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

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 post aortic valve replacement in our study group.

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±7.5 Male, n(%)5 (25)12 (30) 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)

Conclusions Non-dippers were associated with the most adverse cardiac remodelling despite having comparable overall SBP and DBP to dippers, suggesting a complex mechanism beyond absolute BP level, possibly involving the neurohumoral system. LAVI measured by CMR has a positive correlation to echo-derived LVM and can be of incremental value over TTE when assessing for early LV remodelling in patients with abnormal nocturnal BP. This study highlights the importance of ABPM use in identifying those with subclinical target organ damage for risk stratification and individualized treatment strategies.

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Abstract 17 Figure 1 Box plot HRR10–20: Abbreviations; HRR = heart rate recovery.

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

Abstract 17 Table 1 Patient demographics

Abstract 17 Figure 1 Box plot HRR10–20

(95) AF, n(%)(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 -2.6bpm (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.