/L or > 100 nmol/L. CAD severity was assessed by the number of major vessels (left main, left anterior descending, left circumflex and right coronary arteries) with stenosis > 50% (CAD 0-2 vs. 3-4). Statistical analyses included chi-square tests and multivariable logistic regression adjusted for key cardiovascular risk factors.

Results: Patients with elevated Lp(a) levels (> 100 nmol/L) showed a higher prevalence of previous cardiovascular events (myocardial infarction, percutaneous coronary intervention, Coronary Artery Bypass Graft; p = 0.037). Elevated Lp(a) was independently associated with a 2.7-fold increased risk of severe CAD (3-4 vessels > 50% stenosis; OR = 2.696, 95%CI = 1.176-6.176, p = 0.019). Diabetes (OR = 3.910, p = 0.001) and hypertension (OR = 3.436, p = 0.027) were additional predictors, while HDL levels were protective (OR = 0.967, p = 0.049). The regression model demonstrated good discriminatory power (AUC = 0.780).

Conclusions: In this small real-world cohort population with acute MI, the number of previous MI or coronary revascularization was higher in patients with increased levels of Lp(a) and this marker of atherosclerotic disease was greater in patients with more extensive CAD.

PO 51. HIGH-SENSITIVITY C-REACTIVE PROTEIN AS A PREDICTOR OF CARDIOVASCULAR EVENTS IN YOUNG PATIENTS FOLLOWING MYOCARDIAL INFARCTION

Francisco Sousa[1], Maria Isabel Mendonça[2], João Adriano Sousa[1], Débora Sá[1], Matilde Ferreira[1], Gonçalo Abreu[1], Sónia Freitas[2], Eva Henriques[2], Mariana Rodrigues[2], António Drumond[1], Ana Célia Sousa[2], Roberto Palma dos Reis[3]

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Introduction: Young patients diagnosed with coronary artery disease (CAD) face an increased risk of recurrent cardiovascular events (CVE), leading to significant morbidity and mortality. Secondary prevention in CAD patients

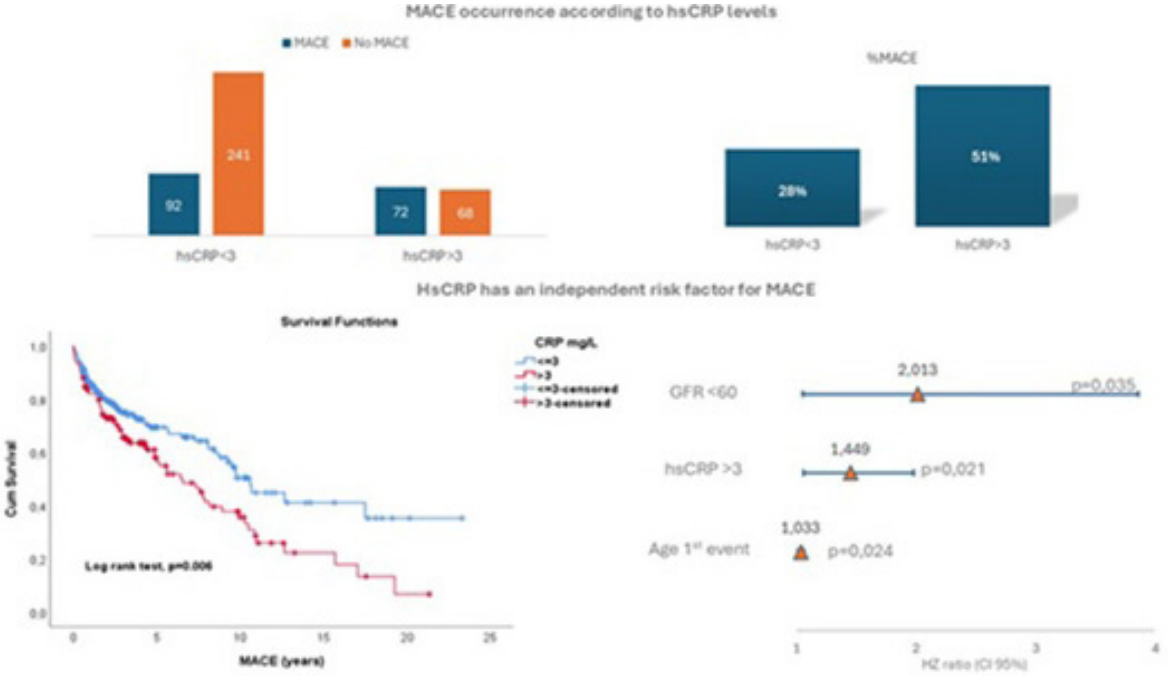


Figure PO 51

has been a cornerstone of cardiology, with great advances in traditional risk factor (TRF) management like dyslipidemia, obesity and diabetes. Inflammation has long been associated with atherosclerosis, but can it be a real driving factor in the recurrence of CVE?

Objectives: To determine if high sensibility CRP (hsCRP) can improve the identification of recurrent CVE, in patients < 55 years at the time of the first event and with few TRFs.

Methods: 473 non-diabetic patients with LDL levels < 100 mg/dl at first admission, who experienced a Myocardial Infarction < 55 years (mean age 47.2 ± 5.8 years) were prospectively followed for (4.9 ± 4.9 years). Major adverse cardiovascular events (MACE) were recorded (Myocardial Infarction; Unstable Angina; Stroke; Heart failure hospitalizations). HsCRP was measured and taking in to account the current evidence the chosen cut off was > 3 mg/L. Bivariate analysis was used to determine if elevated CRP levels and other traditional risk factors (TRFs) were associated with MACE. A multivariate analysis was performed to evaluate if hsCRP was an independent risk factor for MACE.

Results: During follow up 164 patients had at least one CVE. Patients with hsCRP > 3 mg/L (n = 140) had a 51% event rate (n = 72), the ones with hsCRp < 3 mg/L had a 28% event rate (n = 92), this difference met statistical significance (p < 0.001). After bivariate analysis Lp(a) > 30 mg/dl, younger age at the time of the 1st event, alcohol consumption > 300 mg p/week and Glomerular Filtration rate < 60 ml/min/1.73 m^2 were also associated with MACE. The multivariate analysis confirmed CRP > 3 mg/L as an independent risk factor for MACE (p = 0.021; HR 1.449) as well as GFR < 60 ml/min/1.73 m^2 (p = 0.035; HR 2.013) and younger age at the time of 1st event (p = 0.024; HR 1.033).

Conclusions: HsCRP may help the identification of individuals at a very high risk of recurrent CVE. Anti-inflammatory therapies have consistently delivered promising results in cardiovascular endpoints but failed to achieve safety. Future studies are needed to understand if HsCRP guided anti-inflammatory therapies would benefit young patients with few TRFs in secondary prevention.

Sexta-feira, 11 Abril de 2025 | 09:00-10:30

Área de Posters-écran 4 | Sessão de Posters 08 – Doenças cardiovasculares – Prognóstico na SCA

PO 52. STRATIFICATION OF CHEST PAIN IN THE EMERGENCY DEPARTMENT: HOW EFFECTIVELY DO RISK SCORES PREDICT CORONARY ARTERY STENOSIS?

André Manuel Faustino Martins, Margarida Cabral, Joana Pereira, Mónica Amado, Adriana Vazão, Carolina Gonçalves, Mariana Carvalho, Hélia Martins

ULSR Leiria.

Introduction: Chest pain (CP) is a common presenting symptom in emergency departments (ED), where a key task is to confirm or exclude acute coronary syndrome (ACS). Several risk stratification scoring systems have emerged, with the HEART, EDACS, and T-MACS scores being readily applicable in clinical practice.

Objectives: To assess the performance of the HEART, EDACS, and T-MACS scores in predicting ACS with significant coronary artery stenosis (SCS) in pts presenting with CP to the ED of a regional hospital in Portugal.

Methods: Retrospective single-center study of adult pts admitted to the ED with CP and classified as very urgent by the Manchester system during the first 5 months of 2022. Pts with ST-segment elevation myocardial infarction, traumatic CP or those in the postoperative period of cardiothoracic surgery

Table 1. (A)

	Total (n=480)	Group 1 (n=34)	Group 2 (n=446)	p-value
Male gender – n (%)	241 (50.2)	22 (64.7)	219 (49.1)	0.079[a]
Age at diagnosis (yrs) – median (IQR)	59 (27.0)	66.5 (14.0)	57.5 (27.0)	**0.004[b]**
Past medical history – n (%)				
Diabetes mellitus	85 (17.7)	11 (32.4)	74 (16.6)	**0.020[a]**
Arterial hypertension	235 (49.0)	24 (70.6)	211 (47.3)	**0.009[a]**
Dyslipidemia*	203 (42.4)	25 (73.5)	178 (40.0)	**<0.001[a]**
History of smoking*	40 (44.4)	8 (57.1)	32 (42.1)	0.298[a]
History of CAD	59 (12.3)	17 (50.0)	42 (9.4)	**<0.001[a]**
Family history of CVD*	10 (2.1)	1 (2.9)	9 (2.3)	0.519[a]
Atrial fibrillation	54 (11.3)	3 (8.8)	51 (11.4)	1.000[a]
HFpEF	45 (9.4)	6 (17.6)	39 (8.7)	0.117[a]
HFmrEF	12 (2.5)	0 (0)	12 (2.7)	1.000[a]
HFrEF	12 (2.5)	3 (8.8)	9 (2.0)	**0.046[a]**
Valvular heart disease	26 (5.4)	3 (8.8)	23 (5.2)	0.417[a]
Previous ischemic stroke/TIA	24 (5.0)	3 (8.8)	21 (4.7)	0.237[a]
Peripheral arterial disease	17 (3.5)	2 (5.9)	15 (3.4)	0.342[a]
Chronic kidney disease	36 (7.5)	5 (14.7)	31 (7.0)	0.164[a]
Pulmonary disease	44 (9.2)	9 (26.5)	35 (7.8)	**0.002[a]**
Depression/anxiety	154 (32.1)	7 (20.6)	147 (33.0)	0.136[a]
Clinical risk score results				
HEART score				
Total scoring – median (IQR)	3.0 (3.0)	8.0 (1.0)	3.0 (3.0)	**<0.001[b]**
Low risk, score [0-3] – n (%)	255 (53.1)	0 (0)	255 (57.2)	**<0.020[a]**
Intermediate risk, score [4-6] – n (%)	173 (36.0)	6 (17.6)	167 (37.4)	**<0.001[a]**
High risk, score [7-10] – n (%)	52 (10.8)	28 (82.4)	24 (5.4)	**<0.001[a]**
EDACS score				
Total scoring – median (IQR)	13.0 (10.0)	20.0 (6.0)	13.0 (8.0)	**<0.001[b]**
Low risk, score < 16 – n (%)	311 (64.8)	3 (8.8)	308 (69.1)	**<0.001[a]**
Not low risk, score ≥ 16 – n (%)	169 (35.2)	31 (91.2)	138 (30.9)	**<0.001[a]**
T-MACS score				
Total scoring – median (IQR)	0.026 (0.076)	0.998 (0.454)	0.024 (0.058)	**<0.001[b]**
Very low risk, score < 0.02 – n (%)	180 (37.5)	0 (0)	180 (40.4)	**<0.001[a]**
Low risk, score [0.02-0.05[– n (%)	121 (25.2)	1 (2.9)	120 (26.9)	**0.002[a]**
Moderate risk, score [0.05-0.95[– n (%)	138 (28.8)	12 (35.3)	126 (28.2)	0.382[a]
High risk, score ≥ 0.95 – n (%)	41 (8.5)	21 (61.8)	20 (4.5)	**<0.001[a]**

(B)

EDACS score

- **Age** – 18-45: 2 pts, 46-50: 4 pts, 51-55: 6 pts, 56-60: 8 pts, 61-65: 10 pts, 66-70: 12 pts, 71-75: 14 pts, 76-80: 16 pts, 81-85: 18 pts, ≥86: 20 pts
- **Aged 18-50 yrs and either known CAD or ≥3 risk factors** – 4 pts
- **Male sex** – 6 pts
- **Symptoms and signs** – Diaphoresis: 3 pts, Radiation to arm/shoulder: 5 pts, Pleuritic pain: - 4 pts, Pain reproduced by palpation: - 6 pts

HEART score

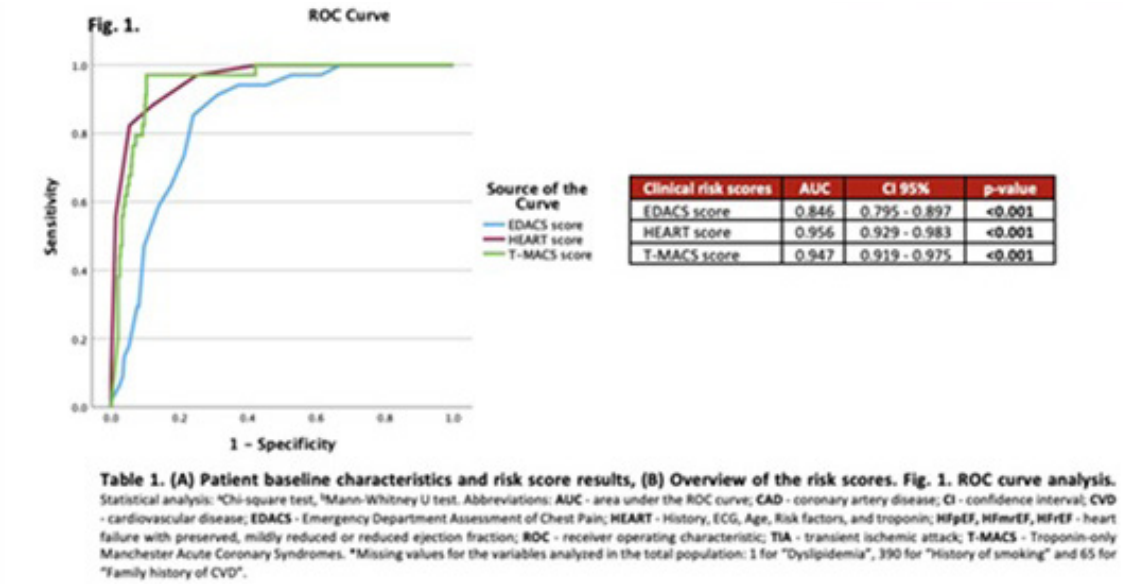
- **History** – Highly suspicious: 2 pts, Moderately suspicious: 1 pts, Slightly suspicious: 0 pts
- **ECG** – Significant ST depression: 2 pts, Nonspecific repolarization disturbance: 1 pts, Normal: 0 pts.
- **Age** – ≥65: 2 pts, 45-65: 1 pts, <45: 0 pts
- **Risk factors** – ≥3 or history of atherosclerotic disease: 2 pts, 1-2: 1 pts, 0: 0 pts
- **Troponin** – >2x normal limit: 2 pts, 1-2x normal limit: 1 pts, < normal limit: 0 pts

T-MACS score

- **ECG** significant ST changes (E) – 1 pts
- **Worsening angina** (A) – 1 pts
- **Radiation** to arm/shoulder (R) – 1 pts
- **Vomiting** (V) – 1 pts
- **Sweating** (S) – 1 pts
- **Hypotension** (H) – 1 pts
- **Troponin levels at presentation** (pg/ml) (T)

$$p = \frac{1}{1 + e^{[illegible]}}$$

Figure PO 52



Clinical risk scores	AUC	CI 95%	p-value
EDACS score	0.846	0.795 - 0.897	<0.001
HEART score	0.956	0.929 - 0.983	<0.001
T-MACS score	0.947	0.919 - 0.975	<0.001

Table 1. (A) Patient baseline characteristics and risk score results, (B) Overview of the risk scores. Fig. 1. ROC curve analysis.
Statistical analysis: *Chi-square test, †Mann-Whitney U test. Abbreviations: **AUC** - area under the ROC curve; **CAD** - coronary artery disease; **CI** - confidence interval; **CVD** - cardiovascular disease; **EDACS** - Emergency Department Assessment of Chest Pain; **HEART** - History, ECG, Age, Risk factors, and troponin; **HFpEF, HFmrEF, HFrEF** - heart failure with preserved, mildly reduced or reduced ejection fraction; **ROC** - receiver operating characteristic; **TIA** - transient ischemic attack; **T-MACS** - Troponin-only Manchester Acute Coronary Syndromes. *Missing values for the variables analyzed in the total population: 1 for "Dyslipidemia", 390 for "History of smoking" and 65 for "Family history of CVD".

Figure PO 52 ***(Cont.)***

were excluded. Pts with suspected ACS underwent cardiac catheterization (CC) and were classified into two groups: Group 1, consisting of pts with significant coronary artery stenosis (SCS), defined as ≥ 70% coronary artery stenosis; and Group 2, which included ACS patients without SCS and non-ACS patients. Demographic data were recorded, and the HEART, EDACS, and T-MACS scores were calculated for each patient. Group comparisons were performed.
Results: A total of 480 pts were included; median age was 59 yrs (IQR 27) and 241 pts (50.2%) were male. The baseline characteristics are presented in Table 1. 46 pts (9.6%) underwent CC due to suspected ACS, and 34 (7.1%) were found to have SCS (Group 1). Group 1 pts were significantly older and had a higher prevalence of diabetes, hypertension, dyslipidemia and history of coronary artery disease (Table 1). The EDACS score showed the lowest discriminatory capacity for ACS-SCS, with an area under the curve (AUC) of 0.846 ($p < 0.001$) and a score ≥ 16.5 yielding 85% sensitivity and 76% specificity. In contrast, the HEART and T-MACS scores showed superior discriminatory accuracy for ACS-SCS (AUC 0.956 and 0.947, respectively; $p < 0.001$), with a HEART score ≥ 6.5 yielding 82% sensitivity and 46% specificity, and a T-MACS score ≥ 0.229 showing 97% sensitivity and 90% specificity. However, it is important to note that both the HEART and T-MACS scores have limited discriminatory ability for predicting ACS-SCS in pts with moderate risk.
Conclusions: The HEART, EDACS, and T-MACS scores are valuable tools for SCS, enabling the prioritization of CP pts in ED and ensuring timely interventions and efficient resource allocation.

PO 53. IDENTIFYING PREDICTORS OF MISCLASSIFICATION IN OCCLUSION MYOCARDIAL INFARCTION

André Lobo, Francisca Nunes, Francisco Sousa, Fábio Nunes, Marta Catarina Almeida, Marta Leite, Inês Neves, Inês Rodrigues, António Gonçalves, Ricardo Fontes-Carvalho

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

Introduction: Occlusion Myocardial Infarction (OMI) is an evolving concept in Acute Coronary Syndromes (ACS) that challenges the traditional STEMI paradigm. It emphasizes detecting acute coronary occlusion through subtle ECG findings to better identify patients requiring urgent revascularization. This study evaluates the characteristics of patients classified as NSTEMI despite presenting with acute OMI, focusing on cases where a paradigm shift may hold greater clinical significance.
Methods: We retrospectively analyzed 336 ACS patients admitted over one year. Patients initially classified as STEMI or NSTEMI/UA were reclassified as OMI or non-OMI ACS based on OMI definition: TIMI flow ≤ 2 and/or significantly elevated troponin (Troponin T > 1,000 ng/L or Troponin I > 5,000 ng/L) with regional wall motion abnormalities. Patients were grouped as STEMI, NSTEMI-OMI, or NSTEMI-non-OMI. Baseline characteristics, including demographics, comorbidities, and ECG findings (rhythm abnormalities, bundle branch block [BBB], pacemaker rhythm, and left ventricular hypertrophy), were compared across groups.
Results: Among 336 ACS patients, including 196 STEMI and 134 NSTEMI/UA cases. Of those, 52 were reclassified as NSTEMI-OMI. NSTEMI-OMI patients were more likely to present with BBB or pacemaker rhythm (23.1 vs. 6.1%; $p < 0.001$) and a history of coronary disease (30.8 vs. 11.2%; $p = 0.002$) compared to STEMI patients. No other significant differences in demographics, comorbidities, or ECG characteristics were found. Similarly, no significant differences were observed between NSTEMI-OMI and NSTEMI-non-OMI patients. Discussion: Prior ECG changes, such as BBB or pacemaker rhythm, and a history of coronary disease may obscure coronary occlusion using STEMI criteria, likely due to baseline ECG abnormalities. Even modified criteria may miss these cases. Transitioning to the OMI paradigm could improve early recognition and management by identifying occlusions irrespective of STEMI criteria. This study highlights a subgroup where this shift may be particularly important. Advanced tools like AI-driven ECG analysis could enhance detection, bridge diagnostic gaps, and support timely revascularization. However, the OMI paradigm still faces challenges, including a lack of standardization in ECG interpretation and validation in randomized studies.
Conclusions: Adopting the OMI paradigm could improve the detection and management of coronary occlusion in patients with challenging ECGs, such as BBB, pacemaker rhythm, or prior coronary disease. Further standardization and validation are needed to ensure broader clinical applicability.

PO 54. LONG-TERM OUTCOMES AND RISK FACTORS IN YOUNG ADULTS WITH ACUTE CORONARY SYNDROME: A DECADE OF EXPERIENCE

Liliana Brochado, Oliveira Baltazar, Mariana Martinho, Bárbara Ferreira, Diogo Cunha, João Luz, Nazar Ilchyshyn, Adriana Silva, Ana Rita Pereira, Hélder Pereira, Paula Fazendas

Hospital Garcia de Orta, EPE.

Introduction: Acute Coronary Syndrome (ACS) incidence in younger populations has been increasing worldwide. Several aspects remain unclear despite young individuals presenting distinct risk profiles compared to their older counterparts. A comprehensive understanding of the evolving characteristics and treatment options is crucial to address the burden of ACS in this population. However, data regarding long-term follow-up and prognosis in young adults remain limited.
Objectives: Describe the demographic, clinical characteristics, and outcomes, including major adverse cardiovascular events (MACE), in young individuals hospitalized with ACS.
Methods: We conducted a retrospective, single-center study of young individuals hospitalized with ACS between January 1, 2013, and October 30, 2023. We defined young individuals as 45 years or below. We analyzed demographics, clinical characteristics, and outcomes, including MACE, defined as the composite of all-cause mortality, myocardial infarction, stroke, and hospitalization due to heart failure.
Results: A total of 130 patients were included, with a median follow-up of 4.5 years (SD 2.9). The majority were male (77.7%), with a mean age of 41.8 years (SD 4.2). Nearly all patients (97.9%) had at least one traditional cardiovascular risk factor. The most prevalent were overweight or obesity (75.2%), dyslipidemia (74.6%), hypertension (30.8%), diabetes (20%), family history of premature ACS (20%), and smoking (79.2%). Less common comorbidities included drug use (11.5%), autoimmune diseases (2.3%), and inflammatory conditions (0.8%). The cohort's clinical presentation included STEMI (60.8%), NSTEMI (30%), and unstable angina (9.2%). Cardiorespiratory arrest occurred in 3.1% of cases at presentation. Most patients had single-vessel disease (74.6%), predominantly involving the left anterior descending artery (61.5%). Atherosclerosis was the primary cause of ACS (76.9%), followed by in-stent restenosis (8.5%), embolism (5.4%), and spontaneous coronary artery dissection (2.3%). During follow-up, 17.7% of patients experienced MACE, with cardiovascular mortality at 5.4% and recurrent myocardial infarction at 10.8%. In a multivariate analysis, no significant associations were found between demographic characteristics, risk factors, or clinical presentation and the development of MACE.
Conclusions: Young adults with ACS face a substantial risk of major cardiovascular events and premature mortality during long-term follow-up, with a high rate of recurrent events. Early morbidity and mortality significantly impact their most productive years. Cardiovascular risk factors such as smoking, obesity, and dyslipidemia should not be underestimated in young individuals. Further studies are needed to explore the potential benefits of primary prevention strategies in this high-risk population.

PO 55. PREDICTING MAJOR ADVERSE CARDIOVASCULAR EVENTS AFTER UNSTABLE ANGINA: IS IT POSSIBLE?

Mariana Rodrigues Simões, Bernardo Resende, Mafalda Griné, João Gameiro, Luís Paiva, Maria João Ferreira, Lino Gonçalves

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

Introduction: Acute coronary syndromes (ACS), such as unstable angina (UA), represent a significant burden of morbidity and may severely impact quality of life. Over their lifetime, many patients experience recurrent cardiovascular events, for example, additional episodes of ACS or development of heart failure.
Methods: We performed a single-centre retrospective study reviewing patients with the diagnosis of unstable angina (UA) between January 2013-June 2021. Our purpose was to identifying predictors of major adverse cardiac events (MACE). MACE was defined as a composite of nonfatal myocardial infarction (MI), hospitalization for heart failure (hHF), and repeated coronary angiography because of recurring UA (rUA) during follow-up. A revision of informatized clinical files was performed and SPSS software was used for statistical analysis.
Results: A total of 742 patients were included. Sixty-eight percent of patients were men. The mean age was 65.75 ± 11.18 years. All patients underwent coronary angiography and the median high sensitivity troponin levels at admission were 0.012 (0.011-0.034) ng/ml. The follow-up time was 46.1 ± 25.7 months. Patients were divided in MACE and non-MACE groups. MACE happened to 125 patients (17%). MACE group had higher percentage of diabetes *mellitus* (DM) (47% versus (*vs*) 33%, p = 0.002), arterial hypertension (90 vs. 83%, p = 0.03) and hyperlipidaemia (91 vs. 83%, p = 0.02). There was not any association between gender (p = 0.118), age (p = 0.23) or past/current history of smoking (p = 0.140) and MACE. Regarding, echocardiographic alterations, patients in MACE group presented lower median left ventricular ejection fraction (LVEF) (55 (IQR15) *vs*. 60 (IQR5), p < 0.001) and a higher percentage of patients with wall motion alterations (45 vs. 29%, p < 0.001). Significant coronary artery disease (CAD) was also more common in MACE group: 73 vs. 50%, p < 0.001. When performing multivariate analysis, and adjusting to confounders, presence of significant CAD (B = 0.864; OR = 2.37 (CI 1.53-3.67), p < 0.001), DM (B = 0.472; OR = 1.60 (CI 1.06-2.41), p = 0.024) and LVEF (B = -0.042; OR = 0.96 (CI 0.94-0.98), p < 0.001) were independent predictors of MACE.
Conclusions: In our contemporary cohort of unstable angina, presence of significant CAD, diabetes *mellitus*, and lower values of LVEF were predictors of composite of nonfatal myocardial infarction, hospitalization for heart failure and repeated coronary angiography because of recurring UA, after index event.

PO 56. PREDICTORS OF SIGNIFICANT CORONARY ARTERY DISEASE IN A CONTEMPORARY COHORT OF UNSTABLE ANGINA PATIENTS

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Introduction: The diagnosis of unstable angina (UA) can be challenging due to its diverse clinical presentations, as well as its varying association with significant coronary artery disease and the need for myocardial revascularization.
Methods: We performed a single-centre, retrospective observational study reviewing patients with the diagnosis of UA between January 2013 - June 2021. The cohort was divided in two group: patients with significant coronary artery disease (CAD^+) and those without (CAD^-), detected by coronary angiography. A revision of informatized clinical files was performed and SPSS software was used statistical analysis.
Results: A total of 742 patients were included. Sixty-eight percent of patients were men. The mean age was 65.75 ± 11.18 years. All patients underwent coronary angiography and the median high sensitivity troponin levels at admission were 0.012 (0.011-0.034) ng/ml. The follow-up time was 46.1 ± 25.7 months. Significant CAD was present in 396 patients (53%). Patients in CAD^+ group were more frequently men (n = 293 versus (*vs*) 215, p = 0.001) and were older (66.8 ± 10.7 vs. 64.5 ± 11.6, p = 0.004). They also presented more risk factors such as arterial hypertension (n = 344 *vs*. 278, p = 0.016), diabetes *mellitus* (156 vs. 104, p = 0.008) and hyperlipidemia (n = 355 vs. 271, p < 0.001), but current or past smoking history was not associated to CAD (n = 135 *vs*. 108, p = 0.405). In the electrocardiogram (ECG), patients in the CAD^+ group more commonly exhibited ST segment deviation (n = 62 vs. 33, p = 0.013). Related to echocardiographic findings, CAD^+ group showed lower left ventricular ejection fraction (LVEF) (54.43 ± 8.38 vs. 56.48 ± 7.89%, p = 0.001) and more frequently wall motion abnormalities (WMA) (n = 150 vs. 73, p < 0.001). When performing multivariate analysis, and adjusting to confounders, age (B = 0.02, OR = 1.02 (CI 1.005-1.035), p = 0.007), male gender (B = 0.504, OR = 1.66 (CI 1.178-2.326), p = 0.004), hyperlipidemia (B = 0.747, OR = 2.111 (CI 1.356-3.286), p = 0.001), WMA (B = 0.726, OR = 2.07 (CI 1.468-2.91), p < 0.001) and ST-segment deviation (B = 0.633, OR = 1.88 (CI 1.174-3.02), p = 0.009) were independent predictors of CAD.
Conclusions: In a contemporary UA cohort, age, male gender, hyperlipidaemia, WMA on echocardiography and ST-segment deviation on ECG were independent predictors of significant CAD.

PO 57. INSIGHTS INTO LEFT VENTRICULAR SYSTOLIC FUNCTION RECOVERY FOLLOWING ACUTE CORONARY SYNDROME

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Introduction: Left ventricular (LV) dysfunction frequently occurs following acute coronary syndrome (ACS) and can significantly impact patient outcomes. Standard care aims to prevent and reverse adverse LV remodelling, but several factors may influence LV function recovery.
Objectives: This study aims to evaluate LV ejection fraction (LVEF) recovery at 12 months in patients with newly reduced LVEF following ACS and to identify predictors of LVEF non-recovery.
Methods: All patients hospitalized for an ACS between April 2022 and December 2023 were retrospectively identified. Those with reduced LVEF (EF < 50%) during the index event and no prior history of LV disfunction were included. LVEF was evaluated during the initial hospitalization and at 12 months. A multivariate logistic regression model was used to identify independent predictors of LVEF non-recovery at 12 months.
Results: A total of 339 patients with ACS were identified, of whom 135 (41%) patients had newly reduced LVEF and were included. The majority were male (75.6%) with a mean age of 64 years (SD 12.0) and a median LVEF of 41% (IQR 37-45). 65.2% of the patients presented with ST elevation myocardial infarction (STEMI) and 28.1% with non-STEMI; 6.7% were admitted for unstable angina. At 12 months, two-thirds of patients (66.7%) demonstrated LVEF recovery (LVEF ≥ 50%), while 16.3% had mildly reduced LVEF (40-49%) and 11.1% had LVEF < 40%. Overall, the median LVEF significantly increased to 55% (IQR 46-59), p < 0.001. Patients with persistent LVEF dysfunction (LVEF < 50%) were more frequently diabetic compared with patients with LVEF recovery (43.2 vs. 25.6%, p = 0.059). No other significant differences were observed between groups. After adjusting for other cardiovascular risk factors, type of ACS at baseline, complete revascularization, adherence to treatment, and participation in cardiac rehabilitation programs, diabetes (OR 4.6, 95%CI 1.4-14.9, p = 0.01) and previously known coronary artery disease (OR 2.3, 95%CI 1.0-5.0, p = 0.04) were identified as independent predictors of LVEF non-recovery at one year.
Conclusions: A significant proportion of patients developed newly reduced LVEF following an ACS. Current treatments enabled a favourable cardiac remodeling with LVEF recovery observed in two-thirds of patients at 12 months. Diabetes and previously known coronary artery disease were independent predictors of LVEF non-recovery at 12 months, possibly indicating low cardiac reserve in these patients.

PO 58. MECHANICAL COMPLICATIONS OF ACUTE MYOCARDIAL INFARCTION: CLINICAL CHARACTERISTICS AND MORTALITY TRENDS

Mariana Ferreira Carvalho[1], Carolina Gonçalves[2], Adriana Vazão[2], André Martins[2], Joana Pereira[2], Mónica Amado[2], Jorge Guardado[2], Hélia Martins[2], em nome dos Investigadores do Registo Nacional de Síndromes Coronárias Agudas[3]

[1]Centro Hospitalar de Leiria, Hospital de Santo André. [2]Centro Hospitalar de Leiria/Hospital de Santo André. [3]CNCDC-Centro Nacional de Coleção de Dados em Cardiologia.

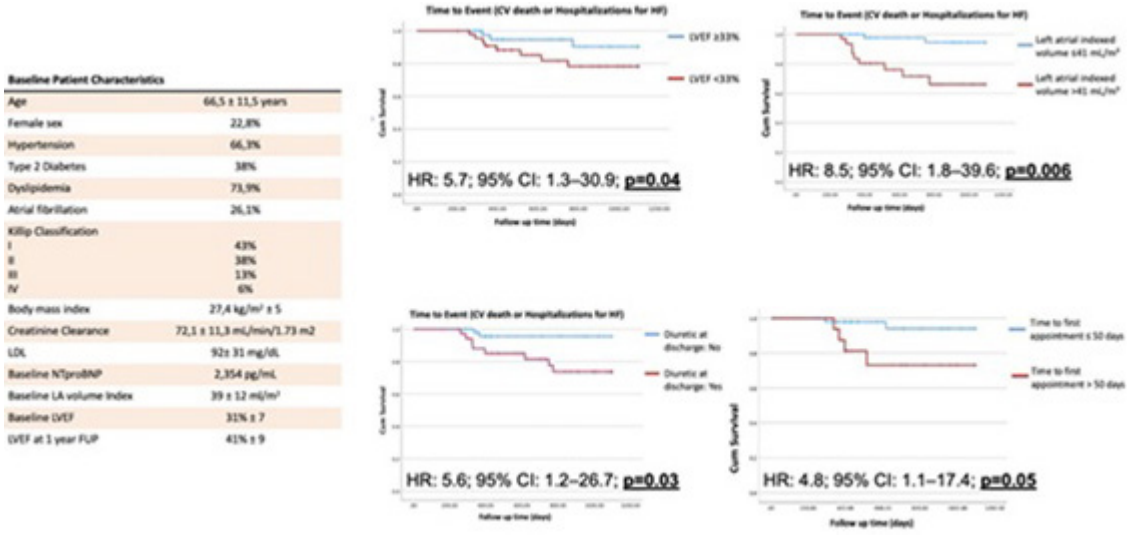
Introduction: Mechanical complications following acute myocardial infarction (AMI) remain a critical concern despite advances in reperfusion therapies. These events, though less frequent with improved reperfusion, still carry significant mortality. This study aimed to evaluate temporal trends in incidence and mortality of mechanical complications post-AMI in Portugal and identify key prognostic factors, emphasizing the clinical impact of these findings.
Methods: A retrospective study using data from the Portuguese Registry of Acute Coronary Syndromes (ProACS) (2002-2022) on STEMI patients ≥ 18 years presenting within 12 hours and undergoing reperfusion. Survival analysis included Kaplan-Meier estimates for survival probabilities and Cox proportional hazards models to identify independent predictors of mortality. Temporal mortality trends were assessed with segmented regression to evaluate statistical significance over four defined periods.
Results: Of 5,269 STEMI patients, 26 (0.5%) had complications: acute mitral regurgitation (38.5%), ventricular free wall rupture (34.6%), and ventricular septal rupture (26.9%). In-hospital mortality was significantly higher in these patients (p < 0.001). Mortality declined from 0.8% (2011-2013) to 0.5% (2020-2023; p = 0.005). One-year survival was 45% for patients with complications versus 90% for those without. Key predictors of mortality included advanced age (HR = 1.04, p < 0.001), diabetes (HR = 1.49, p = 0.017), prior heart failure (HR = 1.97, p = 0.026), vascular disease (HR = 2.86, p < 0.001), and malignancy (HR = 2.55, p < 0.001). Dyslipidemia showed a protective effect (HR = 0.64, p = 0.005), likely reflecting statin therapy benefits. Kaplan-Meier analysis revealed 62% of deaths occurred within 30 days. Free wall rupture had the worst prognosis (25% one-year survival), followed by septal rupture (40%) and mitral regurgitation (50%). Temporal trends showed patients receiving reperfusion within 6 hours experienced significantly lower mortality than those treated later (p < 0.01).
Conclusions: Mechanical complications of STEMI remain rare but associated with high mortality, particularly within the first 30 days post-event. This analysis shows that early reperfusion (< 6 hours) significantly reduces mortality, emphasizing the need for rapid intervention. Identifying high-risk groups, such as patients with advanced age, prior heart failure, or vascular disease, allows physicians to tailor management strategies.

PO 59. PREDICTORS OF CORONARY ARTERY DISEASE IN ACUTE HEART FAILURE PATIENTS: DO THEY ALL BENEFIT FROM INVASIVE CORONARY ANGIOGRAPHY?

Mauro Moreira, José Luís Ferraro, Ana Rodrigo Costa, Inês Gomes Campos, Rafaela G. Lopes, Joel Ponte Monteiro, Adriana Pereira, Aurora Andrade

ULS Tâmega e Sousa.

Introduction: Coronary artery disease (CAD) is highly prevalent in heart failure (HF), posing diagnostic and management challenges due to overlapping manifestations. Despite advances, uncertainty remains regarding CAD assessment and revascularization in HF patients.
Methods: Single-centre, retrospective study with acute heart failure (AHF) patients undergoing invasive coronary angiography (ICA). Acute coronary syndrome cases were excluded. History, symptoms, biomarkers, electrocardiogram (ECG) and echocardiogram findings were compared. A composite endpoint (CE) included revascularization, antiplatelet therapy or lipid-lowering therapy initiation/up-titration. Backwards Wald logistic regression was used to estimate composite endpoint independent predictors.
Results: Of 215 patients, 120 patients underwent ICA (58.6%). Mean age was 67.9 ± 12.0 years; 68.3% male. Hypertension (80.8%) and dyslipidaemia (63.3%) were highly prevalent. HFrEF was present in 44.2% of cases, and 65% had new-onset HF. Chest pain was absent in 82.5% of patients. History of CAD was present in 16.7%. Median left ventricle ejection fraction was 33.78 ± 14.1%. ECG changes suggestive of ischemia were observed in 36.7% of patients, and 35.8% had new-onset segmental kinetic disturbances. CE was more frequent in current smokers (37.5%; p < 0.001); absence of previous HF (35.1 vs. 12.7%; p < 0.001); typical thoracic pain (42.9 vs. 16.9%; p = 0.016) non-medicated with beta-blockers (24.8 vs. 13.3%; p = 0.032); new-onset HF (24.5 vs. 12.4%; p = 0.022); higher haemoglobin (13.5 vs. 12.7 g/dL; p = 0.039), total cholesterol (169.9 vs. 139.5 mg/dL; p < 0.001), LDL-C (99.0 vs. 74.7 mg/dL; p < 0.001) and TG (140.5 vs. 109.2 mg/dL; p = 0.019); presence of changes suggestive of ischemia (28.4 vs. 13.5%; p = 0.008) and new-onset segmental kinetic disturbances (42.9 vs. 16.9%; p = 0.016). When these variables are applied in logistic regression, the resulting module has a very good prediction accuracy for the CE (AUC = 0.798 (0.716-0.881)). ECG changes suggestive of ischemia (OR = 10.9; p = 0.007) and new-onset segmental kinetic disturbances (OR = 14.1; p = 0.011) were identified as independent predictors of the CE.
Conclusions: This study highlights the diagnostic and therapeutic importance of simple variables, such as ischemic markers on ECG and echocardiography, in identifying CAD and guiding management in patients



Baseline Patient Characteristics	
Age	66,5 ± 11,5 years
Female sex	22,8%
Hypertension	66,3%
Type 2 Diabetes	38%
Dyslipidemia	73,9%
Atrial fibrillation	26,1%
Killip Classification	
I	43%
II	38%
III	13%
IV	6%
Body-mass index	27,4 kg/m² ± 5
Creatinine Clearance	72,1 ± 11,3 mL/min/1.73 m2
LDL	92± 31 mg/dL
Baseline NTproBNP	2,354 pg/mL
Baseline LA volume index	39 ± 12 ml/m²
Baseline LVEF	31% ± 7
LVEF at 1 year FUP	41% ± 9

Figure PO 60

with AHF. Elevated cholesterol, smoking, and typical thoracic pain further inform risk of CAD, particularly in new-onset HF cases.

These findings highlight the importance of early follow-up and tailored guideline directed medical therapy for patients with any of those characteristics at discharge.

PO 60. UNCOVERING PREDICTORS OF ADVERSE OUTCOMES IN HFREF AFTER ACUTE MYOCARDIAL INFARCTION

Daniel Inácio Cazeiro[1], Catarina Gregório[1], Diogo Ferreira[1], Fátima Salazar[2], Ana Francês[2], Rafael Santos[1], Joana Rigueira[1], Doroteia Silva[1], Nuno Lousada[1], Fausto J. Pinto[1], Dulce Brito[1], João Agostinho[1]

[1]Department of Cardiology, Hospital de Santa Maria (ULSSM), CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa. [2]Department of Cardiology, Hospital de Santa Maria (ULSSM), Lisboa.

Introduction: ischemic heart disease is the leading cause of heart failure (HF) with reduced left ventricle ejection fraction (LVEF). Acute myocardial infarction often serves as the precipitating event that leads to LVEF reduction and, in some cases, to HF. However, while some patients fully recover their LVEF and avoid developing HF with revascularization and optimized medical therapy, others remain with reduced LVEF and end up developing HF symptoms. The aim of this study is to define predictors of cardiovascular (CV) death or HF hospitalization (HFH) in this population.
Methods: This prospective, single-center study included post-myocardial infarction patients with LVEF < 50% at discharge, who started being followed at a HF-specialized outpatient clinic since 2020. The primary outcome was a composite of CV death or HFH at 3 years. Logistic regression, receiver operating characteristic curve and Kaplan-Meier survival analysis were performed to identify predictors of poor outcomes.
Results: The study included 92 patients (22.8% female, mean age: 66.5 ± 11.5 years) with a mean follow-up of 2.5 years. Baseline mean LVEF was 31%, and median NT-proBNP was 2,354 pg/mL; 46.7% were discharged without diuretic therapy. After one year of optimized medical therapy, the mean LVEF improved to 41%, 63% of patients no longer required furosemide, and 51%, were in NYHA class I. At three years, baseline LVEF < 33% was associated with an increased risk of the composite outcome (HR: 5.7; 95%CI: 1.3-30.9; p = 0.04). A left atrial indexed volume > 41 mL/m² was also strongly associated with worse outcomes (HR: 8.5; 95%CI: 1.8-39.6; p = 0.006). Additional predictors of poor prognosis included a delay of > 50 days to the first post-discharge appointment (HR: 4.8; 95%CI: 1.1-17.4; p = 0.05) and diuretic therapy at discharge (HR: 5.6; 95%CI: 1.2-26.7; p = 0.03). In contrast, baseline creatinine, LDL cholesterol, NT-proBNP levels, and foundational HF therapy doses were not statistically associated with outcomes.
Conclusions: In this cohort, baseline LVEF < 33%, left atrial indexed volume > 41 mL/m², delayed follow-up (> 50 days), and diuretic need at discharge were significant predictors of cardiovascular death and HF hospitalization.

Sexta-feira, 11 Abril de 2025 | 11:00-12:00

Área de Posters-écran 1| Sessão de Posters 09 – Obesidade e hipertensão: velhos conhecidos, novas ferramentas

PO 61. GLP1 AGONISTS: PRESCRIBER INERTIA OR ACCESSIBILITY ISSUE?

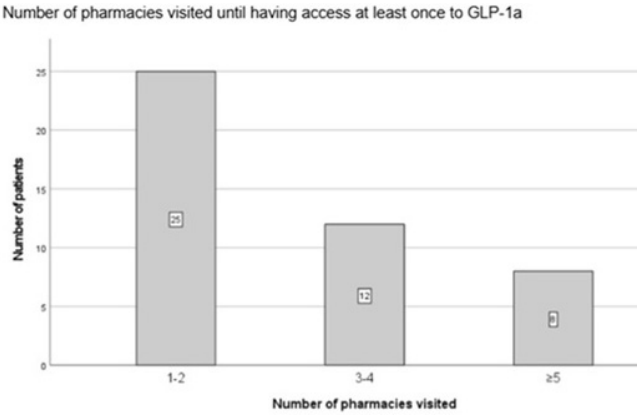
Matilde Ferreira[1], João Adriano Sousa[1], Maria Isabel Mendonça[2], Débora Sá[1], Gonçalo Abreu[1], Francisco Sousa[1], Sónia Freitas[2], Eva Henriques[2], Mariana Rodrigues[2], António Drumond[1], Ana Célia Sousa[1], Roberto Palma dos Reis[3]

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

Introduction: In patients with diabetes and chronic coronary syndrome, treatment with GLP-1 receptor agonists and/or SGLT2 inhibitors is recommended to reduce cardiovascular (CV) risk, independent of glucose control, and as an addition to the standard of care, according to the latest guidelines. However, prescription patterns and data on local availability appear limited, as there is a general perception that access to GLP-1 receptor agonists (GLP-1a) in local pharmacies is low.
Methods: A substudy of the cross-sectional database from our center cohort was conducted using diabetic patients with chronic coronary syndrome. This observational study aimed to better understand guideline adherence, prescription patterns, and local drug accessibility. Data was obtained through a telephone survey.
Results: A total of 261 patients with type 2 diabetes mellitus and a history of coronary cardiovascular events (e.g. myocardial infarction or unstable angina) were surveyed. Of these, 210 (80.5%) were male, with a mean age of 68.1years (range 44-87). SGLT2 inhibitors were prescribed to 79.3% (n = 207) of patients. However, 216 patients (82.5%) had not been prescribed GLP-1a in the past two years. Among the 45 patients (17.2%) who had received at

least one prescription, the distribution was as follows: 44.4% for semaglutide, 28.9% for dulaglutide, 11.1% for liraglutide and 15.6% for exenatide. Access to the prescribed medication was reported by 88.9% of these patients at least once, while 1.9% never obtained access. On average, patients visited 2.93 pharmacies (range: 1-12) to obtain their medication. Notably, 73.3% of patients reported interrupting treatment at least once due to limited availability, and an alternative GLP-1a was prescribed in 15.6% of cases to address accessibility issues.

