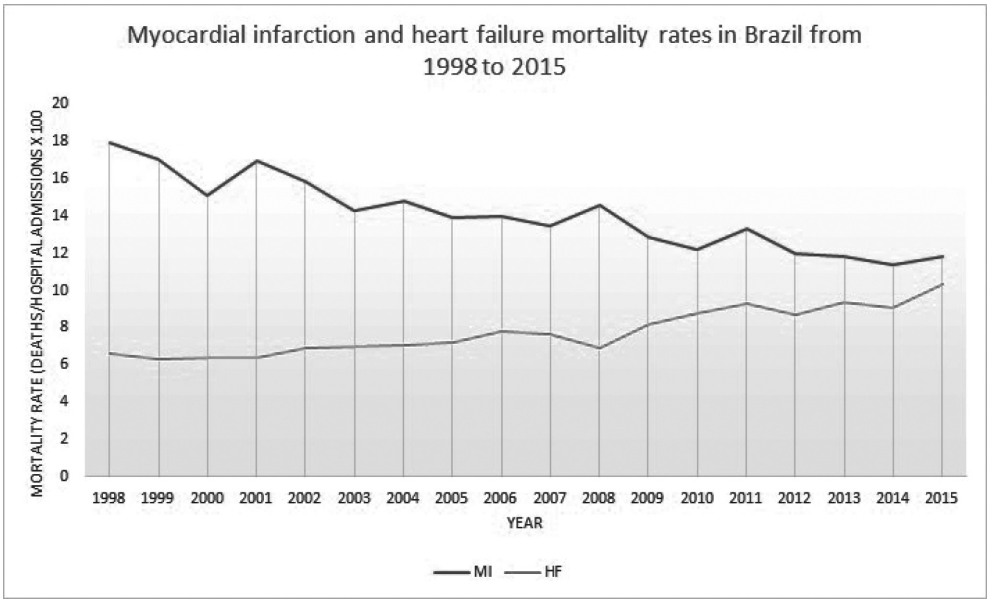

Abstract 12 Figure 1 Evolution of mortality rates in Brazil for myocardial infarction and heart failure from 1998 to 2015

13 NOVEL BIOMARKERS IN ASSESSING OUTCOME IN PATIENTS WITH SEVERE AORTIC STENOSIS AND HEART FAILURE

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Introduction Severe Aortic stenosis (AS) and non-valvular heart failure (HF) appear to have different pathological processes, and therefore cardiac remodelling is likely to involve different pathways. Novel biomarkers have been developed to assess prognosis, response to treatment and also to understand the underlying mechanism of cardiac remodelling. We identified from the literature the biomarkers that have shown to demonstrate promise in assessing aortic stenosis and heart failure. We compared the differences in levels between the two groups and to see how they predict outcome (all-cause mortality). We identified biomarkers of fibrosis (ST2, galectin 3), matrix remodelling (osteopontin, PIIINP, TIMP1), stretch (NT-pro BNP, cardiotrophin/CTP).

Methods We studied a total of 140 patients. 48 patients were recruited with chronic heart failure and EF ≤ 40% from the HF clinics at Kings College Hospital, London on optimal doses of HF medication and device therapy according to ESC Guidelines. In addition, we also examined 92 patients who were awaiting TAVI for severe aortic stenosis. Prior consent was obtained, and serum was sent for analysis of NT-pro NP, serum ST2, Galectin 3, osteopontin, TIMP1, CTP and PIIINP. These patients were followed up as part of routine care for the time of the study. No patients were lost to follow up. Statistical analysis was performed on SPSS, and median biomarker values were analysed non-parametrically. We chose 2 year follow up because of many landmark studies investigating the prognosis of severe aortic stenosis and the impact of TAVI are around 2 years.

Results Out of a total of 140 patients, 24 patients were registered dead at one year and 81 at the end of 3 year follow up. Baseline ejection fraction remains the best predictor of prognosis of all causes mortality at one year in keeping with previous studies. However, the area under the curve for ST2 at baseline appeared to be the most promising of all the biomarkers (0.612) compared with NT-pro BNP (0.610), TIMP1 (0.610), CTP (0.602) Osteopontin (0.601), PIIINP (0.353), Galectin 3 (0.370). When we repeated the ROC analysis with 2 year mortality, NT-pro BNP still had the highest AUC (0.685), followed by TIMP 1 (0.639), Osteopontin (0.633), CTP (0.628), ST2 (0.555), ejection fraction (0.528), Galectin 3 (0.458) and PIIINP (0.322). Combining biomarkers in a multi-marker panel improved the AUC even further.

Conclusions Novel biomarkers appear to give important prognostic information as good as ejection fraction and traditional biomarkers like NT-pro BNP in patients with severe aortic stenosis and optimally managed heart failure. The cost of NT-pro BNP remains high despite the assay in commercial and clinical use, therefore limiting its wider use in the UK. Novel biomakers which may provide similar prognostic information individually or as a multi-marker panel may be an alternative worthy of a larger trial in future.

14 DELAYS IN REFERRAL FOR SPECIALIST ASSESSMENT FOLLOWING A POSITIVE NATRIURETIC PEPTIDE RESULT IN PATIENTS WITH SUSPECTED HEART FAILURE

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Introduction Heart failure (HF) is associated with significant morbidity and the prognosis is frequently poor. Symptoms, quality of life and outcome can be hugely improved by the implementation of appropriate evidence based therapies by a specialist multidisciplinary team. Current NICE guidelines