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## ABSTRACTS PRESENTED AT



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## 108634

**MODALITY: E-POSTER RESEARCHER - NON-CASE REPORT**  
**CATEGORY: HEART FAILURE/ CARDIOMYOPATHY/ TRANSPLANT**

**TITLE: EFFECT OF ANTIHYPERTENSIVE TREATMENT ON LEFT VENTRICULAR DIASTOLIC FUNCTION IN SUBJECTS WITH OBSTRUCTIVE SLEEP APNEA AND HYPERTENSION: A RANDOMIZED CONTROLLED TRIAL**

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Obstructive sleep apnea (OSA) has been associated with left ventricular (LV) diastolic dysfunction. Treating HTN with diuretics could reduce fluid retention and rostral fluid shift in patients with OSA, leading to changes in LV diastolic parameters. We compared the effects of diuretics or amlodipine on echocardiographic LV diastolic parameters. Methods: Patients with HTN and an apnea-hypopnea index between 10 and 40 events/hour were randomized to receive chlorthalidone plus amlodipine (25 mg/5 mg) daily or amlodipine (10 mg/daily) for eight weeks. The changes on echocardiographic LV diastolic function parameters were the primary outcome. Results: 62 participants completed the study. Systolic and diastolic BP (24h) decreased without between-treatment differences at the end of study. Nighttime SBP dipping was higher in the diuretic group than the amlodipine group (P=0.01). The following deltas were found between diuretic and amlodipine groups, respectively: septal E/e' ratio, -0.20±0.36 vs. 0.08±0.36 (P=0.6); lateral E/e' ratio -0.14±0.22 vs. 0.66±0.38 (P=0.07); and average E/e' ratio -0.19±0.21 vs. 0.43±0.32 (P=0.1). Conclusion: Patients with OSA and HTN treated with diuretics or amlodipine showed similar reductions in BP and LV structural measurements. The trend for the association of diuretics to have a greater effect on diastolic parameters and nocturnal SBP dipping suggest it can have beneficial cardiac effects in the long-term management of BP.

Diastolic function parameters according to the treatment group

	Chlorthalidone + Amlodipine		Amlodipine		P-value between groups*
	Baseline (n=28)	Follow-up (n=28)	Baseline (n=30)	Follow-up (n=30)	
E/e' ratio (SD)	67.2±12.9	66.6±12.0	69.2±12.8	70.2±12.8	0.5
A-wave (cm/s)	65.2±16.4	61.8±15.6	65.6±18.9	67.2±19.2	0.5
E/A	1.10±0.41	1.10±0.39	1.11±0.38	1.11±0.39	0.5
E/A ratio	2.86±0.86	2.84±0.86	2.86±0.70	2.85±0.72	0.96
Septal E/e' ratio (SD)	11.0±2.6	11.7±2.6	11.1±2.6	10.8±2.7	0.2
Lateral E/e' ratio (SD)	7.8±1.9	7.8±1.9	7.8±1.9	7.2±1.8	0.8
Average E/e' ratio (SD)	6.1±1.4	6.97±1.7	6.4±1.7	7.1±2.1	0.09
Septal E/e'	6.3±1.7	6.1±1.7	6.3±1.7	6.0±1.7	0.8
Average E/e'	7.2±1.2	7.1±1.0	7.2±1.2	6.9±1.0	0.2

\* Data are presented as mean ± SD. E/e' ratio, early peak diastolic velocity/mean A-wave peak velocity of mitral regurgitation. E/A, E-wave deceleration time; a', early mitral regurgitation velocity; E/A, relationship between early mitral flow filling wave and early diastolic mitral annular retraction velocity. \* P<0.05. † P<0.05 for delta independent samples.

## 108659

**MODALITY: E-POSTER RESEARCHER - NON-CASE REPORT**  
**CATEGORY: PERICARDIUM/ ENDOCARDIUM/ VALVOPATHIES**

**TITLE: THE FREQUENCY, ASSOCIATED FACTORS AND PROGRESSION OF HEART VALVE DISEASE IN CHRONIC KIDNEY DISEASE PATIENTS**

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Introduction: Cardiovascular diseases are a major cause of death in patients with advanced chronic kidney disease (CKD). Valve calcification (VC), mitral and aortic, associated with significant valve disease is a predictor of cardiovascular mortality, coronary artery disease and arrhythmias in these patients. Objectives: To assess the frequency of heart valve disease, its progression, and associated factors in patients with CKD. Methods: A total of 568 medical records of patients treated between 2007 and 2021 at the cardiology-renal outpatient clinic at a university hospital were analyzed, of which 347 were included due to the presence of CKD and heart valve disease. The explanatory variables analyzed were: age, gender, VC, glomerular filtration rate (GFR), dyslipidemia, coronary artery disease, systemic arterial hypertension, diabetes mellitus, C-reactive protein, secondary hyperparathyroidism and laboratory data on mineral and bone metabolism. To assess the association between categorical variables, the Pearson's chi-square test or Fisher's exact test was used. Results: 50.7% were female. The most frequent risk factor was systemic arterial hypertension (83.9%) and 25.1% of patients were diabetic. Mitral valve disease was observed in 81.6%, followed by aortic valve disease (66%). Regurgitant lesions were the most frequent: mitral (75%) and aortic (40.2%). Around half (48.1%) of those with heart valve disease were in the 30-39 age group, confirming the precocity of heart valve disease in CKD. A progression of heart valve disease was observed in 122 patients (35.2%). Valve calcification was significantly associated only with the progression of aortic valve disease (p=0.01). The variables significantly associated with mitral valve disease were secondary hyperparathyroidism (p=0.03), GFR (p=0.02) and total cholesterol (p=0.02). None of the variables analyzed were significantly associated with aortic and pulmonary valve disease. Secondary hyperparathyroidism (p=0.019) was also significantly associated with tricuspid valve disease, as well as altered levels of triglycerides (p=0.017). Conclusion: The frequency of heart valve disease, particularly mitral and aortic, is high in patients with CKD. The factors significantly associated with heart valve disease were: secondary hyperparathyroidism, GFR, total cholesterol and altered triglyceride levels. The progression of valve disease was observed in 35% of patients and was significantly influenced by VC.