Conclusions: The proportion of diabetic patients receiving guideline-recommended therapy remains suboptimal, reflecting a persistent gap between findings from randomized clinical trials and real-world clinical practice. GLP-1a therapies are still infrequently prescribed, and when prescribed, they are often difficult to access in local pharmacies. To our knowledge, this is one of the first observational studies to highlight the complexities surrounding GLP-1a prescription and accessibility in routine practice.



PO 62. CARDIAC REHABILITATION IN OBESE PATIENTS: A POPULATION AT INCREASED RISK

João Martins Neves, Miguel Azaredo Raposo, Ana Abrantes, Catarina Gregório, João Fernandes Pedro, Gisela Afonso, Graça Araújo, Sandra Miguel Correia, Nelson Cunha, Inês Aguiar-Ricardo, Fausto J. Pinto, Ana Abreu

Department of Cardiology, Hospital de Santa Maria (ULSSM), CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Cardiac rehabilitation (CR) is a cornerstone in cardiovascular patients' treatment. Patients with obesity face elevated cardiovascular risk and warrant meticulous integration into these programs. Moreover, it has been suggested that standard CR guidelines may not be optimal for obese patients and further studies are needed to better understand obese patients' adherence and CR efficacy.

Objectives: To evaluate adherence and efficacy of CR program in obese patients when compared to non-obese patients.

Methods: Single center retrospective study of consecutive patients referred to a center-based CR program from 2015 to April 2023. The CR program was conducted 2 or 3 times per week, the exercise training session lasts 60 mins. (aerobic and resistance training) plus 60 minutes of respiratory session. Obesity was defined as BMI ≥ 30 kg/m² and control as BMI < 30 kg/m². Adherence was evaluated as percentage of programmed sessions attended and efficacy as reduction in cardiovascular risk factors or improvement of cardiopulmonary exercise test (CPET) parameters after the CR program. Parametric and non-parametric tests were applied as adequate.

Results: We included 446 patients, 23% obese, of these 6% had BMI > 35 kg/m² and 5 patients BMI > 40 kg/m². In obese patients 73% were male, mean age 50 years, 72% had dyslipidemia, 56% had smoking habits. Obese patients had an 80% increased odd of hypertension and 90% odd of diabetes when compared to non-obese patients (81 vs. 71%, OR 1.8 CI 1.1-3.2; 36 vs. 23%, OR 1.9 CI 1.2-3; respectively). Most patients completed the program with 98% adherence, with median number of exercise sessions completed of 12 ± 4, with no differences between groups. After completing the CR program obese patients presented a significant improvement in NYHA functional class ($p < 0.001$), cardiovascular risk factors (weight: 95 ± 12 kg vs. 94 ± 12 kg $p = 0.035$, abdominal perimeter: 113 vs. 108 $p = 0.009$, cLDL75 ± 69 vs. 56 ± 33 $p = 0.002$, HgA1C 6.5 ± 1.2 vs. 6 ± 0.5 $p = 0.04$) and improvement of functional capacity (peak VO2 14.6 vs. 16.5 ml/kg/min, $p = 0.008$; % of predicted VO2peak 59 vs. 65% $p = 0.009$; O2pulse 11 vs. 12.4 $p = 0.003$; CPET time 8 vs.10 min, $p = < 0.00$). Obese patients showed a significantly higher weight, abdominal perimeter and BMI reduction when compared to control (1.4 ± 4 vs. 0.5 ± 3 kg, $p < 0.001$, 2 ± 4 vs. 0.5 ± 4 cm, $p = 0.02$, 1 ± 2 vs. 0.1 ± 1 points, $p \leq 0.001$ respectively). In obese patients both METs and percentage of predicted peak O2 positively correlated with distance in 6MWT, with a strongest correlation for METs (rs44%, $p < 0.001$, rs57%, $p < 0.001$, respectively). Regarding phase 3, 46% of obese patients joined a supervised program, 12% enrolled in a fitness center and 42% failed to maintain an activity regime.

Conclusions: Obese patients demonstrated comparable adherence to the program and exhibited equivalent, or in some cases, superior efficacy in terms of cardiovascular risk control compared to those without obesity.

PO 63. DIFFERENCES IN OVERWEIGHT AND OBESITY PREVALENCE AMONG PRIMARY SCHOOL CHILDREN IN SÃO JOÃO DA MADEIRA, PORTUGAL

Ana Margarida Silva Pinho[1], Ana Guedes[1], Alice Coelho[1], Irene Guimarães[2], Rosa Cardoso[1], Lúcia Gomes[1], Miguel Costa[1], Carla Araújo[1], Rui Baptista[1]

[1]Centro Hospitalar de Entre Douro e Vouga, EPE/Hospital de S. Sebastião.
[2]Câmara Municipal de São João da Madeira.

Introduction: Childhood obesity is a growing global health concern, associated with increased risks of cardiometabolic disorders and long-term health complications. São João da Madeira, Portugal's smallest municipality in area, provides a unique setting to investigate localized disparities in childhood obesity. Understanding these small-scale differences is essential

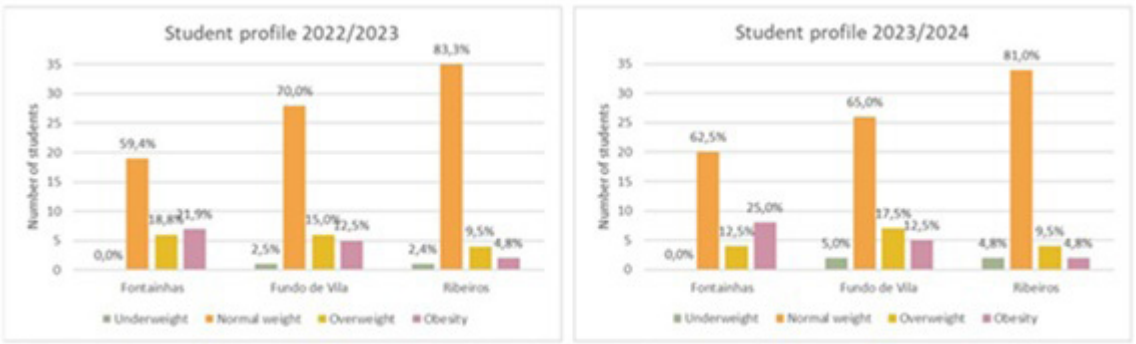


Figure 1. Prevalence of weight categories in students from primary school in the 2022/2023 academic year and 2023/2024.

Figure PO 63

for implementing targeted, effective public health strategies. We aimed to analyze the prevalence of overweight and obesity among primary school children in São João da Madeira and evaluate differences between schools across two academic years (2022/2023 and 2023/2024).
Methods: A cross-sectional study was conducted in three primary schools in São João da Madeira, involving 114 children (age range 7-11 years, 56.1% females) participating in the ongoing GREAT (Target in promoting children's health: a research-driven school-based physical activity intervention) prospective cohort study. Anthropometric measures and BP were obtained by a trained team using standardized techniques and appropriate equipment. Body composition was assessed through Body Mass Index (BMI) and pediatric growth curves, classifying children into four categories: underweight, normal weight, overweight, and obesity.
Results: The findings revealed significant disparities in overweight and obesity prevalence between schools. In the 2022/2023 academic year, overweight and obesity rates ranged from 14.3-40.7%, with Fontaínhas school recording the highest prevalence (40.7%) versus 27.5% in Fundo de Vila and 14.3% in Ribeiros. In 2023/2024, while a slight overall improvement was noted, the rates remained high, ranging from 14.3-37.5%. Ribeiros school consistently reported the lowest levels of overweight and obesity.
Conclusions: This study demonstrates that even in small, geographically compact areas such as São João da Madeira, notable differences in childhood obesity prevalence exist, driven by school location and socioeconomic factors. These disparities emphasize the need for localized approaches to obesity prevention, rather than relying on broad, generalized strategies. Extrapolating these results to larger urban centers highlights the potential for even greater disparities, reinforcing the importance of targeted, region-specific public health interventions to address childhood obesity and its associated health risks.

PO 64. COMPARISON BETWEEN OFFICE BLOOD PRESSURE AND AMBULATORY BLOOD PRESSURE MONITORING IN PREDICTING CARDIOVASCULAR EVENTS

Simão de Almeida Carvalho, Carlos Costa, Inês Cruz, Tiago Aguiar, Adriana Pacheco, Andreia Fernandes, Ana Briosa Neves, José Mesquita Bastos

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

Introduction: Hypertension is a major risk factor for cardiovascular disease. While office blood pressure (BP) is commonly used in practice, it may fail to capture BP variability and nocturnal patterns, which are crucial for assessing cardiovascular risk.
Objectives: This study compares the ability of office BP and Ambulatory Blood Pressure Monitoring (ABPM) to predict cardiovascular events.
Methods: A single-center cross-sectional study of hypertensive patients undergoing ABPM. Parametric tests analyzed variables with normal distribution, using Independent-Samples T Test, Chi-square, logistic and ROC analysis for model comparison in SPSS. Patients were classified by office BP, ABPM, and anti-hypertensive medications into Ambulatory Resistant Hypertension (ARH), Ambulatory Non-Resistant Hypertension (ANRH), White Coat Uncontrolled Resistant Hypertension (WCURH), and Controlled Hypertension (CH). The composite endpoint included stroke, acute coronary syndrome (ACS), or heart failure (HF) hospitalization.
Results: The study included 958 patients (mean age: 58.7 ± 11.5 years; 51.3% female), followed for 11.9 ± 5.5 years. Cardiovascular risk factors included mean BMI of 28.2 ± 4.7 kg/m^2, diabetes (29.2%), smoking history (35.3%), and dyslipidemia (68.6%). Office BP showed mean systolic BP of 153.1 ± 22.2 mmHg and pulse pressure (PP) of 58.8 ± 18.2 mmHg. ABPM showed 24-hour systolic BP of 131.5 ± 15.8 mmHg and PP of 52.1 ± 11.0 mmHg, with nocturnal dipping in 52.1%. During follow-up, 18.8% of patients had cardiovascular events: stroke (8.7%), ACS (5.6%), or HF hospitalization (4.5%). Compared to event-free patients, those with events had higher BMI (29.3 ± 4.3 vs. 27.8 ± 4.8 kg/m^2; p = 0.002), casual systolic BP (158.3 ± 23.5 vs. 151.9 ± 21.7 mmHg; p < 0.001), and PP (62.3 ± 19.9 vs. 58.0 ± 17.7 mmHg; p = 0.004). ABPM showed higher 24-hour systolic BP (137.3 ± 17.1 vs. 130.1 ± 15.2 mmHg; p < 0.001), nighttime systolic BP (130.0 ± 19.7 vs. 120.8 ± 15.6 mmHg; p < 0.001), and reduced nocturnal dipping (42.1 vs. 55.1%; p = 0.002). Logistic regression models compared office BP (Model 1: systolic BP and PP) and ABPM (Model 2: 24-hour systolic BP, PP, daytime and nighttime systolic BP, nighttime diastolic BP, and nocturnal dipping). Model 2 had a higher AUC (0.65, 95%CI: 0.60-0.70) than Model 1 (0.60, 95%CI: 0.55-0.64), though the difference was not statistically significant (p = 0.10). Subgroup analysis showed that ABPM significantly outperformed casual BP in ARH (AUC 0.77 vs. 0.63; p = 0.04) and ANRH (AUC 0.62 vs. 0.52; p = 0.03). In WCURH (AUC 0.60 vs. 0.56; p = 0.28) and CH (AUC 0.65 vs. 0.63; p = 0.23), differences were not significant.
Conclusions: ABPM demonstrated clear superiority in ARH and ANRH, improving predictive accuracy in these subgroups. In WCURH and CH, differences were not significant but favoured ABPM, highlighting its value in complex cases where office BP may not fully reflect cardiovascular risk.

PO 65. EXPLORING CORRELATION BETWEEN ADIPOSITY AND BLOOD PRESSURE AND THE IMPACT OF EXERCISE IN PRIMARY SCHOOL CHILDREN FROM SÃO JOÃO DA MADEIRA

Ana Guedes[1], Margarida Pinho[1], Alice Coelho[1], Irene Guimarães[2], Rosa Cardoso[1], Lúcia Gomes[1], Miguel Costa[1], Carla Araújo[1], Rui Baptista[1]

[1]*Centro Hospitalar de Entre Douro e Vouga, EPE/Hospital de S. Sebastião.*
[2]*Câmara Municipal de São João da Madeira.*

Introduction: Childhood obesity and high blood pressure are critical public health concerns, with elevated BP in children being a predictor of future cardiovascular disease. Schools have the potential to mitigate these health problems by implementing key prevention strategies. Regular physical activity, as recommended by the WHO (300 minutes/week), is key to improving cardiovascular health. We aimed to evaluate the prevalence of overweight and obesity among primary school children in São João da Madeira and to explore the correlation between adiposity and blood pressure and to study the impact of exercise on this correlation.

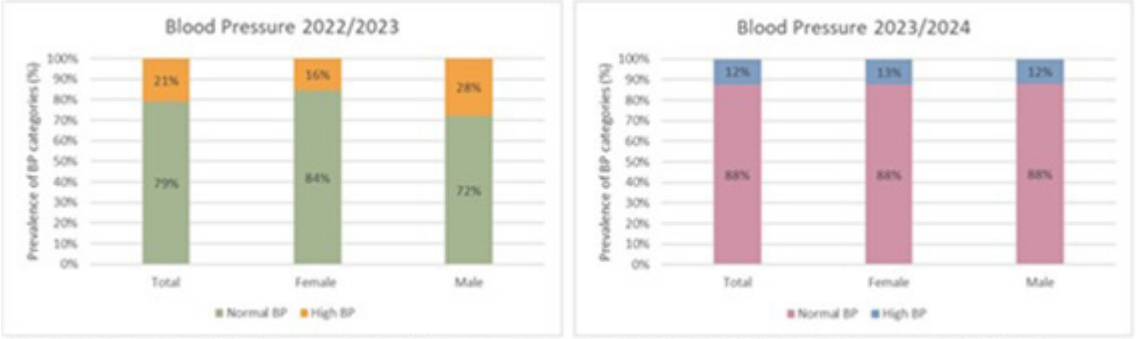


Figure 1. Prevalence of Blood Pressure in students from primary school in the 2022/2023 academic year and 2023/2024.

Figure PO 65

Methods: A cross-sectional study was conducted in three primary schools in São João da Madeira, involving 114 children (age range 7-11 years, 56.1% females) participating in the ongoing GREAT (Target in promoting children's health: a research-driven school-based physical activity intervention) prospective cohort study. Anthropometric measures were assessed using bioelectrical impedance, blood pressure was measured following standardized protocols and fat mass was obtained by a validated equation for this age range. Physical activity levels, inside and outside school activities, were quantified. Correlations between fat mass, blood pressure, and activity levels were analyzed using statistical models.
Results: The prevalence of elevated blood pressure decreased from 21.1% in 2022/2023 to 12.3% in 2023/2024. A significant correlation was found between adiposity and blood pressure ($R^2 = 0.1531$, $p < 0.01$), showing higher fat mass is associated with elevated blood pressure. Children with greater participation in structured physical activity experienced a measurable decrease in body fat percentage, reinforcing its inverse relationship with adiposity. Despite these improvements, 30.7% of participants (35 children) met at least one criterion for medical referral.
Conclusions: The study shows an association between increased adiposity and elevated blood pressure and an inverse relationship between adiposity and structured physical activity, in primary school children. This underscores the critical role of structured physical activity in reducing body fat and improving health indicators such as blood pressure in children. Schools are well placed to implement specific programs that promote increased physical activity to prevent long-term cardiovascular risks.

PO 66. IMPACT OF SUBCLINICAL PRIMARY ALDOSTERONISM ON VALVULAR, CORONARY AND AORTIC CALCIFICATION: A POPULATION-BASED COHORT STUDY

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

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

Introduction: Primary aldosteronism (PA) is a state of autonomous, renin-independent aldosterone production, which elevates cardiovascular risk. Subclinical forms of PA are prevalent in the general population and increase the risk for incident hypertension and cardiovascular events. Data from preclinical and clinical studies showed that aldosterone is involved in atherosclerosis by contributing to vascular calcification and plaque inflammation. However, it is unknown whether subclinical forms of PA increases calcification in heart valves and great vessels.
Objectives: Explore the association of the spectrum of PA with aortic, coronary and valvular calcification in individuals included in the Framingham Heart Study cohort.
Methods: We assessed participants from the Generation 3 cohort of the Framingham Heart Study, in which aldosterone and renin levels were measured and cardiac computerized tomography (CT) was performed. Individuals taking angiotensin converting enzyme inhibitors, angiotensin receptor blockers or mineralocorticoid blockers were excluded. Linear regressions adjusted for relevant covariates were performed to evaluate the association of the aldosterone-to-renin ratio with mitral annulus calcium (MAC), aortic valve calcium (AVC), coronary artery calcium (CAC) and thoracic aorta calcium (TAC) scores.
Results: We included 4,573 individuals (mean age 40.9 ± 10.1 years; 54% female; mean body mass index [BMI] 26.9 kg/m^2; mean systolic blood pressure 117 ± 0.21 mmHg; mean diastolic blood pressure 75.3 ± 9.7), of whom 1,566 (34%) underwent cardiac CT. A higher aldosterone-to-renin ratio, reflecting increased aldosterone production independent of renin, was not associated with a higher MAC (b = 0.20, 95%CI -0.13-0.53; p = 0.22), AVC (b = -0.21, 95%CI -0.15 – 0.11; p = 0.75), CAC (b = 0.01, 95%CI -0.04 – 0.06; p = 0.61) nor TAC (b = -0.02, 95%CI -0.07 – 0.04; p = 0.56) scores.
Conclusions: In the general population, a biochemical phenotype of subclinical primary aldosteronism did not correlate with meaningful valvular, coronary or aortic calcification, suggesting that pathophysiological mechanisms other than mineralocorticoid receptor overaction are responsible for the calcification of these structures.

Sexta-feira, 11 Abril de 2025 | 11:00-12:00

Área de Posters-écran 2 | Sessão de Posters 10 – Geriatria cardiovascular: mostra-me os dados!

PO 67. PACEMAKER IN NONAGENARIAN AND CENTENARIAN PATIENTS: A FIVE-YEAR EXPERIENCE AT A TERTIARY CENTER

Emanuel de Oliveira, Bernardo Cruz, Gonçalo Pestana, Ana Lebreiro, João Calvão, Ricardo Pinto, Marta Madeira, Luís Adão, Rui A. Rodrigues

Centro Hospitalar Universitário de São João.

Permanent pacing is the treatment of choice for various bradyarrhythmias. With population aging, there has been an increase in permanent pacemaker implantation in elderly individuals. However, data on nonagenarians and centenarians remain scarce. This study describes the characteristics and outcomes of patients aged ≥ 90 years undergoing pacemaker implantation at a tertiary center. This observational, retrospective study included consecutive patients aged ≥ 90 years who underwent their first permanent pacemaker implantation between January 1, 2020, and November 30, 2024. Demographic and clinical data were collected from electronic medical records. A total of 110 patients were included, 53.6% of whom were women, with a mean age of 92.6 years (range: 90-101). The Clinical Frailty Scale (CFS) ranged from 4 to 8, with 43.6% scoring 6 and 17.3% scoring > 6. Hypertension was the most common comorbidity (74%), followed by heart failure (41.1%) and diabetes mellitus (28.7%). Urgent implantations accounted for 82.7% of procedures, 7% requiring temporary pacing. The main symptoms were syncope (34.5%), heart failure (18.2%), and fatigue (14.5%). Most patients had sinus rhythm (68.2%) and more frequently presented with complete atrioventricular block (49.1%), second-degree atrioventricular block (17.3%), and atrial fibrillation with slow ventricular response (10.9%). Single-chamber ventricular pacemakers were the most implanted type (62.7%). Complications occurred in 2.7% of cases, the most common being ventricular lead displacement, followed by ventricular tachycardia and pocket hematoma. The mean follow-up period was 433 days, with an overall mortality rate of 30.9% (12.7% in the first year). Within the first month, 14.8% visited the emergency department, and 8.3% were hospitalized for any cause. The average number of emergency visits per patient was 2.3 (0.4 cardiovascular-related), and the average number of hospitalizations was 0.7 (0.3 cardiovascular-related). Pacemaker implantation in nonagenarians and centenarians proved safe and effective. Despite frailty and comorbidities, first-year mortality was low. The predominance of single-chamber pacemakers reflects a preference for less invasive procedures in this population. The prominence of non-cardiovascular events underscores the impact of comorbidities and highlights the need for a comprehensive care approach.

PO 68. GENDER DIFFERENCES IN NONAGENARIANS UNDERGOING PACEMAKER IMPLANTATION

Emanuel de Oliveira, Joana Conde Gonçalves, Gonçalo Pestana, Ana Lebreiro, João Calvão, Ricardo Pinto, Marta Madeira, Luís Adão, Rui A. Rodrigues

Centro Hospitalar Universitário de São João.

Pacemaker implantation in very elderly patients is an increasingly common practice for treating bradyarrhythmias. However, the influence of gender on clinical characteristics, laboratory findings, and prognosis in this population remains underexplored. This study aims to compare and analyze gender differences in these patients. This observational, retrospective study included consecutive patients aged ≥ 90 years who underwent their

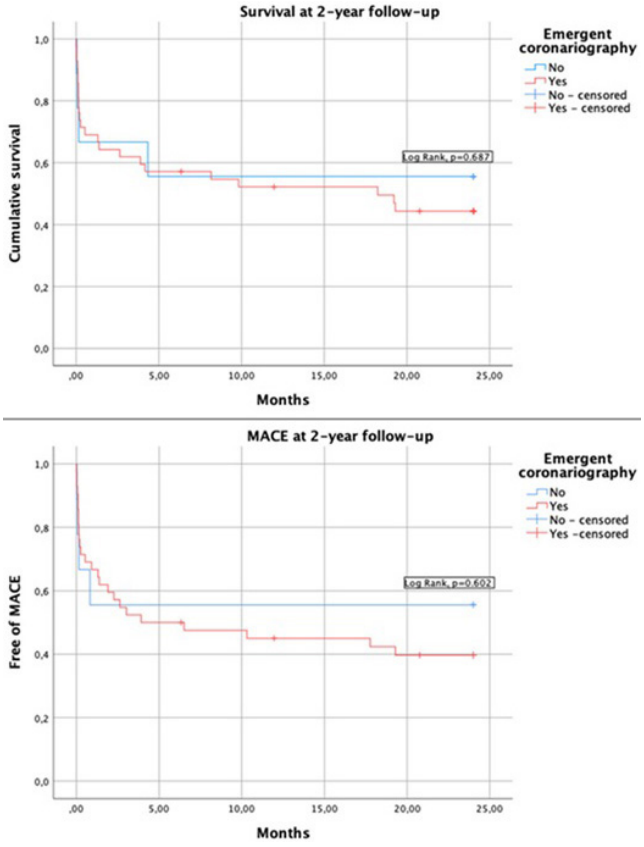
first permanent pacemaker implantation between January 1, 2020, and November 30, 2024. Patients were divided into two groups based on gender. Demographic and clinical data were collected from electronic medical records. A total of 110 patients were included, 59 women (53.6%) and 51 men (46.4%), with similar mean ages (93.1 vs. 92.2 years, p 0.056). Syncope was the most common presenting symptom in both groups (30.5% in women vs. 39.2% in men), but heart failure symptoms and fatigue were more frequent in women (28.8 vs. 5.9% and 22 vs. 5.9%, p 0.004). Conversely, dizziness and absence of symptoms were more common in men (11.8 vs. 3.4% and 17.6 vs. 5.1%, p 0.004). No significant differences were found in indication, rhythm, or pacemaker type. Women had significantly higher rates of Clinical Frailty Scale (CFS) scores ≥ 6 (74.6 vs. 45.1%, p 0.002) and advanced chronic kidney disease (14 vs. 2%, p 0.023). Conversely, the prevalence of left ventricular dysfunction was higher in men (13.7 vs. 8.9%, p 0.03), while women had a greater prevalence of heart failure with preserved ejection fraction (41.1 vs. 17.6%, p 0.03). No significant differences were observed in overall mortality (27.1% in women vs. 35.3% in men, p 0.355) during an average follow-up of 433 days. Our findings highlight significant differences in clinical presentation between nonagenarian men and women undergoing pacemaker implantation, even though the electrocardiographic indications did not differ. Despite similar mean ages, women exhibited greater frailty and more comorbidities, such as heart failure with preserved ejection fraction and advanced chronic kidney disease. Nonetheless, mortality rates were comparable between genders, suggesting that pacemaker implantation offers similar benefits to both men and women.

PO 69. CLINICAL OUTCOMES IN NONAGENARIANS UNDERGOING EMERGENT CORONARY ANGIOGRAPHY: A RETROSPECTIVE ANALYSIS

Joana Conde Gonçalves, Emanuel de Oliveira, Mariana Paiva, Bernardo Cruz, Paula Dias, Rui Almeida, Rui Rodrigues

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Management of acute coronary syndrome (ACS) in elderly patients presents unique challenges due to frailty and higher burden of comorbidities. The impact of emergent coronariography in these patients remains a subject of debate. This study investigates the clinical profile, in-hospital outcomes and 2-year follow-up of nonagenarians presenting with ST elevation ACS (STE-ACS), focusing on comparing those undergoing emergent coronary angiography with a matched control group.
Methods: A retrospective analysis of patients aged ≥ 90 years admitted with STE-ACS to our institution between January 2008 and June 2024 was performed. Clinical data were collected from institutional registries. Major adverse cardiovascular events (MACE) were defined as a composite of all-cause mortality, ischemic stroke, recurrent ACS and hospitalization for acute heart failure.
Results: Fifty-one patients (median age 92 ± 2 years; 59% female) were included. Comorbidities were highly prevalent (hypertension 82.4%, diabetes 15.7%, dyslipidemia 51%, smoking 15.7%, obesity 15.7%, atrial fibrillation 17.6%, chronic kidney disease 19.6%). The median Clinical Frailty Score was 4. Most ACS cases (64.7%) involved the anterior wall. Emergent coronary angiography was performed in 82.4% of patients. The left anterior descending artery was the most frequent culprit site and revascularization was achieved in just over half of the patients, predominantly via stent implantation. Clinically, 27.4% of patients progressed to Killip class III/IV and only 29.4% retained preserved ejection fraction post-event. In-hospital mortality was 31.4%. No significant differences in mortality were observed between patients undergoing emergent angiography and controls (p = 0.588). Similarly, 2-year follow-up revealed no significant differences in mortality (p = 0.687) or MACE (p = 0.602). Overall, 56.9% of patients experienced MACE and 52.9% died within the follow-up period.
Conclusions: Nonagenarians with STE-ACS represent a high-risk population. Emergent coronary angiography was not associated with improved survival or reduced MACE in this cohort. These findings underscore the need for individualized therapeutic strategies in this vulnerable population.



PO 70. EVALUATING THE PREDICTIVE VALUE OF FRAILTY SCORES ON MORTALITY IN PATIENTS WITH CARDIOGENIC SHOCK ACROSS THE AGE SPECTRUM

André Moniz Garcia[1], Inês Coutinho Dos Santos[2], João Presume[1], Ana Rita Bello[1], Jorge Ferreira[1], Catarina Brízido[1], Christopher Strong[1], António Tralhão[1], C. Santos-Jorge[1], Rui Miguel Gomes[1], Márcia Presume[1]

[1]Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz. [2]Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: Cardiogenic shock is a multifactorial syndrome affecting patients across all age groups with mortality rates that exceed 50% in several cohorts. Elderly individuals, due to their inherent frailty, are particularly susceptible. This study aims to evaluate differences in clinical characteristics and outcomes between younger and older patients with cardiogenic shock and assess the utility of frailty scores in predicting outcomes.
Methods: This retrospective study analysed a cohort of cardiogenic shock patients from a single center, from 2017-2024, focusing on one-year mortality as the primary outcome. Predictive variables included demographic, clinical, and frailty data, incorporating the ECOG Performance Status (PS), Charlson Comorbidity Index (CCI), and Modified Frailty Index-11 (mF11). Univariate and multivariate analyses assessed the predictive value of these scores. Age and frailty were combined into a logistic regression model to evaluate their joint predictive capacity.
Results: A total of 356 patients were included, with a mean age of 66 ± 16 years, 66.5% male, and a one-year mortality rate was 54.8%. Mortality increased with age, reaching 66.0% in patients aged ≥ 70 years compared to 46.6% in younger patients (p = 0.002) (Figures 1 and 2). Worse functional status was also associated with higher mortality; individuals with PS ≥ 2 had a one-year mortality rate of 68.9%, compared to 50.2% in those with PS ≤ 1 (Figures 3 and 4). Among frailty scores, PS independently predicted one-year mortality (HR1.272 [1.099-1.471]; p = 0.001), while CCI (HR 1.055 [0.979-1.139]; p = 0.165) and mF11 (HR1.066 [0.988-1.150]; p = 0.101) were not significant. In a multivariate analysis adjusting for age, gender, SCAI class, troponin levels, cardiac arrest, and chronic kidney disease, PS remained a robust predictor

Figure 1: Pie chart of the distribution age ranges.

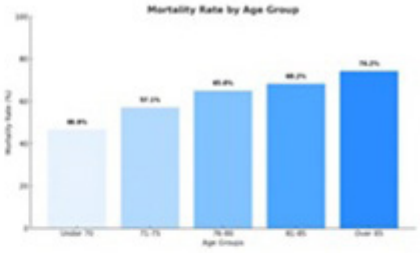


Figure 2: Bar chart of the mortality rate by age group

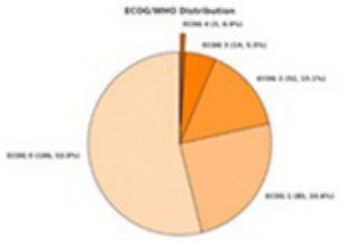


Figure 3: Pie chart of the distribution of the ECOG score.

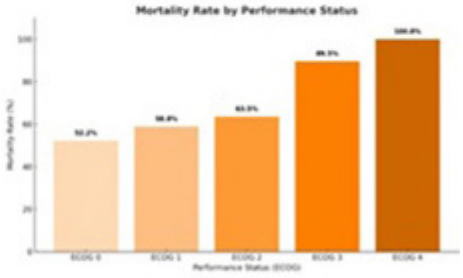


Figure 4: Bar chart of the mortality rate by ECOG score

Figure PO 70

(HR1.347 [1.142-1.588]; p < 0.001, per unit increase). In patients aged ≥ 70 years, those with PS ≤ 1 had a one-year mortality rate of 61.2%, compared to 82.4% with PS > 1. Combining age and PS into a logistic regression model yielded a significant association with one-year mortality (p < 0.001) and an AUROC of 0.691, indicating moderate discriminative ability.
Conclusions: Age and frailty, particularly functional status as measured by ECOG PS, are critical predictors of mortality in cardiogenic shock. This study underscores the need to routinely integrate frailty assessments into risk models to refine prognostication and optimize care pathways in this critically ill population.

PO 71. ADVANCED THERAPEUTIC INTERVENTIONS IN ELDERLY HEART FAILURE: OUTCOMES OF CARDIAC RESYNCHRONIZATION THERAPY

Ana Rita Teixeira, Julien Lopes, André Paulo Ferreira, Madalena Coutinho Cruz, Guilherme Portugal, Ana Lousinha, Pedro Silva Cunha, Tânia Mano, Rui Cruz Ferreira, Mário Oliveira

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

Introduction: The increasing prevalence of heart failure (HF) among the aging population has prompted questions about the suitability of advanced therapeutic interventions, such as cardiac resynchronization therapy (CRT), in elderly individuals. This study aims to assess the clinical and echocardiographic outcomes over a 6-month period in patients aged 75 years and older.
Methods: A single-center retrospective analysis was conducted on a cohort of patients who underwent successful CRT device implantation between 2011 and 2016. Clinical status, echocardiographic parameters and cardiopulmonary exercise testing data were assessed both before and 6 months after CRT implantation. Follow-up data included changes in left ventricular ejection fraction (LVEF) and LV end-systolic volume (LVESV), New York Heart Association (NYHA) functional class, and the incidence of major adverse cardiovascular events (MACE) post-CRT.
Results: The study involved 204 HF patients with a mean age 70 ± 10 years, of whom 64.7% had left bundle branch block and a baseline QRS of 151 ± 21 ms. Atrial fibrillation was present in 74 patients, and a defibrillator was added in 79.9% of cases. Initial echocardiography indicated severe systolic dysfunction, with a mean LVEF of 26 ± 7%, and severe LV dilation (end-systolic and end-diastolic volumes, 151 mm and 204 mm, respectively). Of these patients, 70 HF were ≥ 75 years old. The older group showed a higher prevalence of hypertension (p = 0.033) and a more frequent use of CRT-P instead of defibrillator (p < 0.001). Echocardiographic LVEF was higher in older HF patients (28 ± 7 vs. 25 ± 7%, p = 0.014) while peak VO_2 was lower (14.1 ± 3.8 vs. 17 ± 4.3, p = 0.012). No significant differences were observed between groups regarding sex, other cardiovascular risk factors or comorbidities and NYHA class (p = ns). NYHA class improvement was similar between groups. Significant improvements in elderly patients were observed in LVEF (p = 0.034) and a reduction in LVESV (p < 0.001) which did not show significant differences between younger patients. At the 6-month follow-up, older patients had more heart failure hospitalizations (p = 0.022), although death, arrhythmias and ischemic events were comparable between both groups.
Conclusions: In our population, CRT demonstrated effectiveness in LV remodeling among elderly heart failure patients. Despite favourable outcomes and a similar improvement in NYHA class between groups, elderly patients experienced more HF hospitalizations at the 6-month follow-up. The results suggest that advanced age alone should not limit CRT implantation in well-selected patients.

PO 72. SEGMENTAL KINETIC DISTURBANCES: A POOR PREDICTOR OF CORONARY ARTERY DISEASE IN VERY ELDERLY PATIENTS WITH HEART FAILURE

José Luís Ferraro, Mauro Moreira, Ana Rodrigo Costa, Inês G. Campos, Rafaela G. Lopes, Joel Ponte Monteiro, Inês Almeida, Carla Almeida, Aurora Andrade

Centro Hospitalar Tâmega e Sousa.

Introduction: Very elderly patients with heart failure (HF) is a growing population that exhibit distinct clinical characteristics and cardiovascular phenotypes, highlighting the need for personalized approaches in management. The aim of this study was to compare clinical characteristics between very elderly (≥ 80 years) and elderly (65-80 years) patients with HF.
Methods: A retrospective single-center analysis of patients admitted for HF throughout 2022, included 265 patients. There were divided in two groups: very elderly (n = 76) and elderly (n = 104). A statistical analysis was performed to compare baseline characteristics, biomarkers, coronary anatomy, and outcomes between groups. A p-value of < 0.05 was considered statistically significant.

Results: The mean age of very elderly and elderly group was 85 ± 3.3 and 73 ± 4.5 years, respectively. The median follow-up period was 1.5 years. Very elderly patients were predominantly revascularized surgically in the past and elderly patients were predominantly revascularized percutaneously (p = 0.003). Complete revascularization was significantly more frequent in very elderly patients compared to elderly patients (87.5 vs. 43.5%, p = 0.031). Valvular etiology was more frequent in the very elderly group, with severe aortic stenosis being the most common condition (34.7 vs. 15.4%, p = 0.003). Very elderly patients showed a predominance of heart failure with preserved ejection fraction, elderly patients predominantly had heart failure with reduced ejection fraction (p = 0.011). 49.3% of very elderly patients and 29.8% of elderly patients did not have segmental kinetic disturbances (p = 0.033). There were no significant differences between groups regarding invasive coronary angiography during hospitalization and detection of coronary arterial disease detection or progression. Logistic regression analysis showed that SKD did not significantly predict CAD in very elderly patients (p = 0.705, OR = 0.859).
Conclusions: Very elderly and elderly patients have distinct cardiovascular profiles. Despite fewer segmental kinetic disturbances in the very elderly group, similar rates of invasive coronary angiography during hospitalization and disease progression were observed. This raises the possibility that segmental kinetic disturbances may not be a fully reliable primary factor in decision-making for catheterization in very elderly patients. Further studies are needed to identify additional predictors for catheterization in this population.

Sexta-feira, 11 Abril de 2025 | 11:00-12:00

Área de Posters-écran 3 | Sessão de Posters 11 – Cardioncologia de Ponta II

PO 73. MANAGING CARDIOVASCULAR RISK IN CANCER PATIENTS: THE IMPACT OF CANCER THERAPIES ON NEW-ONSET HEART FAILURE

Inês Caldeira Araújo, Andreia Magalhães, Catarina Gregório, Miguel Azaredo Raposo, Ana Abrantes, Marta Vilela, João Cravo, Diogo Ferreira, Daniel Cazeiro, Miguel Nobre Menezes, F.J. Pinto, Manuela Fiúza

Department of Cardiology, Hospital de Santa Maria (ULSSM), CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Advances in oncologic treatments have enabled cancer patients to live longer, however, this has been overshadowed by unintended and often severe cardiac complications that impact overall patient outcomes. Cardiotoxicity, particularly the link between certain cancer therapies and the development of new on-set heart failure (HF), has become an increasingly significant concern.
Objectives: To evaluate the impact of cancer therapies, cardiovascular comorbidities, laboratory and echocardiographic parameters on new-onset HF.
Methods: A retrospective, observational, single-center study was conducted including patients enrolled in a cardio-oncology consultation between 2022 and 2023. New-onset HF was defined by a reduction of left ventricular ejection fraction (LVEF) or signs and symptoms of HF plus an elevation of NT-proBNP. Parametric and non-parametric tests were performed.
Results: A total of 185 patients (48% male, mean age 64 ± 15 years) were included. Of these, 35 patients (19%) developed HF. Cardiovascular comorbidities were similar across both groups. Patients on SGLT2 inhibitors tended to experience a lower incidence of new-onset HF (p = 0.089). Regarding cancer therapies, those receiving targeted therapy had a significantly higher incidence of new-onset HF (HR 2.5, p = 0.015). Additionally, 20% of patients who developed HF had been treated with anthracyclines (p = 0.073) and the combination of target therapy and radiotherapy also potentiated this cardiotoxic effect (p < 0.001). Higher baseline troponin levels were associated with an increased likelihood of developing the primary endpoint (p = 0.05). Echocardiographic parameters revealed that patients with lower LV strain prior to starting oncological treatment were more likely to develop LV dysfunction or HF (p = 0.057). Among patients with new-onset HF, the median LVEF was 43 (36 to 50) (p < 0.001), and the median LV strain was -12 (-14.5 to -9.5) (p < 0.001). During follow-up, 29% of patients who developed new-onset HF were hospitalized for cardiovascular causes (p < 0.001). Elevated NT-proBNP and troponin levels were strongly associated with an increased risk of hospital admissions (p = 0.012 and p = 0.034, respectively), while lower LVEF and higher LV strain values also correlated with higher rates of cardiovascular admissions. There were no significant differences in mortality between the two groups (p = 0.981). Of the patients who developed new-onset HF, 45% suspended treatment, with 6.5% undergoing a temporary interruption and 38.7% permanently discontinuing therapy. Notably, 43% of patients demonstrated full recovery of LVEF.

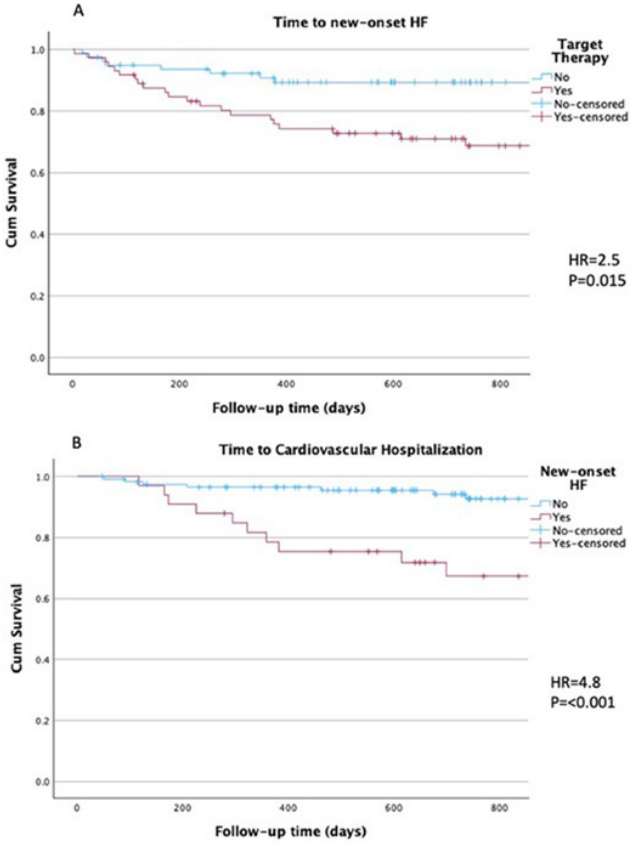


Figure 1: A - Time to new-onset HF in patients who received versus did not receive target therapy. B - Time to CV hospitalization in patients that developed versus did not developed HF after cancer therapy.

Conclusions: The results highlight the significant impact of cancer therapies, particularly target therapy, on the development of LV dysfunction and HF. These findings underscore the need for vigilant CV monitoring in cancer patients to manage risks and improve patient outcomes.

PO 74. A NEW ERA IN CARDIO-ONCOLOGY: UPRISING HEART FAILURE THERAPIES FOR CARDIO-PERMISSIVE STRATEGIES IN CANCER THERAPY-RELATED CARDIAC DYSFUNCTION

Leonor Magalhães[1], Ricardo Carvalheiro[1], Isabel Cardoso[1], Vera Vaz Ferreira[1], Tânia Branco Mano[1], Luís Almeida Morais[1], Boban Thomas[2], Rui Cruz Ferreira[1]

[1]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [2]Integrated Care Cardiology Program, Regional Hospital Mullingar, Dublin Midlands Hospital Group, Dublin, Republic of Ireland.

