HEART RATE RECOVERY FOLLOWING ACTIVE STAND MODERATE ALCOHOL CONSUMPTION IS ASSOCIATED WITH PROGRESSION OF LEFT VENTRICULAR DYSFUNCTION IN PRE-HEART FAILURE

17 HEART RATE RECOVERY FOLLOWING ACTIVE STAND TEST IN PATIENTS WITH VERSUS WITHOUT SEVERE AORTIC STENOSIS

L Brandon, R Armstrong, B Ken, C Finucane, M Afonso Shirsath, M Hensey, O Connor, RA Kenny, A Maree.
St James Hospital, Dublin, Ireland

Introduction: Untreated symptomatic severe aortic stenosis (AS) has a 50% two-year mortality rate and valve replacement is the only meaningful treatment. Autonomic nervous system (ANS) dysfunction determined by speed of heart rate recovery post active stand test (HRR10–20) is associated with increased all-cause mortality. Aortic stenosis in known to modulate autonomic function but its impact on HRR10–20 has not been determined.

Aims: To determine whether HRR10–20 differs between patients with and without symptomatic severe AS.

Methods: Patients (n=20) with symptomatic severe AS were enrolled prospectively and compared with an age and sex-matched control group (n=40) from the Irish Longitudinal Study on Aging (TILDA). Autonomic function was evaluated using non-invasive digital photoplethysmography that records beat to beat changes in HR and BP for three minutes following an active stand and HRR10–20 was calculated. Statistical analysis was carried out using STATA software 14.6.

Results: Table 1: Patient demographics Study group (n=20) Control group (n=40) Age, mean78.6±7.8 Male, n(%) 12 (60) 24 (60) Smoking history, n(%)10 (50)18 (45) IHD, n(%)10 (50)3 (7.5) DM, n(%)5 (25)10 (25) HTN, n(%)17 (85)38 (95)

Abstract 17 Table 1 Patient demographics

Abstract 17 Figure 1 Box plot HRR10–20

(95) AF, n(%)5 (25)3 (7.5) Anti HTN agent, n(%)18(90)30 (75) Antithrombotic agent, n(%)17(85)38 (95) Abbreviations: AF = Atrial fibrillation, DM = Diabetes mellitus, HTN = Hypertension, IHD = Ischaemic heart disease. Patients were Caucasian, 60% male and mean age was 78.6 years (table 1). Speed of heart rate recovery post active stand (HRR10–20) was significantly impaired in patients with symptomatic severe AS compared to controls, 2.06 bpm(95% CI -2.58 to +6.70) v -2.66 bpm (95% CI -4.2 to -1.07), p=0.016, respectively (figure 1). A Box plot of results HRR10–20: Abbreviations; HRR = heart rate recovery.

Conclusion: Patients with symptomatic severe aortic stenosis have impaired autonomic function determined by HRR10–20 when compared to patients with preserved aortic valve function. HRR10–20 may be a simple marker to assess for autonomic dysfunction in this cohort of patients, perhaps putting them at risk of higher all-cause mortality. It remains to be seen if this resolves with aortic valve replacement, we plan to re-evaluate HRR10–20 post aortic valve replacement in our study group.

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18 MODERATE ALCOHOL CONSUMPTION IS ASSOCIATED WITH PROGRESSION OF LEFT VENTRICULAR DYSFUNCTION IN PRE-HEART FAILURE

B Wong, A Moore, A Radhakrishna, K McDonald, M Ledwidge. St Vincent’s University Hospital, Dublin, Ireland; University College Dublin, Ireland

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Background There is limited evidence of the longitudinal impact of alcohol use and progression of structural cardiac changes amongst European populations at risk of heart failure (CV risk factors) or with pre-heart failure (asymptomatic but with cardiac changes, and no previous heart failure [HF]). Furthermore, the 2021 European guidelines describe beneficial effects in the general population of light alcohol (<140 g/week for men and <70g/week for women) usage on risk of HF, despite contrary emerging evidence.

Aim To understand the dose-response relationship between alcohol consumption and progression of pre-HF in a European population.