## 108733

**MODALITY: E-POSTER RESEARCHER - NON-CASE REPORT**  
**CATEGORY: CARDIORESPIRATORY PHYSIOLOGY/ BASIC SCIENCE**

**TITLE: IMPACT OF AIR QUALITY DURING SLEEP ON CARDIORESPIRATORY DYNAMICS: AN EXPLORATORY STUDY**

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Introduction: Inadequate sleep and poor air quality are both associated to an increased cardiovascular risk. Sleep quality and structure are also vulnerable to environmental influences. Typically, sleeping environments have low ventilation rates, leading to pollutants accumulation. Though during nighttime and early morning there is a circadian propensity to cardiorespiratory events, environmental factors which may aggravate this risk should be taken into account. The aim of this study is to test the associations between air pollutants, specifically CO and CO2 and heart rate dynamics as an indicator of cardiovascular autonomic function. Methodology: Ten men followed specific inclusion criteria: age between 25 and 40 years old, healthy individuals, non-smoking, without children below five years and without sleeping, cardiac and respiratory problems and whose households are within Lisbon area, were recruited. An unattended polysomnography (PSG) was performed during 2 weeknights in a row. The second night PSG's results were used in order to minimize the first night effect. For the purpose of this study the data related to heart rate (HR) were collected, namely HR acceleration index (HR Acc index), mean of HR (HRmean) and minimum of HR (HRmin). IAQ monitoring was based on a comprehensive multi-pollutant assessment where chemical, in particular carbon dioxide (CO) and carbon monoxide (CO), were assessed through real time instruments. Non-parametric statistics were applied, namely Spearman correlations, to analyze potential associations between sleep and environmental parameters. The level of significance considered was  $\alpha = 0.05$ . Results: The mean age was 33.9±5.20 years. HR and IAQ parameters showed a moderately positive correlation between CO exposure and HR Acc index (rs = .635) and HRmin (rs = .0667) and a highly positive correlated between CO exposure and HRmean (rs = 0.71); also a moderately and positive correlation between CO2 exposure and HR Acc index (rs = .688) was observed as well as a highly positive correlation between CO2 exposure and HRmin (rs = 0.713) HRmean (rs = .0794). Conclusions: Results from this preliminary study suggest that high levels of CO and CO2 may increase the HR Acc index, HRmin and HRmean, raising awareness on the possible impact of indoor air quality on cardiovascular autonomic modulation. Further studies are needed to confirm such findings and to establish their clinical relevance within cardiorespiratory health.

## 108720

**MODALITY: E-POSTER RESEARCHER - NON-CASE REPORT**  
**CATEGORY: ANTICOAGULATION**

**TITLE: THE RELATIONSHIP BETWEEN BASELINE CHARACTERISTICS AND ISCHEMIC STROKE IN PATIENTS WITH ATRIAL FIBRILLATION AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT TREATED WITH EDOXABAN OR VITAMIN K ANTAGONISTS**

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Introduction: In ENVISAGE-TAVIAF (NCT02943785) edoxaban was noninferior to vitamin K antagonists (VKAs) for the composite endpoint of net adverse clinical events in patients with atrial fibrillation after transcatheter aortic valve replacement (TAVR). Objective: To evaluate the association between baseline patient characteristics and ischemic stroke (IS) incidence. Methods: This on-treatment analysis of ENVISAGE-TAVIAF included patients that received ≥1 dose of the study drug over the period treatment and ≤3 days after interruption or discontinuation. Baseline demographic and clinical characteristics were stratified by IS incidence. Numerical variables were compared using one-way analysis of variance; categorical variables were compared using Fisher's exact test. Stepwise logistic regression with 30 independent predictors determined patient characteristics associated with first IS event. Results: Of 1377 patients included in the on-treatment analysis, 41 (3.0%) experienced IS during the on-treatment period (edoxaban, n = 19; VKA, n = 22). Most IS events occurred within 6 months of TAVR for both the edoxaban (57.9%) and VKA (68.2%) arms. Differences in baseline demographic and clinical characteristics are shown for patients who did or did not experience IS while receiving treatment (Table). Significantly more patients who experienced IS had a history of systemic embolic events (SEE, P = 0.015). Only a history of SEE was independently associated with IS (P = 0.006). Body mass index (P = 0.052) and history of myocardial infarction (P = 0.074) were numerically, but not statistically, associated with IS. Conclusions: In this on-treatment analysis of the ENVISAGE-TAVIAF trial, few patients experienced IS. Patients with history of SEE may be at increased risk of IS following TAVR.