Sex, male – N (%)	4 (20%)
Age (mean±SD)	56 (±12)
Cancer	**N (%)**
Breast	13 (65%)
Hematologic	5 (25%)
Lung	1 (5%)
Prostate	1 (5%)
Chemotherapy agents	**N (%)**
Anti-HER2 agent	11 (55%)
Taxane	2 (10%)
Anthracycline	3 (15%)
BTK	2 (10%)
TKI	2 (10%)
ICI	1 (5%)
Radiotherapy – N (%)	8 (40%)
CV risk factors and diseases	**N (%)**
Hypertension	9 (45%)
Dyslipidaemia	9 (45%)
Mellitus Diabetes	4 (20%)
Smoker	5 (25%)
Coronary artery disease	3 (15%)
Peripheral artery disease	2 (10%)
Arrhythmia	2 (10%)
Valvular disease	1 (5%)
Cerebrovascular Disease	1 (5%)
HF previously diagnosed (HFpEF)	2 (10%)
Chronic Renal Disease	1 (5%)
CV risk factors	
1	4 (20%)
≥ 2	11 (55%)

CTRCD Grade	**N (%)**
Asymptomatic Mild	11 (55%)
Asymptomatic Moderate	7 (35%)
Asymptomatic Severe	0
Symptomatic Mild	1 (5%)
Symptomatic Moderate	1 (5%)
Symptomatic Severe or Very Severe	0
Optimized Cardioprotective Therapy	**N (%)**
RAAS inhibitors	18 (90%)
ACE inhibitors	11(55%)
ARBs	2 (10%)
ARNIs	5 (25%)
Beta-blockers	17 (85%)
MRA	11 (55%)
SGLT2 inhibitors	10 (50%)
Number of Drug Classes Utilized	
1 class	1 (5%)
2 classes	7 (35%)
3 classes	7 (35%)
4 classes	5 (25%)
NT-proBNP	
Elevated - N (%)	9 (45%)
Basal (pg/mL)	513 (195-843)
Maximum (pg/mL)	1805 (274-3900)
% of increased	103% (34%-420%)
LVEF	Median (IQR)
Baseline LVEF, %	61 (58-65)
Minimum LVEF, %	49 (48-54)
LVEF reduction in percentual points, %	12 (5-14)
LVEF post-treatment suspension, % (N=11)	57 (53–61)
GLS	Median (IQR)
Baseline GLS (%)	- 17,5(-15.2 to -18.2)
Minimum GLS (%)	-13.9 (-11.7 to -16.1)
GLS reduction in percentual points (%)	-2,85 (-2.57 to -4.9)
GLS post-treatment suspension (N=11)	-15.2 (-15.5 to -18.2)

Legends: N, number of patients; %, percentage of patients; SD, standard deviation; BTK Bruton's Tyrosine Kinase, TKI, Tyrosine Kinase Inhibitor; ICI, CV, cardiovascular; HFpEF, Heart Failure with Preserved Ejection Fraction; CTRCD, Cancer Therapy-Related Cardiac Dysfunction; RAAS, Renin-Angiotensin-Aldosterone System; ACE, Angiotensin-Converting Enzyme Inhibitors; ARB Angiotensin Receptor Blockers; ARNI, Angiotensin Receptor-Neprilysin Inhibitors; MRA, Mineralocorticoid Receptor Antagonist; SGLT2i, Sodium-Glucose Cotransporter-2 Inhibitor; LVEF, Left Ventricular Ejection Fraction; GLS, Global Longitudinal Strain

Figure PO 74

Introduction: Permissive cardiotoxicity is a novel concept in cardio-oncology that balances the need for life saving oncological therapy with the acceptance of its cardiotoxicity. One of the most feared cardiotoxicities of chemotherapy (QT) is cancer therapy-related cardiac dysfunction (CTRCD) which often leads to premature QT discontinuation. Change in left ventricular ejection fraction (LVEF) and global longitudinal strain (GLS) define the CTRCD according to 2022 ESC Cardio-oncology guidelines.
Methods: Retrospective analysis of outpatients (P) diagnosed with CTRCD, followed at a cardio-oncology clinic at a tertiary centre between April 2021 and December 2023, managed with a permissive cardiotoxicity strategy without subsequent QT discontinuation.
Results: 20P were included with a mean age of 56 ± 12 years, 80% were women. Most common malignancies were breast cancer (65%) and hematologic neoplasms (25%); 45% were stage IV. The major of cardiotoxic QT were HER2-targets (55%) and anthracyclines (15%). There was a high burden of CV risk factors (≥ 2 in 55%). The median follow-up was 16 months (IQR 11-27). Most patients (85%) presented mild or moderate asymptomatic CTRCD. The cohort presented a median baseline of LVEF 61% (IQR 58-65) and GLS -17.5% (-15.2 to -18.2%). Both presented a significant decrease during QT to a median minimum LVEF of 49% ($p < 0.001$) and GLS -13.9% ($p = 0.028$). An increase in NT-proBNP levels (median 2x increase) was observed in 9 (45%), with a median maximum of 1,805 pg/mL. Only 3P experienced mild-to-moderate symptomatic HF due to toxicity, 1 requiring hospitalization. All patients received cardioprotective therapy (95% under ≥ 2 HF pillar classes; 25% under sacubitril-valsartan). With permissive strategy, 13P (65%) completed the entire oncological treatment, with a post-treatment median LVEF of 57% (53-61) and GLS of -15.2% (-15.5-18.2%), showing no significant difference compared to baseline ($p > 0.05$). 7P remain on QT, 6 of whom are under palliative treatment despite cardiac dysfunction for over 12 months (range: 14 to 36 months). No mortality or severe cardiovascular-related adverse events were reported.
Conclusions: A permissive cardiotoxicity strategy supported by optimized cardiac care and close monitoring allowed patients with mild-to-moderate CTRCD to safely maintain QT with cardioprotective therapy. These findings underscore the importance of structured cardio-oncology follow-up in enabling high-risk patients to complete oncological therapies.

PO 75. THE DELICATE BALANCE OF PERMISSIVE CARDIOTOXICITY STRATEGY IN CANCER-RELATED CARDIAC DYSFUNCTION AT A TERTIARY CENTRE: A COMPARATIVE ANALYSIS

Leonor Magalhães[1], Ricardo Carvalheiro[1], Isabel Cardoso[1], Vera Vaz Ferreira[1], Tânia Branco Mano[1], Sónia Oliveira[2], Leonor Fernandes[2], Luís Almeida Morais[1], Boban Thomas[3], Rui Cruz Ferreira[1]

[1]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [2]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital Santo António dos Capuchos. [3]Integrated Care Cardiology Program, Regional Hospital Mullingar, Dublin Midlands Hospital Group, Dublin, Republic of Ireland.

Introduction: Cancer therapy-related cardiac dysfunction (CTRCD) is a common cause of early suspension of chemotherapy (QT), potentially impacting survival rates. Permissive cardiotoxicity emphasizes the continuation of cancer treatments while managing cardiotoxic effects. This study assesses clinical outcomes in patients with CTRCD undergoing a permissive strategy.
Methods: Retrospective analysis of outpatients (P) with CTRCD referred to a cardio-oncology outpatient clinic at tertiary centre from April 2021 to December 2023.
Results: 110P were diagnosed with CTRCD, of these 31P underwent permissive cardiotoxicity strategy. 61% were female and median age of 59 years (IQR 54-69). 65% had 2 or more cardiovascular risk factors and 4P presented pre-existing reduced ejection fraction HF. Breast cancer and

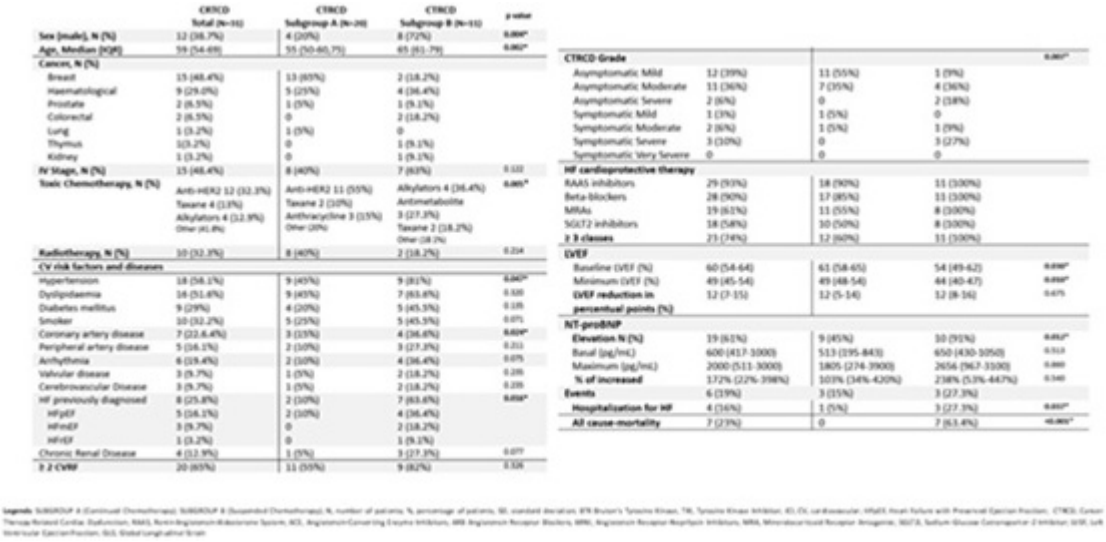


Figure PO 75

haematological malignancies accounted for 77% cases, 48% were stage IV. The majority of cardiotoxic QT regimens included HER2-targeted agents, alkylating agents, and taxanes. 68% developed asymptomatic CTRCD. The baseline median LVEF was 60% (IQR 54-64), which declined to a minimum of 49% (IQR 45-54). All patients started cardioprotective therapy (74% were treated with 3 or 4 classes of foundational HF prognosis-modifying drugs; 29% treated with sacubitril/valsartan). Over a median follow-up of 13 months, 20P continued their planned QT (Subgroup A), while 11 discontinued treatments later (Subgroup B). In Subgroup B, only 3P stopped due to severe symptomatic CTRCD. Comparative analysis showed that older age, male sex, hypertension [VVF1] and pre-existing HF were associated with QT suspension ($p < 0.05$). Although Subgroup B had a higher incidence of NT-proBNP elevation ($p = 0.012$) and lower median minimum LVEF ($p = 0.008$), the relative impairment from baseline did not differ significantly between subgroups. In Subgroup B, 7P (64%) died after QT suspension, with a median survival of 152 days after suspension. In contrast, no deaths or significant cardiac events were reported in Subgroup A, and 13P (42%) already completed prescribed oncological therapy.

Conclusions: In this cohort under permissive cardiotoxicity strategy, 9% experienced severe CTRCD, leading to suspension of QT; 42% resumed oncologic treatment with no mortality. A permissive cardiotoxicity approach enabled more patients to complete life-saving treatments. The current HF guideline-directed medical therapy and specialized cardio-oncology care may facilitate permissive cardiotoxicity strategies for potentially improved outcomes.

PO 76. CANCER THERAPY SUSPENSION DUE TO CARDIOVASCULAR TOXICITY: RISK FACTORS AND OUTCOMES

Isabel Nóbrega Fernandes, Marta Catarina Bernardo, Isabel Martins Moreira, Luís Sousa Azevedo, Alzira Nunes, Ilídio Moreira

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

Introduction: Cancer therapies are under permanent development. However, its potential cardiotoxicity presents a limitation in patients with a substantial cardiovascular (CV) risk, which may require cancer therapy suspension (CTS).

Methods: Single-centre retrospective study of consecutive patients presenting with cancer therapy-related cardiovascular toxicity (CTR-CVT), followed in Cardio-Oncology consultation between May 2021 and July 2024,

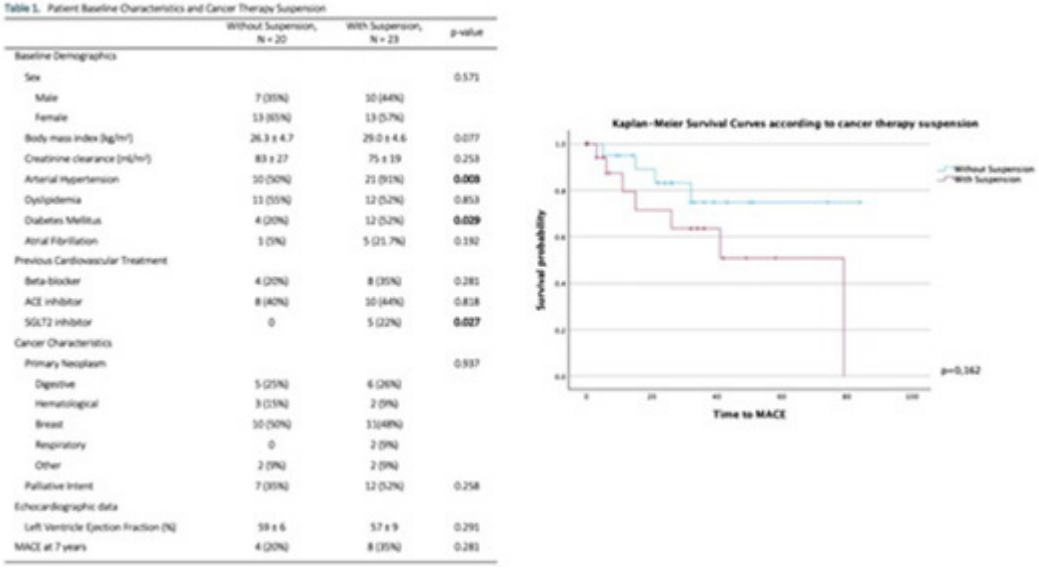


Figure PO 76

were analyzed. We aimed to assess characteristics of the population with CTS and its impact on CV events. Major Adverse Cardiovascular Events (MACE) were defined as the composite of all-cause mortality, CV mortality, heart failure, and acute myocardial infarction.
Results: In a mean follow-up time of 34 months, a total of 43 patients presented CTR-CVT, with 23 patients requiring CTS. Median age (67 versus 64 years) and sex distribution (44 vs. 35% males) were similar between patients with and without CTS. There was a higher prevalence of arterial hypertension (91% versus 50%, p = 0.003) and diabetes (52% versus 20%, p = 0.029) among patients who needed therapy suspension, as well as a tendency towards higher body mass index and higher proportion of preexisting atrial fibrillation (Figure 1). The most prevalent neoplasm in both groups was breast cancer. The CV causes for therapy suspension were vascular toxicity (26%), cardiac dysfunction (57%) and arrythmia (17%). Five patients (11%) were able to resume therapy. CTS group had a higher occurrence of MACE (35% versus 20%, p = 0.281), although the Kaplan-Meier curves did not confirm a statistically significant difference.
Conclusions: Treatment suspension due to CV toxicity occurred in patients with a high burden of comorbidities, yet did not significantly affect clinical outcomes. Preventing CTS through prompt follow-up and a risk-reduction approach can positively impact the morbidity and mortality of these patients.

PO 77. ANTHRACYCLINE CHEMOTHERAPY: IMPACT ON CARDIAC BIOMARKERS AND FITNESS

Margarida de Castro, Luísa Pinheiro, Mariana Tinoco, Emídio Mata, Tamara Pereira, Alexandra Teixeira, Gonçalo Torres, Geraldo Dias, Daniela Ferreira, Olga Azevedo, João Português, António Lourenço

Unidade Local de Saúde do Alto Ave.

Introduction: Cancer therapy-related cardiac dysfunction (CTRCD) is a concern for Breast Cancer (BC) patients undergoing anthracycline chemotherapy (AC). CTRCD rely essentially on echocardiographic parameters. Alternative markers are being explored for their potential in early detection of CTRCD and prediction of impaired cardiorespiratory fitness (CRF) and heart failure (HF). Placental growth factor (PlGF), soluble fms-like tyrosine kinase-1 (sFlt-1) and myeloperoxidase (MPO) have shown to be increased after AC in BC patients, with higher PlGF and MPO levels correlating with risk of systolic dysfunction. Interleukin-6 (IL-6) and β2-microglobulin have been linked to cardiovascular outcomes.
Objectives: We aimed to explore the effects of AC on biomarkers in BC patients, and to assess their association with CRF impairment.
Methods: We conducted a prospective study including women with BC undergoing AC between May 2022 and December 2023. Cardiopulmonary exercise test (CPET) and laboratory analyses were performed at 3 moments: before AC, 1-month and 6-months after completing AC. Functional disability (FD) was defined as a VO2peak ≤ 18.0 mL/kg/min.
Results: We included 32 women. FD increased from 9% pre-AC to 44% at 1-month and 53% at 6-months post-AC. Hemoglobin levels showed a significant drop at 1-month (p < 0.001), with a slight recovery at 6-months (p = 0.001). High-sensitivity troponin significantly increased from 3.3 ± 1.1 to 30.4 ± 5.8 at 1 month (p < 0.001) and recovered at 6-months, remaining higher than pre-AC levels (9.2 ± 4.2, p < 0.001). NT-proBNP levels stayed unchanged. β2-microglobulin, SFlt-1, and IL-6 showed a significant increase at 1-month and normalized at 6-months. PlGF significantly increased at 1-month and remained elevated at 6-months. At 1-month, 44% (n = 14) had FD. Patients with FD had higher IL-6 (2.9 ± 1.4 vs. 1.7 ± 1 pg/mL), PlGF (22.4 ± 5.7 vs. 16.3 ± 3.3 pg/mL) and MPO (1.5 ± 0.7 vs. 1 ± 0.2) levels. At 6-months, 53% (n = 17) had FD. Patients with FD had higher MPO (1.4 ± 0.3 vs. 0.9 ± 0.1) levels than patients without FD. In univariate analysis with biomarkers, only MPO levels significantly influenced Vo2peak during follow-up (FU).
Conclusions: In our cohort, hsTnI and NT-proBNP levels were not linked to Vo2peak. Despite an increase in sFlt-1, IL-6, and β2-microglobulin levels at 1 month and PlGF levels at 1 and 6 months, none were associated with Vo2peak, suggesting they may detect cardiac injury early after AC but do not reflect CRF status. Although MPO did not show significant changes during FU in the overall population, patients with FD exhibited higher levels of MPO at 1 and 6 months, and MPO levels were associated with Vo2peak. Further research is required to confirm the utility of MPO level as a predictor of CRF.

PO 78. CARDIOTOXICITY IN IBRUTINIB-TREATED PATIENTS: INCIDENCE, MANAGEMENT, AND IMPACT ON TREATMENT OUTCOMES

Ricardo Carvalheiro, Leonor Magalhães, Isabel Cardoso, Vera Vaz Ferreira, Luís Almeida Morais, Tânia Mano, Rui Cruz Ferreira

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

Introduction: Ibrutinib, a Bruton's tyrosine kinase inhibitor, has revolutionized treatment for various hematologic malignancies but is associated with cardiovascular toxicities (CTR-CVT), particularly atrial fibrillation (AF) and hypertension (HTN). Understanding the incidence, severity, and clinical impact of CTR-CVT is critical for optimizing treatment and improving patient outcomes.
Methods: We retrospectively evaluated a cohort of patients treated with ibrutinib in a single tertiary center.
Results: 54 pts (41% female) with a mean age of 68 ± 12 years were included in the analysis. 18 pts (33%) developed CTR-CVT during a median follow-up of

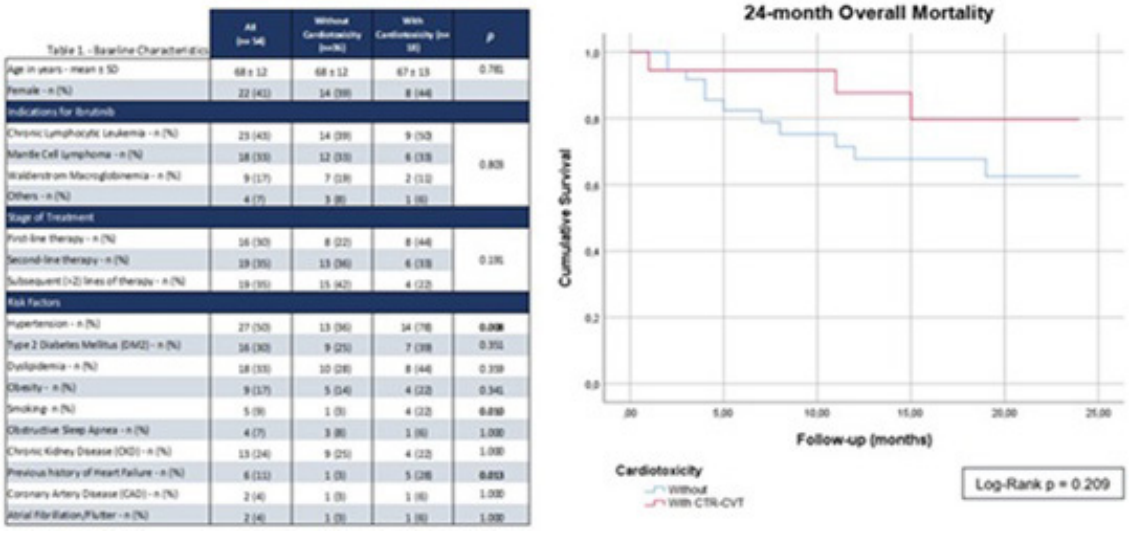


Figure PO 78

15 (IQR: 5-34) months, with a median time to cardiotoxicity of 10 (IQR: 1-19) months. There were 6 pts (13%) with new onset/worsening HTN, 10 pts (10%) with new-onset AF, and 6 pts (13%) with new onset/worsening heart failure (HF). Regarding risk factors for CTR-CVT, HTN, smoking, and previous HF were more frequent in the CTR-CVT group (78 vs. 36%, p = 0.008; 22 vs. 3%, p = 0.010; 28 vs. 3%, p = 0.013, respectively). AF occurred in a median of 8 (IQR: 1, 25) months after treatment initiation, with most of the cases (7-70%) being asymptomatic, and 2 (20%) requiring emergency hospital admission. Despite a mean CHA2DS2-VASc score of 3 ± 2, only 4 pts (40%) were started on oral anticoagulation, all with reduced doses. There were no thromboembolic or haemorrhagic events in this group. Considering other CTR-CVT, most events were mild, with 2 cases of CTCAE-grade > 2 HTN and 1 case of grade 3 HF. 17 pts (32%) suspended ibrutinib after a median of 8 (IQR: 4, 19) months, with only 2 cases directly attributable to CTR-CVT. Kaplan-Meier analysis showed no significant differences between the groups regarding time to suspension of ibrutinib over 24 months (Log-rank p = 0.089). 20 pts (37%) died during follow-up, with a median time to death from ibrutinib initiation of 11 (IQR: 4.26) months, but there were no statistically significant differences between the groups regarding overall mortality over 24 months (Log-Rank p = 0.209).
Conclusions: Cardiotoxicity was a common occurrence in our cohort of pts treated with ibrutinib, with AF being the most frequent event. Despite its prevalence, most cardiotoxic events were mild and manageable and not associated with a shorter time to suspension of ibrutinib (p = 0.089) or with greater overall mortality (p = 0.209).

Sexta-feira, 11 Abril de 2025 | 11:00-12:00

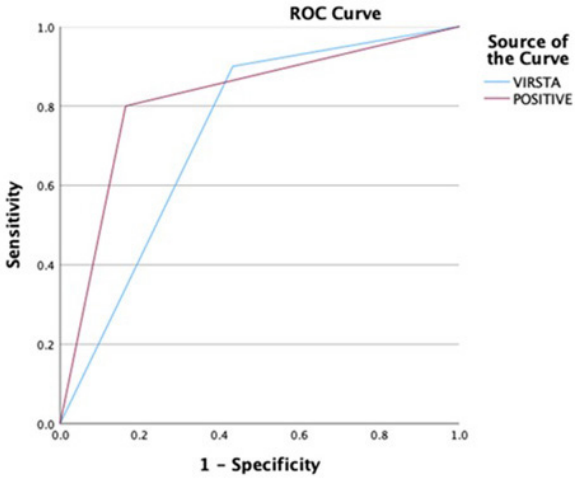
Área de Posters-écran 4 | Sessão de Posters 12 – Endocardite infecciosa 1

PO 79. PERFORMANCE OF GUIDELINE-SUGGESTED RISK SCORES FOR INFECTIVE ENDOCARDITIS IN A REAL-WORLD COHORT

Mariana Duarte Almeida, Gonçalo Marques Ferreira, João Gouveia Fiuza, Oliver Correia Kungel, Francisco Rodrigues Santos, Vanda Devesa Neto, Nuno Craveiro

ULS Viseu Dão-Lafões.

Introduction: Infective endocarditis (IE) is a disease with high mortality, in which positive blood cultures are a major criterion. *Staphylococcus aureus* is a common causative microorganism. There remains some uncertainty regarding the routine use of echocardiography in cases of positive blood cultures to investigate signs suggestive of IE. To support the decision to perform echocardiography, recent guidelines suggest the use of clinical scores that identify patients at high risk for *S. aureus* IE and, therefore, candidates for echocardiography. Transthoracic echocardiography (TTE) is the first-line imaging modality, while transesophageal echocardiography (TEE) plays a critical role in cases of high clinical suspicion or inconclusive TTE findings.
Objectives: The aim of this study was to evaluate the applicability of guideline-recommended scores in a real-world cohort of pts, to inform their implementation in clinical practice.
Methods: Retrospective data from pts with *S. aureus* positive blood cultures between January 2021, and December 2022, were analyzed. Data from pts who underwent echocardiography were analyzed and compared based on whether they met the modified Duke criteria for a definitive IE diagnosis or not. Demographic, laboratory, imaging parameters, and clinical outcomes were collected. Statistical analyses included Chi-square tests and Independent t-tests for group comparisons. Binary logistic regression assessed the predictive performance of the scores, and Receiver Operating Characteristic (ROC) curves with corresponding Areas Under the Curve (AUC) were used to analyze model discrimination.
Results: Of the 222 pts included, 77 (mean age: 73.5 ± 13.0 years, range 28-95) underwent echocardiography for IE evaluation, of whom 22 (28.6%) underwent TEE. Among these, 13.0% (n = 10) met criteria for a definitive diagnosis of IE. Compared to pts without IE, those with a definitive diagnosis had significantly higher VIRSTA scores (7.4 ± 3.1 vs. 3.1 ± 2.8, p < 0.001) and POSITIVE scores (5.8 ± 3.3 vs. 0.9 ± 2.0, p < 0.001). The PREDICT score was also higher (2.2 ± 1.1 vs. 1.9 ± 1.0) but without significance (p = 0.173). Positive associations between guideline-recommended cut-offs and the presence of IE were observed for VIRSTA (≥ 3, p = 0.006) and POSITIVE (≥ 4, p < 0.001), but not for PREDICT (≥ 4, p = 0.780). VIRSTA and POSITIVE scores predicted IE diagnosis with odds ratios of 11.8 (p = 0.023) and 20.4 (p < 0.001), respectively. ROC analysis showed AUC values of 0.734 (p = 0.022; 95%CI: 0.581-0.871) for the VIRSTA score and 0.818 (p = 0.001; 95%CI: 0.665-0.971) for the POSITIVE score.



Conclusions: The POSITIVE and VIRSTA scores demonstrated good predictive accuracy for infective endocarditis in our population and may guide the decision to perform echocardiography to assess imaging criteria for IE in clinical practice. Conversely, the PREDICT score did not appear as useful in our reality.

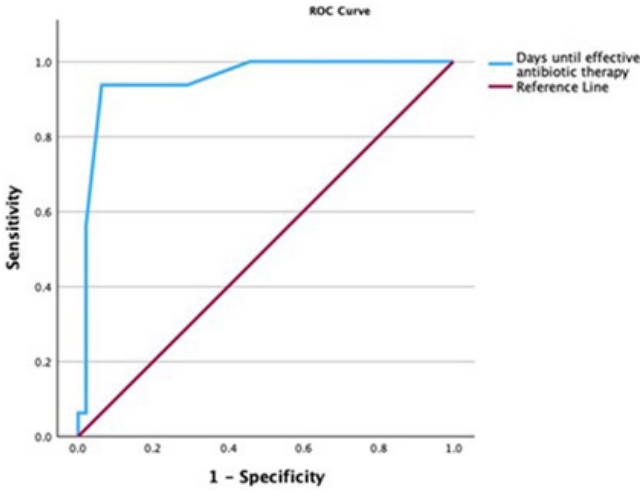
PO 80. IMPACT OF DELAYS IN DIAGNOSIS AND THERAPY ON MORTALITY IN PATIENTS WITH INFECTIVE ENDOCARDITIS

João Gouveia Fiuza, Gonçalo RM Ferreira, Mariana Duarte Almeida, Oliver Kungel, Francisco Rodrigues Santos, Vanda Devesa Neto, Luísa Malvar Gonçalves, Júlio Gil Pereira, António Costa

Unidade Local de Saúde de Viseu Dão-Lafões.

Introduction: Infective endocarditis (IE) is a severe condition with high mortality rates, where timely diagnosis and initiation of effective antibiotic therapy are critical for improving outcomes. Despite advancements in management, delays in therapy remain common due to the disease's complex presentation.
Objectives: To assess the impact of delays in effective antibiotic therapy and diagnosis on mortality in patients with IE. Also, to quantify the relationship between these delays and patient outcomes.
Methods: Retrospective study of 64 patients admitted for IE in a Cardiology Department. Baseline characteristics and microbiological findings were analyzed. Patients were divided into two groups based on in-hospital mortality. The variables analyzed were demographic and clinical characteristics, the number of days until effective antibiotic therapy and the number of days until diagnosis. Variables were compared between groups using Chi-square and Mann-Whitney U. Multivariate logistic regression was performed to assess the association between delays and mortality. ROC analysis was used to evaluate the predictive ability of variables.
Results: Mean age was 68 ± 8 years; 67.2% were men. In-hospital mortality was 25%. Patients who died experienced significantly longer delays in both effective antibiotic therapy and diagnosis. The mean delay to effective antibiotic therapy was 13.63 days for patients who died versus 3.77 days for

survivors (p < 0.001). Similarly, the mean delay to diagnosis was 14.94 days for patients who died versus 5.42 days for survivors (p < 0.001). Logistic regression analysis revealed that each additional day of delay to effective antibiotics increased the odds of mortality by 33.8% (OR 1.338, 95%CI: 1.020-1.754, p = 0.035). Delay to diagnosis was not significantly associated with mortality after adjusting for other factors (OR 1.082, 95%CI: 0.860-1.360, p = 0.502). ROC analysis revealed that delays in effective antibiotic therapy are a strong predictor of mortality (AUC of 0.951; p < 0.001). The optimal cutoff for predicting mortality was 8.5 days, with a sensitivity of 93.8% and a specificity of 93.7% (Youden's Index = 0.875).



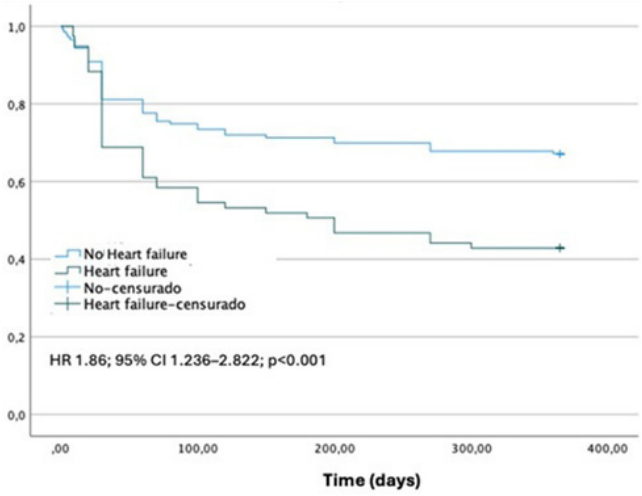
Conclusions: This study highlights the critical importance of minimizing delays in initiating effective antibiotic therapy for patients with IE. Each additional day of delay to effective antibiotic therapy significantly increased the odds of in-hospital mortality underscoring the direct impact of timely therapeutic intervention on patient outcomes. These findings emphasize the need for streamlined clinical pathways and prompt initiation of targeted antibiotic therapy to improve survival in this high-risk population. Future research should focus on identifying and addressing barriers to early antibiotic initiation in clinical practice.

PO 81. INFECTIVE ENDOCARDITIS AND ACUTE HEART FAILURE: A COHORT ANALYSIS OF RISK FACTORS AND MORTALITY

Liliana Brochado, Diogo Cunha, Mariana Martinho, Bárbara Ferreira, Oliveira Baltazar, João Luz, Nazar Ilchyshyn, Adriana Silva, Hélder Pereira, Paula Fazendas

Hospital Garcia de Orta, EPE.

Introduction: Acute heart failure (AHF) is the most frequent complication of infective endocarditis (IE) and the leading indication for urgent/emergent heart surgery. Patients with IE and acute onset of symptoms are at high risk of mortality. Still, the characteristics associated with AHF in those with IE are poorly defined.
Objectives: To characterize a cohort of IE patients, identify risk factors for AHF within this group, and evaluate its impact on mortality.
Methods: We conducted a retrospective, single-center analysis of patients hospitalized with IE (2006-2021). We assessed in-hospital mortality and all causes of mortality over a 1-year follow-up period. Logistic regression and Cox regression analyses were performed to identify risk factors for developing HF and the mortality predictors.
Results: Among 221 EI patients, 79 (35.7%) had acute heart failure (AHF), but only 38% of these patients underwent surgical intervention. Patients with AHF demonstrated significantly higher rates of in-hospital mortality compared to those without AHF (39.2 vs. 22.1%; p = 0.008), as well as increased 1-year mortality (57.0 vs. 33.1%; p < 0.001). The main characteristics among patients who developed AHF in the context of IE included being male (81 vs. 66.9%; p = 0.029), pre-existing valvular heart disease (57 vs. 36.9%; p = 0.005), coronary artery disease (20.3 vs. 6.3%; p = 0.003), and a history of heart failure (38.0 vs. 14.8%; p < 0.001). Additionally, these patients more frequently presented with constitutional symptoms (66.2 vs. 42.2%; p = 0.002), involvement of the aortic valve (65.8 vs. 48.2%; p = 0.016), and a history of invasive procedures in the past 3 months (47.8 vs. 20.8%; p < 0.001). Among local complications of IE, progression to regurgitation was the sole differentiating factor associated with AHF development (75 vs. 50%; p < 0.001). The presence of valvular heart disease (OR 2.54; 95%CI 1.28-5.05; p = 0.008), coronary artery disease (OR 4.49; 95%CI 1.56-12.96; p = 0.005), recent invasive procedures within the past 3 months (OR 2.41; 95%CI 1.19-4.91; p = 0.015), and constitutional symptoms at admission (OR 3.23; 95%CI 1.59-6.52; p < 0.001) were independently associated with an increased likelihood of developing AHF. Multivariable analysis identified AHF, alongside septic shock, as a significant predictor of mortality (HR 1.86; 95%CI 1.236-2.822; p < 0.001).



Survival curves in function due to having Heart Failure and respective mortality predictor results in multivariate analysis

Conclusions: Our study demonstrated a high rate of in-hospital and one-year mortality among patients with IE who developed AHF, associated with a low rate of cardiac surgeries performed. These findings emphasize the critical need for timely and effective management strategies. By identifying patient characteristics associated with an increased risk of AHF, earlier surgical referral and intervention could be facilitated, potentially leading to significantly improved clinical outcomes.

PO 82. INFECTIVE ENDOCARDITIS - PREDICTORS OF CEREBRAL AND PERIPHERAL EMBOLIZATION AND MORTALITY

Fernando Nascimento Ferreira, Francisco Albuquerque, Rita Ilhão Moreira, Bárbara Teixeira, Miguel Figueiredo, Madalena Coutinho Cruz, Ana Galrinho, Ana Teresa Timóteo, Pedro Rio, Luísa Moura Branco, Rui Cruz Ferreira

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

Introduction: Infective Endocarditis (IE) is a globally impactful pathology with significant incidence and mortality. Among various complications, cerebral and peripheral embolization bear prognostic significance, therefore, there is a need for the assessment of clinical features associated with an increased risk of these complications.
Objectives: To evaluate potential predictors of cerebral and peripheral embolization and their prognostic value.
Methods: A retrospective study included patients with a definitive diagnosis of IE, according to the 2023 European Society of Cardiology guidelines, who underwent transesophageal echocardiography at a Cardiology Center of a

Characteristics	Peripheral embolization Yes (n: 29)	No (n: 113)	p-value	Cerebral embolization Yes (n: 21)	No (n: 121)	p-value
In-hospital mortality - n (%)	4 (14)	29 (26)	0,177	6 (29)	27 (22)	0,578
All-cause mortality - n (%)	7 (24)	51 (45)	**0,040**	15 (71)	43 (36)	**0,002**

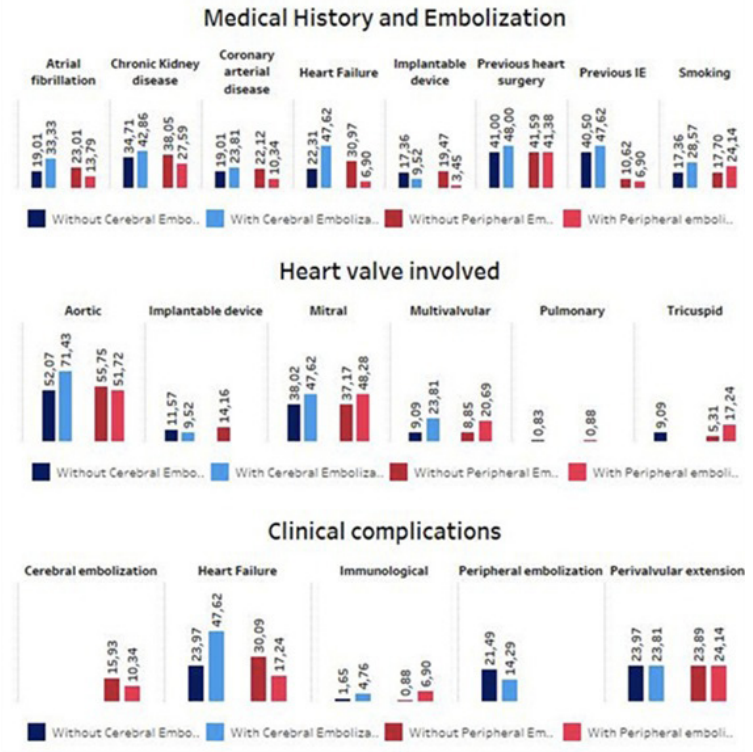


Figure PO 82

tertiary hospital between 2015 and 2020. Clinical, echocardiographic and prognostic characteristics were assessed, and their association with cerebral (CE) and peripheral embolization (PE), as well as their relationship between those complications and mortality.

Results: A total of 142 patients were included in the study. 71.1% were male, with a mean age of 66 years (± 15.6). 41.5% had prior cardiac surgery, 37.3% with valve replacement, 32.4% with recent hospitalization or an invasive procedure within the 3 months preceding diagnosis, and 9.9% with a history of bacterial IE. The aortic valve was the most affected (54.9%), and vegetation was the most frequent echocardiographic finding (93.7%). *Staphylococcus* spp. was the predominant microorganism, present in 26.1% of cases. Complications included heart failure (27.5%), central embolization (CE) (14.8%), 76.2% ischemic, and pulmonary embolism (PE) in 20.4%. Surgical indications were present in 54.2% of patients, and 37% underwent surgery. The in-hospital mortality rate was 23.2%, while the one-year mortality rate was 27.4%. PE was significantly associated with tricuspid valve endocarditis (OR 3.7; CI 1.047-13.186; p = 0.047) and IE related to cardiac devices (OR 0.858; CI 0.796-0.925; p = 0.047), both statistically independent. Additionally, PE was found to be a predictor of mortality, though not independently. CE was significantly associated with a history of HF (OR 3.165; CI 1.215-8.244; p = 0.002), clinically complicated HF (OR 3.7; CI 1.047-13.186; p = 0.047), and IE associated with cardiac devices (OR 2.884; CI 1.112-7.477; p = 0.025), all independent associations. CE was strongly correlated to all-cause mortality (OR 4.535; CI 1.640-12.542; p = 0.002), independently of previous mentioned factors.

Conclusions: The study findings indicate that predictors of PE are tricuspid valve IE and cardiac device-associated IE. Predictors of CE include a history of heart failure, EI complicated with heart failure, and cardiac device-associated IE. Both complications appear to increase mortality. In summary, recognizing clinical features associated with a poorer prognosis allows a meticulous follow-up and early identification of severe IE complications.

PO 83. SPECIFIC PATHOGENS AND PROGNOSTIC OUTCOMES IN INFECTIVE ENDOCARDITIS: A RETROSPECTIVE ANALYSIS

Ana Carolina Pereira Mateus, Rodrigo Brandão, Inês Miranda, Mara Sarmento, Filipa Gerardo, David Roque

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

Introduction: Infective endocarditis (IE) remains a serious condition with adverse clinical outcomes, influenced by the causative pathogen. This study evaluates the impact of specific pathogens on complications and in-hospital mortality in IE.

Methods: A retrospective cohort of 90 patients diagnosed with IE at a secondary care center over six years was analyzed. Pathogens were categorized into Staphylococcus spp., Streptococcus spp., Enterococcus spp., other agents, culture-negative cases, and multiple pathogens. Outcomes included sepsis, acute kidney injury (AKI), in-hospital mortality, and other clinical events.

Results: Patients with *Enterococcus* spp. were older than the cohort average (75.6 vs. 69.9 years, p = 0.023), while patients with other agents were younger (60.3 vs. 69.9 years, p = 0.008). No significant differences were noted for gender, hypertension, diabetes, atrial fibrillation, HIV, or immunosuppression. Native valve, prosthetic valve, or device infections did not show significant statistical differences. Similarly, vegetation size > 10 mm, local complications, embolic events, significant functional impact of IE (e.g., regurgitation/stenosis), vasopressor use, atrioventricular block, *de novo* heart failure, stroke, and surgical indication also showed no significant variation between groups. Sepsis occurred in 46.7% of patients, with significant differences between pathogens (p = 0.002). *Staphylococcus* spp. (66.7%, p = 0.039) and multiple pathogens (100%, p = 0.048) were associated with higher sepsis

rates, while *Streptococcus* spp. showed lower rates (25.0%, p = 0.005). Other pathogen groups showed no significant differences. AKI occurred in 71.3% of patients, with rates higher in *Staphylococcus* spp. (90.5%, p = 0.036) and lower in *Streptococcus* spp. (54.2%, p = 0.008). In-hospital mortality was 32.5%, varying significantly by pathogen (p = 0.014). *Staphylococcus* spp. (57.1%, p = 0.017) and multiple pathogens (100%, p = 0.011) were associated with increased mortality. *Streptococcus* spp. exhibited a trend toward reduced mortality (16.7%, p = 0.07), while other groups showed no significant differences.
Conclusions: This study highlights the significant impact of pathogen type on outcomes in infective endocarditis (IE), particularly regarding sepsis, AKI and mortality. However, further research is needed to understand the underlying mechanisms driving these differences. Given the complexity of IE, including multi-pathogen infections, the establishment of dedicated IE teams could enhance early diagnosis and improve management. These teams are essential for implementing pathogen-specific strategies, which may ultimately lead to better patient outcomes and reduced mortality.

PO 84. AORTIC PROSTHETIC VALVE ENDOCARDITIS: CLINICAL CHARACTERISTICS, MICROBIOLOGICAL PROFILE AND OUTCOMES COMPARISON BETWEEN TRANSCATHETER AND SURGICAL BIOPROSTHESIS

Ana Teresa Timóteo, Ana Galrinho, Pedro Rio, Ana Leal, Fernanda Varela, Inês Rodrigues, Rui Cruz Ferreira

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

Introduction: The frequency of prosthetic infective endocarditis (IE) is increasing, accounting for 30% of cases in EURO-ENDO registry. In this registry, Enterococcal IE frequency was higher, compared to previous studies, and culture negative was also more frequent than expected. Furthermore, there was a high number of embolic events that could occur in up to 40% of cases. Mortality is also high, up to 30%. However, most of the studies reported are related to surgical prosthesis and very few is known regarding infection of transcatheter prosthesis. Our objective was to compare clinical characteristics, microbiological profile and outcome between surgical and transcatheter (TAVI) aortic bioprosthesis.
Methods: We reviewed all transesophageal echocardiograms performed in our institution from 2019 to 2024 for suspicious endocarditis in patients with prosthetic biological valves, either surgically or percutaneously implanted, some of them in other institutions. The electronic records were reviewed and confirmed endocarditis cases were included in the present analysis. Data was collected and this is a descriptive analysis regarding clinical characteristics, microbiological profile and outcomes.
Results: A total of 33 patients were included in the analysis, 19 with surgical valves and 14 percutaneous. Mean age was 77 ± 9 years, 64% males. Age was higher in the TAVI group (83 ± 7 vs. 72 ± 8 years, p = 0.001). The other baseline clinical characteristics were similar between groups. An early endocarditis occurred in 21% of surgical patients and 57% in TAVI patients (p = 0.033). The most common finding at echocardiography was the presence of vegetations, but the presence of abscess was observed in 33% of surgical compared to 7% in TAVI (p = 0.098). Embolization rate was 42% in surgical and 21% in TAVI (p = 0.278). The most frequent bacteria in surgical cases were *Streptococcus* (26%) and Enterococcus (26%), followed by *Staphylococcus* (21%). In 16%, it was culture-negative. In TAVI patients, the most frequent bacteria were *Staphylococcus* (21%) and *Steptococcus* (21%), followed by Enterococcus (14%. However, in 14% it was culture-negative and in 28% of the cases, there were unusual bacteria. One-year all-cause mortality rate was 47% in surgical vs. 64% in TAVI (p = 0.335). At a mean follow up of 401 ± 417 days, the mortality rate was 58% in the surgical group and 86% in the TAVI (p = 0.086).
Conclusions: Although this is an exploratory study, from a single-centre and with a limited number of patients, we observed a similar pattern in endocarditis in surgically implanted valves compared to percutaneous. However, early endocarditis were more frequent in percutaneous valve endocarditis, with a trend to a higher mortality rate.

Sexta-feira, 11 Abril de 2025 | 12:00-13:00

Área de Posters-écran 1| Sessão de Posters 13 - Congénitos e HTP 1

PO 85. THE FAILING FONTAN: FROM THE SUCCESSFUL PALLIATION TO THE UNAVOIDABLE NOT-SO-SLOWLY PROGRESSIVE FAILURE OF THE CIRCUIT

Ana Isabel Pinho, Ana Filipa Amador, Luís Santos, Cátia Oliveira, Carla Sousa, Rui André Rodrigues, Cristina Cruz

Centro Hospitalar Universitário de S. João, EPE.

Introduction: Fontan procedure has expanded considerably as the most common operation performed in patients with a functional or anatomic univentricular heart. Despite its successful palliation for two to three decades, adult Fontan patients experience a unique spectrum of complications, requiring specialized care.