Methods This is a secondary analysis of the St Vincent’s Screening TO-Prevent Heart Failure (STOP-HF) trial amongst patients who are at risk of HF or with pre-HF, with documented alcohol intake and echocardiography at both baseline and follow up ≥18 months. Excluded were ex-drinkers and patients with symptomatic HF. The main outcome measure was the relationship between progression of cardiac functional changes (progression of pre-HF) or onset of symptomatic HF, stratified according to whether patients were classified as at risk of HF or with pre-HF at baseline, and 3 categories of alcohol dose: no alcohol usage; low alcohol use (up to 1 unit daily or 70g/week); moderate-high alcohol usage (>1 unit daily or >70g/week). Progression of pre-HF was defined as follow up left ventricular dysfunction (EF <50%) and a decline of at least 5% and/or lateral E/e' was defined as follow up left ventricular dysfunction (EF <50%).

Results Of 744 patients included in the analysis (mean age 66.5 (9.8) years), 395 (53.1%) were female, 556 (74.7%) had hypertension, 145 (19.3%) had diabetes and 260 (34.9%) had cardiac disease. Of 744 patients included in the analysis (mean age 66.5 (9.8) years), 395 (53.1%) were female, 556 (74.7%) had hypertension, 145 (19.3%) had diabetes and 260 (34.9%) had cardiac disease. Overall, a total of 201 (27.0%) patients reported no alcohol usage, 356 (47.8%) reported low (≤70g/ wk) alcohol intake and 187 (25.1%) reported moderate-high alcohol usage with >70g/wk alcohol intake. There was no difference in reported alcohol usage between those at risk of HF and pre-HF patients. Those with moderate-high alcohol usage were younger, more likely to be male and had higher body mass index than patients with low alcohol usage. Over a median follow up period of 5.44 [IQR 4.33;6.73] years, 84 (11.3%) patients had progression of pre-HF or developed symptomatic HF. Moderate-high alcohol usage was associated with an adjusted 4.5 fold (95% CI 1.7- 15.9, p=0.004) increased risk of progression of pre-HF/HF amongst those with pre-HF at baseline compared to those who reported no alcohol intake. Increased HF progression was also evident in moderate (70–140g/week) and high (>140g/week) alcohol use subgroups. Conversely, in patients at risk of HF, at baseline had no association of moderate-high alcohol usage with progression of HF. Finally, there was no protective associations of low alcohol usage (<70g/week) and progression of HF in any patient group.

Conclusion Moderate alcohol (>70g/week; more than 1 bottle of 12.5% wine/week) usage appears to be associated with progression of pre-HF and HF in European patients in the STOP-HF study (figure 1) and we did not observe protective benefits of low alcohol usage. These data are in accordance with recent evidence from Asian populations. European HF guidelines should reconsider advice suggesting any protective effects of alcohol on risk of heart failure.

Abstract 18 Figure 1 The association of moderate alcohol intake on progression of LV dysfunction in those with Pre-Heart Failure

1C Tony, 1A Russell-Hallinan, 2N Glezeva, 1P Collier, 1K McDonald, 1M Ledwidge, 1BC Collins, 1C Watson. 1Wellcome-Wolfson Institute for Experimental Medicine, Queen's University Belfast, UK; 2STOP- HF Unit, St Vincent’s University Hospital Healthcare Group, Dublin, Ireland; 3Department of Cardiovascular Medicine, Cleveland Clinic, Ohio, USA; 4Heart Failure Unit, St Vincent’s University Hospital Healthcare Group, Elm Park, Dublin, Ireland; 5School of Biological Sciences, Queen’s University Belfast, UK

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Background There is a need for improved biomarkers to diagnose atrial fibrillation (AF) earlier and reduce risk of future serious comorbidities. Quantitative protein profiling of atrial appendage tissue from patients with atrial fibrillation (AF n=10) and age/sex matched controls with normal sinus rhythm (control, n=10) was performed using mass spectrometry. Similarly, serum samples, collected longitudinally from patients with and without AF (n=186), were analysed to establish a comprehensive dataset that depicts changes in both the atrial tissue and circulating proteome as result of AF.

Methods Sections of formalin fixed paraffin embedded (FFPE) tissue were mechanically homogenised in Preomics™ LYTE

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