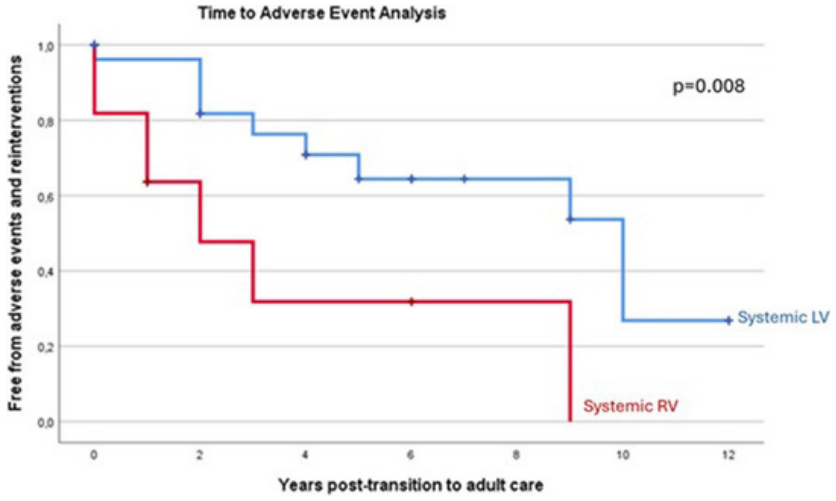


Figure PO 85

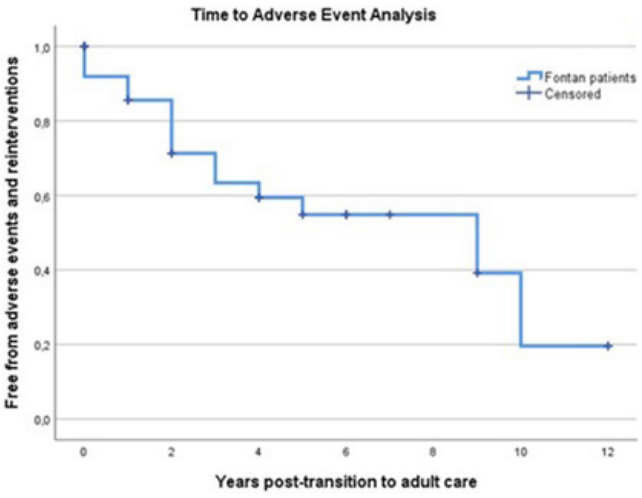
Objectives: This study examines the outcomes, complications, and management strategies of adult patients with Fontan physiology.
Methods: We conducted a retrospective analysis of Fontan patients ≥ 18 years-old managed in a Portuguese congenital heart disease center. Data collected included demographics, clinical outcomes, comorbidities, and interventions. A time to adverse event analysis was performed.
Results: The study cohort consisted of 37 adult Fontan patients (mean age 27 ± 6 years; 38% female); the 2 oldest Fontan patients were 39 years-old. Median duration of Fontan circulation was 19 years (range 7-32 years) and median follow-up duration post-transition to adult care was 6 years (0-14 years), with regular multidisciplinary evaluations involving cardiology, hepatology, and imaging specialists. Fifty-four percent of patients presented with various degrees of hepatic congestion and liver fibrosis, including 1 patient with hepatocarcinoma. Pulmonary hypertension was observed in 8.1%. Common complications also included heart failure (32%), arrhythmias (19%), protein-losing enteropathy (13%), and thrombi in the Fontan circuit (5%). Long-term follow-up revealed stable hemodynamics without complications in 24% of patients, while 30% required additional surgical or catheter-based interventions. One patient died of end stage heart failure, 1 patient endured re-do Fontan, and 2 patients underwent successful heart transplantation. One patient is currently being studied for heart and liver transplantation. Three female patients got pregnant and 2 gave birth to healthy newborns. Regarding the time-to-adverse-events analysis, more than 50% of patents were event-free during the first 16 years of follow-up. However, after 19 years of follow-up, more than 70% of patients presented with a Fontan complication or need for reintervention. Patients with systemic right ventricle had a significantly higher likelihood of adverse events after transitioning to adult care compared to those with systemic left ventricle, with a hazard ratio of 3.56 (95%CI 1.26-10.02), indicating a more than threefold increase in risk (Figure 1).
Conclusions: The Fontan operation has transformed the prognosis for patients with single-ventricle physiology, allowing many to transition into adulthood. As a testimony to the success of the current strategy of care, the proportion of adults with Fontan circulation is increasing. However, adult Fontan patients represent a heterogeneous group that faces considerable morbidity, underscoring the need for lifelong, multidisciplinary care.

PO 86. ADULTS WITH FONTAN CIRCULATION: INSIGHTS FROM A PORTUGUESE ADULT CONGENITAL HEART DISEASE CENTER

Ana Isabel Pinho, Ana Filipa Amador, Cátia Oliveira, Luís Santos, Carla Sousa, Rui André Rodrigues, Cristina Cruz

Centro Hospitalar Universitário de S. João, EPE.

Introduction: The Fontan procedure has significantly improved survival for patients with single-ventricle physiology, allowing many to reach adulthood. Following Fontan procedure, patients face substantial morbidity risk and require lifelong follow-up with a cardiologist experienced in the care of adult congenital heart diseases (ACHD).
Objectives: To understand the diversity of anatomical anomalies and therapy requirements of adult Fontan patients.
Methods: We conducted a retrospective analysis of patients ≥ 18 years-old with Fontan circulation managed in an ACHD center. Data collected included demographic information, clinical outcomes and interventions. A time to adverse event analysis was performed.
Results: Among 37 adult Fontan patients (mean age 27 ± 6 years; 38% female), the underlying diagnosis were pulmonary atresia (35.1%), hypoplastic left heart syndrome (19%), tricuspid atresia (13%), double-outlet right ventricle (RV) (8%), unbalanced atrioventricular (AV) canal defects (5%), Ebstein anomaly (3%), and other anatomic variants with hypoplasia of either ventricle (16%). The most prevalent surgical technique was extracardiac conduit (76%), followed by lateral tunnel (19%) and atriopulmonary connection (5%). The systemic ventricle was morphologically left in 70%. A fenestration or residual shunt persisted in 43%. The mean basal oxygen saturation was 95%; 54% had desaturation with exercise. Most patients were asymptomatic (65% NYHA class I), with normal ventricular function in 62% of those with a systemic left ventricle and impaired function in 73% of those with a systemic RV; more than mild AV valve regurgitation was present in 16%. Rhythm disturbances were common, with atrial arrhythmias observed in 16% and ventricular arrhythmias in 11%. Basal ECG frequently showed AV or intraventricular conduction disturbances (73%); 5% required pacemaker implantation. Medical therapy included ACE inhibitors (46%), spironolactone (35%), SGLT2 inhibitors (24%), beta blockers (30%), diuretics (19%), aspirin (49%), anticoagulation with warfarin (22%) or DOAC (24%). Median follow-up was 6 years since transition to ACHD clinic, with regular multidisciplinary evaluations. More than 50% of patients were event-free during the first 5 years post-transition to adult care and 2 female patients achieved successful pregnancies. However, after 10 years of follow-up in adult care, more than 80% of patients suffered a Fontan complication or needed reintervention. One patient died of heart failure, 1 patient underwent a re-do Fontan and 2 patients underwent successful heart transplantation.



Conclusions: Adult Fontan patients represent a heterogeneous group with diverse anatomical anomalies, comorbidities and clinical trajectories. This single-center experience highlights the importance of individualized long-term follow-up to address unique clinical needs and improve outcomes.

PO 87. SIX-MINUTE WALKING TEST AND CARDIOPULMONARY EXERCISE TEST IN PULMONARY HYPERTENSION RISK ASSESSMENT

Débora Repolho, Filipa Ferreira, Otília Simões, Ana Sofia Alegria, Ana Claúdia Vieira, Bárbara Ferreira, João Luz, Helder Pereira

Unidade Local Saúde Almada-Seixal, EPE.

Introduction: Pulmonary Hypertension (PH) leads to a progressive decline in functional capacity, necessitating thorough evaluation and, when possible, quantification. The 6-minute walk test (6MWT) and cardiopulmonary exercise testing (CPET) are recommended for risk assessment at diagnosis, alongside other variables. During follow-up, a simplified 4-strata tool includes three basic variables such as the 6MWT but excludes CPET. Additionally, CPET is rarely used as an endpoint in clinical trials, raising critical questions about its role in clinical practice.
Objectives: To evaluate the agreement between risk levels determined by 6MWT and CPET and to assess the correlation of 6MWT and CPET with other variables used in the 4-strata follow-up risk assessment: N-terminal pro-brain natriuretic peptide (NT-proBNP) and World Health Organization (WHO) Functional Class (FC).
Methods: This retrospective, cross-sectional study included patients from a pulmonary hypertension clinic who during follow-up, underwent 6MWT, CPET, NT-proBNP measurement, and WHO FC assessment within the same period, without changes in their therapeutic regimen. The 6MWT was conducted following ATS 2002 guidelines, and CPET was performed on a

treadmill. Correlations were analyzed using Pearson's or Spearman's tests based on sample normality.

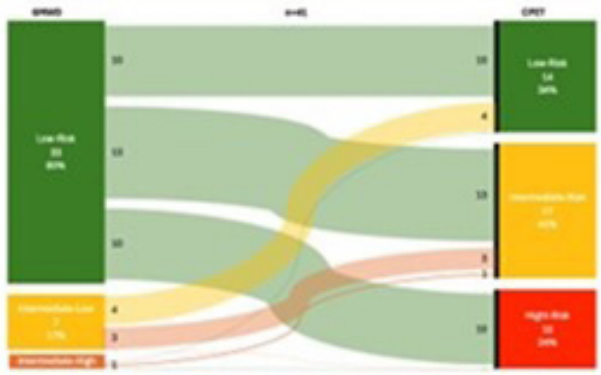


Figure 1 – Sankey diagram depicting the agreement between risk levels determined by 6MWT and CPET

Results: A total of 41 patients were included, 63% with pulmonary arterial hypertension (PAH) and 37% with chronic thromboembolic pulmonary hypertension (CTEPH). The cohort was 75.6% female, with a mean age of 48 ± 15 years. WHO FC distribution was: I - 46.3%; II - 36.6%; III - 17.1%; IV -0. Median NT-proBNP was 166 (IQR 118-318 pg/mL). Although 6MWT correlated with CPET (*rs* = 0.382; p = 0.014), the agreement between their risk levels was not verified. There is limited discriminatory power of 6MWT in patients walking over 440 meters, where CPET often classified these patients at higher risk (Figure 1 A). Conversely, some patients with limited 6MWT performance had lower CPET risk levels, likely reflecting limitations unrelated to pulmonary hypertension. Stronger correlations were found between FC and% predicted 6MWT distance compared to absolute distance (*rs* = -0.515; p = 0.001 vs. *rs* = -0.362; p = 0.02). Moderate correlations were observed between FC and predicted peak VO_2 (*rs* = -0.515; p = 0.001). NT-proBNP showed no significant correlations with either 6MWT distance or peak CPET, possibly due to the younger age and low-risk profile of the cohort.
Conclusions: These findings highlight that there is still a place for CPET in risk stratification at follow-up particularly in low-risk patients and in patients with low functional capacity not in line with the rest of the assessment. The distance alone at 6MWT provides limited data and percentage of predicted distance correlates better with FC.

PO 88. OXYGEN THERAPY IN CTEPH PATIENTS: PREVALENCE AND ASSOCIATED FACTORS

Tiago Miguel Raposo Lobão, Bárbara Ferreira, Sofia Alegria, Filipa Ferreira, Débora Repolho, Liliana Brochado, Diogo Cunha, Oliveira Baltazar, João Luz, Nazar Ilchyshyn, Lourenço Aguiar, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Chronic thromboembolic pulmonary hypertension (CTEPH) is a disease characterized by elevated mean pulmonary artery pressure (mPAP) due to persistent obstruction of the pulmonary vasculature by organized fibrotic material. This condition is associated with significant morbidity and mortality. In patients with resting hypoxemia, need for long-term oxygen therapy (LTOT) is indicated (paO2 < 60 mmHg). However, studies on the prevalence and factors associated with the need for LTOT in this population are still scarce.
Objectives: To characterize patients with CTEPH who are under LTOT and the factors associated with hypoxemia in this population.
Methods: A retrospective study from a referral center for pulmonary hypertension was conducted. All patients with CTEPH who began follow-up in the clinic between 2015 and 2023 were included. Relevant baseline clinical, laboratory, echocardiographic, hemodynamic assessments, respiratory function tests, and pulmonary scintigraphy data were collected. The following tests were used: chi-square test, Mann-Whitney U test, and univariate logistic regression. Continuous data were presented as median and interquartile range (IQR).
Results: Of the 67 patients included in this study, 25 (37%) were on LTOT therapy. The majority were women (72%), with a median age of 72 years (IQR 59.5-79), mostly presenting in NYHA functional class III (60%), with an NT-proBNP of 1995 (IQR 920.5-3716.5), and 76% had a history of pulmonary embolism in the past. The following characteristics were associated with an increased likelihood of requiring O2 (without LTOT vs. with LTOT): NYHA functional class IV [4.9 vs. 40%; p < 0.001; OR 13 (95%CI 2.6-66.4)]; six-minute walk test [360 (275-440) vs. 240 (135-365); p = 0.003; OR 0.0991 (95%CI 0.985-0.997)]; right atrial dilation [51.2 vs. 92%; p < 0.001; OR 10.952 (95%CI 2.280-52.608)]; right ventricular dilation [57.1 vs. 84%; p = 0.024; OR 3.937 (95%CI 1.149-13.492)]; decreased systolic longitudinal function of the RV [20 (16-23) vs. 17 (14-19); p = 0.024; OR 0.875 (95%CI 0.769-0.996)]; estimated pulmonary artery systolic pressure [67 (IQR 47-94.5) vs. 100 (IQR 88.5-112); p < 0.001; OR 1.041 (95%CI 1.017-1.065)]; mPAP [37 (26.5-51.5) vs. 47 (45-54); p = 0.03; OR 1.078 (95%CI 1.026-1.133)]; RVP [6.4 wood U (3.86-10.605) vs. 11.25 (9.02-15.6); p < 0.001; OR 1.206 (95%CI 1.069-1.360)]; cardiac index [2.375 (2.050-2.8175) vs. 2.0 (1.6-2.42); p = 0.013; OR 0.377 (95%CI 0.156-0.911)]; SvO2 [66.7% (62.3%-72.7%) vs. 60% (52.9%-66.1%); p = 0.001; OR 0.894 (95%CI 0.830-0.963)]. Our study did not demonstrate statistically significant differences between groups regarding DLCO assessment, percentage of perfusion defects in scintigraphy or NT-proBNP values.
Conclusions: These results highlight that a significant proportion of CTEPH patients need LTOT. This seems to correlate with disease severity including hemodynamic parameters.

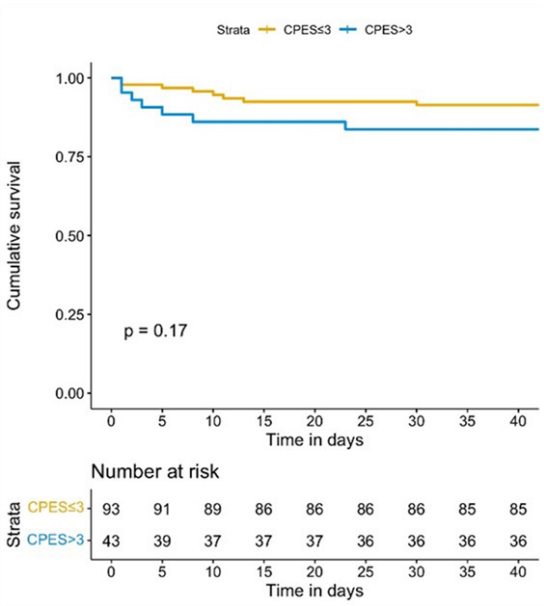
PO 89. PROGNOSTIC VALUE OF THE COMPOSITE PULMONARY EMBOLISM SHOCK SCORE IN ACUTE INTERMEDIATE-RISK PULMONARY EMBOLISM

Inês Amorim Cruz, Tiago Aguiar, Simão Carvalho, Carlos Costa, Joana Ribeiro, Luís Miguel Santos, Ana Briosa

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

Introduction: One of the critical pillars for managing acute pulmonary embolism (PE) is adequate risk stratification, as it may influence decisions for treatment escalation. Although intermediate-risk PE patients may appear stable, they represent a heterogeneous group with high in-hospital mortality. In FLASH Registry, in patients submitted to mechanical thrombectomy, over one-third were in normotensive shock with a low cardiac index and the Composite Pulmonary Embolism Shock (CPES) score has been developed to identify these patients. However, few is known if CPES score predicts adverse clinical outcomes.
Objectives: To explore if the CPES score predicts adverse outcomes in patients with acute intermediate-risk PE.
Methods: All consecutive patients with acute intermediate-risk PE admitted between January 2016 and December 2020 were included. For CPES score, 1 point was attributed for each marker: elevated troponin, elevated B-type natriuretic peptide, concomitant deep vein thrombosis, saddle PE, moderately or severely reduced RV function, and tachycardia. The primary outcome was a composite of in-hospital mortality, resuscitated cardiac arrest, or hemodynamic decompensation. A time-to-event analysis was carried, including Kaplan-Meier analysis and Cox proportional hazard models.
Results: Among the 151 patients with intermediate-risk PE (63% women, median age 77 years [IQR 69-85], and 13% with a history of venous thromboembolism), 31% were classified as intermediate-high risk PE, and 19 (13%) experienced a primary outcome event. Patients with a CPES score > 3 were younger, more frequently obese, and more likely to have undergone systemic thrombolysis. In univariable Cox regression analysis, a higher CPES score was not significantly associated with a worse primary composite outcome (Hazard Ratio = 1.22, [95%CI, 0.85-1.76], p = 0.3). Inspecting Kaplan-Meier curve, while patients with a CPES score > 3 had not a higher risk of adverse outcomes compared to patients CPES score ≤ 3 (Figure 1,

log-rank test p = 0.17), a trend toward curve separation was observed, suggesting that the sample size may be insufficient to demonstrate a definitive effect.



Conclusions: In this cohort of patients with acute intermediate-risk PE, the CPES score did not effectively predict adverse clinical outcomes. However, a trend toward curve separation was observed, indicating that the sample size may have been insufficient and further studies are needed.

PO 90. INCIDENCE OF CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION AFTER SEVERE FORMS OF ACUTE PULMONARY EMBOLISM: SYSTEMATIC REVIEW WITH META-ANALYSIS

Rita Calé, Mariana Martinho, Filipa Ferreira, Sofia Alegria, João Luz, Hélder Pereira, Daniel Caldeira

Hospital Garcia de Orta.

Introduction: The incidence of chronic thromboembolic pulmonary hypertension (CTEPH) after severe forms of pulmonary embolism (PE) is currently unknown and could be clinically relevant.
Objectives: This meta-analysis aimed to estimate the proportion of CTEPH diagnosed following intermediate- or high-risk acute PE and assess the impact of differing diagnostic methods on reported proportions.
Methods: Eligible studies were identified through a systematic search of MEDLINE and Cochrane Central Register of Controlled Trials (CENTRAL) databases in March 2024. Inclusion criteria encompassed studies reporting CTEPH outcomes, confirmed either by right heart catheterization (RHC) or in which the diagnosis of CTEPH was based on other diagnostic criteria (clinical/echocardiography and ventilation/perfusion lung scintigraphy, with or without RHC confirmation) following intermediate- or high-risk acute PE. The pooled prevalence with the respective 95% confidence interval (CI) was derived by random effects meta-analysis. Heterogeneity was assessed using the I^2 metric.
Results: A total of 13 studies (n = 50.109) were included. The median follow-up duration was 26.1 months (IQR: 8.3-38.7). CTEPH confirmed by RHC was reported in 4.31% of patients (95%CI: 1.29-8.76; I^2 = 97%; Figure 1A), while CTEPH assessed by other non-invasive tests than RHC was reported in 6.47% (95%CI: 3.04-10.93; I^2 = 75.55%; Figure 1B). Significant variability in the diagnostic approaches, in study design and follow-up periods contributed to the observed statistical heterogeneity.
Conclusions: CTEPH was diagnosed in about one for every 20 patients that had intermediate- or high-risk acute PE. The findings underscore the

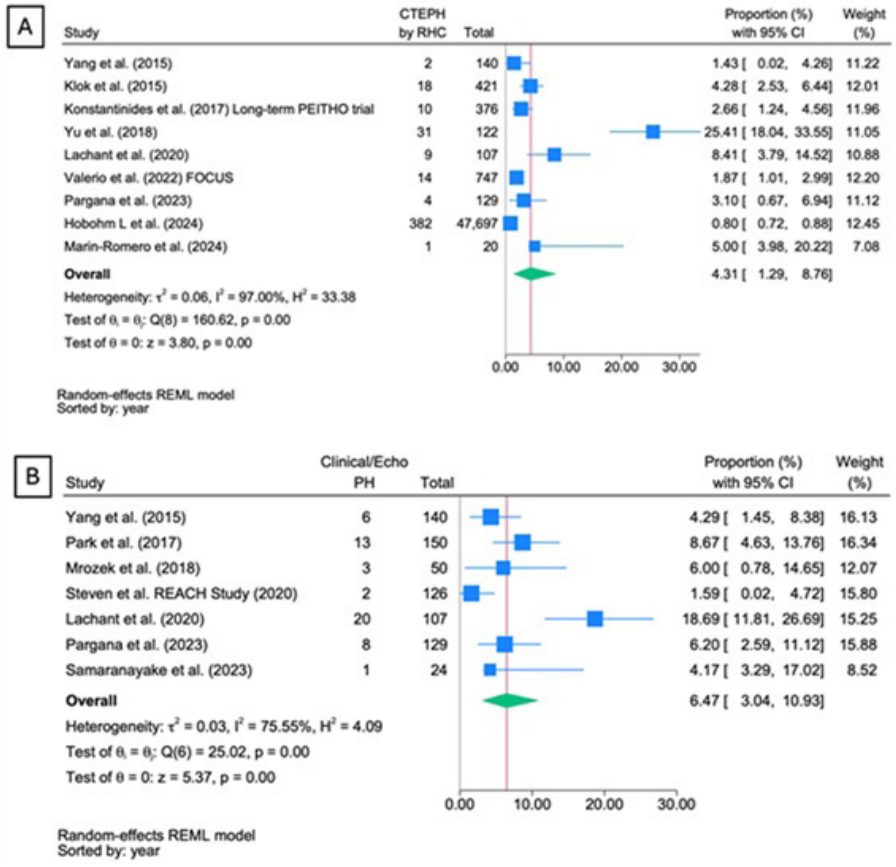


Figure PO 90

importance of systematic follow-up in delivering tailored management strategies, with the aim of improving patient outcomes and mitigating long-term complications in a significant proportion of these patients.

Sexta-feira, 11 Abril de 2025 | 12:00-13:00

Área de Posters-écran 2 | Sessão de Posters 14 – Congénitos e HTP 2

PO 91. RIGHT ATRIAL PRESSURE ESTIMATION BY ECHOCARDIOGRAPHY IN PULMONARY HYPERTENSION – TIME FOR A CHANGE?

Fábio Viveiros[1], Catarina Gregório[1], Miguel Azaredo Raposo[1], Ana Abrantes[1], Daniel Cazeiro[1], Inês Caldeira Araújo[1], Susana Gonçalves[2], Ana Almeida[1], Catarina Sousa[1], Fausto J. Pinto[1], Rui Plácido[1]

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

Introduction: Right atrial pressure (RAP) is a valuable measurement for assessing hemodynamic status in pulmonary hypertension (PH) patients (pts). Correct estimation of RAP (eRAP) and management of fluid status is crucial in this challenging population. The current ESC PH guidelines classify RAP estimation into three subgroups based on inferior vena cava (IVC) diameter and inspiratory collapse.
Objectives: To evaluate the correlation between standard eRAP and invasive measurement in right heart catheterization (RHC).
Methods: This is a retrospective, single-center study of consecutive patients diagnosed with PH, who underwent RHC and transthoracic echocardiography on the same day. RAP was estimated according to the guidelines at 3, 8, and 15 mmHg, and using a modified 4-level method at 5, 10, 15, and 20 mmHg. Hemodynamic parameters were recorded from RHC. Statistical analysis was conducted using Pearson's and Spearman's correlations, and Cohen's Kappa was used to assess agreement between invasive measurements and the standard and modified eRAP groups by echo.
Results: A total of 69 patients were included in the study, with a majority being female (64%) and a mean age of 63.7 years. The distribution of PH subgroups was as follows: Group I (43%), Group II (10%), Group III (12%), and Group IV (30%). The mean RAP measured from RHC was 7.59 mmHg, compared to 7.69 mmHg estimated by echo using the standard method. There was a significant positive correlation between RAP and eRAP ($p < 0.001$), albeit not strong ($r = 0.439$). The modified 4-level method did not show any advantage. Inferior vena cava (IVC) diameter showed a significant positive correlation with RAP ($r = 0.571$, $p < 0.001$). When RAP was divided into three groups (< 5 mmHg, > 5 < 10 mmHg, and > 10 mmHg), the agreement assessed with Cohen's Kappa was statistically significant ($p = 0.008$), but minimal with a kappa of 0.235. When RAP was divided into four groups (< 5 mmHg, > 5 < 10 mmHg, > 10 < 15 mmHg, and > 15 mmHg), the agreement assessed with Cohen's Kappa was statistically significant ($p = 0.022$), with a lower kappa of 0.169.
Conclusions: The standard eRAP pressure through echocardiography using IVC diameter and inspiratory collapse showed a weak but significant correlation with invasive measurements. Subdividing into four groups did not improve the agreement between estimated and actual RAP measurements. Imperfect evaluation of IVC collapsibility may contribute to these findings. A more accurate tool for estimating RAP in PH patients is needed.

PO 92. BREAKING NEW GROUND IN PULMONARY ENDARTERECTOMY: INITIAL EXPERIENCE OF A PORTUGUESE SINGLE CENTER

Daniel Inácio Cazeiro[1], Miguel Azaredo Raposo[1], Ana Abrantes[1], Diogo Ferreira[1], João Cravo[1], Marta Vilela[1], Tatiana Guimarães[1], Nuno Lousada[1], Ângelo Nobre[2], Fausto J. Pinto[1], Ricardo Ferreira[2], Rui Plácido[1]

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Introduction: Pulmonary thromboendarterectomy (PEA) is the main treatment option in operable chronic thromboembolic pulmonary hypertension (PH). We developed a PEA program in collaboration with an international surgical reference center and hereby present the results of the first 7 patients (pts) treated.
Methods: Retrospective analysis of all pts submitted to PEA. Diagnosis, operability assessment and referral for PEA were carried out by a

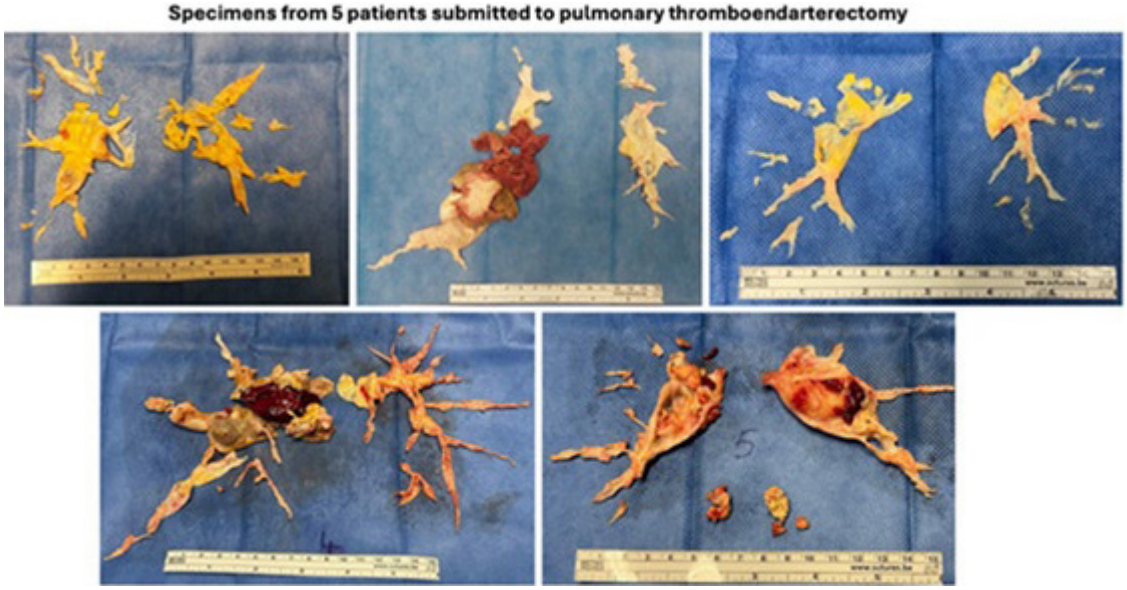

Figure PO 92

multidisciplinary team in our PH center. The same surgical team performed all PEA, using cardiopulmonary bypass and deep hypothermic circulatory arrest. Postoperatively, pts were managed in the Cardiothoracic Surgery Intensive Care Unit (ICU).
Results: Seven pts (71% female, mean age 69 years and BMI 26kg/m^2) underwent PEA. All pts were in WHO functional class (FC) II or III, with a median NTproBNP level of 2,218 pg/mL and mean 6-minute walking distance (6MWD) of 199 m. Seventy-one percent of pts had experienced ≥ 1 acute pulmonary embolism. Four pts were on ≥ 1 vasodilator and 3 were on long-term oxygen therapy. Mean estimated systolic pulmonary artery pressure (sPAP), tricuspid annular plane systolic excursion (TAPSE) and TAPSE/sPAP ratio were 77 mmHg, 18 mm and 0.27 mm/mmHg, respectively. Most pts exhibited a high-risk hemodynamic profile, with mean PAP, pulmonary vascular resistance and cardiac index of 45 mmHg, 9.4WU and 2.26 L/min/m^2, respectively. PEA was performed electively in 6 pts and urgently in 1 pt. Mean bypass time was 281 min, with cross-clamp time of 65 min and circulatory arrest time of 34 min. In the first 6 pts (1 pt still admitted in the ICU), no pulmonary major complications occurred. Two pts experienced major bleeding events and 1 of them had Dressler syndrome, requiring pericardiocentesis. Median ICU and total hospital stay were 5 and 10 days, respectively, with no in-hospital deaths. At present, follow-up consult was performed in 5 pts, with 3 reporting WHO FC improvement and 2 showing decreased NTproBNP levels. Follow-up diagnostic exams were performed in only 1 pt, with an increase in 6MWD (340 > 432 m) and normalization of sPAP and right ventricular function. One pt died 5 months post-surgery from COVID-19 pneumonia.
Conclusions: Seven PEA procedures were carried out successfully in our center, with no in-hospital deaths. Due to the complexity and steep learning curve of the technique, careful patient selection, thorough preoperative planning, and expert collaboration were crucial for a positive outcome.

PO 93. LONG-TERM SURVIVAL WITH PARENTERAL PROSTACYCLIN THERAPY IN PULMONARY HYPERTENSION – INSIGHTS FROM A REFERRAL CENTER IN PORTUGAL

Débora Repolho, Filipa Ferreira, Ana Sofia Alegria, Ana Claúdia Vieira, Bárbara Ferreira, João Luz, Sofia Tavares, Helder Pereira

Unidade Local Saúde Almada-Seixal, EPE.

Introduction: Therapy with parenteral prostacyclin analogues in patients with pulmonary arterial hypertension (PAH) has been established for decades and is an integral component of the current guidelines for the treatment of pulmonary hypertension. However, there are few studies that report long-term experience of its use. Its administration form represents a significant burden either with subcutaneous or intravascular administration.
Objectives: To report the 20 years' experience with parenteral prostacyclin therapy of a Portuguese pulmonary hypertension treatment center.
Methods: A retrospective longitudinal observational study that included all patients followed in single pulmonary hypertension clinic from 2002 who were treated with prostacyclin analogues, administered through subcutaneous and/or intravascular routes. Primary outcome was lung transplantation and death from any cause. The Kaplan-Meier method was employed for survival analysis.
Results: 47 patients were included, with 66% diagnosed with PAH and 34% with chronic thromboembolic pulmonary hypertension (CTEPH). Baseline at diagnosis World Health Organization (WHO) Functional Class (FC) II comprised 12.8%, FC III accounted for 36.2%, and FC IV represented 51.1%. The cohort was predominantly female (78.7%), with a mean age of 45 ± 16 years. Therapeutic options included treprostinil in 34%, epoprostenol in 38.3%, iloprost in 14.9%, while 12.8% alternated between two drugs. 76.6% of patients were adherent to the therapeutic regimen. The longest follow-up period was 21 years. Median time from diagnosis to the initiation of prostacyclin treatment was 0.4 years (IQR: 3.05 years). Seventeen patients (40%) started parenteral prostacyclins as upfront therapy. Twenty-two (46.8%) patients died: 77.2% due to heart failure, 9% sudden death, and 13.6% from other causes. Two patients (4.2%) underwent lung transplantation. Kaplan-Meier survival analysis estimated an overall mean transplant-free survival of 10.4 ± 1.5 years, with a median of 8.0 years (IQR: 6 years). The transplant-free survival rates at 1, 3, and 6 years were 82.1%, 72.2%, and 55.8%, respectively. A sub-analysis was conducted on patients who survived the first year: Kaplan-Meier survival analysis estimated an overall mean transplant-free survival of 12.6 ± 1.6 years, with a median of 10 years (IQR: 7 years). The transplant-free survival rates at 1, 3, and 6 years were 91.2%, 80.7%, and 63.1%, respectively. Epoprostenol demonstrated the best individual transplant-free survival, at 9.86 ± 2.25 years, with a median of 10 years (IQR: 10 years).
Conclusions: Our experience with long-term parenteral prostanoid therapy demonstrate good overall survival free from transplant.

PO 94. QTC INTERVAL INDEPENDENTLY PREDICTS OUTCOMES IN ACUTE PULMONARY EMBOLISM

Tiago Filipe Aguiar

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Introduction: Multiple electrocardiographic (ECG) findings have been associated with acute pulmonary embolism (APE). Although QT and heart rate corrected QT (QTc) interval prolongation has been associated with APE, their prognostic value remains unclear.
Objectives: To evaluate the prognostic value of QTc in APE patients.
Methods: Single centre cohort analysis of 210 consecutive patients admitted to the Emergency Department with the diagnosis of APE confirmed by computed tomography pulmonary angiogram. QTc was calculated using the Bazett's formula, and analyses were performed separately by gender, due to known gender interaction in QTc. The primary endpoint was in-hospital mortality, and the secondary endpoint was a composite of in hospital death and need for fibrinolysis.
Results: The sample was comprised of 58.6% females (n = 123), with a mean age of 69 years. There was a high frequency of cardiovascular risk factors (51.4% hypertensive, 33.3% dyslipidemic, 18.6% diabetic, 13.3% obese, and 6.2% smoker), with an overall distribution of venous thromboembolic risk factors of 158 minor risk factors (75.2%), 47 moderate risk factors (22.4%), and 47 major risk factors (22.4%). The majority of the population in study presented with an intermediate APE risk score, with 45 having low risk, 65 intermediate-low risk, 45 intermediate-high risk, and 17 with high risk. A prolonged QTc interval was present in 38% of the overall population (56% and 34% of male and female patients, respectively). The mean QTc was 447.05 ± 1.05 ms and was numerically higher in females. In the overall cohort, QTc was not significantly associated with in-hospital mortality, despite being numerically higher in patients meeting the endpoints. When analyzing by gender, QTc was significantly associated with in-hospital mortality in males (470 ± 34 vs. 440 ± 32 ms with vs. without mortality, p < 0.05) but not in females (448 ± 21 vs. 450 ± 39, p = 0.85). We used ROC curves to identify 460 ms as the optimal QTc cut-off point for predicting in-hospital mortality (sensitivity 88% and specificity 65%) and 450 ms for predicting the CE (sensitivity 73% and specificity 65%) in the male population. After multivariate analysis, a QTc ≥ 460 ms remained independently associated with in-hospital mortality (OR 10.40, 95%CI 1.03-107.19, p < 0.05) and there was a non-significant trend towards a positive association with the CE (OR 5.74, 95%CI 0.98-33.50, p = 0.052), even if the same cut-off of 460 ms was used for simplification (accepting a sensitivity of 55% and specificity of 73% for detection of the CE).
Conclusions: These findings suggest that QTc may be an important prognostic tool in male patients presenting with APE, in addition to or in complement of existing risk scores.

PO 95. PULMONARY EMBOLISM IN ANTICOAGULATED PATIENTS: A RETROSPECTIVE SINGLE-CENTERED COHORT COMPARING DATA FROM THE PIOPED II STUDY

Ana Rita de Oliveira Tomás, Maria Carolina Silva, Rodrigo Brandão, Isabel Ribeiro Ferreira, Rúben Costa, Mónica Roxo Iglesias, Carolina Chumbo, Constança Coutinho, Daniela Madeira, Teresa Branco

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

Introduction: Pulmonary embolism (PE) is a prevalent and potentially fatal condition representing the third most frequent acute cardiovascular syndrome with an incidence reaching 115/100,000 individuals annually. Although uncommon, cases of acute PE have been reported in patients undergoing anticoagulation (AC).
Objectives: Review the characteristics of PE in patients receiving AC and compare these findings with data from individuals not under this treatment. Materials and methods: We conducted a retrospective single-center study including patients diagnosed with PE from January 2019 to December 2023 in medical wards of our hospital with 18 years or older. Patients whose PE did not represent a current diagnosis were excluded. Socio-demographic data, comorbidities, pharmacological treatments, and clinical outcomes were collected and analyzed using Excel®. The findings were compared with data from the Prospective Investigation of Pulmonary Embolism Diagnosis II (PIOPED II) study which included only patients not undergoing AC therapy.
Results: Of the 1,197 patients evaluated, 74 were excluded and 59 (7%) were anticoagulated at the time of PE diagnosis, mostly with direct oral anticoagulants (DOACs) (78%), specifically rivaroxaban (43%) or apixaban (33%), at appropriate doses, though 19% reported non-compliance. The mean age was 76 ± 13 years vs. 57 ± 17 in PIOPED II ($p < 0.001$). In the AC group, most PE were segmental (54%) but in PIOPED II there was a predominance of lobar PEs (77%) ($p < 0.001$). The most frequently reported signs and symptoms in both groups were dyspnea (56% in the AC group vs. 79% in PIOPED II), chest pain (27 vs. 64%), cough (37 vs. 43%), tachypnea (68 vs. 57%), tachycardia (81 vs. 26%), and respiratory failure (51 vs. 21%). SARS-CoV-2 infection (34%), previous venous embolism (25%), obesity (25%), immobilization (20%) and active cancer (19%) emerged as the most common risk factors (RF) in our cohort. Some patients had no identifiable RF (10% in our study and 6% in PIOPED II). Mortality in our study reached 29%, but equivalent data from PIOPED II was not available.
Conclusions: PE in anticoagulated patients appears to occur in older individuals and in smaller pulmonary artery branches. This population does not exhibit a significantly different prevalence of symptoms or RF, and events may arise even in their absence. The low overall incidence of PE in anticoagulated patients and the predominance of segmental involvement suggests that current treatment strategies remain effective, potentially resulting in less severe outcomes. Due to lack of studies and consensus in literature, patient's management is most often not evidence based. Further and larger studies are needed to identify high risk scenarios and to implement strategies such as DOAC level measurement to better predict recurrence, understand underlying mechanisms of treatment failure and guide appropriate approaches.

Sexta-feira, 11 Abril de 2025 | 12:00-13:00

Área de Posters-écran 3 | Sessão de Posters 15 – Endocardite infecciosa 2

PO 96. CLINICAL RULE FOR INFECTIVE ENDOCARDITIS IN THE EMERGENCY DEPARTMENT SCORE: A PREDICTION TOOL FOR INFECTIVE ENDOCARDITIS AND ITS EMBOLIC EVENTS

Adriana Henriques Silva, Liliana Brochado, Cristina Martins, Oliveira Baltazar, Nazar Ilchyshyn, João Mirinha Luz, Diogo Cunha, Tiago Lobão, Lourenço Aguiar, Bárbara Ferreira, Mariana Martinho, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Infective endocarditis (IE) is a condition characterized by significant mortality and morbidity. It often presents with non-specific symptoms, leading to delays in recognition. The Clinical Rule for Infective Endocarditis in the Emergency Department (CREED) score is a clinical tool designed for risk stratification of IE in patients presenting with fever at the emergency department.
Objectives: Evaluate whether patients with a definitive diagnosis of IE actually had a high probability of IE as assessed by the CREED score. Also, we aim to assess whether high and very high-risk scores are associated with an increased number of complications, indications for surgery, and in-hospital death.
Methods: Retrospective study analysing the CREED score profiles of patients with a confirmed IE with fever at admission, between 2006 and 2022 in a single center. Then, the study sample was divided into two groups: patients with very low and low risk (group 1), and patients with high and very high risk (group 2). We evaluated whether there were statistical differences in complications (paravalvular complications, embolic events, aneurysms, pseudoneurysms, abscesses, fistulas and septic shock), indication for surgery, and in-hospital death between the two groups.
Results: Of a total of 222 patients diagnosed with IE, 96 (43%) were eligible for the CREED score. Among these, 63 (66%) were classified as having a high or very high risk of IE, while 33 (34%) fell into the low or very low-risk categories. Regarding baseline characteristics (age, sex, and personal medical history), there was a statistically significant difference between group 1 and group 2 only in the history of valvulopathy (27 vs. 56%, $p = 0.008$). There was no statistical difference between groups in complications for all causes (55 vs. 64%, $p = 0.343$), but individually the group 2 was associated with an increased likelihood of developing embolic events (OR 3.17; 95%CI 1.2-8.4; $p = 0.02$). There was no statistical difference between groups in indication for surgery (30 vs. 46%, $p = 0.136$) and in-hospital mortality (21 vs.27%, $p = 0.535$).
Conclusions: Our results indicate that the CREED score effectively identifies patients at high-risk of having infective endocarditis, while a low score does not exclude the diagnosis. However, this score can be useful for predicting embolic events. It is crucial combine risk stratification with clinical judgment for timely diagnosis of infective endocarditis.

PO 97. ANTIBIOTIC THERAPY FOR ENDOCARDITIS IN OUTPATIENT SETTING: IS IT INEFFECTIVE AND SAFE IN LOW RISK PATIENTS?

Lucas Hamann, Sofia Andraz, Joana Guerreiro Pereira, Joana Massa Pereira, Miguel Espírito Santo, Hugo Costa, Pedro de Azevedo, Raquel Fernandes, Dina Bento, Daniela Silva, João Moura Guedes, Jorge Mimoso

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

Introduction: Endocarditis remains a challenging condition requiring prolonged treatment. Outpatient antibiotic therapy (OAT), including parenteral (OPAT) or oral (OOAT) regimens, has emerged as a safe, cost-effective alternative to hospital-based antibiotic therapy (HBAT) for low-risk patients. However, the lack of standardized criteria and safety concerns complicates patient selection for OAT.
Objectives: To compare OAT and HBAT patients regarding baseline characteristics, mortality over 2 years (primary outcome), and secondary outcomes such as causes of death, re-hospitalization, and re-operation.
Methods: This retrospective study (2020-2024) included 36 patients diagnosed with endocarditis, divided into OAT (n = 20) and HBAT (n = 16) groups. Baseline characteristics, comorbidities, and outcomes were analyzed. Data were presented as frequencies and percentages or means and standard deviations. Logistic regression was used, with $p < 0.05$ considered significant.
Results: The mean age was 58 ± 16 years, and 67% of patients were male. Among OAT patients, 75% received OPAT and 25% OOAT. Comorbidities included heart failure (10%), hypertension (55%), diabetes (45%), obesity (15%), HIV infection (10%), intravenous drug use (15%), and cancer (25%). No significant differences were observed between groups in comorbidities, infection site, valvular surgery, complications, or cardiovascular device presence. Mortality rates during the follow-up (19.8 ± 16.8 months) were comparable (HBAT: 44 vs. OAT: 15%, $p = 0.829$), with no significant differences in first-year mortality. However, OAT significantly reduced re-hospitalization rates (HBAT: 50 vs. OAT: 15%, $p = 0.023$) and showed differing causes of death, though re-operation rates were similar.

				Hospital-based antibiotic treatment	Outpatient antibiotic therapy	Total	p-value
				n=16 (44%)	n=20 (56%)	36	
Gender	Male		n (%)	9 (56%)	15 (75%)	24 (67%)	0.236
	Female		n (%)	7 (44%)	5 (25%)	12 (33%)	
Age (years)			Mean±SD	57 ± 18	59 ± 14	58 ± 16	0.336
Medical History	Coronary disease		n (%)	2 (13%)	5 (25%)	7 (19%)	0.346
	Heart failure		n (%)	2 (13%)	2 (10%)	4 (11%)	0.813
	COPD		n (%)	0	4 (20%)	4 (11%)	0.058
	Hypertension		n (%)	7 (44%)	11 (55%)		
	Diabetes Mellitus		n (%)	4 (25%)	9 (45%)	13 (36%)	0.214
	Dyslipidemia		n (%)	8 (50%)	7 (35%)	15 (42%)	0.364
	Obesity		n (%)	2 (13%)	3 (15%)	5 (14%)	0.829
	Low weight (IM<18)		n (%)	3 (19%)	1 (5%)	4 (11%)	0.192
	Chronic kidney disease		n (%)	0	3 (15%)	3 (8%)	0.106
	Demencia		n (%)	0	0	0	
	Chronic liver disease		n (%)	1 (6%)	2 (10%)	3 (8%)	0.686
	Atrial fibrillation or flutter		n (%)	4 (25%)	5 (25%)	9 (25%)	1.000
	HIV infection		n (%)	1 (6%)	2 (10%)	3 (8%)	0.686
	Intravenous drug users		n (%)	2 (13%)	3 (15%)	4 (14%)	0.829
	Cancer		n (%)	1 (6%)	5 (25%)	6 (17%)	0.134
	Previous IE		n (%)	0	1 (5%)	1 (3%)	0.364
Cardiovascular device	Total number of patients		n (%)	3 (19%)	5 (25%)	8 (22%)	0.313
	Mechanic heart valve		n (%)	1 (6%)	0	1 (3%)	
	Biologic heart valve		n (%)	1 (6%)	3 (15%)	4 (11%)	
	Transcatether heart valve		n (%)	2 (12%)	0	1 (3%)	
	PM/CRT/ICD		n (%)	0	2 (67%)	2 (6%)	
Charlson index > 5			n (%)	4 (25%)	7 (37%)	11 (31%)	0.576
Ability to perform daily activities	Independent on all activities		n (%)	14 (88%)	20 (100%)	34 (94%)	0.104
	Dependent on some activities		n (%)	2 (13%)	0	0	
	Dependent on most activities		n (%)	0	0	0	
Endocarditis as the 1st diagnosis			n (%)	4 (27%)	10 (50%)	14 (40%)	0.163
Location of the infection	Native heart valves	Aortic valve	n (%)	7 (44%)	10 (50%)	17 (47%)	0.709
		Mitral valve	n (%)	8 (50%)	6 (30%)	14 (39%)	0.221
		Tricuspid valve	n (%)	1 (6%)	1 (5%)	2 (6%)	0.871
		Pulmonary valve	n (%)	0	0	0	
	Mechanic heart valve	Aortic position	n (%)	1 (6%)	0	1 (3%)	0.359
		Mitral position	n (%)	0	0	0	
	Biologic heart valve	Aortic position	n (%)	2 (13%)	3 (15%)	5 (14%)	0.569
		Mitral Position	n (%)	0	1 (5%)	1 (3%)	
	Pacemaker catheter		n (%)	0	1 (5%)	1 (3%)	0.569
	Aortic conduit		n (%)	1 (6%)	1 (5%)	2 (6%)	
Positive blood cultures			n (%)	16 (100%)	18 (90%)	34 (94%)	0.315
Valvular Surgery			n (%)	8 (50%)	14 (70%)	22 (61%)	0.221
At home hospitalization			n (%)	0	15 (75%)	15 (42%)	**<0.001**
Complications	No complications		n (%)	2 (13%)	7 (35%)	9 (25%)	0.211
	Heart Failure		n (%)	7 (44%)	3 (15%)	10 (28%)	0.056
	Severe valve disfunction		n (%)	9 (56%)	10 (50%)	19 (53%)	0.709
	Abcess/ Fistula		n (%)	2 (13%)	0	2 (6%)	0.104
	Emboli		n (%)	7 (44%)	5 (25%)	12 (33%)	0.236

Figure PO 97

Conclusions: When guided by appropriate clinical judgment, OAT is as effective as HBAT in terms of mortality while reducing hospital burden and re-hospitalization rates. OAT represents a viable option for select endocarditis patients, emphasizing the need for standardized patient selection criteria.

PO 98. THE BURDEN OF INFECTIVE ENDOCARDITIS IN A CENTER WITHOUT CARDIAC SURGERY: A RETROSPECTIVE ANALYSIS

Sofia Andraz, Joana Massa Pereira, Lucas Hamann, Miguel Espírito Santo, Joana Guerreiro Pereira, Eunice Soromenho Silva, Dina Bento, Hugo Costa, Pedro Azevedo, Jorge Mimoso

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

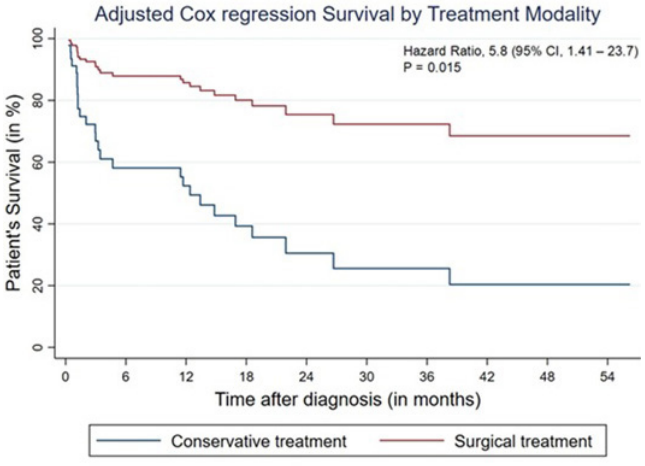
Introduction: Infective endocarditis (IE) is a global public health challenge. While cardiac surgery is recommended to improve outcomes, many patients are treated conservatively with antibiotic therapy alone. Data on IE treatment and outcomes in centers without on-site cardiac surgery remain scarce.

Objectives: To assess treatment strategies and prognosis in patients with IE from a single cardiology center without onsite cardiac surgery.

Methods: Retrospective analysis including consecutive IE patients admitted between January 2020 and December 2023 (mean follow-up 19.8 ± 16.8 months). Data on demographics, microorganisms, infection sites, complications, surgical interventions, and clinical outcomes (IE recurrence, re-hospitalization and mortality) were compared between those undergoing surgery and those treated conservatively with antibiotics. Cox regression was performed to assess the impact of cardiac surgery after adjusting for relevant confounders.

Results: 53 patients (70% male, mean age 62 years) were included. Comorbidities included hypertension (53%), diabetes mellitus (36%), dyslipidemia (43.1%), and atrial fibrillation/flutter (23%). Prosthetic material was present in 26%, most commonly biological (13%) or mechanical (6%) valves or pacemaker leads (6%). The aortic (45%) and mitral (36%) valves

were the most frequently affected sites, with vegetations larger than 10 mm observed in 38% of cases. Positive blood cultures were found in 94%, with *S. aureus* (34%) as the predominant pathogen. 51% received conservative treatment, while 49% underwent surgery. No differences observed between groups in sex, age, comorbidities, pathogen or IE type, except for higher HIV prevalence (33 vs. 0%, p = 0.02) and tricuspid valve involvement in the conservative group (19 vs. 0%, p = 0.02). IE-related complications, including severe valve dysfunction (57%), heart failure (32%), local fistula/abscess (8%) and embolic events (36%), were frequent and similarly distributed between groups. Overall mortality was 51%, with 30% in-hospital mortality and 38% within the first year. Re-hospitalization (35 vs. 7%, p = 0.015), overall mortality (77 vs. 26%, p < 0.001) and first-year mortality (58 vs. 21%, p = 0.030) rates were significantly higher in the conservative group. IE recurrence and in-hospital mortality were not significantly different between groups. Multivariate analysis identified conservative antibiotic treatment as the only variable independently associated with higher mortality (HR 5.8).



Graphic 1 – Kaplan-Meier survival estimates by treatment modality, adjusted for potential confounders* in Cox regression.

* gender, age, Charlson's index, initial diagnosis, local abscess/fistula, severe valvular dysfunction, peripheral embolization and prosthetic valve endocarditis

Conclusions: These results highlight the complexity and high mortality of IE. The underperformed surgical treatment significantly impacted prognosis, as those treated conservatively had about 6 times the mortality risk compared to those who underwent surgery. Optimizing referral pathways is of paramount importance in centers without onsite cardiac surgery.

PO 99. COMPREHENSIVE MANAGEMENT OF INFECTIVE ENDOCARDITIS: CLINICAL FINDINGS AND SURGICAL OUTCOMES

João Santos Fonseca, Ana Abrantes, Miguel Azaredo Raposo, Catarina Gregório, Marta Vilela, Daniel Cazeiro, Pedro Alves da Silva, Joana Rigueira, Rui Plácido, Daniel Caldeira, Fausto J. Pinto, Catarina Sousa

Unidade Local de Saúde de Santa Maria.

Introduction: Infective endocarditis (IE) is a life-threatening condition characterized by high mortality rates and the potential for severe complications. Effective management requires meticulous and prompt life-saving strategies, often involving surgical intervention.
Objectives: To analyze the current management of IE in a tertiary hospital.
Methods: This study included 82 patients with a definite diagnosis of IE based on transesophageal echocardiography (TOE) findings, from January 2023 to October 2024.
Results: Most patients were male (55; 67.1%) and the overall average age was 67.0 [25 – 89] years old. The main findings in TOE included vegetations (62; 75.6% - average size: 12.6 mm) and abscesses (5; 6.1%). Most involved structures were: mitral valve (37; 45.1%), aortic valve (33; 40.2%), electronic device lead (14; 17.1%) and central venous catheter (6; 7.3%). In the studied population, regarding the valves involved: native (45; 54.9%) and prosthetic (23; 28.0%). IE led to moderate-severe valve regurgitation in 29 (35.4%) of cases. The primary isolated bacteria were *Staphylococcus aureus* (22; 26.8%) and *Enterococcus faecalis* (10; 12.2%). First-line antibiotics included Flucloxacillin (53 patients; 64.6%), Vancomycin (27 patients; 32.9%) and Piperacillin-tazobactam (11 patients; 13.4%). The average antibiotic treatment duration was 29.5 [2-331] days. Overall, 29 (35.4%) patients met the criteria to IE complications requiring surgery and 15 (18.3% of the global population and 51.7% of those eligible for surgery) patients ultimately underwent surgical intervention. Indications for surgery included heart failure (9; 31.0%), uncontrolled infection (17; 58.6%) and high risk of embolism or established embolism (3; 10.3%). The average time from IE diagnosis to surgery was 32 days. Surgical procedures involved valve replacement (12; 80%) or repair (3; 20%) of the aortic (7; 46.7%), mitral (5; 33.3%), aortic and mitral (2; 13.3%); or aortic and tricuspid (1; 6.7%) valves. Among those patients eligible for surgery, there were differences between those that underwent surgery and those that didn't, respectively: male gender (8/11), age (62.6/76.9 years), vegetations size (11.5/22.5 mm), embolization (5/9), ischemic stroke (2/6), deaths (6/11). In patients with cardiovascular implantable electronic devices, extraction was performed in 8 (53.3%) cases. During the analyzed period, in the overall population there were 22 (26.8%) in-hospital deaths; specifically, in those that underwent surgery, 6 (40%) ultimately died.
Conclusions: This study highlights the significant clinical burden of IE. The importance of early diagnosis and prompt treatment, including targeted antibiotics and timely surgery, is underscored. Despite these efforts, the mortality rate remains a concern, emphasizing the need for continued research and improved management to enhance patient outcomes.

PO 100. VANCOMYCIN THERAPY AND ACUTE KIDNEY INJURY IN PATIENTS WITH INFECTIVE ENDOCARDITIS

João Gouveia Fiuza, Mariana Duarte Almeida, Gonçalo RM Ferreira, Oliver Kungel, Francisco Rodrigues Santos, Vanda Devesa Neto, Nuno Vicente, Nuno Craveiro, Jorge Bigotte Santos, Júlio Gil Pereira, António Costa

Unidade Local de Saúde de Viseu Dão-Lafões.

Introduction: Infective endocarditis (IE) is a life-threatening condition requiring prompt and effective antimicrobial therapy. Vancomycin is one of the most often used antibiotic drugs to treat IE. However, nephrotoxicity is a concern given the relevant morbidity associated with it, requiring regular dose adjustments.
Objectives: To assess the association between vancomycin treatment and acute kidney injury (AKI) in patients with IE.
Methods: Retrospective study of 30 patients admitted for IE and treated with vancomycin in a Cardiology Department, over a 5-year period. Baseline characteristics, laboratory results, vancomycin dosages and trough levels were obtained. Vancomycin levels ≥ 21 µg/mL were categorized as supratherapeutic. Timely vancomycin dose adjustment was defined as appropriate dose modifications accordingly to drug monitoring results within 24 hours. AKI was diagnosed according to the KDIGO criteria. Statistical analysis included Chi-square and Mann-Whitney U.
Results: Mean age of 70 ± 12 years; 66.7% were male. Chronic kidney disease (CKD) was present in 30% (n = 9) and mean admission creatinine was 1.35 mg/dL. In-hospital mortality was 23.3% (n = 7). AKI occurred in 50% (n = 15) of patients. Only 33.3% (n = 10) of patients had timely vancomycin dose adjustments and 50% had supratherapeutic vancomycin levels on the first measurement. Patients without timely vancomycin dose adjustments (87.5 vs. 10%, χ^2 = 15.143, p < 0.001), atrial fibrillation (76.9 vs. 29.4%; χ^2 = 6.652, p = 0.01), treated with diuretics (75 vs. 35.7%; χ^2 = 4.013, p = 0.045) and with supratherapeutic vancomycin trough levels at the third measurement (91.7 vs. 20.0%; χ^2 = 8.731, p = 0.001) had a significantly higher prevalence of AKI. Additionally, vancomycin levels at the second and third measurements were significantly higher in patients with AKI (32 µg/mL vs. 20 µg/mL, p = 0.037; 30 µg/mL vs. 18 µg/mL, p = 0.019, respectively). Discharge creatinine levels remained increased in the AKI group (2.17 mg/dL vs. 1.39 mg/dL, p = 0.029). Additionally, patients with AKI had a significantly longer duration of

vancomycin therapy (40 vs. 9 days, p = 0.003). While gentamicin use showed a near-significant trend (p = 0.065), no significant associations were observed for previous CKD (p = 0.7), HF (0.251), DM (p = 1) or concomitant radiocontrast use (p = 0.396). In-hospital mortality was 23.3%, and it was not significantly higher in those who developed AKI (p = 0.390).
Conclusions: In patients with IE treated with vancomycin, we observed a higher incidence of AKI than typically reported in the general inpatient population. However, this did not contribute to additional in-hospital mortality. Our findings emphasize the importance of close vancomycin monitoring and timely adjustments to prevent AKI. Future studies should explore alternative monitoring strategies and interventions to minimize nephrotoxicity.

PO 101. IS PROCALCITONIN A GOOD PREDICTOR FOR IN-HOSPITAL MORTALITY IN INFECTIVE ENDOCARDITIS?

Rodrigo Neves Brandão, Filipa Gerardo, Carolina Mateus, Inês Pereira de Miranda, Mara Sarmento, Tiago Mesquita, Márcio Madeira, Miguel Borges dos Santos, Carlos Morais

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

Introduction: Infective endocarditis (IE) is a disease with a high mortality rate. Procalcitonin (PCT) is an important marker of bacterial infection and systemic inflammation, and its potential role as a predictor of mortality for some diseases has been increasingly studied over the years, making it a potentially important future biomarker.
Objectives: This study aimed to assess the role of procalcitonin as a predictor of mortality in patients with infective endocarditis.
Methods: We conducted a retrospective single center analysis of patients hospitalized with infective endocarditis diagnosis from 2017-2022. Binary logistic regression was used to assess the association between procalcitonin levels and mortality, adjusting for other clinical and laboratory variables, including age, comorbidities, presence or absence of local complications and vegetation size. Results and discussion: From a total of 89 patients, 69% were male and the mean age was 69.9 ± 12.6 years. From the latter, 73% had hypertension, 23% type 2 diabetes, 32% atrial fibrillation and 38% history of valve disease (either intervened or not intervened). Our data revealed that procalcitonin levels were not significantly associated with mortality in infective endocarditis (p = 0.35), with an OR of 0.9, indicating a non-significant and even irrelevant decrease in the odds of mortality for each unit increase in procalcitonin levels. The overall model, including procalcitonin and other clinical variables, was also non-significant (p = 0.7), suggesting that none of the predictors included in the model, collectively, could significantly predict mortality in this cohort.
Conclusions: Our findings suggest that procalcitonin does not significantly predict mortality in patients with infective endocarditis, as no statistically significant association was found between PCT levels and patient outcomes. The non-significance of the overall model further indicates that other factors not included in this analysis may be more strongly associated with mortality in this patient population. Further studies with larger sample sizes and consideration of additional biomarkers are warranted to better understand the prognostic role of procalcitonin and other potential predictors in infective endocarditis.

Sexta-feira, 11 Abril de 2025 | 12:00-13:00

Área de Posters-écran 4 | Sessão de Posters 16 – Diagnóstico e prognóstico na estenose aórtica

PO 102. ASSESSING THE ROLE OF AORTIC VALVE CALCIUM SCORE IN PATIENTS WITH SEVERE AORTIC STENOSIS AND CHRONIC KIDNEY DISEASE

C. Santos-Jorge, Rui Miguel Gomes, Márcia Presume, André Moniz Garcia, Ana Rita Bello, Maria Rita Lima, Rita Amador, Rita Almeida Carvalho, Samuel Azevedo, Marisa Trabulo, Rui Campante Teles, Jorge Ferreira

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

Introduction: Patients with chronic kidney disease (CKD) are at an increased risk of developing aortic valve disease, with an accelerated progression of aortic stenosis (AS). The aortic valve calcium score (AVCS) complements echocardiographic findings in assessing AS severity. This study aimed to investigate the relationship between AVCS, AS severity, and CKD stages to determine whether advancing CKD correlates with increased valvular calcification and stenosis severity.
Methods: Retrospective analysis of 305 non-elective hospitalized patients who underwent TAVI in a single tertiary center between January 2020 and

Table 1: Baseline population characteristics

	Total of patients (n=305)
Females, n (%)	169 (55,4%)
Age (years, mean ± SD)	82 ± 7
Diabetes, n (%)	153 (50,2%)
Peripheral vascular disease, n (%)	33 (10,8%)
Hypertension, n (%)	279 (91,5%)
Obesity, n (%)	62 (20,3%)
Dyslipidemia, n (%)	233 (76,4%)
Non-smoker, n (%)	247 (81%)
Past Smoker, n (%)	50 (16,4%)
Active Smoker, n (%)	8 (2,6%)
Chronic kidney disease, n (%)	124 (40,8%)
Stage I, n (%)	3 (1%)
Stage II, n (%)	27 (8,9%)
Stage III, n (%)	65 (21,3%)
Stage IV, n (%)	22 (7,2%)
Stage V, n (%)	8 (2,6%)

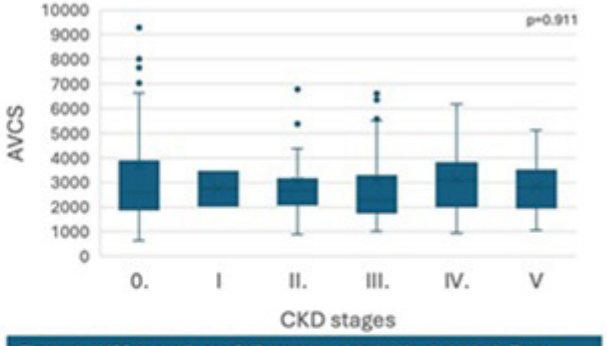


Figure 1: AVCS according to CKD stages, using the Kruskal-Wallis Test, shows no significant difference.

Table 2: Aortic valve characteristics in patients categorized into their respective CKD stage

	No CKD	CKD Stage I	CKD Stage II	CKD Stage III	CKD Stage IV	CKD Stage V
Median mean gradient (mmHg)	47 (40-60)	47 (41-53)	47 (40-60)	43 (35-52)	43 (40-58)	49 (36-60)
Aortic valve area (cm²)	0,6 (0,5-0,9)	0,75 (0,6-0,9)	0,75 (0,6-0,9)	0,7 (0,5-0,9)	0,7 (0,6-1)	0,84 (0,7-0,9)
Aortic valve calcium score (AU)	2617 (1867-3963)	2747 (2052-3442)	2663 (2074-3189)	2310 (1766-3342)	3094 (1797-3967)	2782 (1740-3900)

Figure PO 102

December 2023. Patients were categorized into their respective CKD stage based on clinical records. To access AS severity, we evaluated mean gradient (MG), aortic valve area (AVA) and AVCS.
Results: A total of 305 patients were included, 55% (n = 169) women, age 82 ± 7 years. CKD was present in 124 patients (41%), 3 stage I, 27 stage II, 65 stage III, 22 stage IV and 8 stage V. The median mean gradient, aortic valve area and AVCS were 46 (IQR 39-58) mmHg, 0.7 (0.5-0.9) cm^2 and 2,622 (1,842-3,659) AU, respectively. Our analysis showed no significant difference in mean gradient, aortic valve area and AVCS in patients according to their CKD stage (Figure 1).
Conclusions: Our analysis reveals that patients with CKD do not exhibit worse echocardiographic parameters compared to those without CKD, and that AVCS remains unaffected by renal dysfunction. Consequently, patients with CKD should be assessed using the same AVCS thresholds for severe AS as those used for individuals with normal renal function.

PO 103. SEX DIFFERENCES IN LEFT VENTRICULAR SYSTOLIC FUNCTION IN SEVERE AORTIC STENOSIS

António Afonso Angélico Gonçalves, Rafael Silva Teixeira, Inês Arrobas Rodrigues, Marta Catarina Almeida, André Lobo, Marta Fernandes Leite, Ana Inês Neves, Fábio Sousa Nunes, Ricardo Fontes Carvalho

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

Introduction: Sex-related differences in left ventricular (LV) remodeling in response to an increased pressure overload imposed by aortic stenosis (AS) may hinder an accurate assessment of LV systolic function.
Objectives: Our aim was to compare LV systolic function between genders in patients with severe AS and preserved LV ejection fraction (LVEF).
Methods: Patients with a first diagnosis of severe AS and preserved LVEF were retrospectively identified. Propensity score matching (1:1 ratio) was employed based on aortic peak velocity (APV), age, cardiovascular risk factors (diabetes, obesity, arterial hypertension, dyslipidemia, smoking), history of coronary artery disease and atrial fibrillation (AF). LV morphology and systolic function (LVEF and global longitudinal strain [GLS]) were compared between genders.
Results: A total of 288 patients were included, with 144 in each gender group, matched for AS severity (mean APV of 4.4 ± 0.3 m/s), age (mean age of 77 ± 9 years), documented CAD (22%), AF (26%) and comorbidities. Women were more likely to have severe LV hypertrophy based on indexed LV mass (51 vs. 35%; p = 0.01), despite similar prevalence of LV dilation (19 vs. 17%; p = 0.76) and relative wall thickness (0.49 ± 0.10 vs. 0.5 ± 0.09; p = 0.77). However, absolute wall thickness was higher in males (mean posterior wall thickness of 13.0 ± 1.6 vs. 11.6 ± 1.8 mm; p = 0.001). Despite similar LVEF (59 ± 5%; vs. 61 ± 5%; p = 0.06), men displayed lower GLS (-20.2 ± 7.3 vs. -22.0 ± 8.0%; p = 0.01).
Conclusions: The findings from this study highlight significant gender differences in LV remodeling and systolic function among patients with severe AS and preserved LVEF. The observation that men have lower GLS despite similar LVEF values suggests that conventional measures like LVEF might not fully capture the nuances of systolic function in the context of severe AS, particularly with LV thickened walls.

PO 104. THE MYOCARDIAL IMPACT OF RAPID PROGRESSION OF AORTIC STENOSIS

Francisca Martins Nunes, Rafael Teixeira, André Lobo, Francisco Sousa, Maria Leonor Moura, Marta Catarina Almeida, Francisco Sampaio, Ricardo Fontes-Carvalho

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Introduction: Aortic stenosis (AS) is one of the most prevalent valvular heart diseases in developed countries, driven primarily by degenerative fibrocalcific changes. This progressive condition affects not only the aortic valve but also the myocardium, ultimately leading to significant cardiac damage. AS is a potentially life-threatening disease, characterized by progressive narrowing of the aortic orifice and structural changes that often extend beyond the left ventricle. Notably, retrospective studies have highlighted that the extent of baseline extra-aortic cardiac damage does not necessarily correlate with the baseline hemodynamic severity of AS. This study aimed to evaluate the rate of AS progression and its impact on cardiac damage and survival.
Methods: We retrospectively identified 914 patients (age 76 ± 8 years, 52% female, median follow-up time 6.8 years) with AS who had undergone more than one echocardiogram. Bayesian hierarchical nonlinear models were used to predict aortic peak velocity (APV) as a function of time and estimate individual AS acceleration rates. Patients were then clustered into rapid progressors and slow progressors using machine learning algorithms.
Results: APV was best modelled by a logistic function of time. A total of 483 patients were clustered as rapid progressors (53%) and 431 as slow progressors (47%), with acceleration rate coefficients estimated at 0.14 ± 0.02 years and 0.09 ± 0.02 years, respectively (p < 0.01). No association was found between progression rate and clinical variables. Compared with slow progressors, rapid progressors had significantly higher 5-year incidences of left ventricular damage, combined left atrium and mitral valve damage, and combined tricuspid valve damage with pulmonary hypertension (all p ≤ 0.01). No statistically significant differences were seen in right ventricular damage between the groups due to the low number of events. After multivariate adjustment for age, gender, comorbidities, and baseline AS severity, rapid progression remained an independent predictor for all extra-aortic cardiac damages except right ventricular dysfunction. Importantly, baseline AS severity was not predictive of AS-related cardiac damage. Rapid progression was associated with higher mortality (HR 1.28, p = 0.02), persisting after adjustment for demographics, comorbidities, AS severity, and time-dependent aortic valve replacement (HR 1.36, p < 0.01).
Conclusions: The rapid progression of AS is a critical determinant of premature cardiac damage and reduced survival, independent of baseline disease severity. These findings highlight the importance of identifying and monitoring patients with rapidly progressing AS to enable timely interventions and possibly improve clinical outcomes.

PO 105. THE SODIUM FLUORIDE AORTIC GRADIENT: I NSIGHTS FROM THE ROPPET-NAF STUDY

Mafalda Griné[1], Manuel Oliveira-Santos[1], João Borges-Rosa[1], Rudolfo Silva[1], Andreia Gomes[1], Antero Abrunhosa[2], Miguel Castelo-Branco[2], Lino Gonçalves[1], Maria João Ferreira[1]

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Introduction: 18F-NaF PET-CT (Positron Emission Tomography-Computed Tomography using 18F-sodium fluoride) detects active microcalcification, an indicator of plaque instability. Variations in 18F-NaF uptake across the coronary, carotid, and aortic territories have been noted. We aimed to explore regional differences in 18F-NaF uptake specifically within the Aorta of individuals at high cardiovascular (CV) risk.
Methods: We conducted a sub-analysis of a prospective study of high-risk individuals without prior CV events using 18F-NaF PET-CT (ROPPET-NAF, NCT 03233243). The uptake of 18F-NaF in the aortic wall was quantified via tissue-to-background ratio (TBR), calculated by dividing the maximum standard uptake value of a region of interest by the baseline blood pool activity in the atria.
Results: We included 30 participants in this analysis (mean age 63.7 ± 9.5 years; 70.0% male), most of whom had diabetes and hypertension (93.3%). The estimated 10-year CV event risk was 10.5% (range: 6.5-15.5) by SCORE2/SCORE-OP and 32.2 ± 18.6% by the ASCVD equation. The Abdominal Aorta showed significantly higher 18F-NaF uptake compared to other aortic segments [p < 0.001; TBR: 1.84 (1.56-2.21) in the Abdominal Aorta vs. 1.63 (1.51-1.84) in the Descending Thoracic Aorta, 1.68 ± 0.25 in the Aortic Arch, and 1.65 (1.43-1.78) in the Ascending Aorta]. No other regional differences were significant. Males exhibited higher Abdominal Aorta TBR compared to females [1.95 (1.68-2.62) vs. 1.56 (1.51-1.79), p = 0.014]. Abdominal Aorta

TBR was positively correlated with estimated 10-year CV event risk by both SCORE2/SCORE-OP (R = 0.49, p = 0.006) and ASCVD (R = 0.43, p = 0.017) systems. No significant associations were found between other baseline characteristics and Abdominal Aorta TBR.
Conclusions: In this high-risk cohort, the Abdominal Aorta demonstrated significantly greater 18F-NaF activity compared to other aortic segments. This increased uptake was more pronounced in males and correlated with higher predicted CV risk. Further large-scale studies are needed to confirm these findings and to establish the role of 18F-NaF PET-CT in CV disease research and management.

PO 106. THE POTENTIAL ROLE OF ELEVATED LIPOPROTEIN(A) IN THE EARLY STAGES OF AORTIC VALVE STENOSIS

Francisco Sousa[1], Maria Isabel Mendonça[2], João Adriano Sousa[1], Débora Sá[1], Matilde Ferreira[1], Gonçalo Abreu[1], Sónia Freitas[2], Eva Henriques[2], Mariana Rodrigues[2], António Drumond[1], Ana Célia Sousa[2], Roberto Palma dos Reis[3]

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Introduction: High levels of liproprotein (a) have been linked with atherosclerosis, having a great impact on the entire cardiovascular system and the aortic valve is no exception. Elevated Lp(a) levels have been associated with the development of severe aortic stenosis, but it is still unknown if its pro inflammatory and atherogenic properties are key to initial aortic valve calcification.
Objectives: Determine if elevated Lp(a) levels are associated with aortic valve calcification.
Methods: Aortic valve calcium was measured in 228 individuals under 65 years with no prior diagnosis of cardiovascular disease. Valvular calcium score was measured by CT angiography and reported in Agatston units. The population was divided into two groups: AVC = 0; AVC > 0. Patients with likely severe aortic stenosis were excluded (Men > 2000 A.U; Women > 1,200 A.U). According to current evidence an Lp(a) was considered elevated > 30 mg/dl. Bivariate and multivariate analyses were conducted to understand the influence of Lp(a) levels on aortic valve calcification after adjusting for traditional risk factors.
Results: Individuals with elevated and LPA levels (> 30 mg/dl) were more likely to have aortic valve calcification, 38.0%, when compared with the ones with lower Lpa levels (< 30 mg/dl) 15.8% (p < 0.01). Traditional risk factors such as older age, obesity, male sex and hypertension, were significant in the bivariate analysis. After multivariate analysis, it was clear that Lp(a) > 30 mg/dl remained an independent risk factor for aortic valve calcification (p = 0.015; OR 3.25) along with obesity (p = 0.039; OR 2.62), male sex (p = 0.029; OR 2.58) and older age (p < 0.0001; OR 1.18).
Conclusions: Levels of Lp(a) higher than 30 mg/dl were associated with early aortic valve calcification, supporting its role in the early stages of the development of aortic stenosis. Future studies might shed a light if Lp(a) level control through medication could prevent the progression of aortic stenosis.

PO 107. GENDER DIFFERENCE IMPACT ON TRANSCATHETER AORTIC VALVE REPLACEMENT OUTCOMES: A SYSTEMATIC REVIEW AND META-ANALYSES

Mariana J. Almeida[1], Gonçalo Ferraz Costa[2], Helena Donato[1], Joana Delgado Silva[2], Lino Gonçalves[2]

[1]Faculdade de Medicina da Universidade de Coimbra. [2]ULS Coimbra.

Introduction: Previous studies have associated female sex with worse outcomes after surgical aortic valve replacement (SAVR). However, data on sex-specific differences following transcatheter aortic valve implantation (TAVI) remain conflicting. Since TAVI is more frequently performed in women, understanding the relationship between gender disparities and TAVI outcomes is essential.
Objectives: This study aims to evaluate and summarize all available randomized clinical trial-based evidence regarding the outcomes of transcatheter aortic valve implantation (TAVI) in women compared to men.
Methods: We utilized PubMed, Web of Science and Embase as databases, and our last search was made on 1st of July 2024. We only searched for Randomized Clinical Trials written in English. Following the PICO method, we established our investigation question. We included only studies reporting outcomes with TAVI in women versus men. Mantel-Haenszel random-effect model Odd Ratios were calculated. The main outcome was all-cause mortality. Our measure of effect was Odds Ratio (OR), and we selected the random effects option.
Results: This systematic review included 14 studies, encompassing a total of 15,225 participants. Regarding the primary outcome of all-cause mortality, variations appeared to depend on the type of valve used; however, no significant subgroup differences were observed. Female gender was identified as a protective factor for all-cause mortality among intermediate-risk patients (OR: 0.64; 95%CI: 0.49 to 0.84; Z = 3.27; p = 0.001; I^2 = 0%), but had an increased risk of major bleeding (OR: 1.35; 95%CI: 1.21 to 1.52; Z = 5.22; p < 0.00001; I^2 = 15%). Regarding the outcomes permanent pacemaker implantation after TAVI (OR: 1.05; 95%CI: 0.62 to 1.77; Z = 0.17; p = 0.86; I^2 = 87%), stroke/transient ischemic attack (OR: 0.96; 95%CI: 0.85 to 1.08; Z = 0.69; p = 0.49; I^2 = 0%), and cardiovascular mortality (OR: 0.98; 95%CI: 0.74 to 1.29; Z = 0.15; p = 0.88; I^2 = 58%) there were no statistically significant differences based on sex.
Conclusions: This analysis suggests that female gender serves as a protective factor against all-cause mortality in intermediate-risk patients. However, women demonstrated an elevated risk of major bleeding post-procedure. Future randomized clinical trials should aim for greater objectivity and include larger sample sizes.

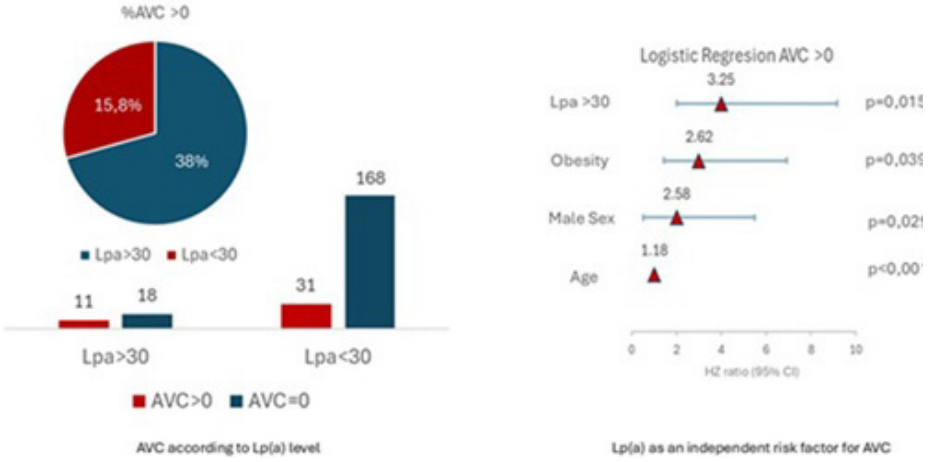

Figure PO 106

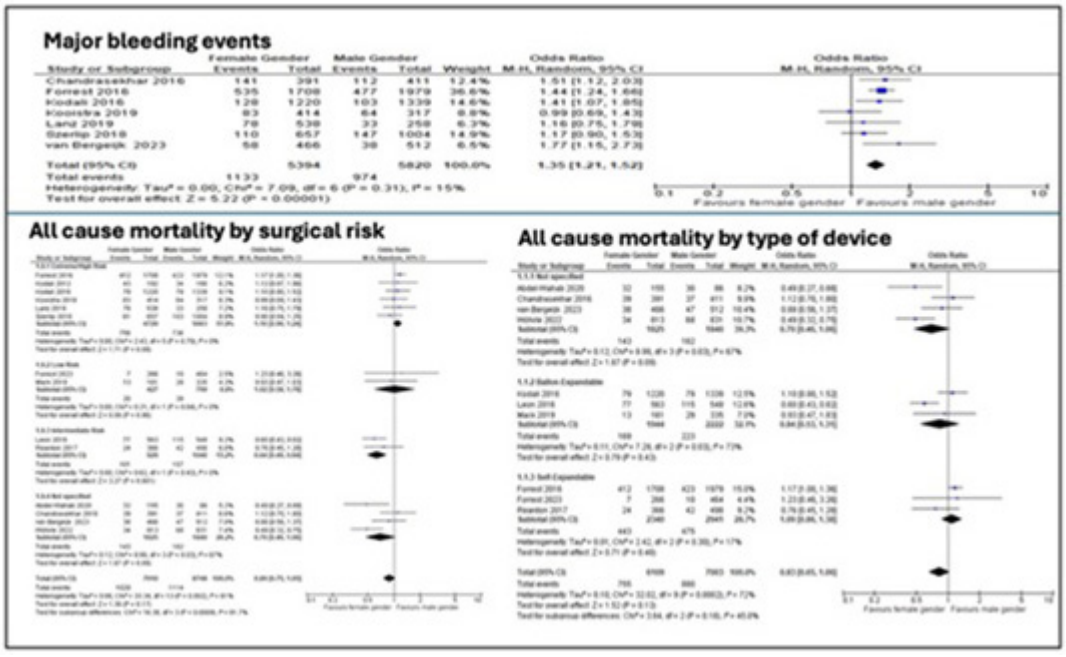

Figure PO 107

Sexta-feira, 11 Abril de 2025 | 14:00-15:00

Área de Posters-écran 1| Sessão de Posters 17 – Diferenças entre sexos em medicina cardiovascular

PO 108. SEX-SPECIFIC DIFFERENCES IN ATRIAL REMODELLING AND RECURRENCE RISK AFTER CATHETER ABLATION FOR ATRIAL FIBRILLATION

Ana Inês Aguiar Neves[1], Rafael Silva Teixeira[1], Fabiana Duarte[2], João G. Almeida[1], Paulo Fonseca[1], Marco Oliveira[1], Helena Gonçalves[1], José Ribeiro[1], Francisco Sampaio[1], João Primo[1], Ricardo Fontes-Carvalho[1]

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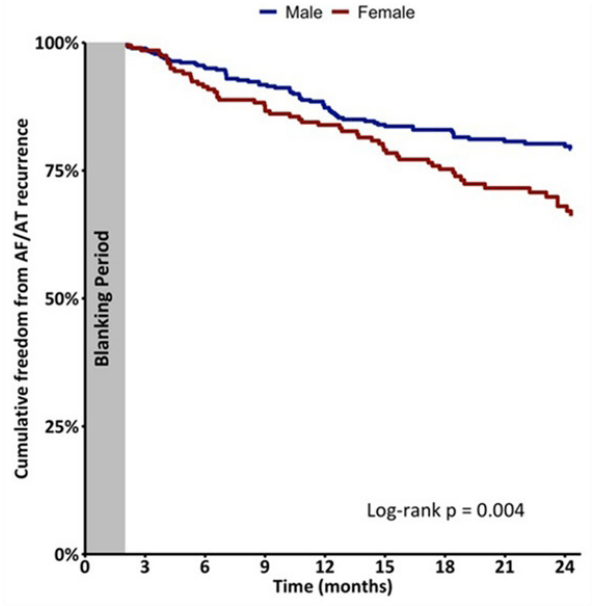
Introduction: Women undergoing catheter ablation (CA) for atrial fibrillation (AF) tend to experience higher recurrence rates than men. The extent to which these sex differences may be driven by a greater burden of comorbidities or by changes in atrial remodelling remains unclear. This study aimed to evaluate sex-specific differences and predictors of AF recurrence after CA, as well as to assess differences in atrial remodelling in these patients.

Methods: Patients who underwent an index CA procedure for AF at a tertiary centre from January 2019 to June 2023 were retrospectively included. Propensity-score (PS) matching was used to compare baseline characteristics and echocardiographic parameters of left atrial (LA) structure and function between sexes. The primary outcome was defined as any recurrence of AF or atrial tachycardia lasting at least 30 seconds after an 8-week blanking period following CA.

Results: 560 patients (35% women) were included in this analysis. The median follow-up was 19 months (IQR: 10-24 months). Women tended to be older (64 vs. 58 years, p < 0.001) and had more comorbidities than men. The estimated 12-month cumulative freedom from AF recurrence was significantly lower in women compared to men (83.6 vs. 87.1 p = 0.004). The higher incidence of AF recurrence in women remained significant even after adjusting for confounders (HR 1.75, 95%CI 1.21-2.53) and after PS matching (HR 1.73, 95%CI 1.05-2.87). Baseline characteristics did not influence the effect of sex on AF recurrence. In the PS-matched cohort of 113 patient pairs, women had lower peak atrial longitudinal strain (PALS) (21.5 vs. 26.0%, p = 0.010) and higher LA conduit strain (-13.0 vs. -15.7%, p = 0.015), with similar peak atrial contraction strain (PACS) (-8.5 vs. -10.2%, p = 0.106). Women also had a higher LA stiffness index (0.57 vs. 0.39, p = 0.026), despite no significant differences in estimated LV filling pressures (E/e' ratio, p = 0.508) or LA dimensions (p = 0.104). Additionally, women were more likely to have low-voltage areas detected using electroanatomic mapping (27.4 vs. 12.4%, p = 0.042).



Conclusions: Female sex was an independent predictor of AF recurrence. Women exhibit lower LA strain, increased LA stiffness and a greater extent of fibrosis compared to men, suggesting that intrinsic differences in atrial remodelling may contribute to a higher risk of AF recurrence.

PO 109. MYOCARDIAL INFARCTION AND GENDER DIFFERENCES IN ELDERLY PATIENTS

Gonçalo R. Ferreira, João Fiúza Gouveia, Oliver Kungel, Francisco Santos, Mariana Almeida, Vanda Neto, Luísa Gonçalves, Júlio Gil, Bruno Marmelo, António Costa

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

Introduction: Myocardial infarction remains a main cause of death in western countries. Clinical trials that supply scientific evidence behind the guidelines usually exclude the elderly and underrepresent female patients. Furthermore, new studies suggest that these patients are less likely to receive guideline-oriented treatment and therefore are at higher risk of adverse events during hospitalization.
Objectives: Compare gender differences in the initial management of older patients presenting with ST elevation myocardial infarction (STEMI) and non ST elevation myocardial infarction (NSTEMI).
Methods: Enrolled patients with the age of 65 or older, admitted in the cardiology department with the diagnosis STEMI and NSTEMI during 2007 and 2015. Excluded patients who underwent thrombolysis. Patients were divided in two groups: STEMI group and NSTEMI group. In each group, comparison between genders was made in terms of percutaneous coronary intervention (PCI) versus conservative approach, timing of PCI (urgent versus delayed), and in-hospital cardiovascular outcomes (cardiovascular death and heart failure). For statistical analysis, the two groups were compared using Pearson's Chi-Square test and odds-ratio chances, considering p values < 0.05 to be statistically significant.
Results: The study cohort was composed 382 patients in the STEMI group, and 621 patients for NSTEMI group. In the STEMI group, 36.4% of the patients were female. Female patients were older than male patients (mean age of 78.2 years vs. 75.8 years), and cardiovascular risk factors were prevalent in the former. There was no difference in the choice of conservative treatment (17.3% females vs. 16% males, p = 0.78) and in the timing of PCI (delayed PCI in 16.5% females vs. 15.2% males, p = 0.75). In terms of adverse events, no difference between genders in in-hospital mortality or heart failure. In the NSTEMI group, 37.5% of the patients were female. Female patients were older than male patients (mean age of 79 years vs. 76.2 years), and arterial hypertension, dyslipidemia and obesity were prevalent in the former. Female patients were 1.48 times more likely to receive conservative treatment vs. male patients (45.4% females vs. 36% males, p = 0.02). However, there was no difference between genders in in-hospital mortality or heart failure, even in the conservative approach subgroup. There was no difference in the timing of PCI (delayed PCI in 94.1% females vs. 94.4% males, p = 0.91).
Conclusions: There was no difference in the initial management of STEMI elderly patients, regardless of gender. Although female elderly patients presenting with NSTEMI were more likely to receive conservative treatment, there was no difference in adverse outcomes during hospitalization.

PO 110. BRIDGING THE GENDER GAP IN TAVI: REAL-WORLD EVIDENCE FROM A SINGLE-CENTER STUDY

Rita Louro, António Almeida, Orlando Luquengo, Rafael Viana, Marta Figueiredo, Miguel Carias, Marisa Serrano, Gustavo Sá Mendes, David Neves, Ângela Bento, Renato Fernandes, Lino Patrício

Hospital Évora.

Introduction: Women are commonly underrepresented in clinical trials, raising concerns about the applicability of data to the female population. In this analysis, we sought to address whether the results observed in clinical trials align with real-world practice and whether women face distinct challenges or benefits following TAVI compared to men.
Methods: This retrospective analysis assessed 300 TAVI patients from a single centre, without surgical backup. We aimed to assess in-hospital outcomes: periprosthetic leak, high-grade atrioventricular block, vascular and haemorrhagic complications, stroke, acute kidney injury, and death within 7 days. At 1 year follow-up (FUP) outcomes were cardiovascular death, readmission for cardiovascular causes, and clinical improvement following TAVI.
Results: From a total of 300 patients undergoing TAVI, 139 were male and 161 were women. Regarding baseline characteristics, women were older than men. Diabetes was more prevalent in men, as was current smoking. Men had a higher prevalence of coronary artery disease (CAD), previous PCI and previous CABG. Renal dysfunction was more common in women. About clinical presentation, women had higher risk scores, higher mean aortic valve gradients, lower aortic valve area, higher left ventricular ejection fraction and higher median calcium score. Men and women had no significant differences in in-hospital complications, except for acute kidney injury more frequent in women. At 1-year follow-up, no significant differences were found according to sex concerning cardiovascular death, readmissions due to cardiovascular causes, or clinical improvement (p > 0.05 for all).

	Male n=137	Female n=159	p value
Baseline characteristics			
Age, years - median (IQR)	81.4 (9.0)	83.2 (8.0)	0.01
BMI, kg/m2 - mean±SD	26.8 (4.9)	27.3 (6.3)	0.41
Diabetes, n (%)	59 (42.4)	45 (28.0)	<0.05
Dyslipidaemia, n (%)	100 (71.9)	114 (70.8)	0.83
Hypertension, n (%)	120 (86.3)	138 (85.7)	0.88
COPD, n (%)	13 (9.4)	9 (5.6)	0.21
Current smoker, n (%)	29 (20.9)	3 (1.9)	<0.05
GFR < 60 ml/min/1,73m^2, n (%)	57 (41.0)	93 (57.8)	<0.05
CAD, n (%)	43 (30.9)	20 (12.5)	<0.05
Atrial fibrillation, n (%)	32 (23.0)	33 (20.6)	0.62
Previous MI, n (%)	16 (11.5)	11 (6.8)	0.16
Previous PCI, n (%)	33 (23.9)	8 (5.0)	<0.05
Previous CABG, n (%)	23 (16.7)	7 (4.3)	<0.05
Previous SAVR, n (%)	2 (1.4)	5 (3.1)	0.46
Previous Stroke, n (%)	16 (11.5)	9 (5.6)	0.06
Clinical presentation			
Mean AVG, mmHg - median (IQR)	42 (15.0)	47 (13.0)	<0.05
AVA, cm2 - mean±SD	0.79±0.21	0.69±0.22	<0.05
Maximum Velocity, m/s - mean±SD	4.12±0.70	4.4±0.56	<0.05
FEVE, % - median (IQR)	57 (20.0)	60 (9.0)	<0.05
Low Flow - Low Gradient, n (%)	18 (13.7)	13 (8.4)	0.15
Paradoxical LF-LG, n (%)	7 (5.4)	10 (6.6)	0.67
Calcium Score, AU - median (IQR)	3270 (2328.0)	2100 (1324.0)	<0.05
STS score, % - median (IQR)	3.1 (3.8)	4.8 (4.8)	<0.05
Euroscore, % - median (IQR)	2.3 (1.9)	2.9 (3.6)	<0.05
Outcomes			
In-hospital outcomes, n(%)			
Periprosthetic leak	2 (1.4)	5 (3.1)	0.457
High-grade AV block	34 (24.6)	28 (17.4)	0.123
Vascular complication	8 (5.8)	16 (9.9)	0.189
Haemorrhagic Complication	7 (5.0)	18 (11.2)	0.55
Stroke	3 (2.2)	5 (3.1)	0.729
Acute Kidney Injury	4 (2.9)	14 (8.8)	<0.05
Death within 7 days	3 (2.2)	4 (2.5)	1.0
@1yrFUP outcomes, n (%)			
Cardiovascular death	2 (2.1)	5 (4.6)	0.347
Readmission cardiovascular cause	9 (9.3)	15 (13.5)	0.695
Clinical improvement	86 (94.5)	96 (90.6)	0.299

Conclusions: In contrast to clinical trials, women were well-represented in our study population. Women tended to present with more severe valvular disease and higher surgical risk scores compared to men. However, men exhibited a higher prevalence of comorbidities such as coronary artery disease and previous revascularization procedures (PCI and CABG). Despite these baseline differences, no significant disparities were observed between genders in most in-hospital complications and 1-year follow-up outcomes, except for acute kidney injury, which was more frequent in women. This suggests that, despite their higher initial surgical risk, women achieve similar clinical outcomes to men after TAVI.

PO 111. SEX-DIFFERENCES AND LONG-TERM OUTCOMES AFTER AORTIC VALVE REPLACEMENT

Adriana Vazão[1], André Martins[1], Carolina Gonçalves[1], Joana Pereira[1], Mónica Amado[1], Mariana Carvalho[1], Margarida Cabral[1], João Carvalho[1], Catarina Ruivo[1], Sara Fernandes[2], Hélia Martins[1]

[1]ULSR Leiria. [2]ULS de Santo António.

	Total (n=95)	Group 1 (n= 32)	Group 2 (n=63)	p-value
Age at diagnosis (years) – mean ± SD	71 ± 9 years	74 ± 8 years	70 ± 10 years	0,105 (c)
Past medical history				
Hypertension (%)	72 (75,8%)	27 (84,4)	45 (71)	0,164 (a)
Dyslipidemia (%)	*74 (77,9%)*	25 (78)	49 (78)	0,969 (a)
Diabetes Mellitus (%)	*26 (27,4%)*	9 (28)	17 (27)	0,906 (a)
History of smoking (%)	***18 (18,9%)***	**1 (3)**	**17 (27)**	**0,005 (a)**
Atrial fibrillation/atrial flutter (%)	*22 (23,2%)*	10 (31)	12 (19)	0,183 (a)
History of coronary artery disease (%)	*29 (30,5%)*	*8 (25)*	*21 (33)*	*0,405 (a)*
Chronic obstructive pulmonary disease (%)	*3 (3,2%)*	*2 (6)*	*1 (2)*	*0,262 (b)*
History of cancer (%)	*15 (15,8)*	*5 (16)*	*10 (16)*	*0,975 (a)*
Prior implanted pacemaker (%)	*14 (14,7)*	*6 (19)*	*8 (13)*	*0,542 (b)*
New York Heart Association class 3-4 (%)	*20 (21,1)*	8 (25)	*12 (19)*	*0,501 (a)*
Symptoms (%)	*86 (90,5)*	*31 (97)*	*55 (87)*	*0,265 (b)*
Symptoms – exertional angina (%)	*33 (34,7)*	*9 (28)*	*24 (38)*	*0,335 (a)*
Symptoms – heart failure (%)	*73 (76,8)*	*27 (84)*	*46 (73)*	*0,215 (a)*
Symptoms – syncope (%)	*6 (6,3)*	-	*6 (10)*	-
Aortic valve replacement (AVR)				
Surgical AVR (%)	83 (87,4%)	29 (91%)	54 (86%)	0,745 (b)
Transcatheter aortic valve implantation (TAVI) (%)	12 (12,6%)	3 (9%)	9 (14%)	0,745 (b)
Long-term Adverse Outcomes				
Heart Failure Hospitalization	20 (21%)	5 (16%)	15 (24%)	0,355 (a)
All-cause mortality	24 (25,3%)	6 (19%)	18 (29%)	0,298 (a)
Cardiovascular mortality	11 (12%)	1 (3%)	10 (16%)	0,092 (b)

Fig. 1 – Baseline characteristics and long-term adverse outcomes (a – chi-square test; b- Fisher's exact test; c- T-student test)

Figure PO 111

Introduction: Aortic stenosis is the most common valvulopathy, with an increasing incidence attributed to rising life expectancy. While the incidence of severe aortic stenosis (SAS) does not differ between sexes, its pathophysiology varies. Identifying sex-related differences in long-term outcomes among patients (pts) undergoing aortic valve replacement (AVR) may enhance clinical awareness and improve patient prognosis.
Objectives: To evaluate sex-related differences in clinical and echocardiographic predictors of long-term adverse events, in pts who underwent AVR.
Methods: Retrospective cohort study of adult pts with SAS, diagnosed between January 2015 and August 2019, who underwent surgical AVR (SAVR) or transcatheter aortic valve implantation (TAVI). Demographic data, baseline clinical characteristics and transthoracic echocardiography (TTE) parameters at three time points: pre-procedure, short term post-procedure, and late post-procedure were collected. The median follow-up duration was 5 years. Long-term adverse events were defined as heart failure (HF) hospitalization or death from any cause after AVR during the follow-up period. Female pts (group 1) were compared to male pts (group 2). Statistical analysis was performed with SPSS v29.
Results: Ninety-five pts were included in the study, of whom 83 (87%) underwent SAVR and 12 (13%) underwent TAVI. Thirty-two pts (34%) were female (group 1). Baseline clinical characteristics were similar between groups, except for tobacco use, which was less common in women (1 (3%) vs. 17 (27%), p = 0.005). On baseline ECG, left ventricular hypertrophy criteria were less frequently observed in Group 1 (12 (39%) vs. 36 (61%), p = 0.004). Baseline laboratory analysis revealed lower hemoglobin levels (13 ± 2 vs. 14 ± 2 g/dL, p = 0.011), lower creatinine levels (median 66 vs. 81 µmol/L, p = 0.002) and higher LDL cholesterol levels (114 ± 35 vs. 98 ± 31 mg/dL, p = 0.039) in Group 1. Pre-procedural TTE parameters were largely similar between groups, except for a smaller aortic valve area in Group 1 (median 0.65 [0.51-0.79] vs. 0.85 [0.74-0.96] cm^2, p < 0.001). However, this difference was not significant after adjustment for body surface area (0.41 ± 0.11 vs. 0.43 ± 0.08 cm^2/m^2, p = 0.431). Short-term post-procedural TTE (median 10 months) demonstrated improvement in aortic valve parameters in both groups. Nonetheless, Group 1 pts had a higher E/e' ratio (median 15 vs. 12, p = 0.029). Long-term follow-up TTE (median 41 months) revealed no significant differences between groups. Regarding long-term adverse events, 20 HF hospitalizations and 24 deaths were recorded, including 11 CV-related deaths, but no significant differences in adverse events were observed between groups (Figure 1).
Conclusions: This retrospective study did not identify any sex-related differences in long-term outcomes in adult pts following AVR.

PO 112. UNDERINFORMED AND OVERLOOKED: THE STATE OF CARDIOVASCULAR HEALTH LITERACY IN PORTUGUESE WOMEN

Jéni Quintal, Catarina Lagoas Pohle, Rui Antunes Coelho, Patrícia Bernardes, David Campos, Marco Tomaz, Sara Gonçalves, Tatiana Duarte, Quitéria Rato, Filipe Seixo

Unidade Local de Saúde da Arrábida, E.P.E.

Introduction: Cardiovascular diseases (CVD) are the leading cause of death among women. Health literacy –the ability to access, understand, and use health information– is vital for managing cardiovascular risk factors (CVRF). However, women often face overlooked symptoms and treatment disparities, with low health literacy exacerbating delays in care and adverse outcomes. Evaluating their cardiovascular health literacy is key to addressing these gaps and improving outcomes.
Objectives: This study aimed to assess cardiovascular health literacy in a Portuguese female population.
Methods: We conducted a cross-sectional survey with women aged 18 and older, recruited during a cardiovascular screening event in Portugal (May 2023). Participants completed a questionnaire adapted from Hyun-Jin Kim et al.'s, evaluating awareness of CVD risk, recognition of symptoms and signs, as well as knowledge regarding the causes, prevention, and appropriate response to CVD. Primary outcome included cardiovascular health literacy; secondary outcome included identifying independent predictors of health literacy. Statistical analyses were conducted with appropriate tests for data distribution.
Results: This study included 204 women (mean age 55 ± 16 years). The majority of participants (89.2%) resided in urban areas, while only 24.0% had completed a bachelor´s degree or higher. CVFR were present in 64.3%, including a smoking history in 29.9%. CVD affected 6.5% participants, and 62.3% were postmenopausal. Regarding cardiovascular health literacy, 15.5% of participants were unaware of CVD in women, 44.1% had limited knowledge, and only 5.6% felt well-informed. While 27.7% identified CVD as the leading cause of death in women, only 18.8% recognized it as the most prevalent disease, and 26.7% acknowledged worse outcomes in women. Around 40% recognized heart attack symptoms, and 44% identified those of heart failure. Low CVRF knowledge was noted in 22.3%, with 31.1% reporting no prior education on CVD literacy and 24.9% feeling inadequately informed. However, 69.5% had encountered the topic in the past year, and 63.8% found information accessible. Key barriers to lifestyle changes were economic

issues (50%) and lack of time (36.7%). Despite these challenges, 77% felt comfortable discussing their health with their doctor. Higher health literacy correlated with greater CVD knowledge ($p < 0.001$). Age ($p = 0.006$), education ($p < 0.001$), and menopause ($p = 0.008$) independently predicted lower CVD awareness.

Table 1. Characteristics of the study population and cardiovascular disease literacy

Variables	Total Cohort n= 204	
Patient demographics		
Age, mean (± SD), years	55	(±16)
Urbanization level of residence, n (%)		
Urban	181	(89.2)
Rural	22	(10.8)
Education level, n (%)		
Primary education	44	(22.4)
Secondary education	105	(53.6)
Bachelors or superior	47	(24.0)
Cardiovascular risk factors and cardiovascular disease		
Cardiovascular risk factors, n (%)	126	(64.3)
Hypertension	64	(31.2)
Dyslipidemia	30	(15.0)
Diabetes mellitus	21	(10.6)
Smoking history, n (%)		
Never smoked	132	(66.7)
Former smoker	44	(22.2)
Current-smoker	55	(7.7)
Alcohol consumption, n (%)		
Never drinks alcohol	104	(51.0)
More than 1-2 cups a day	9	(9.1)
More than 2 times a week	24	(24.7)
Cardiovascular disease, n (%)	13	(6.5)
Cerebrovascular disease, n (%)	4	(2.0)
Menopause, n (%)	127	(62.3)
Cardiovascular health literacy		
Self-evaluation of knowledge about CVD health literacy, n (%)		
I know very well	11	(5.6)
I know well	68	(34.9)
I know little	86	(44.1)
I do not know	30	(15.4)
Cardiovascular disease, general, n (%)		
Recognizes the main cause of death among women	56	(27.7)
Recognizes the most prevalent disease in women	37	(18.8)
Links menopause to heightened risk of CVD	123	(61.8)
Links depression to heightened risk of CVD	155	(77.9)
Acknowledges worse cardiovascular outcomes in women	52	(26.7)
Acute myocardial infarction, n (%)		
Correctly identifies symptoms	80	(39.6)
Recognizes angina and equivalents	170	(84.2)
Knows how to act in an AMI	129	(68.3)
Stroke, n (%)		
Correctly identifies symptoms	115	(56.7)
Recognizes it as a chronic disease	86	(48.3)
Heart failure, n (%)		
Correctly identifies symptoms	88	(43.6)
Level of knowledge about CVD prevention, n (%)		
Low[1]	38	(18.9)
Medium[2]	28	(13.9)
High[3]	133	(66.2)
Level of knowledge about CVRF, n (%)		
Low[1]	45	(22.3)
Medium[2]	96	(47.5)
High[3]	55	(27.2)
Cardiovascular health education		
Degree of information received about CVD in women, n (%)		
I was well informed	26	(13.5)
I received some information	59	(30.6)
I was not informed	60	(31.1)
I received little information	48	(24.9)
Finds it easy to acess information about CVD in women, n (%)	113	(63.8)
Heard about CVD in women in the last year, n (%)	137	(69.5)
Barriers to a healthy lifestyle, n (%)		
Economic issues	98	(50.0)
Already has a healthy lifestyle	71	(36.2)
Lack of time	72	(36.7)
Does not believe in CVD prevention	14	(7.1)
Lack of information	21	(10.7)
Not interested	10	(5.1)
Others	24	(12.4)
Feels comfortable discussing their illness with the doctor, n (%)	137	(77.0)

AMI - acute myocardial infarction; CVD – cardiovascular disease; CVRF – cardiovascular risk factors; [1] < 50% correct answers; [2] 50-70% correct answers; [3] >70% correct answers.

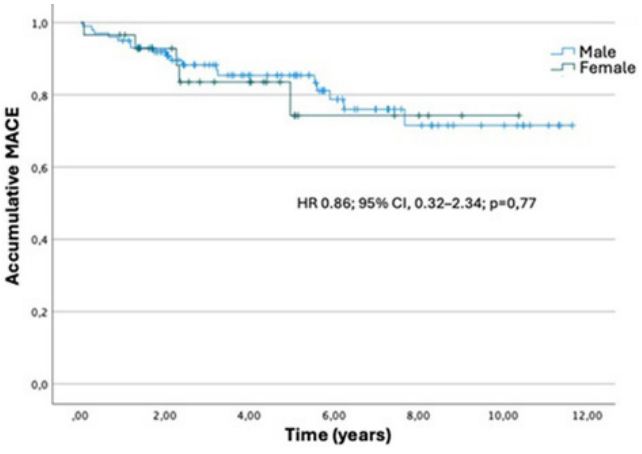
Conclusions: This study highlights significant gaps in cardiovascular health literacy among Portuguese women, with age, education, and menopause influencing awareness. Addressing barriers like economic challenges and strengthening health literacy is essential to empower women in addressing CVRF and improving outcomes.

PO 113. ACUTE CORONARY SYNDROME IN YOUNG WOMEN: RISK FACTORS AND LONG-TERM PROGNOSIS

Liliana Brochado, Oliveira Baltazar, Mariana Martinho, Bárbara Ferreira, Diogo Cunha, João Luz, Nazar Ilchyshyn, Adriana Silva, Ana Rita Pereira, Hélder Pereira, Paula Fazendas

Hospital Garcia de Orta, EPE.

Introduction: Heart disease mortality rates in young women are rising. Despite this, there are significant gaps in knowledge regarding the prevention and treatment of ischemic heart disease in young adults, particularly women, who remain underrepresented in clinical trials.
Objectives: Describe the demographic and clinical characteristics of young women hospitalized with Acute Coronary Syndrome (ACS) and assess major adverse cardiovascular events (MACE).
Methods: We conducted a retrospective, single-center study on all young individuals hospitalized with ACS between January 1, 2013, and October 30, 2023. For women and men, we defined being young as having 45 years or less. The median follow-up period was 4.5 years (SD 2.9). Demographics, clinical characteristics, and outcomes were analyzed, with MACE defined as the composite of total mortality, myocardial infarction, stroke, and hospitalization for heart failure.
Results: Of the 130 patients who experienced ACS, 22.3% were women, with a mean age of 41.1 years (SD 3.9). In the women's group, 93.1% had at least one cardiovascular risk factor: 65.5% were overweight or obese, 62.1% were smokers, 62.1% had dyslipidemia, 27.6% had hypertension, 6.9% had diabetes and 24.1% had a family history of premature ACS. Less frequent comorbidities included drug use (6.9%) and autoimmune diseases (6.9%). Regarding clinical presentation, 69% of women were diagnosed with STEMI, 17.2% with NSTEMI, and 13.8% were admitted with unstable angina. Cardiorespiratory arrest occurred in 3.4% of cases. Upon admission, 41.4% had an ejection fraction (EF) below 50%. Most women had single-vessel disease (79.3%), predominantly affecting the left anterior descending artery (62.1%). Atherosclerosis was the leading cause of ACS (74.9%), followed by embolism (10.3%) and spontaneous coronary artery dissection (10.3%). Comparing men and women, the only statistically significant difference in demographic characteristics, risk factors, and clinical presentation was the proportion of smokers (62.1% in women vs. 84.2% in men, $p = 0.017$). During follow-up, 17.2% of women developed MACE, with cardiovascular mortality at 5.4% and recurrent myocardial infarction at 6.9%. There were no significant differences between sexes regarding the prognosis of developing MACE.



Conclusions: Our study reveals that the clinical presentation and diagnosis of ACS in young women closely resemble that of men when baseline characteristics are similar. However, the prognosis is concerning, with a high incidence of MACE in both sexes. Early intervention targeting cardiovascular risk factors, particularly smoking, is essential, regardless of young age or female sex.

Sexta-feira, 11 Abril de 2025 | 14:00-15:00

Área de Posters-écran 2 | Sessão de Posters 18 – Miocardiopatia dilatada

PO 114. FROM GENES TO OUTCOMES: THE PROGNOSTIC ROLE OF GENETIC MUTATIONS IN DILATED CARDIOMYOPATHY

Inês Pereira de Miranda, Rodrigo Brandão, Filipa Gerardo, Carolina Pereira Mateus, Mara Sarmento, Mariana Passos, Inês Fialho, Ana Oliveira Soares, David Roque, João Bicho Augusto

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

Introduction: Dilated cardiomyopathy (DCM) is a heterogeneous condition with varying disease progression rates. While imaging metrics like left ventricular ejection fraction (LVEF) are established prognostic tools, the role of genetic testing in predicting outcomes remains unclear. Variants of uncertain significance (VUS) and pathogenic/likely pathogenic (P/LP) mutations are found in a significant proportion of DCM patients, but their prognostic value is not well-defined.

Objectives: To evaluate prognostic value of genetic findings, clinical, and imaging characteristics in predicting adverse cardiovascular (CV) outcomes in DCM patients.

Methods: We conducted a single-center, retrospective study of 137 DCM patients who underwent genetic testing between 2018 and 2024. Data were collected on demographics, clinical history, imaging parameters (echocardiogram and cardiac MRI), and genetic testing (gene negative, VUS, or P/LP variant). The primary endpoint was a composite of CV events, including heart failure admission, malignant arrhythmia (ventricular tachycardia/fibrillation), cardiac syncope, cardiovascular death, myocardial infarction, and/or ischemic stroke. Two predictive models were employed to assess the impact of clinical and genetic variables on events: (1) logistic regression and (2) Random Forest. Performance metrics, including accuracy and area under the receiver operating characteristic curve (AUC), were calculated for both models using a train-test split (80% training, 20% testing).

Results: A total of 119 patients were suitable for analysis (mean age 60 ± 13 years, 65% male); 55.5% were gene positive – 46.2% had at least one VUS,

Figure 1. Model performance comparison between logistic regression and random forest.

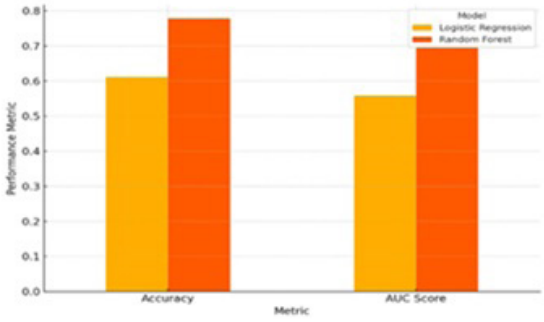
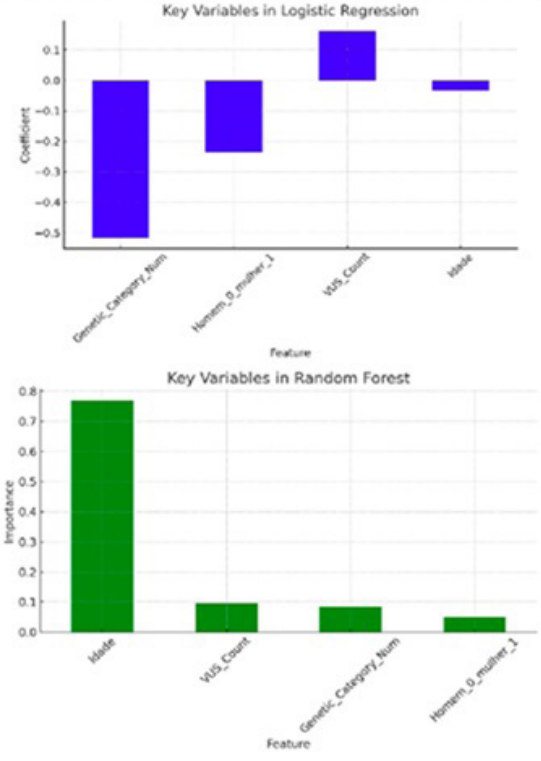


Figure 2. Key variables included in the logistic regression model (top - coefficients represented) and in the random forest model (bottom - feature importance scores).



and 9.3% had P/LP (TTN was the most common gene). The primary outcome was met in 68.1%. In logistic regression, age (coefficient: -0.03, p = 0.09) and imaging variables, including LVEF (coefficient: -0.05, p = 0.01), were the strongest predictors of adverse outcomes. Genetic category was not statistically significant (coefficient: -0.63, p = 0.06). The rate of adverse events increased with more VUSs present: no VUS 69%, 1 VUS 65%, 2 VUS 62%, 3 VUS 86%, 5 VUS 100%, but this trend did not achieve statistical significance (coefficient: 0.31, p = 0.20). In the Random Forest analysis, LVEF accounted for 40% of total feature importance, followed by LV end-diastolic volumes (25%) and age (21%). Genetic data, including VUS count (6%) and genetic category (5%), contributed minimally to the model's predictive performance. The Random Forest model significantly outperformed logistic regression, with an accuracy of 77.8% and an AUC score of 69.5%, compared to logistic regression's accuracy of 61.1% and AUC score of 55.8%.
Conclusions: In this cohort of DCM patients, genetic variables such as P/LP variants and the number of VUS had limited prognostic value. Data limitations prevented assessing specific high-risk genotypes, which could impact outcomes.

PO 115. GENDER DIFFERENCES IN MYOCARDIAL REVERSE REMODELING AFTER GUIDELINE-DIRECTED MEDICAL THERAPY IN DILATED CARDIOMYOPATHY

Pedro Miguel Mangas Neto da Palma[1], Maria Miguel Fernandes[2], Inês Fortuna[2], Luís Santos[1], Ana Pinho[1], Catarina Marques[1], Paulo Araújo[1], Xavier Resende[1], Sandra Amorim[1], Manuel Campelo[1], J. Silva Cardoso[1], Elisabete Martins[1]

[1]Centro Hospitalar de S. João, EPE. [2]Faculdade de Medicina da Universidade do Porto.

Introduction: The prognosis of patients with dilated cardiomyopathy (DCM) has improved with guideline-directed medical therapy (GDMT), which promotes myocardial reverse remodeling and reduces morbidity and mortality. Male gender is consistently associated with higher rates of sudden cardiac death, heart failure-related mortality, and transplant in DCM cohorts. These gender differences in outcomes are driven by genetic, hormonal and potentially treatment-related factors. Gender differences in response to GDMT may contribute to these disparities, but data on this topic are scarce.
Objectives: To assess and characterize gender-based differences in response to GDMT in patients with DCM.
Methods: We conducted a single-center retrospective cohort study, including patients diagnosed with DCM according to the 2023 ESC Guidelines for the Management of Cardiomyopathies proposed criteria since 2019. Comprehensive data, including clinical evaluations, laboratory findings, echocardiographic parameters, and cardiac MRI results, were collected at baseline and following the initiation of guideline-directed medical therapy (GDMT), with a minimum interval of 12 months between assessments. Left ventricular (LV) remodeling was defined as an increase in left ventricular ejection fraction (LVEF) of ≥ 10 percentage points.
Results: A total of 64 patients (mean age 51.2 ± 15.4 years; 41% female) were followed for an average of 7.3 years. Pathogenic genetic variants were identified in 36% of patients, with TTN (48%) and FLNC (17%) being the most frequent. Atrial fibrillation was observed in 14% of patients, and 18% had complete left bundle branch block. GDMT was widely implemented: 94% of patients received ACE inhibitors or ARNI (57% ARNI), 92% were on beta-blockers, 83% on SGLT2 inhibitors, and 69% on MRA. The mean baseline LVEF was 36.1% (35.50% ± 1.60 in females vs. 36.9% ± 2.16 in males), which improved to 40.1% after GDMT (40.3% ± 1.69 in females vs. 39.7% ± 1.87 in males). Overall, 42% of patients met the criteria for LV reverse remodeling, with a higher prevalence in females (45.9%) compared to males (37.1%). Conversely, 14% of patients experienced significant disease progression (LVEF decrease of ≥ 10 percentage points), predominantly affecting males (60%).
Conclusions: This study highlights gender-based differences in myocardial response to GDMT in DCM. Females showed higher rates of reverse remodeling and lower rates of disease progression compared to males. These findings underscore the need for gender-specific approaches to optimize DCM management and outcomes.

PO 116. PREDICTING ATRIAL FIBRILLATION – CAN ATRIAL PARAMETERS GENERATED BY ARTIFICIAL INTELLIGENCE IN CARDIAC MAGNETIC RESONANCE BE THE KEY IN DILATED CARDIOMYOPATHY?

Marta Paralta de Figueiredo, Rafael Viana, António Almeida, Rita Louro, Miguel Carias, Diogo Brás, Bruno Piçarra, Manuel Trinca

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Introduction: Atrial fibrillation (AF) is frequent in dilated cardiomyopathy (DCM) with a prevalence reported as high as 40% in some cohorts, far superior than the 2% in the general population. It carries a high-risk of stroke as well as increased mortality. Prompt diagnosis and management are essential to minimizing AF-related adverse outcomes in patients with cardiomyopathies.
Objectives: Our aim is to uncover if there are AI-derived CMR parameters differences in DCM that could be associated with AF.

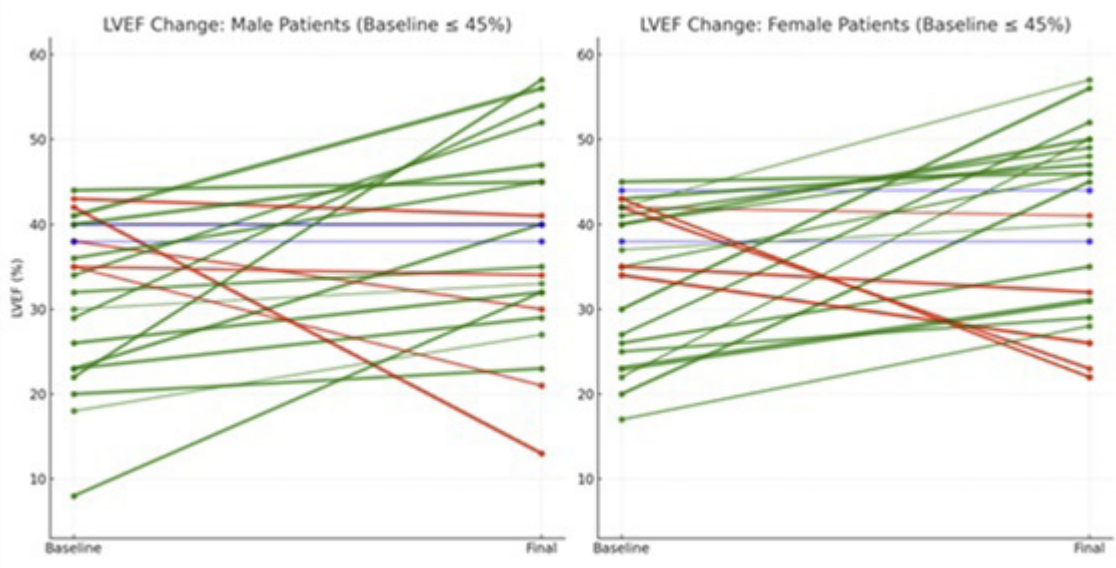


Figure PO 115

Methods: We retrospectively analyzed a population of patients submitted to CMR and divided them in two groups – those with DCM and those without structural disease. We documented demographic factors, left (LAEF) and right (RAEF) atrial ejection fraction, atrial volumes and the longitudinal LA shortening obtained through AI in CMR. We then performed univariate analysis to establish the relationship between variables.
Results: Out of 103 patients, 22.3% (n = 23) had no structural disease that we considered the control group and 39.8% (n = 41) had DCM. 59.4% were male, with mean age of 53 ± 17 years, with no differences between groups. Patients with DCM had twice higher prevalence of AF (4 vs. 2%). When comparing groups, these patients had comparable left (53.7 ± 20.5 mL) and right atrial volumes (30.3 ± 13.6mL) between them. However, patients with DCM had significantly lower LAEF (47 vs. 65%, p = < 0.001), lower RAEF (46 vs. 52%, p = 0.04), lower LA longitudinal shortening (13 vs. 40, p < 0.001) and lower RA longitudinal shortening (22 vs. 40, p < 0.001).
Conclusions: Patients with DCM have a much higher risk of AF than the general population. Atrial ejection fraction and atrial longitudinal shortening generated by AI in CMR could be earlier predictors of AF when comparing with atrial volumes in patients with DCM. These parameters could help earlier diagnosis of AF and improve outcomes.

PO 117. FORECASTING VENTRICULAR ARRHYTHMIAS IN DILATED CARDIOMYOPATHY: A FOCUS ON CARDIAC IMPLANTABLE ELECTRONIC DEVICES PATIENTS

Mariana Rodrigues Simões, Rafaela Fernandes, Diogo Fernandes, Ana L. Silva, Tatiana Pereira Dos Santos, João Ferreira, Luís Paiva, Lino Gonçalves

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

Introduction: Ventricular arrhythmias (VA) increase mortality and morbidity in dilated cardiomyopathy (DCM). Since major trials focus on ischemic cardiomyopathy, identifying predictors specific to DCM is crucial.
Methods: We performed a single-centre retrospective, observational study reviewing patients with DCM who received cardiac implantable electronic devices (CIED) between May 2014-October 2018 to evaluate sustained ventricular arrhythmias and associated factors, using clinical records and SPSS software for analysis.
Results: A total of 100 patients were included. Seventy-four percent of patients were men. Sixty-six patients had a CRT (cardiac resynchronization therapy)-defibrillator, 18 patients had a CRT-pacemaker, and 16 patients had an ICD (implantable cardioverter-defibrillator). Ninety-three percent of patients implanted the device as primary prevention and 7% as secondary prevention. Seventy-eight patients had arterial hypertension (HTN) and 23 presented diabetes *mellitus* (DM). At the time of device implantation, 45 patients had atrial fibrillation (AF) and by the end of follow up, that number raised to 65. During a follow-up time of 6.80 ± 3.55 years, 33 patients presented at least one sustained VA detected by the device: 21 patients presented only ventricular tachycardia events, 2 experienced only ventricular fibrillation events and 10 had both events. Patients were divided in VA group and non-VA group. No differences were found related to age (65.36 ± 2.16 in the VA group versus (*vs*) 67.30 ± 1.23 years, p = 0.407). The median creatinine levels were the same across groups [1.22 (IQR 0.49) in the VA vs. 1.09 (IQR 0.57) mg/dl, p = 0.361]. Patients that presented VA had significantly higher values of left ventricular end-diastolic diameter (LVEDD): 70 (IQR 9) *vs.* 66 (IQR 13) mm, p = 0.029; but no differences when it came to left ventricular end-systolic diameter (LVESD): 58.73 ± 1.41 mm in the AV group vs. 55.26 ± 1.20 mm, p = 0.096. Left ventricular ejection fraction (LVEF) was the same among groups: 30 (IQR 9)%, p = 0.919. There were no association between HTN (p = 0.347), DM (p = 0.515) or AF at the time of device implantation (p = 0.351) and the occurrence of VA events. Although by the end of follow up, 25 of the 33 patients in the VA group had atrial fibrillation, that wasn´t statistically significant (p = 0.308).
Conclusions: In patients with DCM undergoing CIED implantation, sustained AV was linked to increased LVEDD, while no significant association was observed with LVEF.

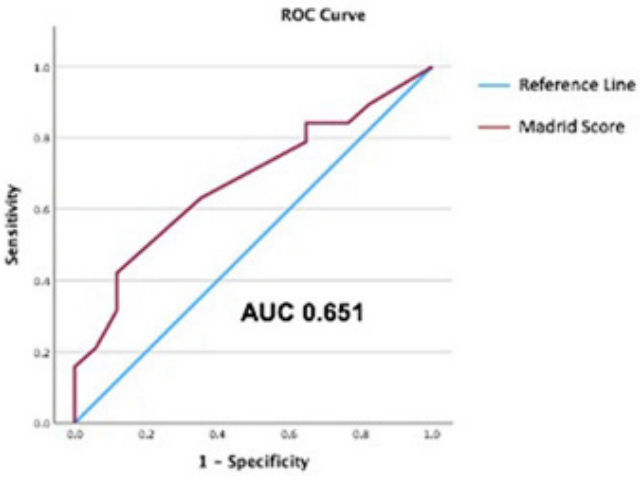
PO 118. GENETIC MUTATIONS AND TESTING PROFILES LANDSCAPE IN DILATED CARDIOMYOPATHY PATIENTS: A DIAGNOSTIC IMPACT ANALYSIS

João Fernandes Pedro[1], Ana Abrantes[1], Catarina Gregório[1], Fátima Salazar[2], Ana Francês[2], Rafael Santos[1], Joana Rigueira[1], Doroteia Silva[1], Nuno Lousada[1], Fausto J. Pinto[1], Dulce Brito[1], João R. Agostinho[1]

[1]Department of Cardiology, Hospital de Santa Maria (ULSSM), CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa. [2]Cardiology Department, Hospital Santa Maria (ULSSM).

Introduction: Dilated cardiomyopathy (DCM) often has a genetic etiology. The use of genetic testing in this setting seems to be growing but is still limited. The Madrid Score has been proposed to predict the likelihood of a positive genetic test, though its accuracy is not well established.
Objectives: This study aims to evaluate the results of genetic testing in dilated cardiomyopathy patients and the predictive value of the Madrid Score and to identify factors influencing testing decision.
Methods: A prospective cohort study of incident DCM patients was conducted at a single tertiary center over 4 years. Data on patient characteristics, genetic testing usage, results and the reasons for not performing the test were collected. The Madrid Score was calculated for each patient, and its performance was evaluated using receiver operating characteristic (ROC) curve analysis.
Results: 91 patients were included, with a mean age of 61 ± 15 years and a mean left ventricle ejection fraction of 25 ± 8%, 70.3%, and 47.2% were in NYHA class II and 24.7%, in class III. More than half of the patients (50.6%) had an implantable defibrillator, mostly for primary prevention (84.1%). A family history of DCM was present in 15.6% of patients and genetic testing was performed in 58.9% of patients. The main reasons for not performing genetic testing were advanced age/comorbidities (32.4%), presumed alcoholic cardiomyopathy (29.7%) and tachycardia-induced cardiomyopathy (8.1%). Of the patients who underwent genetic testing, 52.8% had a positive result. Identified mutations included TTN (4), DSP (4), FLNC (3), LMNA (2), SCN5A (1), DES (1), RYR2 (1), SGCB (1), DSG2 (1), and BAG3 (1). A second mutation was found in 12.5% of those with a positive result. When applied to the patients that were tested, the Madrid Score predicted a mean 33.02 ± 22.42% likelihood of a positive genetic test, which was inferior to the observed rate (52.8%), indicating that it significantly underestimates the positivity of a test by a mean difference of 19.78% (95%CI 12.41-27.15; p < 0.001). ROC analysis showed an AUC of 0.651 (95%CI: 0.537-0.765), reflecting a moderate to poor performance (Figure 1).

Figure 1



Conclusions: In this cohort the positivity of genetic testing was higher than predicted by the Madrid Score. These results suggest that the Madrid Score seems to underestimate the true probability of a positive result and that the threshold to perform genetic testing in the absence of a known etiology for DCM should be low.

PO 119. REFINING GENETIC PREDICTION IN DILATED CARDIOMYOPATHY: EVALUATING THE MADRID SCORE AND ENHANCED MACHINE LEARNING MODELS WITH CLINICAL AND IMAGING DATA

Inês Pereira de Miranda, Carolina Pereira Mateus, Filipa Gerardo, Mara Sarmento, Rodrigo Brandão, Mariana Passos, Inês Fialho, Ana Oliveira Soares, David Roque, João Bicho Augusto

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

Introduction: Investigating dilated cardiomyopathy (DCM) etiology in clinical practice is challenging, especially when selecting patients who benefit from genetic testing. In 2022 Madrid Score was created to help predict patients who are likely to have pathogenic or likely pathogenic (P/LP) genetic variants.
Objectives: We aimed to evaluate the Madrid Score's applicability in a real-world population of DCM patients.
Methods: We conducted a single-center, retrospective study evaluating 137 DCM patients who underwent genetic testing between 2018 and 2024. Data collected included demographics, clinical history, imaging parameters (echocardiogram and cardiac MRI), and genetic testing results (gene negative, variant of uncertain significance [VUS], or P/LP variant). The Madrid Score (variables include family history of DCM, skeletal muscle disease, left bundle branch block, low QRS voltage in limb leads, hypertension) was calculated for all patients. Logistic regression models were developed to evaluate Madrid Score's predictive power, with additional clinical and imaging variables tested to enhance predictions. Advanced machine learning models, including Gradient Boosting, were also tested. Performance metrics such as accuracy, precision, recall, F1 score, and area under the receiver operating characteristic curve (AUC) were calculated. Feature importance analysis was performed on the Gradient Boosting model to identify key predictors. The dataset was manually oversampled to address class imbalance in patients with P/LP variants.
Results: Of 119 suitable patients (mean age 60 ± 13 years, 65% male), 55.5% were gene positive - 46.2% VUS, 9.3% P/LP (TTN was the most common gene). Patients with P/LP mutations had significantly higher Madrid Scores than those with VUS or no mutation (35.5 ± 19.6 vs. 33.3 ± 19.6 vs. 30.6 ± 19.1; p = 0.03). Logistic regression confirmed the Madrid Score as an independent P/LP mutation predictor (odds ratio per unit increase: 1.03; 95%CI: 1.01-1.06; p = 0.03) with moderate discriminatory ability (AUC = 0.67). Logistic regression incorporating clinical and imaging features showed limited performance (AUC = 0.43, accuracy = 70.6%, recall = 66.7%, precision = 57.1%). In contrast, the Gradient Boosting model significantly outperformed others, achieving AUC = 0.91, accuracy = 85.3%, recall = 86.7%, and precision = 81.3%. Feature importance analysis revealed age, left ventricular ejection fraction, and LV end-diastolic volume as top predictors above the Madrid Score.
Conclusions: The Madrid Score is a useful predictor of P/LP genetic variants in DCM, but its discriminatory ability is moderate. Advanced machine learning models integrating clinical and imaging data significantly improve predictive accuracy. These findings highlight the potential of combining data-driven approaches to enhance genetic testing yield, though further validation is needed.

Figure 1. Distribution of Madrid score by genetic test result

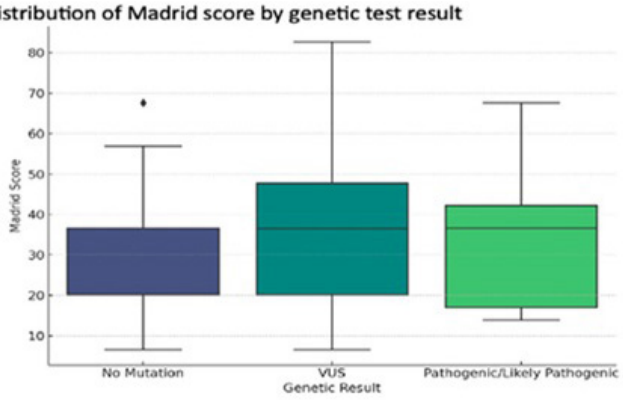
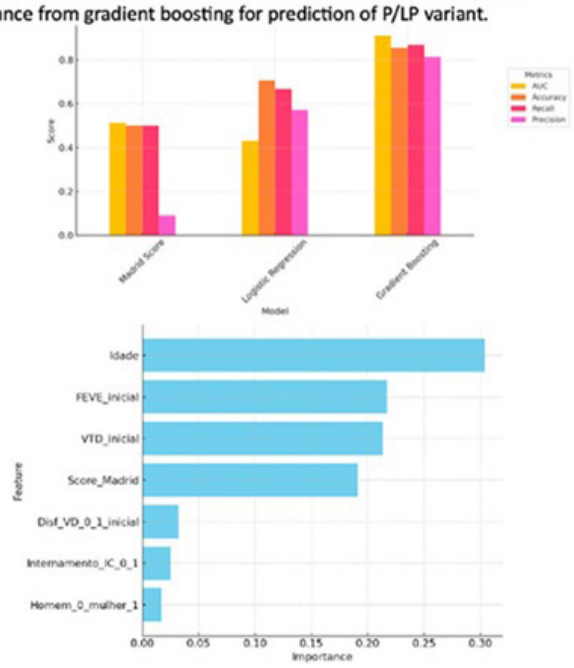


Figure 2. (A) Performance metrics comparison across models, and (B) corrected feature importance from gradient boosting for prediction of P/LP variant.



Sexta-feira, 11 Abril de 2025 | 14:00-15:00

Área de Posters-écran 3 | Sessão de Posters 19 – Imagem nas miocardiopatias

PO 120. THE SPECTRUM OF HYPERTROPHIC CARDIOMYOPATHIES – WHERE IS FABRY?

Marta Miguez Vilela[1], Miguel Raposo[1], João Cravo[1], Daniel Cazeiro[1], Diogo Ferreira[1], Catarina Sousa[1], Patrício Aguiar[2], João Agostinho[3], Fausto Pinto[1], Dulce Brito[1]

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Introduction: Fabry cardiomyopathy (Fabry-CM) is a lysosomal storage disorder that can lead to left ventricular hypertrophy (LVH), often mimicking other forms of hypertrophic cardiomyopathy (HCM). Several studies have attempted to identify distinct features of Fabry-CM using routine diagnostic methods but differentiating it from other forms of HCM remains a diagnostic challenge.

Objectives: Assess key echocardiographic (echo) and electrocardiographic (EKG) features to differentiate Fabry-CM from other forms of HCM.

Methods: A retrospective, single-center study included patients with Fabry-CM and compared them to patients with other conditions associated with LVH - sarcomeric HCM, cardiac amyloidosis (CA), and aortic stenosis (AS). Patients in the Fabry-CM group were matched for age, gender, and comorbidities. Data from echo and EKG at the time of diagnosis were collected.

Results: A total of 14 patients with Fabry-CM were compared to 15 with CA, 12 with HCM, and 12 with AS. The groups were similar in terms of age and gender distribution. The mean age was 59.4 ± 3.4 years, 69.2 ± 2.8 years, 62.2 ± 5.5 years, 65 ± 1.5 years, respectively (p = 0.1). Males accounted for 64%, 66%, 58%, and 50% of each respective group (p = 0.4). Fabry-CM was associated with a significantly lower interventricular septum/posterior wall thickness ratio (IVS/LVPW) compared to HCM (1.06 ± 0.03 vs. 1.57 ± 0.11; p < 0.001) and similar to CA and AS (1.13 ± 0.03 and 1.05 ± 0.03; p = 0.2 and p = 0.5, respectively). LVPW thickness was greater in Fabry-CM compared to HCM (14.9 ± 0.9 mm vs. 11.5 ± 0.6 mm; p = 0.01), amyloidosis-CM (13.6 ± 0.5 mm; p = 0.018) and AS (13.1 ± 0.1 mm; p = 0.06). Ejection fraction (EF) and global longitudinal strain (GLS) were lower in Fabry-CM compared to HCM (EF: 56% ± 1.8 vs. 67.2% ± 0.9, p < 0.001; GLS: -13% ± 1.1 vs. -16% ± 0.9, p = 0.02) and AS (EF: 61.3% ± 1.4, p = 0.02; GLS: -15.45% ± 0.6, p = 0.06).

	Fabry	Amyloidosis	HCM	AS
n (%)	14 (26%)	15 (28%)	12 (23%)	12 (23%)
Age years (mean ±SD)	59.4 (± 3.4)	69.2 (± 2.8)	62,2 (± 5.5)	65 (± 1.5)
Male, n (%)	9 (64%)	10 (66%)	7 (58%)	6 (50%)
Echocardiogram				
Ratio IVS/LVPW (mean ±SD)	1.06 (± 0.03)	1.13 (± 0.03)	1.57 (± 0.11)	1.05 (± 0.03)
Septum mm (mean ±SD)	15.1 (± 1)	14.9 (± 0.5)	14.1 (± 0.7)	12.9 (± 0.2)
Anterior wall mm (mean ±SD)	14.5 (± 0.88)	14.3 (± 0.44)	13.8 (± 0.63)	13.4 (± 0.11)
Lateral wall mm (mean ±SD)	14.9 (± 0.9)	14.1 (± 0.4)	13.4 (± 0.7)	13.1 (± 0.12)
Inferior wall mm (mean ±SD)	14.8 (± 0.9)	14.01 (± 0.5)	10.7 (± 0.65)	13.2 (± 0.14)
Infero-lateral wall mm (mean ±SD)	14.9 (± 0.9)	13.6 (± 0.5)	11.5 (± 0.6)	13.1 (± 0.1)
FEVE % (mean ±SD)	56 (± 1.8)	54.1 (± 1.5)	67.2 (± 0.9)	61.3 (± 1.4)
GLS % (mean ±SD)	13 (± 1.1)	11.4 (± 0.5)	16.18 (± 0.9)	15.45 (± 0.6)
Strain anterior wall % (mean ±SD)	10.7 (± 2.1)	11.5 (± 0.6)	12.5 (± 1.5)	12.54 (± 1.6)
Strain lateral wall % (mean ±SD)	12.2 (± 1.5)	11.4 (± 0.7)	16 (± 1.1)	13.8 (± 1.1)
Strain Infero-lateral wall % (mean ±SD)	11.3 (± 1.4)	8.9 (± 0.8)	16 (± 1.6)	13.1 (± 0.9)
Strain inferior wall % (mean ±SD)	13.4 (± 1.7)	11.6 (± 0.7)	17.6 (± 1.6)	15.6 (± 0.7)
Strain septum wall % (mean ±SD)	12.6 (± 1.5)	9.1 (± 0.7)	17 (± 1.7)	15.7 (± 1.5)
Apical sparing n (%)	4 (29%)	8 (53%)	1 (8,3%)	0
RV free wall % (mean ±SD)	17.7 (± 2.9)	16.1 (± 1.1)	23.43 (± 1.3)	23.43 (± 1.3)
E/E (mean ±SD)	13.4 (± 1.2)	18.1 (± 0.3)	14.2 (± 2.7)	13.9 (± 1.4)
Derrame pericardico	1 (7%)	3 (21%)	1 (8%)	0
Electrocardiogram				
PR ms (mean ±SD)	128 (± 8.4)	183 (± 5.3)	155 (± 6.4)	163 (± 6.9)
R AVL mV (mean ±SD)	1.6 (± 0.7)	0.4 (± 0.06)	0.8 (± 0.1)	0.6 (± 0.09)
criterios HVE (mean ±SD)	7 (50%)	0	10 (83%)	4 (33%)
Low voltage membros (mean ±SD)	0	7 (46%)	0	0

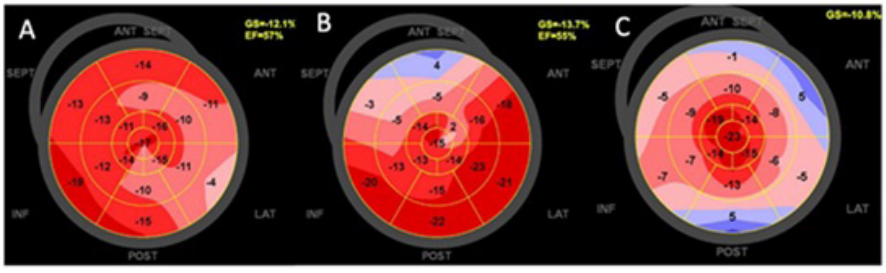

Figure 1: Comparison of echocardiographic and electrocardiographic features across Fabry cardiomyopathy, hypertrophic cardiomyopathy, cardiac amyloidosis and aortic Stenosis. (A) Fabry cardiomyopathy; (B) Sarcomeric hypertrophic cardiomyopathy; (C) Cardiac amyloidosis.

LVPW strain was reduced in Fabry-CM compared to HCM (-11.3 ± 1.4 vs. -16 ± 1.6%, p = 0.019). Apical sparing was observed in 29% of Fabry-CM patients vs. 53% in CA (p = 0.1). Fabry-CM also showed reduced right ventricular (RV) free wall strain compared to HCM (-17.7 ± 2.9 vs. -23.43 ± 1.3%, p = 0.019) and a lower RV free wall strain/RV global strain ratio compared to CA (1.1 ± 0.01 vs. 1.3 ± 0.1, p = 0.03). Regarding EKG, Fabry-CM was strongly associated with a short PR interval and a prominent R wave in aVL (> 1.1 mV) compared to other hypertrophic entities (short PR: 7 (13%) in Fabry-CM patients compared to none in the remaining groups (p < 0.001); R wave in aVL > 1.1 m: 9 (17%) vs. 1 (2%), (p < 0.001).
Conclusions: Routine exams can play a key role in identifying Fabry-CM among patients with other forms of HCM. Key features include a lower IVS/LVPW ratio, increased LVPW thickness, reduced LVPW strain and RV free wall strain, shorter PR interval and a prominent R wave in aVL.

PO 121. ECHOCARDIOGRAPHIC DIFFERENTIATION OF CARDIAC AMYLOIDOSIS SUBTYPES

João Mendes Cravo[1], Ana Abrantes[1], Marta Vilela[1], Catarina Gregório[1], Catarina Campos[2], Isabel Conceição[2], Catarina Sousa[1], Fausto J. Pinto[1], Dulce Brito[1], João Agostinho[3]

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Introduction: Cardiac amyloidosis (CA) presents significant diagnostic challenges due to the overlapping echocardiographic (echo) features observed among its subtypes. Differentiating transthyretin wild-type (wtATTR), transthyretin hereditary (hATTR) and light chain (AL-CM) cardiac amyloidosis remains complex, especially when relying solely on echo criteria.
Objectives: To compare echo features that can distinguish wtATTR, hATTR and AL-CM and to evaluate their progression over time.
Methods: A retrospective, single-center study included patients with CA. Three groups of patients - wtATTR, hATTR and AL-CM - matched for age, gender and comorbidities were established. Echo parameters at diagnosis and 2-year follow-up were collected and analyzed.
Results: A total of 120 patients with CA were initially screened and 45 were selected for the study: 14 (31%) with hATTR, 20 (44%) with wtATTR and 11 (25%) with AL-CM. Baseline characteristics were comparable across groups in terms of mean age: 82 ± 1.1 years for wtATTR, 77 ± 2.6 years for hATTR and 68 ± 3.1 years for AL-CM (p = 0.06). Most patients were male: 13 (92%) vs. 17 (85%) vs. 9 (81%) respectively (p = 0.2). At baseline, significant differences were observed between wtATTR and hATTR. Patients with wtATTR-CM had higher left ventricular (LV) mass (182 ± 47 g/m^2 vs. 138 ± 44 g/m^2, p = 0.01), reduced global longitudinal strain (GLS) and segmental strain (-10% ± 0.6 vs. -13% ± 0.9, p = 0.01), higher left atrial (LA) volume (49 ± 10 mL/m^2 vs. 39 ± 11 mL/m^2, p = 0.15) and a higher right ventricle (RV) free wall strain to RV global strain ratio (1.4 ± 0.1 vs. 1.2 ± 0.1, p = 0.01). Apical sparing was present in both groups, with higher prevalence in wtATTR, although the difference was not statistically significant (p = 0.07). Comparatively, wtATTR and AL-CM were similar, except for septal thickness, greater in wtATTR (16 ± 0.5 mm vs. 13 ± 0.8 mm, p = 0.02), and LA volume, which was higher in wtATTR (49 ± 10 mL/m^2 vs. 36 ± 9 mL/m^2, p = 0.001). The mean time to echo re-evaluation was 21 ± 1.6 months, during which all patients with ATTR were on tafamidis 61 mg and all AL-CM patients were treated with standard of care. In the wtATTR group, re-evaluation demonstrated a significant reduction in LV mass (mean decrease of 26 ± 3 g/m^2, p = 0.023) and a worsening in GLS (mean reduction of 1.2% ± 1.3, p = 0.01). There were no other statistically significant changes. Patients with hATTR, had significant improvement in the E/e' ratios (mean reduction of 3.7 ± 1.3, p = 0.01). Among AL-CM no significant changes were observed.
Conclusions: Echo remains a challenge in differentiating cardiac amyloidosis subtypes. In this cohort, wtATTR showed more advanced features at diagnosis, likely due to the higher time from symptom onset to diagnosis when compared to the other CA types. At two years, treatment seems to lead to stabilization of most echo parameters but, strikingly, in patients with wtATTR LV mass reduction was observed.

	hATTR-CM	wtATTR-CM	AL-CM	
N= 45	14 (31)	20 (44)	11 (24)	
Age years (mean ±SD)	77.6 (± 2.6)	82.3 (± 1.1)	68.1 (± 3.1)	NS
Male, n (%)	11 (78)	17 (85)	8 (72)	NS
Echocardiogram at diagnosis				
Ratio IVS/LVPW (mean ±SD)	1.18 (± 0.04)	1.16 (± 0.05)	1.03 (± 0.02)	NS
LV mass g/m² (mean ±SD)	137.7 (±44.6)	182 (±47.2)	152 (±38.5)	p=0.02
RWT (mean ±SD)	0.67 (±0.15)	0.66 (±0.2)	0.64 (±0.1)	NS
Septum mm (mean ±SD)	12.3 (± 0.8)	15.5 (± 0.5)	13.7 (± 0.8)	p=0.01
Anterior wall mm (mean ±SD)	11.6 (± 0.7)	14.5 (± 0.52)	13.7 (± 0.7)	p=0.01
Lateral wall mm (mean ±SD)	11.7 (± 0.7)	13.7 (± 0.4)	13.8 (± 0.4)	p=0.05
Inferior wall mm (mean ±SD)	11.4 (± 0.6)	14.1 (± 0.7)	13.4 (± 0.9)	NS
FEVE % (mean ±SD)	55.9 (± 2.2)	50.5 (± 2.4)	56 (± 2.8)	NS
GLS % (mean ±SD)	13.4 (± 0.8)	10.1 (± 0.6)	11 (± 1.1)	p=0.01
Strain anterior wall % (mean ±SD)	12.6 (± 0.9)	10.3 (± 0.9)	12.2 (± 1.5)	NS
Strain lateral wall % (mean ±SD)	14.3 (± 0.9)	8.8 (± 0.9)	12.4 (± 1.8)	p=0.004
Strain Infero-lateral wall % (mean ±SD)	12.1 (± 1.4)	7.5 (± 0.9)	7.2 (± 1.3)	p=0.02
Strain inferior wall % (mean ±SD)	14.3 (± 1)	9.4 (± 1.1)	11.9 (± 1.4)	p=0.01
Strain septum wall % (mean ±SD)	14 (± 1.1)	10 (± 1)	11.4 (± 1.1)	p=0.03
Apical sparing n (%)	3 (21)	11 (55)	7 (64)	NS
TAPSE mm (mean ±SD)	20.5 (±2.5)	18.3 (±3-7)	18.9 (±3.7)	NS
RV free wall % (mean ±SD)	15 (± 1.3)	15.7 (± 1.4)	17.1 (± 2.6)	NS
RV global strain % (mean ±SD)	12 (±0.9)	11.4 (±1.3)	13.7 (±1.9)	NS
LA volume mL/m² (mean ±SD)	39.3 (±11.4)	49.1 (±10.1)	35.5 (±8.6)	NS
E/E (mean ±SD)	18.5 (± 2)	19.62 (± 1.6)	15.6 (± 2.5)	NS
PSAP mmHg (median, IQR)	29 (IQR 16-42)	41 (IQR 33-49)	33 (IQR 22-44)	NS
Pericardial effusion n (%)	1 (7)	3 (15)	3 (27)	NS
Echocardiogram after 2 years				
Ratio IVS/LVPW (mean ±SD)	1.23 (± 0.3)	1.17 (± 0.18)	1.07 (± 0.2)	NS
LV mass g/m² (mean ±SD)	120 (±36)	139 (±52.3)	137 (±17.6)	NS
RWT (mean ±SD)	0.65 (±0.2)	0.68 (± 0.2)	0.67 (±0.2)	NS
Septum mm (mean ±SD)	11.7 (±2.5)	13.9 (±1.8)	14 (±1.9)	p=0.019
Anterior wall mm (mean ±SD)	11.1 (±2.1)	13.3 (±1.8)	14.1 (±1.5)	p=0.01
Lateral wall mm (mean ±SD)	11.5 (±1.9)	12.8 (± 2.8)	14.1 (±1.6)	P=0.05
Inferior wall mm (mean ±SD)	11.4 (±1.8)	14.1 (±2.19	13.4 (±2.6)	p=0.04
FEVE % (mean ±SD)	59 (±5.1)	53.1 (±8.1)	55.1 (±8.1)	NS
GLS % (mean ±SD)	13.9 (±2.3)	11.2 (±2.4)	11.1 (±3.2)	p=0.03
Apical sparing n (%)	10 (71)	14 (70)	9 (81)	NS
TAPSE mm (mean ±SD)	20.3 (±2.7)	18.4 (±4.7)	18 (±4.7)	NS
RV free wall % (mean ±SD)	18 (±4.8)	15.2 (±4.3)	16.8 (±5.7)	NS
RV global strain % (mean ±SD)	14.4 (±3.1)	11.6 (±3.7)	13 (±4.9)	NS
LA volume mL/m² (mean ±SD)	36.9 (±11)	45 (±11)	41.9 (±11.5)	NS
E/E (mean ±SD)	13.8 (±1.1)	20.9 (±3.4)	15.3(±1.62)	NS
PSAP mmHg (median, IQR)	24 (IQR 10-29)	42.2 (IQR 32-52)	40 (IQR 32-48)	p=0.04
Pericardial effusion n (%)	2 (14)	4 (20)	3 (27)	NS

PO 122. GENOTYPE-PHENOTYPE CORRELATIONS WITH LATE GADOLINIUM ENHANCEMENT PATTERNS IN PRIMARY CARDIOMYOPATHY

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Introduction: Late gadolinium enhancement (LGE) is commonly observed in primary cardiomyopathy. However, limited data exist regarding its prevalence and distribution in relation to specific genes. This study aimed to assess the genotype-phenotype correlations with LGE patterns in primary cardiomyopathy.
Methods: This is a single-centre study of consecutive patients with dilated cardiomyopathy (DCM) and non-dilated left ventricular cardiomyopathy who are followed in our centre (at least yearly) undergoing cardiac magnetic resonance (CMR) plus DCM-related genes testing. Baseline clinical, laboratory, ECG and CMR data were systematically collected. Patients were categorized into 3 groups based on genetics: pathogenic/likely pathogenic variants (P/LPV), variants of uncertain significance (VUS) and negative test (NT).
Results: Overall, 119 patients [71% female, 51 ± 16 years, 85% with dilated left ventricle (LV), LV ejection fraction (LVEF) 34%] were included. Genetic testing revealed potential causative variants in DCM-related genes in 89 (75%) patients, of whom 46 were identified with a P/LPV and 43 with a VUS. The most common P/LPV were LMNA (20%), PKP2 (17%), FLNC (13%) and TTN (11%). Compared with patients with VUS or a NT, patients with P/LPV were younger (45 *vs.* 53 *vs.* 59 years for P/LPV, VUS and NT, respectively; p

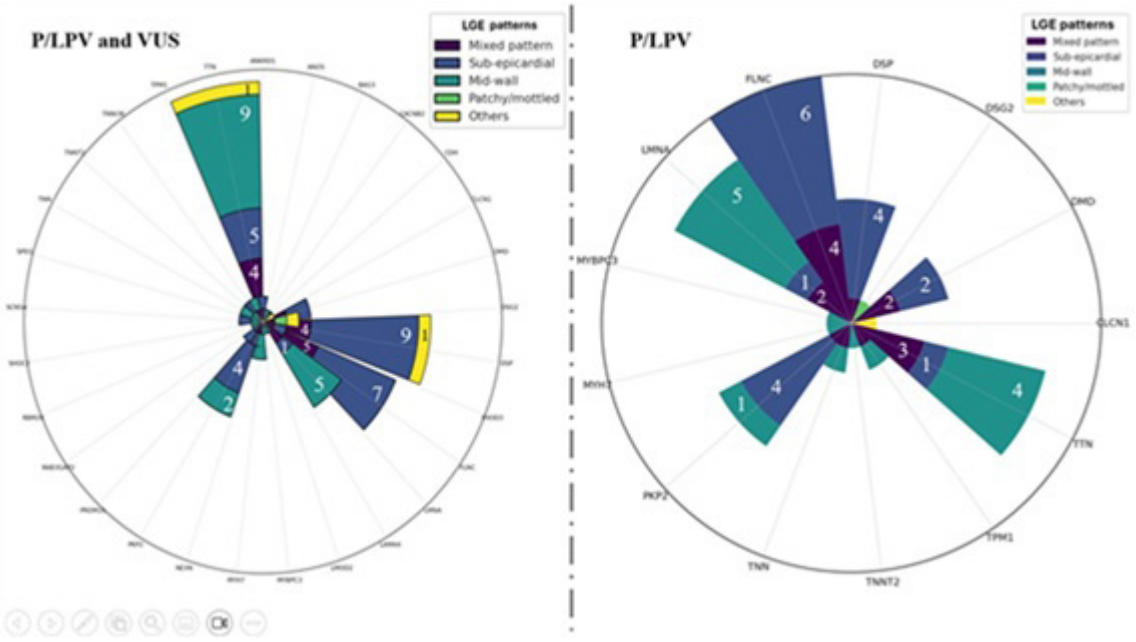


Figure PO 122

< 0.001), and presented with lower NT-proBNP (186 *vs.* 225 *vs.* 459pg/mL, respectively; p = 0.003) and higher LVEF (41 *vs.* 32 *vs.* 34%; p = 0.036). Figure 1 illustrates the distribution of patients according to the LGE patterns, categorized by genes (P/LPV+VUS and P/LPV). No differences were found in the prevalence, extensiveness and pattern of LGE between genetic groups. Patients with PV/LPV in FLNC/PKP2 genes more often had a sub-epicardial pattern (p = 0.018), while TTN/LMNA had numerically more patients with mid-mural LGE when compared to VUS and NT (82 *vs.* 44%; p = 0.124). Those with P/LPV in DSP more often had a sub-epicardial pattern (100 *vs.* 33%, p = 0.009) and "ring-like" LGE (100 *vs.* 17%, p < 0.001), while TTN patients showed lower LVEF (29 *vs.* 42%; p < 0.001) and more often mid-wall LGE (80 *vs.* 27%; p = 0.017), when compared with other patients with P/LPV.

Conclusions: CMR may exhibit a specific LGE distribution in patients with familial DCM/non-dilated LV cardiomyopathy according to the mutated gene. These findings support the correlation of genotype with LGE-phenotype in primary cardiomyopathy.

PO 123. IMPACT OF NOVEL MAXIMAL WALL THICKNESS ADJUSTMENTS ON ARRHYTHMIC EVENT PREDICTION IN HYPERTROPHIC CARDIOMYOPATHY

Rita Amador[1], Rita Carvalho[1], Pedro Freitas[1], Rita Lima[1], Pedro Lopes[1], Francisco Gama[1], Sara Guerreiro[1], Edmundo Arteaga[2], Pedro Carmo[1], Pedro Adragão[1], Carlos Rochite[2], António Ferreira[1]

[1]Centro Hospitalar Universitário de Lisboa Ocidental, EPE/Hospital de Santa Cruz. [2]InCor Instituto do Coração.

Introduction: A recent study from the UK Biobank proposed individualized maximal wall thickness (MWT) thresholds (adjusted for age, sex, and body surface area) to replace the classic 15 mm criterion and improve diagnostic accuracy in patients with suspected hypertrophic cardiomyopathy (HCM). Our study aimed to assess whether this novel approach can also strengthen

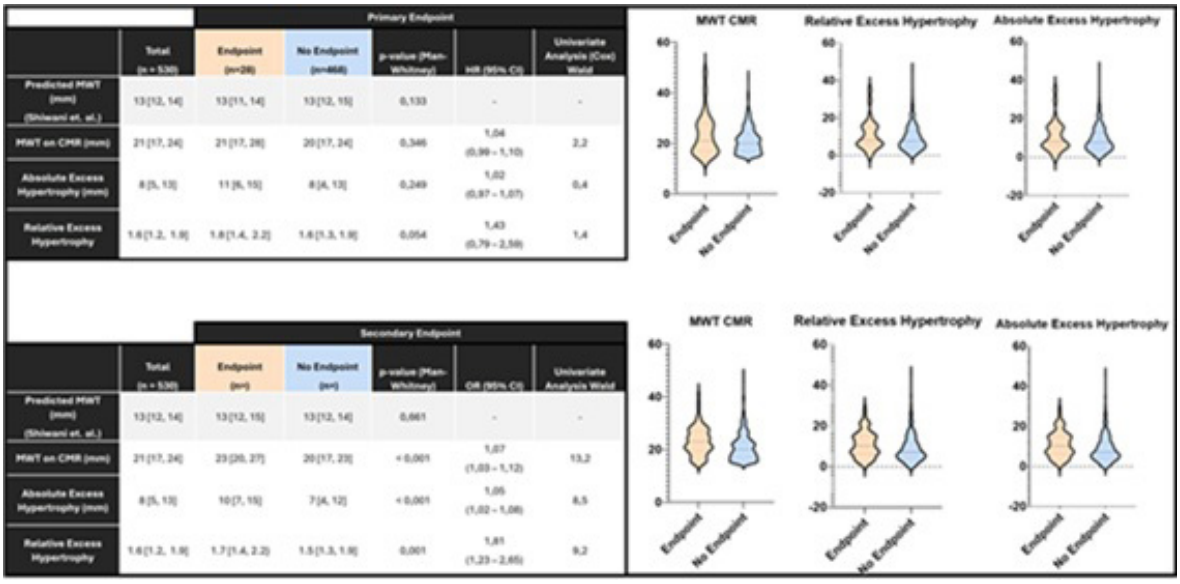


Figure PO 123

the association between MWT and arrhythmic events in patients with established HCM.
Methods: We conducted a multicenter international retrospective analysis of HCM patients who underwent cardiac magnetic resonance (CMR) for diagnostic confirmation and risk stratification. MWT was measured using both echocardiography and CMR. For each patient, the individualized upper limit of normal (ULN) for MWT was calculated and compared with the measured MWT using two different metrics: absolute excess hypertrophy (measured – ULN) and relative excess hypertrophy (measured/ULN). The primary composite endpoint included SCD, appropriate implantable cardioverter-defibrillator (ICD) discharges, and sustained ventricular tachycardia (VT). The secondary endpoint was the presence of non-sustained VT on Holter monitoring.
Results: A total of 530 HCM patients (mean age 49 ± 17 years; 44% male) were included. Mean MWT was 20 ± 5 mm on transthoracic echocardiography and 21 ± 5 mm on CMR, with a theoretical individualized ULN of 13 mm (IQR 12-14 mm). Clinical risk factors included a family history of SCD (13%), unexplained syncope (12%), and NSVT (19%). Over a median follow-up of 50 months, 28 patients experienced a primary endpoint event (15 SCDs, 6 ICD discharges, and 7 sustained VTs). No significant differences in MWT were observed between patients with and without primary endpoint events. Similarly, neither absolute nor relative excess hypertrophy improved predictive value for SCD-related outcomes. For NSVT, significant differences in MWT, absolute, and relative excess hypertrophy were noted. However, hypertrophy indexing methods showed no advantage over raw MWT measurements in prognostic performance (Wald 9 vs. 13, respectively).
Conclusions: In this cohort, novel adjustments to MWT values, including indexing to body surface area and the use of predicted MWT thresholds, did not improve the prediction of SCD-related events or appropriate device therapies. These findings suggest limited utility for these methods in HCM risk stratification.

PO 124. MYOCARDIAL STRAIN CHANGES AS ASSESSED BY FEATURE TRACKING CMR IN PATIENTS WITH ACUTE MYOCARDITIS AND PRESERVED EJECTION FRACTION. IMPACT ON PROGNOSIS

João Mendes Cravo, Marta Vilela, Miguel Menezes, Margarida Martins, Ana Beatriz Garcia, Catarina Gregório, Joana Rigueira, Fausto J. Pinto, Ana G. Almeida, Ana Abrantes

Department of Cardiology, Hospital de Santa Maria (ULSSM), CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Acute myocarditis is in most cases a benign condition presenting with preserved ejection fraction. However, its long-term evolution is still largely unknown. Despite most patients presenting with preserved EF, we believe myocardial deformation changes may be present along with late gadolinium enhancement (LGE) in cardiovascular magnetic resonance (CMR).
Objectives: To assess myocardial strain using feature tracking CMR analysis, in patients with acute myocarditis and normal EF and evaluate its relationship with ventricular function and adverse events at 3-year follow-up.
Methods: 111 consecutive patients (36 ± 12 years, 89 males) with acute myocarditis were included. Diagnosis was based in clinical data, typical ECG and biomarkers rise, normal coronary arteries and CMR study based on the Lake Louise criteria. Inclusion criteria included an EF > 55% in the acute phase and a yearly follow-up for 3 years. A control group of 27 individuals was included. The CMR study, at baseline and follow-up, included a conventional SSFP and LGE assessment. Applying a feature tracking analysis method (cvi42, Circle), peak global longitudinal (GLS), circumferential and radial strain were obtained. The amount of LGE was quantified from a stack of short axis as a percentage of mass from the global myocardial mass.
Results: During a follow-up of 2.7 ± 1.8 years, 4 patients were hospitalized for myocarditis recurrence. Patients remained in NYHA Class I. EF at follow-up showed no difference from the baseline study (62.8 ± 2.6% versus 61.3 ± 4.5%, p = 0.81). In comparison with controls, there was a lower GLS at baseline, showing improvement at 3-year follow-up (-13.5 ± -2.3 versus -18.1 ± -4.5%). The circumferential strain was significantly lower at the baseline and at follow-up. Mean values of baseline circumferential strain were significantly associated with the LGE% (R = 0.66, p = 0.004). At follow-up, a group of 22 patients showed a decrease of > 10% of circumferential strain, maintaining a preserved EF, which was associated with a larger LGE% (p = 0.003) and a lower baseline circumferential strain (p = 0.01).
Conclusions: In patients with acute myocarditis and preserved EF, tissue tracking CMR showed subclinical changes in myocardial deformation. Circumferential strain in the acute phase was inversely associated with the myocardial lesion extent and was associated with lower circumferential strain at follow-up despite preserved EF, corresponding to a subclinical marker of dysfunction.

PO 125. CARDIAC MAGNETIC RESONANCE FINDINGS IN FABRY DISEASE

Joao Santos Fonseca, João Cravo, Ana Abrantes, Beatriz Garcia, Margarida Martins, Catarina Gregório, João Inácio, Joana Rigueira, Rui Plácido, Patrício Aguiar, Fausto J. Pinto, Ana G. Almeida

Unidade Local de Saúde de Santa Maria.

Introduction: Cardiac Magnetic Resonance (CMR) is a key non-invasive diagnostic method to diagnose and stage Fabry disease related cardiovascular involvement. Our study aimed to assess CMR parameters in patients with and without evidence in cardiac involvement at baseline and follow-up.
Methods: Retrospective study of patients, with Fabry disease, followed in a tertiary center. Patients underwent CMR at baseline and follow-up and CMR parameters such as: Left ventricle (LV) end-diastolic volume (EDV), LV mass, LV segmental wall thickness, LV and RV ejection fraction (EF); late gadolinium enhancement (LGE); native T1 and T2 relaxation times were analyzed.

MRI Baseline (n=36)	Total	MRI FUP (n=13)	Total
EDV LV (mL)	130.8±5.2	EDV LV (mL)	133±9.3
EDV LVi (mL/m2)	75.2±3.7	EDV LVi (mL/m2)	77.7±3.6
Dilated LV	2 (6)	Dilated LV	1(8)
LV Mass (g)	127±20.1	LV Mass (g)	155±34
LVi Mass (g/m2)	67.2±8.2	LVi Mass (g/m2)	79±11
IVS (mm)	11.6±1.2	IVS (mm)	14.9±1.8
PW (mm)	8±0.6	PW (mm)	10±1.3
Hypertrophy Pattern		Hypertrophy Pattern	
No hypertrophy	25(71)	No hypertrophy	5(42)
Concentric	4(12)	Concentric	4(33)
Assymetric	6(17)	Assymetric	3(25)
EF LV (%)	62.6±1.1	EF LV (%)	64±1.8
EDV RV (mL)	135.3±7.9	EDV RV (mL)	124±17.5
EDV RVi (mL/m2)	74.1±4	EDV RVi (mL/m2)	82.4±5.2
Dilated RV	0(0)	Dilated RV	0(0)
RV Hypertrophy	0(0)	RV Hypertrophy	2(28)
EF RV (%)	59.6±1.7	EF RV (%)	60.3±2
T1 (ms)	1070±36	T1 (ms)	1029±55
Normal	9(64)	Normal	4(50)
Elevated	1(7)	Elevated	1(12)
Decreased	4(29)	Decreased	3(38)
PseudoNormalization		PseudoNormalization	3(7)
T2 (ms)	41.8±1.5	T2 (ms)	47±0.9
Normal	11(93)	Normal	2(50)
Elevated	1(7)	Elevated	1(25)
LGE	7(20)	LGE	7(58)
LGE - IL Wall	7(20)	LGE - IL Wall	5(42)

Figure 1: Cardiac MRI in Fabry patients at Baseline and FUP

Results: Thirty-six patients were included, 17 (47%) males. Time between the first CMR and the last one was 5.4 ± 0.8 years. Fifty-three percent of patients were on enzyme replacement/chaperone therapy. The CMR variables at baseline were: LVEDV 75.2 ± 3.7 mL/m^2, LV mass 67.2 ± 8.2 g/m^2, interventricular septum 11.6 ± 1.2 mm, posterior wall 8 ± 0.6 mm. Seventy-one percent of patients had no left/right ventricle hypertrophy. Eleven percent of patients had concentric/symmetric hypertrophy and 17% had asymmetric hypertrophy (mainly septal). LV and RV ejection fraction were 62.6 ± 1.1% and 59.6 ± 1.7%, respectively. Twenty percent of patients had late gadolinium enhancement (LGE), all in the classical inferior-lateral wall of the LV. T1 value was normal in 64% of patients and reduced in 29%. No pseudo normalization was observed. T2 value was normal in most patients (93%). There was a statistically significant difference in the

posterior wall thickness between men and women: 9.3 ± 1.3 *vs.* 6.8 ± 0.4 mm (p = 0.04) with no difference in the frequency of therapy between genders. At follow-up, despite therapy, there were changes in several parameters: LVEDV 77.7 ± 3.6 mL/m^2, LV mass 79 ± 11 g/m^2, IVS 14.9 ± 1.8 mm, posterior wall 10 ± 1.3 mm. Thirty-three percent of patients had concentric/symmetric hypertrophy and 25% had asymmetric hypertrophy. Two patients presented right ventricular hypertrophy. T1 relaxation was decreased in 38% of patients. Pseudo normalization was observed in 7% of patients. LGE was present in 58% of patients, mainly in the inferior-lateral wall, but also in other segments such as the septal and anterior wall of the LV. We observed a higher progression of LV hypertrophy in men: interventricular wall thickness of 19.2 ± 2.1 *vs.* 10.6 ± 0.7 mm (p = 0.004) and inferolateral wall thickness of 12.5 ± 0.6 *vs.* 6.7 ± 0.6 mm (p = 0.002).
Conclusions: Our study shows the utility of CMR in tracking Fabry disease progression, demonstrating increase in LV hypertrophy, increase in the frequency of focal fibrosis and reduced T1 values, with greater LV hypertrophy progression in men comparing to women.

Sexta-feira, 11 Abril de 2025 | 15:00-16:00

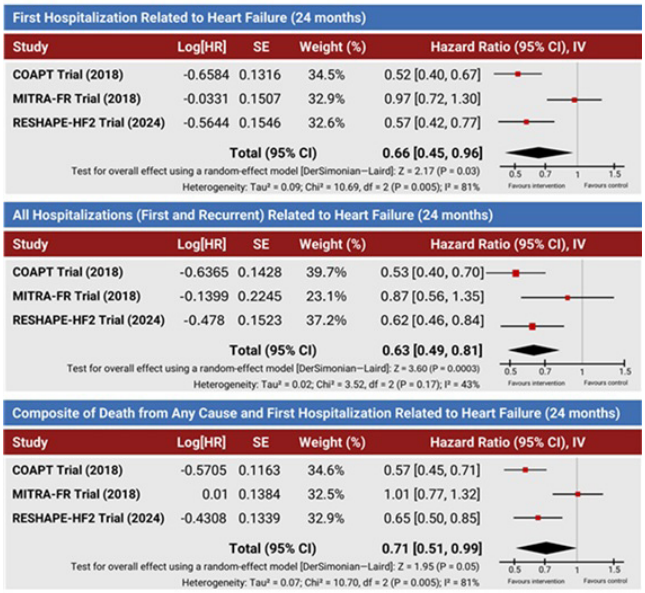
Área de Posters-écran 1| Sessão de Posters 20 – IC e intervenção valvular

PO 126. TRANSCATHETER EDGE-TO-EDGE MITRAL VALVE REPAIR: A META-ANALYSIS OF HOSPITALIZATION OUTCOMES IN HEART FAILURE AND SECONDARY MITRAL REGURGITATION

Emídio Mata, Bárbara Lage Garcia, Margarida Castro, Luisa Pinheiro, Mariana Tinoco, João Português, Francisco Ferreira, Lucy Calvo, Sílvia Ribeiro, António Lourenço

Unidade Local de Saúde do Alto Ave.

Mitral regurgitation (MR) is the most common valvular disease in heart failure (HF), with secondary mitral regurgitation (SMR) as the dominant type. SMR exacerbates HF prognosis, increasing hospitalizations. Transcatheter mitral valve edge-to-edge repair (MTEER), has been investigated in recent years as an adjunct to guideline-directed medical therapy (GDMT). This meta-analysis assesses the effects on hospitalizations of MTEER plus GDMT versus GDMT alone. A systematic search (September 2024) of PubMed, Cochrane, Scopus, and Web of Science was performed to identify randomized controlled trials (RCTs) comparing hospitalizations of patients with HF and SMR randomized to MTEER plus GDMT or GDMT alone. Data was pooled using an inverse variance random-effects model, with hospitalizations expressed as hazard ratios (HR) and 95% confidence intervals (CI). Among 1,558 entries, three RCTs (COAPT, MITRA-FR, and RESHAPE-HF2) were included in the final analysis, with a total of 1423 patients. At 24 months, first HF hospitalization rate was significantly higher in the GDMT group in both COAPT and RESHAPE-HF2. The pooled analysis confirmed a significant benefit favouring MTEER (HR 0.66, CI 0.45-0.96). Similarly, when all HF hospitalizations (first and recurrent) were considered, both individual trials and the pooled analysis demonstrated consistent results at 24 months (HR 0.63, CI 0.49-0.81). Additionally, for the composite outcome of death and first HF hospitalization at 24 months, M-TEER showed significantly fewer events than GDMT (HR 0.71, CI 0.51-0.99). This analysis highlights the significant benefits of MTEER in reducing HF hospitalizations and composite outcomes of death and first HF hospitalization at 24 months compared to GDMT alone. Across trials there were differences in MR severity, GDMT adherence, medication availability and ventricular remodeling that could affect the outcomes. The consistency results across both COAPT and RESHAPE-HF2 with MITRA-FR as an outlier underscores the need for standardized patient selection criteria. These findings affirm MTEER as an effective intervention for HF and SMR patients, improving clinical outcomes and reducing the burden of hospitalizations, supporting its integration into treatment strategies for those already on GDMT.

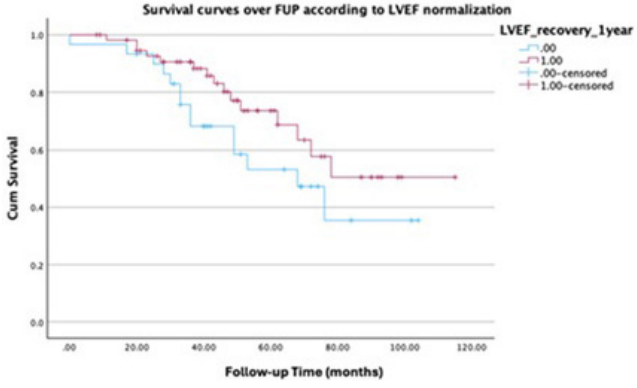


PO 127. LEFT VENTRICULAR DYSFUNCTION AND TAVI – PREDICTORS OF RECOVERY AND OUTCOMES

Miguel Azaredo Raposo, Catarina Gregório, Ana Abrantes, João Cravo, Marta Vilela, Diogo Ferreira, Daniel Cazeiro, Pedro Carrilho Ferreira, João Silva Marques, Miguel Nobre Menezes, Cláudia Jorge, Fausto J. Pinto

Department of Cardiology, Hospital de Santa Maria (ULSSM), CAML, CCUL@ RISE, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Left ventricular ejection fraction (LVEF) recovery after TAVI influences long-term outcomes, being linked to better functional capacity and reduced mortality. However, not all patients experience significant recovery, highlighting the need to identify predictors to optimize patient selection and post-procedural care.
Objectives: We aimed to identify predictors of post-TAVI LVEF normalization at 1-year follow-up (FUP) and compare outcomes of these patients (pts) with those who had persistent LV dysfunction.
Methods: We selected pts from a single center TAVI registry –pts submitted to the procedure from 2012 to 2023– who had baseline LVEF < 50%. Clinical and echocardiographic data were analyzed. For statistical analysis, independent t-test and Chi-square were applied. Kaplan-Meier curves were drawn and cox regressions performed to analyze mortality.



Results: We included 158 pts, 52.5% were male, with mean age of 80.8 ± 6.7 years. Mean time of FUP was 38.9 ± 26 months. Mean EF prior to TAVI

was 37.7 ± 8%, with 20% of pts with LVEF < 30%. Regarding cardiovascular risk factors, 90% had hypertension, 74% dyslipidemia, 40% diabetes mellitus, and 38% CKD. 33% of pts had coronary heart disease, with 22% having underwent percutaneous angioplasty and 11.5% CABG. Median NTproBNP at baseline was 4755 (IQR 7,747) ng/L. 54.4% of pts had a balloon-expandable valve implanted and 45.6% a self-expandable. Regarding predictors of LVEF at FUP, we found female sex to be a protective factor (p = 0.03 OR 4.2). Coronary artery disease (p = 0.05 OR 0.49) and baseline LVEF < 30% were found to be associated with smaller odd of normalization. Patients who recovered LVEF by at least 10% had a 56.2% lower hazard of death at FUP comparing to the remaining population (p = 0.023; HR 0.438). LVEF recuperation to > 50% was also associated with a lower hazard of death at FUP (p = 0.05; HR 0.569).
Conclusions: LVEF recovery post TAVI significatively impacts survival. An increase of 10% or higher by 1-year post-procedure reduced hazard of death at a mean FUP of 39 months by 56%. Women have an increased odd of recovering LVEF and pts with a baseline EF < 30% and those with coronary disease have a decreased odd of normalizing LV function.

PO 128. PERCUTANEOUS MITRAL VALVE REPAIR VS. SURGERY ON 12-MONTH MORTALITY/HOSPITALIZATIONS IN MITRAL REGURGITATION: A META-ANALYSIS OF CLINICAL TRIALS AND PROPENSITY-MATCHED COHORTS

Emídio Mata, Bárbara Lage Garcia, Margarida Castro, Luísa Pinheiro, Mariana Tinoco, João Português, Francisco Ferreira, Lucy Calvo, Sílvia Ribeiro, António Lourenço

Unidade Local de Saúde do Alto Ave.

Surgery remains the standard treatment for severe mitral valve regurgitation (MR), but growing evidence highlights the potential role of mitral valve percutaneous edge-to-edge repair (MTEER). This meta-analysis aims to compare 12-month all-cause mortality and hospitalizations between MTEER and surgical intervention (SMVI). A systematic search (October 2024) of PubMed, Cochrane, Scopus, and Web of Science identified randomized control trials (RCT) and propensity-matched observational studies comparing 12-month all-cause mortality and hospitalizations in MR patients treated with MTEER or SMVI. An inverse variance random-effects meta-analysis assessed event prevalence, with risk ratios (RR) and 95% confidence intervals (CI). From 1482 entries, two RCTs (MATTERHORN and EVEREST II) and three observational studies, totalling 1,787 patients, met the inclusion criteria. Pooled RCT data showed no significant difference in 12-month mortality (RR 0.92; CI 0.46-1.81). Among observational studies, Amabile (2023) reported a significant benefit of SMVI, while Koschutnik (2022) (analyzing only primary MR) and Silaschi (2024) favored surgery without statistical significance. Reported data on 12-month hospitalizations could not be pooled statistically. The MATTERHORN trial reported cardiovascular hospitalization rates of 6.9% (MTEER) versus 11.9% (SMVI). Silaschi (2024) showed similar rates between groups: 8.7% (MTEER) vs. 8.5% (SMVI). Kaplan-Meier curves from Koschutnik (2022) for composite endpoint of death and heart failure hospitalization rates reported 20% for MTEER and 16% for SMVI. MTEER is associated with increased 12-month mortality, mainly driven by observational studies. As for 12-month hospitalizations, data remains inconclusive due to variability across studies and inability to pool results statistically. It is important to note that this meta-analysis, while including both observational studies and RCTs, observational studies utilized propensity score-matched data to minimize selection bias inherent to clinical practice, when assigning patients to each intervention. Nevertheless, RCTs excluded patients with right ventricular dysfunction or other severe valve disorders, such as tricuspid regurgitation, which were not excluded in the observational studies. Furthermore, the analysis combined populations with both primary and secondary mitral regurgitation (MR), which contributes to heterogeneity and may have influenced outcomes.

PO 129. A META-ANALYSIS OF QUALITY OF LIFE OUTCOMES AFTER TRANSCATHETER EDGE-TO-EDGE MITRAL VALVE REPAIR IN SECONDARY MITRAL REGURGITATION

Bárbara Lage Garcia, Emídio Mata, Margarida Castro, Luísa Pinheiro, Mariana Tinoco, João Português, Francisco Ferreira, Sílvia Ribeiro, Lucy Calvo, António Lourenço

Unidade Local de Saúde do Alto Ave.

Introduction: Secondary mitral regurgitation (SMR) often complicates heart failure (HF), worsening quality of life (QoL) outcomes. Transcatheter edge-to-edge mitral valve repair (MTEER) offers a minimally invasive alternative to address SMR. This meta-analysis evaluated the impact of MTEER on QoL in SMR patients compared to guideline-directed medical therapy (GDMT).
Methods: On September, 2024, PubMed, Cochrane Central Register of Controlled Trials, Scopus, and Web of Science were searched for randomized controlled trials (RCTs) of patients with HF and SMR, randomized to receive either MTEER with GDMT or GDMT alone assessing QoL outcomes. Pooled data were analyzed using an inverse variance random-effects model, calculating standardized mean differences (SMD) for changes from baseline to compare different QoL questionnaires.
Results: From 1,558 identified articles, the final analysis included three trials: COAPT, MITRA-FR, and RESHAPE-HF2, totalling 1,423 patients. Both

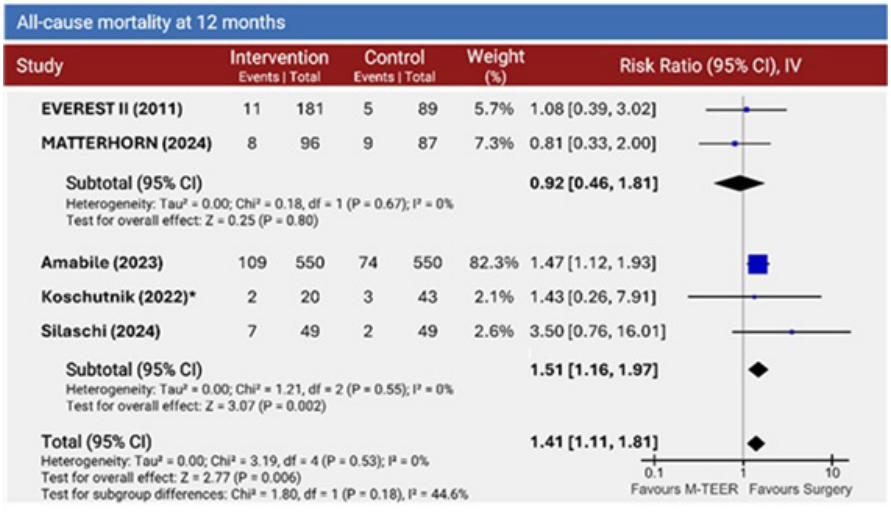


Figure PO 128

COAPT and RESHAPE-HF2 measured QoL using the Kansas City Cardiomyopathy Questionnaire and reported changes from baseline at 12 months. COAPT demonstrated significant QoL improvements in the MTEER group (MD 15.4, CI 9.92; 20.88), with benefits persisting for up to 5 years, a similar finding observed in RESHAPE-HF2 (10.9 [CI: 6.8-15.0]). In contrast, MITRA-FR assessed QoL using the EuroQol 5-Dimension questionnaire, reporting baseline and endpoint scores. No significant improvements in QoL were observed at 12 months (MD 4.2, CI -1.43; 9.83), a trend that persisted at 2 years. To integrate MITRA-FR into the meta-analysis, estimates of change from baseline were calculated using the difference between the reported baseline and endpoint scores. When pooled with data from COAPT and RESHAPE-HF2, the meta-analysis showed a moderate-to-large overall effect size favouring MTEER (SMD 0.84, CI: 0.33; 1.36, $p < 0.001$).

Conclusions: It's important to note that the use of different QoL assessment tools contributes to heterogeneity. A considerable amount of missing follow-up data limits the analyses. However, the pooled analysis highlights the potential of MTEER to improve QoL in patients with HF and SMR, mainly driven by the findings of COAPT and RESHAPE-HF2. These results support MTEER as an effective intervention for improving QoL in SMR with HF patients when compared with GDMT, with sustained benefits over time.

PO 130. RIGHT BUNDLE BRANCH BLOCK AND THE RISK OF PACEMAKER IMPLANTATION AFTER TAVI: AN OBSERVATIONAL STUDY

Luís Santos, Cátia Oliveira, Ana Pinho, Pedro Palma, Helena Moreira, Miguel Rocha, Joana Gonçalves, Emanuel Oliveira, Bernardo Cruz, Elisabete Martins, Rui André Rodrigues

ULS São João.

Conduction disturbances are among the most common and concerning complications following transcatheter aortic valve implantation (TAVI), with new-onset left bundle branch block (LBBB) being the most frequently observed. This issue is particularly critical in patients with pre-existing right bundle branch block (RBBB), as it increases the risk of advanced heart block and need for pacemaker implantation. In this study, we investigated patients with RBBB who underwent TAVI to identify potential predictive factors for pacemaker implantation. We reviewed all TAVI procedures performed at our center between January 1, 2023, and June 30, 2024 (18 months). The minimum follow-up period was 6 months post-TAVI. Statistical analysis was conducted using the Chi-square test of independence via SPSS software. Among 317 patients, 24 (8%) had pre-existing RBBB (mean age: 80 years). Of these, 10 had atrial fibrillation (AF), and 9 presented with additional conduction disturbances, such as first-degree atrioventricular (AV) block or left anterior/posterior hemiblock. Following guideline recommendations, 16 of the 24 patients (67%) required pacemaker implantation after TAVI. No significant association was found between the need for pacemaker implantation and additional conduction disturbances, AF, or the type of valve used ($p > 0.05$). Our findings indicate that two-thirds of patients with RBBB required pacemaker implantation following TAVI. However, the lack of significant associations with the variables analyzed highlights the challenge of predicting pacemaker necessity in this population. Notably, all pacemaker implantations occurred during the same hospitalization as the TAVI procedure, suggesting that conduction disturbances are most likely to emerge in the immediate postoperative period, potentially influenced by valve characteristics. In conclusion, RBBB patients undergoing TAVI require close monitoring, as more than half will need pacemaker implantation. Larger studies are warranted to identify potential predictive factors for pacemaker implantation in this high-risk cohort.

PO 131. STRATEGIC TIMING IN TEER: SURVIVAL IMPLICATIONS FOR MITRAL REGURGITATION IN HEART FAILURE

Marta Leite, Fábio Nunes, Inês Neves, Diogo Ferreira, Gualter Santos Silva, Pedro Teixeira, Gustavo Pires-Morais, José Ribeiro, Bruno Melica, Pedro Braga, Ricardo Fontes-Carvalho

ULSGE.

Introduction: Transcatheter edge-to-edge repair (TEER) is a minimally invasive strategy for treating moderate-to-severe mitral regurgitation (MR) in patients with heart failure, improving quality of life and reducing heart failure hospitalizations. This study compares survival outcomes in patients undergoing elective TEER versus those treated urgently during hospitalization for acute decompensated heart failure.

Methods: A retrospective cohort study was conducted, including 178 patients with moderate-to-severe MR who underwent TEER at our

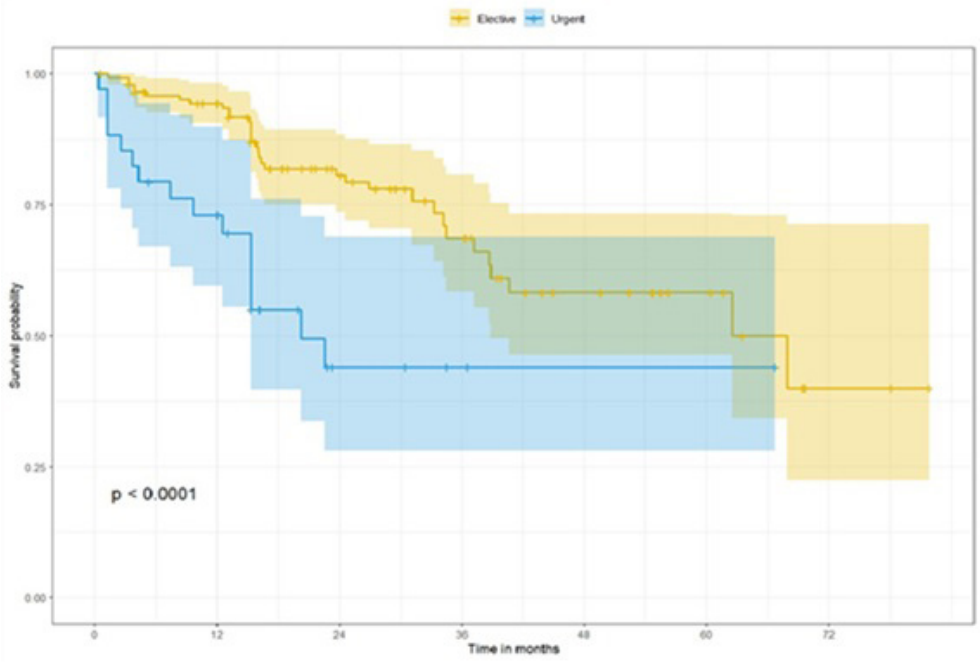


Figure PO 131

center. Patients were categorized into elective (n = 144) and urgent (n = 34) groups. Baseline characteristics, including demographics, cardiovascular comorbidities, echocardiographic findings, and biomarkers (e.g., NTproBNP, EuroSCORE II), were recorded. Survival was assessed using the Cox proportional hazards model, with urgency of intervention as the primary predictor. Kaplan-Meier curves were generated to compare survival probabilities visually between groups.

Results: Urgent TEER was associated with significantly higher mortality compared to elective TEER (Figure 1). The Cox model yielded a hazard ratio (HR) of 3.19 (95%CI: 1.74-5.85, p < 0.001), indicating a threefold increase in mortality risk for urgent procedures. Model fit statistics, including likelihood ratio, Wald, and log-rank tests, were all highly significant (p < 0.001), supporting the robustness of the findings. The model's concordance index was 0.633, suggesting moderate discrimination. Kaplan-Meier analysis revealed a stark contrast in survival curves, with the urgent group showing significantly reduced survival probabilities over time (log-rank p < 0.0001).

Conclusions: Urgent TEER during acute heart failure hospitalization is associated with markedly higher mortality compared to elective procedures. These findings underscore the value of early MR detection and proactive intervention planning to avoid urgent settings, which are linked to poorer outcomes. Clinical compensate and discharge patients when possible, performing TEER electively in an ambulatory context can improve survival and reduce the clinical burden of acute heart failure. This evidence supports timely decision-making to enhance outcomes in high-risk MR patients.

Sexta-feira, 11 Abril de 2025 | 15:00-16:00

Área de Posters-écran 2 | Sessão de Posters 21 – IC e prognóstico

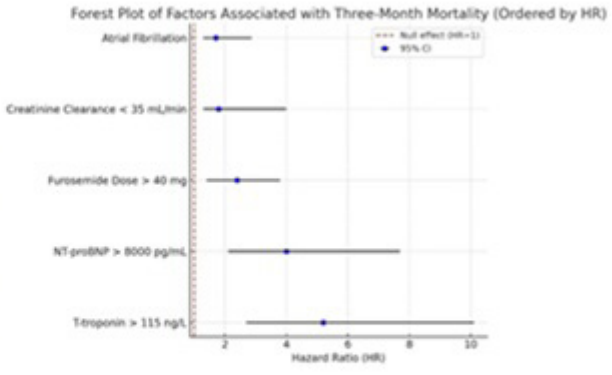
PO 132. THE ABCDE SCORE: A SIMPLE TOOL FOR PREDICTING 3-MONTH MORTALITY IN ACUTE HEART FAILURE PATIENTS

Diogo Rosa Ferreira[1], Ana Abrantes[1], João Lucas Temtem[2], Fátima Salazar[3], Ana Francês[3], Rafael Santos[1], Joana Rigueira[1], Doroteia Silva[1], Nuno Lousada[1], Fausto Pinto[1], Dulce Brito[1], João Agostinho[1]

[1]Department of Cardiology, Hospital de Santa Maria (ULSSM), CAML, CCUL@RISE, Faculdade de Medicina, Universidade de Lisboa. [2]Faculdade de Medicina da Universidade de Lisboa. [3]Unidade Local de Saúde de Santa Maria.

Introduction: Acute heart failure (HF) is a leading cause of morbidity and mortality, with diverse clinical presentations complicating risk prediction and the identification of patients needing hospitalization. Early recognition of high-risk patients is crucial for guiding management and improving

Baseline Patient Characteristics	
Number of patients	187
Age (years) - mean ± SD	82.4 ± 9,5
Female sex (%)	62
Ischemic cardiac disease (%)	27
Hypertension (%)	80
Dyslipidemia (%)	63
Diabetes (%)	36
Atrial Fibrillation (%)	52
LVEF (%) - mean ± SD	50 ± 14
Baseline NTproBNP (pg/mL) - mean ± SD	14831± 6534
Creatinine Clearance (mL/min) mean ± SD	44 ± 21
T Troponin (ng/L) mean ± SD	103 ± 203



	Condition	Description	Points
A	Atrial Fibrillation	Presence of atrial fibrillation	1
B	BNP > 800 pg/mL	NTproBNP>800pg/mL	2
C	Cardiac Damage (Troponin T)	Troponin T > 115 ng/L	2.5
D	Diuretic Dose (Furosemide)	Furosemide > 40 mg	1.5
E	Estimated Glomerular Filtration Rate (eGFR)	eGFR < 35 mL/min	1

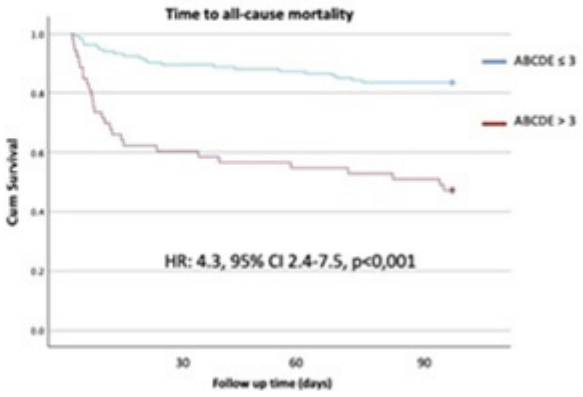


Figure PO 132

outcomes. This study aimed to identify clinical and biomarker-based predictors of 3-month mortality in HF patients and to develop a simple risk score to aid in mortality risk stratification and admission decisions.
Methods: This retrospective, single-center study included 187 consecutive patients diagnosed with acute HF who presented to a tertiary care emergency department between January and March of 2023. Cox regression and Receiver operating characteristics (ROC) analysis were used to identify predictors of short-term mortality and to develop a scoring system for identifying high-risk patients who may benefit from inpatient care.
Results: The cohort had a mean age of 82.4 years, with 62% of female patients and a baseline mean left ventricular ejection fraction of 50%. Among patients, 28% presented with peripheral congestion, 13%, with pulmonary congestion and 59% with both. Of the total, 57% were hospitalized, and 27% had died by the 3-month follow-up. Significant predictors of mortality included atrial fibrillation (HR: 1.7; 95%CI: 1.3-2.87; p = 0.04), estimated glomerular filtration rate (eTGF) < 35 mL/min/1.73 (HR: 1.8; 95%CI: 1.3-4.0, p = 0.004), NT-proBNP level > 8000 pg/mL (HR: 4.0; 95%CI: 2.1-7.7; p < 0.001), T-troponin > 115 ng/L (HR: 5.2; 95%CI: 2.7-10.1; p < 0.001), and a furosemide dose > 40 mg (HR: 2.4; 95%CI: 1.4-3.8; p = 0.03). Based on these factors, the ABCDE scoring system was developed, assigning: 1 point for Atrial fibrillation or Creatinine clearance < 35 mL/min; 2 points for NT-proBNP > 8,000 pg/mL; 2.5 points for Cardiac damage, defined by T-troponin > 115 ng/L; 1.5 points for furosemide Dose > 40 mg; 1 point for EGFR < 35 ml/min/1.73. We calculated individual scores for each patient and identified an optimal cutoff point to best predict 3-month mortality risk. Patients with a score greater than 3 were found to have a 4.3-fold higher risk of mortality at 3 months (HR: 4.3; 95%CI 2.4-7.5, p < 0.001). Among patients with a score greater than 3, 53% of those discharged died, while only 28% of those admitted died during the follow-up period.
Conclusions: The ABCDE scoring system effectively stratifies mortality risk in acute HF patients using key and readily available predictors such as atrial fibrillation, impaired renal function, elevated NT-proBNP and T-troponin and high usual furosemide doses. Patients with scores > 3 had significantly increased 3-month mortality, with discharged patients showing a higher mortality rate than those admitted. This scoring system provides clinicians with a practical tool for identifying high-risk patients that can benefit from being admitted.

PO 133. PORTUGUESE VERSION VALIDATION AND PREDICTIVE PERFORMANCE OF THE HEART FAILURE SYMPTOM TRACKER (HFAST) FOR 3- AND 6-MONTH HOSPITALIZATIONS

Inês Antunes Perez[1], Joana Seringa[2], Teresa Magalhães[2], Ana Teresa Timóteo[1]

[1]Centro Hospitalar Universitário de Lisboa Central, EPE/Hospital de Santa Marta. [2]Escola Nacional de Saúde Pública.

Introduction: Heart Failure (HF) is a global public health challenge with high morbidity and mortality rates. Effective symptom management tools, such as the Heart Failure Symptom Tracker (HFaST), improve early detection of worsening symptoms and support the prediction of hospitalisation risk, as the European Cardiology Society recommends. This study aimed to validate a translated version of the HFaST tool in a Portuguese sample of patients with HF and confirm its ability to predict HF hospitalisations at 3 and 6 months.
Methods: This single-centre Portuguese cross-sectional study was conducted at one Outpatient HF Consultation. Inclusion criteria were adult patients diagnosed with HF and followed up at this consultation. Exclusion criteria were applied to individuals unable to read, answer, or complete questionnaires. A baseline demographic and clinical assessment were collected, along with the Portuguese versions of the HFaST tool and the KCCQ-23. HF-related hospitalisations were monitored at 3- and 6-months post-questionnaire completion.
Results: This study included 60 participants (24 females and 36 males, mean age 63.8 ± 11.8 years). Ischaemic heart disease was the leading cause of HF (43.3%), with most in NYHA classes I (36.7%) and II (50%) and 23.4% reported prior HF-related hospitalisations. The Portuguese HFaST version demonstrated acceptable reliability, with a Cronbach's Alpha of 0.724 and showed moderate to strong inter-item correlations. Significant inverse correlations were observed between the HFaST and corresponding KCCQ-23 items, supporting its psychometric validity in assessing symptoms in HF patients. Univariable linear regression analysis revealed a significant association between higher HFaST scores and the likelihood of hospitalisation at both 3 months (β = 0.218, p = 0.014, Exp(B) = 1.243) and 6 months (β = 0.247, p = 0.023, Exp(B) = 1.280). ROC curve analysis demonstrated moderate to high predictive power, with AUC = 0.803 for 3 months and AUC = 0.822 for 6 months, confirming the HFaST scores' capacity to predict hospitalisation risk over both periods.
Conclusions: The Portuguese version of the HFaST demonstrated reliable psychometric validity and predictive capacity for short-term HF-related hospitalisations in the Portuguese population. Despite the limitation of not adjusting for confounders in the regression analysis, this study supports the HFaST as an effective screening tool for identifying high-risk HF patients, guiding personalised interventions for better disease management, and preventing hospitalisations.

PO 134. EJECTION FRACTION IN HEART FAILURE AND INTENSIVE CARE ADMISSION: WHAT IS THE PROGNOSTIC IMPACT?

Rita Bertão Ventura, Mafalda Griné, Inês Brito e Cruz, Maria João Primo, Didier Martinez, Tomás Carlos, Luísa Rocha, Bernardo Resende, Catarina Mendes Silva, Manuel Oliveira-Santos, Lino Gonçalves

ULS Coimbra.

Introduction: The impact of ventricular dysfunction on the prognosis of heart failure (HF) patients admitted to the Intensive Care Unit remains unclear. This study aimed to characterize ICU HF patients and assess the prognostic impact of ventricular dysfunction stratified by ejection fraction (EF).

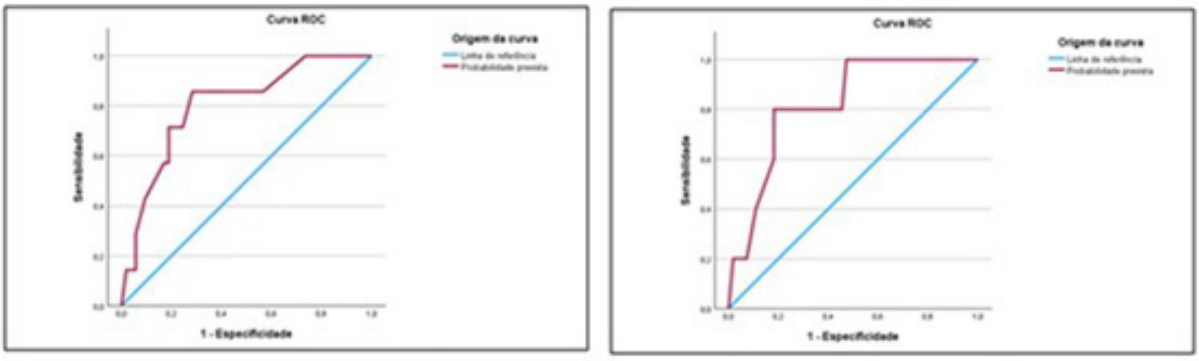
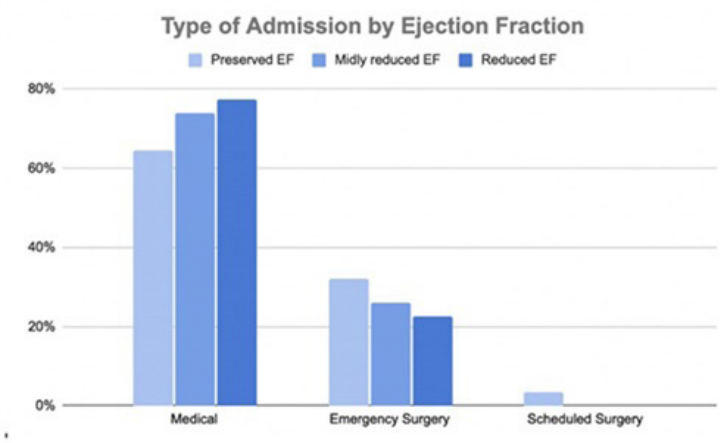


Figure 1. ROC curves evaluating the predictive capacity of HFaST scores for HF-related hospitalisations at 3 months (left) and 6 months (right). The areas under the curve (AUC) were 0.803 and 0.822, respectively, indicating moderate to high predictive power for both timeframes.

Figure PO 133



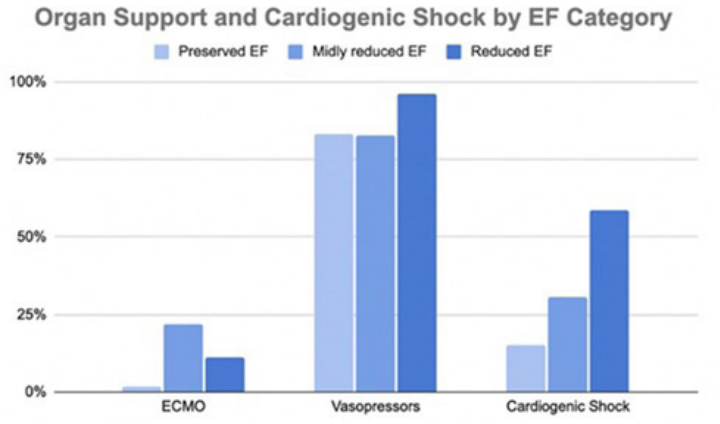


Figure PO 134

Methods: This was a single-centre retrospective cohort study analyzing patients admitted to the ICU with HF at admission between 2020 and 2023. Patients were categorized into three groups based on EF: preserved EF (pEF), mildly reduced EF (mrEF), and reduced EF (rEF). A descriptive analysis of the study population was conducted. This included the type of admission, the need for organ support (such as ECMO and vasopressors), the presence of cardiogenic shock, and laboratory parameters, like lactate and BNP levels. The primary endpoint was all-cause mortality at 30 days and 1 year. Secondary endpoints included rehospitalization rates at 30 days and 1 year, ICU length of stay, and total hospital length of stay.
Results: A total of 135 patients (mean age 66.5 ± 13.0 years, 68.1% male) were included in the study. Of these, 96 (71.1%) were admitted for medical reasons, 37 (27.4%) for emergency surgery, and 2 (1.5%) for scheduled surgery. The patients were categorized into 3 groups: pEF (n = 59, 43.7%), mrEF (n = 23, 17.0%), and rEF (n = 53, 39.3%). The use of ECMO differed significantly between the groups (p = 0.012), being more frequent in rEF (n = 6, 11.3%; p = 0.036) and mrEF (n = 5, 21.7%; p = 0.006) compared to pEF (n = 1, 1.7%). Similarly, vasopressor use showed significant differences (p = 0.043), with rEF (n = 51, 96.2%) using vasopressors more frequently than pEF (n = 49, 83.1%; p = 0.032). Significant differences were observed in lactate (p = 0.008) and BNP (p = 0.046) levels. Cardiogenic shock was significantly more common in rEF (n = 31, 58.5%) than in pEF (n = 9, 15.3%; p < 0.001) and mrEF (n = 7, 30.4%; p = 0.045). No statistically significant differences were found in 30-day mortality (p = 0.631) or 1-year mortality (p = 0.085) between groups. Likewise, rehospitalization rates at 30 days (p = 1.000) and 1 year (p = 0.716) were comparable. Additionally, ICU and total hospital length of stay did not differ significantly (p = 0.316 and p = 0.185).
Conclusions: The study suggests that while ventricular dysfunction was associated with increased use of advanced therapies such as ECMO and vasopressors, as well as more severe clinical presentation, it did not significantly affect short- or long-term survival.

PO 135. A NOVEL RISK SCORE COMBINING BIOMARKERS OF HYPERVOLEMIA PREDICTS 1-YEAR OUTCOMES IN HEART FAILURE PATIENTS WITH PRESERVED EJECTION FRACTION

Tiago Filipe Aguiar

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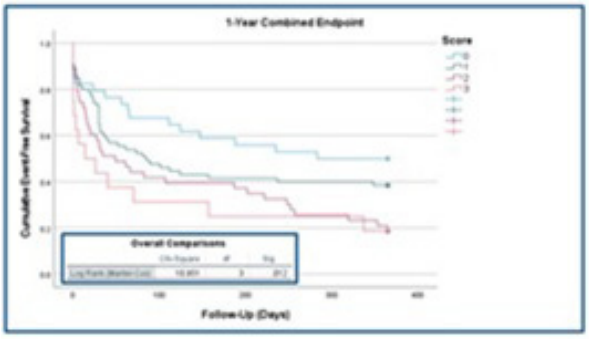
Introduction: Heart failure (HF) with preserved ejection fraction (HFpEF) encompasses a wide range of phenotypes with different prognostic implications. There is a need for biomarkers and score systems that can identify which patients are at highest risk and require closer follow up and more intensive treatment.
Objectives: To evaluate the independent prognostic value of biomarkers indictive of hypervolemic status, and to create a novel risk score to predict future events.
Methods: We performed a cohort analysis of HFpEF patients admitted to the cardiology ward due to acute/chronic decompensated HF. We selected the following variables to assess the volemic status: 1) high estimated plasma volume status (ePVS), calculated from hematocrit and hemoglobin values, with a cut-off of ≥ 5 ml/g ; 2) hyponatremia, with a cut off of ≤ 134 mmol;



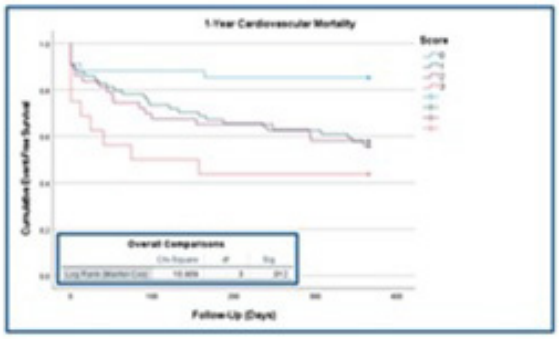


Table 1 - Risk Factors and Co-Morbidities Distribution

Major CV Risk Factors			Important Co-Morbidities		
Hypertension	90	56,60%	Atrial Fibrillation	71	44,70%
Diabetes Mellitus	61	38,40%	Chronic lung disease	40	25,20%
Dyslipidemia	47	29,60%	Coronary artery disease	32	20,10%
			Chronic kidney disease	23	14,50%
			Liver cirrhosis	4	2,50%

Figure PO 135

3) high NTpro-BNP levels, with a cut-off of ≥ 1,000 pg/mL; 4) high blood urea to creatinine (BUN/Creat) ratio with high serum creatinine levels, with a combined cut-off of creatinine ≥ 1.5 mg/dL and BUN/Creat ≥ 30 mg/dL. A composite endpoint CE of cardiovascular mortality and hospital admissions at 1 year was utilized. With these variables, a novel score system was created and tested against the CE with Kaplan-Meier survival curve and multivariate Cox Regression analysis.
Results: Our cohort included 159 patients with HFpEF with at least one hospital admittance due to HF, of which 60% were male, with a mean age of 77 years old. There was a high frequency of cardiovascular risk factors (CVRF) and co-morbidities (Table 1). In our analysis, ePVS had the strongest association with the CE (log-rank 4.25, p = 0.39); HypoNa and BUN/Creat were also positively associated with the CE (log-rank 3.67, p = 0.05 and 3.86, p = 0.05, respectively). NTpro-BNP was strongly associated with cardiovascular death alone, but not with the CE. A novel score system was created, where high ePVS, hyponatremia and high BUN/Creat were each awarded 1 point. There was a strong association between this score and the CE (log-rank 10.95, p = 0.01), confirmed in a multivariate adjustment for cardiovascular risk factors and comorbidities (hazard ratio 1.35, p = 0.01) (Figure 1). Interestingly, this score was also strongly associated with cardiovascular mortality alone (log-rank 10.91, p = 0.01).
Conclusions: The biomarkers of hypervolemia and the novel scoring system were independent predictors of future cardiac events and could serve as an effective tool to identify high-risk patients in this population.

PO 136. PERFORMANCE OF MORTALITY RISK SCORES IN ADVANCED HEART FAILURE PATIENTS: A RETROSPECTIVE COHORT STUDY

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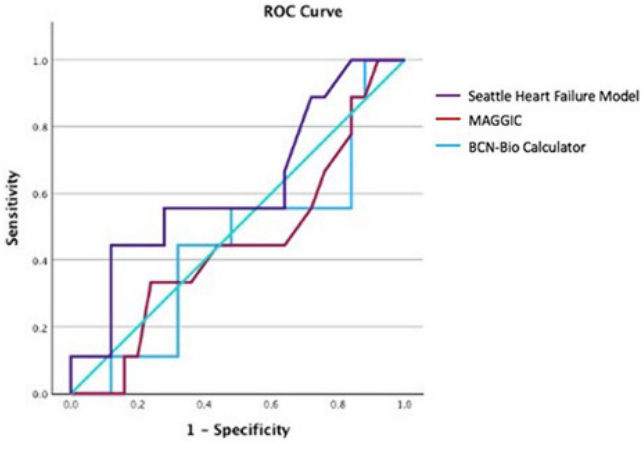
Introduction: Heart failure (HF) prognostic scores to predict mortality risk are widely used, however their predictive accuracy may be reduced in certain subsets of patients. Patients with advanced HF who are receiving intermittent inotropic therapy were not used to derive these score models, so their accuracy to predict mortality in this population is unknown.

Objectives: This study aims to evaluate the performance of three commonly used heart failure prognostic scores for predicting 1-year mortality in a population of advanced HF patients receiving intermittent inotropic therapy.
Methods: Retrospective, single-centre study of patients with advanced HF receiving intermittent levosimendan infusions. Three mortality risk scores - Seattle HF Model, BCN Bio-HF Calculator and MAGGIC Risk Calculator - were used to calculate the predict 1-year mortality. The predictive accuracy of each score was evaluated using the area under the curve (AUC) derived from receiver operating characteristic (ROC) curve analysis using the observed mortality. AUCs were compared using the DeLong method.
Results: Among a cohort of 34 patients with advanced HF receiving intermittent levosimendan, with a median age of 68 (IQR 63-73) years, a median left ventricle ejection fraction of 24% (IQR 16-27%), the majority in NYHA Class III or IV (97.1%), the observed 1-year mortality rate was 26.5%. All the three prognostic scores showed insufficient predictive accuracy for 1-year mortality. The Seattle HF Model demonstrated the highest predictive accuracy with an AUC of 0.618 (95%CI: 0.395-0.841; p = 0.301) (Figure 1). The AUCs for the BCN-Bio HF Calculator and the MAGGIC Risk Calculator were both 0.419 (95%CI: 0.226-0.671; p = 0.652) (Figure 1). No statistically significant difference was found between the AUCs of each of the three scores as assessed by the DeLong test, supporting the fact that the prognostic ability of each score was very limited.



Conclusions: The findings of this study suggest that current scoring systems may not fully capture the whole clinical spectrum of advanced heart failure patients under supportive therapies that are still not fully proven. Future studies should explore the development of more tailored prognostic tools.

PO 137. CLINICAL CHARACTERISTICS AND OUTCOMES OF DE NOVO VERSUS ACUTE DECOMPENSATED HEART FAILURE: ARE THEY SIMILAR?

Ana Rodrigo Costa, José Luís Ferraro, Mauro Moreira, Bruno Bragança, Rafaela G. Lopes, Inês Gomes Campos, Joel Ponte Monteiro, Liliana Reis, Aurora Andrade

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

Introduction: Acute heart failure (AHF) is a heterogeneous clinical syndrome and it's the number one cause of unplanned hospitalization among individuals above 65 years old. AHF carries a high risk of morbidity and mortality. One of the existing classifications divides acute HF into de novo (DNHF) or acute decompensated chronic heart failure (ADCHF). Understanding these subgroups characteristics and outcomes may have important implications for treatment and prognosis.
Objectives: The aim of this study was to evaluate clinical characteristics and long-term outcomes of patients hospitalized with AHF according to DNHF and ADCHF.
Methods: Retrospective single-center cohort study of patients admitted for AHF throughout 2022, divided into two groups: DNHF and ADCHF. The primary composite outcomes were readmission for AHF, cardiovascular death and all-cause death.
Results: In a total of 265 patients, 152 were included in DNHF group (74.6% male, 25.7% female) and 113 were included in ADCHF group (59.3% male, 40.7% female). Prevalence of patients with DNHF was higher under 65 years old (p = 0.039). Comorbidities, such as hypertension, diabetes, dyslipidemia, atrial fibrillation and chronic coronary syndrome were more frequent in ADCHF. Conversely, this study also revealed that acute coronary syndrome was present as a precipitating factor in 27.6% of DNHF, versus 7.1% in ADCHF (< 0.001). For ADCHF, laboratory findings revealed lower haemoglobin (p < 0.001) and lower estimated glomerular filtration rate (p = 0.009) compared to DNHF. In terms of combined endpoint, ADCHF was associated with a worse outcome (p < 0.001). On the other hand, in DNHF there was a statistically significant improvement in terms of ejection fraction 1 year after discharge (p = 0.005). ADCHF patients had more urgent HF visits (p = 0.002), greater needs for oral diuretic up-titration (p = 0.007) and more unplanned HF hospitalizations (p = 0.025). There were no significant differences in cardiovascular or all-cause mortality between groups.
Conclusions: Our study has revealed several clinical characteristics and outcomes between DNHF and ADCHF, with the latter demonstrating a worse prognosis. These findings highlighted the need for individualized treatment strategies for better patient care. Therefore, we need to continue researching strategies that can help prevent episodes of decompensation.

Sexta-feira, 11 Abril de 2025 | 15:00-16:00

Área de Posters-écran 3 | Sessão de Posters 22 – LVAD/Transplantação cardíaca

PO 138. HEART TRANSPLANT IN ACUTELY ILL PATIENTS: TIME ON WAITING LIST AND 1-YEAR MORTALITY

Ana Rita Bello, Rita Almeida Carvalho, Márcia Presume, Rita Amador, Sérgio Maltês, Bruno ML Rocha, Catarina Brízido, António Tralhão, Christopher Strong, Marta Marques, Carlos Aguiar

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

Introduction: In selected advanced heart failure (HF) patients, heart transplant (HT) can improve both symptoms and prognosis. Improvements in HF therapy and the growing recognition of advanced HF, have led to an increasing number of HT candidates and longer waiting list times.
Objectives: We aimed to assess waiting list times for HT, comparing different groups of severity of patients who underwent a HT, and the impact on patient outcomes.
Methods: This retrospective, single-center study included HT recipients from January 2018 to September 2024. Patients were classified according to their status before HT: outpatient setting (group A), admission due to acute HF (group B), and cardiogenic shock under short-term mechanical circulatory support (MCS) (group C). Demographic characteristics, waiting list times, and outcomes were compared using non-parametric analysis and Kaplan-Meier survival curves.
Results: A total of 76 patients were included (68% male), with a mean age of 50 years (± 11). The most common HF etiology was ischemic heart disease (39%). A total of 34 (45%) patients were in class INTERMACS 1-3. The cohort comprised 42 patients who were electively admitted for HT (4 under intermittent levosimendan, 7 with durable LVAD), 18 patients who underwent HT in the setting of acute decompensated HF (4 on intravenous furosemide, 5 on intermittent levosimendan, and 9 on continuous iv inotropes), and 16 patients who were being treated in the cardiac intensive care unit and required MCS at the time of HT (8 on VA-ECMO, 5 on BiVAD, 3 on IABP). In-hospital mortality during HT admission was 8% (6 patients). Overall survival after HT was 85% during the first 12 months. The median time on waiting list for HT was 128 days (IQR 63-314) for elective patients (group A), 26 days (IQR 12-128) for patients with acute HF (group B), and 7 days (IQR 3-17) for those dependent on short-term MCS (group C). Despite prolonged hospitalizations and a higher incidence of complications (including infections and ICU-acquired weakness, p = 0.003), patients in groups B and

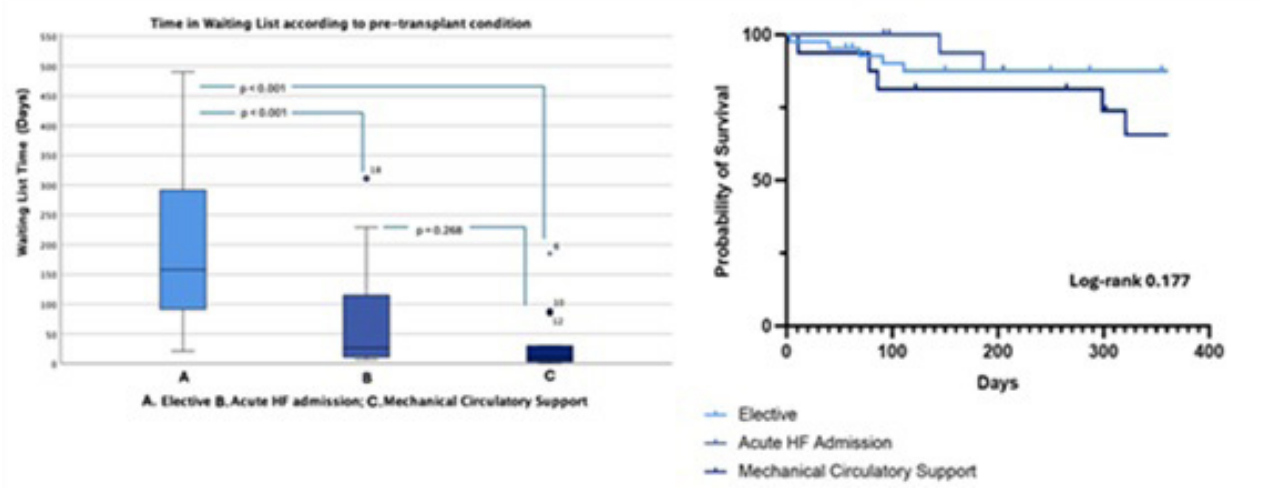


Figure PO 138

C had similar 12-month survival compared with elective patients (log-rank 0.177, p = 0.151) (Figure 1).
Conclusions: Patients with advanced HF admitted for acute decompensation, with or without need for short-term MCS, had significantly shorter waiting list times compared with elective HT candidates. Despite having a higher complication burden during their admission, these patients had similar 12-month survival rates compared to those admitted electively for a HT.

PO 139. IMPACT OF THE HEARTMATE 3 ON QUALITY OF LIFE IN HEART FAILURE: A STUDY USING EQ-5D-5L

Inês Coutinho Dos Santos[1], Márcia Presume[2], Cátia Sampaio[2], Sérgio Maltês[2], Bruno Rocha[2], Catarina Brízido[2], Christopher Strong[2], Marta Marques[2], Carlos Aguiar[2]

[1]Hospital Divino Espírito Santo de Ponta Delgada. [2]Unidade Local de Saúde Lisboa Ocidental | Hospital de Santa Cruz.

Introduction: Advanced heart failure (HF) significantly impairs quality of life (QoL) due to severe symptom burden and functional limitations. Implantation of durable left ventricular assist devices (LVADs) such as HeartMate 3™ (HM3) has been shown to prolong life and improve QoL in eligible patients.
Objectives: To assess and compare QoL in advanced HF patients before and after HM3 implantation using the EuroQoL-5 Dimensions-5 Levels (EQ-5D-5L) questionnaire.
Methods: This cohort study included all patients currently or previously under HM3 support, followed at our center. QoL was assessed with the Portuguese telephone version of EQ-5D-5L, and responses were converted into scores using the Portuguese value set. Normality tests guided the selection of paired-samples t-test and Wilcoxon Signed Rank test for comparisons of pre- and post-HM3 scores. The latter was also compared with the societal values that serve as a reference score for the Portuguese population. Statistical significance was set at $p < 0.05$.
Results: Fourteen patients (mean age 55.9 years) with severe cardiac dysfunction (mean LVEF 20.0% ± 7.1%) were included. The most frequent etiology was ischaemic (57.1%), followed by dilated (28.6%) cardiomyopathy. Most patients were in INTERMACS profiles 2 or 3 at implantation, with 57.1% receiving HM3 as a bridge to transplantation and 14.3% with the goal of destination therapy. After a median LVAD duration of 19.5 months [16.0-32.0] months, QoL showed significant improvement: median EQ-VAS rose from 20.0 to 70.0 (p = 0.008), and mean EQ-5D-5L index increased from 0.347 to 0.895 (p = 0.001, 95%CI 0.230-0.867). Domain analysis revealed significant reductions in problems related to mobility (p = 0.006), usual day activities (p = 0.003), pain/discomfort (p = 0.044) and anxiety/depression (p = 0.041), while self-care limitations remained unchanged. Post-HM3 implantation QoL was comparable to the general Portuguese population (p = 0.388) and superior to the chronic disease subgroup (p = 0.011).
Conclusions: Advanced HF patients receiving HM3 experience significant QoL improvements, achieving levels similar to the general Portuguese population and exceeding those of patients with chronic diseases. These findings align with existing literature, including the HM3 ELEVATE registry.

PO 140. ASSESSMENT OF PALLIATIVE CARE NEEDS IN ADVANCED HEART FAILURE PATIENTS WITH LEFT VENTRICULAR ASSIST DEVICES

Inês Coutinho dos Santos[1], Márcia Presume[2], Cátia Sampaio[2], Sérgio Maltês[2], Bruno Rocha[2], Catarina Brízido[2], Christopher Strong[2], Marta Marques[2], Carlos Aguiar[2]

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Introduction: Durable left ventricular assist device (LVAD) implantation is a well-recognized trigger for specialist palliative care (PC) referral, as recognized by international guidelines. Despite the well-documented PC needs of this population, longitudinal PC integration remains rare in advanced heart failure (HF). Proper screening for these needs is critical to reduce suffering and improve quality of life.
Objectives: To evaluate the prevalence and characteristics of PC needs in patients under HeartMate 3™ (HM3) support, using the Integrated Palliative care Outcome Scale (IPOS).
Methods: This cross-sectional study included all patients on HM3 support at a single center. The Portuguese patient version of IPOS was administered once to assess holistic symptom burden over the preceding week. Clinically significant unmet needs were defined as items scored ≥ 2 and required feedback to the attending physician for further assessment or referral.
Results: Eleven patients (mean age 58.2 years) with HM3 support were included. LVAD was implanted for ischemic cardiomyopathy in 63.6% of cases and as a bridge to transplantation in 54.5%, with other goals including bridge to candidacy (27.3%) and destination therapy (18.2%). At a mean LVAD duration of 23.2 ± 10.6 months, 72.7% exhibited unmet PC needs, with a mean overall score of 7.73 ± 6.54 (out of 68). As main problems, two patients identified anxiety about future transplantation. 36.4% presented at least one clinically relevant physical symptom with weakness being the most troublesome. As additional symptoms, 63.6% of patients spontaneously described slight-to-moderate dizziness. Psychological needs were dominated by health-related anxiety, with a minority reporting mild depression (18.1%). On the other hand, 27.3% reported moderate spiritual distress. All patients felt adequately informed about their condition. Family anxiety (45.5%) and only partly addressed practical issues such as financial concerns (27.3%) represented the most common social challenges. Interventions following IPOS screening included one hospitalization for symptom management, three referral suggestions for social worker (n = 2) and psychological (n = 1) intervention. There were no significant differences between the IPOS overall score and NYHA functional classes (p = 0.088).

EQ-5D-5L	Prior to HeartMate 3 (n=14) mean±SD or median [IQR]	Under HeartMate 3 (n=14) mean±SD or median [IQR]	p	95% CI
Mobility	0,182 [0,000-0,356]	0,000 [0,000-0,048]	**0,006**	–
Self-care	0,024 [0,000-0,294]	0,000 [0,000-0,070]	0,242	–
Usual activities	0,199 [0,063-0,263]	0,022 [0,000-0,044]	**0,003**	–
Pain/discomfort	0,000 [0,000-0,254]	0,000 [0,000-0,000]	**0,044**	–
Anxiety/depression	0,060 [0,000-0,212]	0,000 [0,000-0,036]	**0,041**	–
EQ-5D-5L index	0,347±0,520	0,895±0,106	**0,001**	0,230 – 0,867
EQ-VAS	20,0 [10,0-30,0]	70,0 [65,0-70,0]	**0,008**	–

	HeartMate 3	Portuguese general population	p	95% CI	Portuguese chronic disease subgroup	p	95% CI
EQ-5D-5L index, mean	0,895	0,887	**0,388**	-0,527 – 0,069	0,822	**0,011**	0,012 – 0,134

Figure PO 139