39  PRE-Clinical Heart Failure: A Description of Stage A and B Heart Failure in the Community

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Introduction A greater focus on prevention is needed to manage the epidemic of heart failure (HF). The 2022 AHA/ACC HF guidelines revised the definition of Stage B (pre-HF) to now include previously identified Stage A (at-risk) patients with an elevated BNP (35 pg/mL). Whether this newly identified Stage B population is equivalent to the original has yet to be examined.

Methods We retrospectively analysed clinical characteristics, serial echocardiographic, brain natriuretic peptide (BNP) and outcome data of 1,425 patients who returned for two visits in the St Vincent’s Screening To Prevent HF (STOP-HF) Programme. Patients were categorised as Stage A or Stage B at baseline using original and revised guideline definitions.

Results Baseline Data A population of 1,425 was analysed. On average, visit 2 was completed 5.3 years after visit 1. The average age at visit 1 was 64 years with females accounting for 54% (n=776). At visit 1, 72% (n=1,026) were classified as Stage A and 28% Stage B. Average BNP of a Stage A patient was 29 pg/ml versus 64 pg/ml for Stage B. Stage B patients had higher comorbidity rates, especially atrial fibrillation (19% vs 5%), hypertension (79% vs 68%) and ischemic heart disease (20% vs 8%). Progression/Regression Amongst Stage A patients between visit 1 and visit 2, 74% (n=757) remained in Stage A, 25% (n=252) progressed to Stage B and 2% (n=7) progressed to Stage C. Amongst Stage B patients, 65% (n=259) remained in Stage B, 11% (n=44) progressed to Stage C, and 24% (n=95) regressed to Stage A. Multivariate analysis showed the key drivers of progression were age (p=0.001), vascular disease (p=0.025), triglycerides (p=0.02) and BNP (p=0.007). Events A Stage B patient at visit 1 was twice as likely to develop any type of cardiovascular (CV) event versus a Stage A patient (IRR = 2.279) and 53% more likely to develop HF (p=0.0003). Reflecting the new AHA/ACC definition of Stage B we compared the event rates of Stage A patients with a BNP ≥35 pg/ml to the original Stage A and B populations. The addition of BNP was a poor predictor of CV events. CV rates amongst Stage B were higher versus Stage A with a BNP ≥35 pg/ml (IRR=2.39). BNP was a useful predictor of CV within Stage B. Incorporation of a BNP ≥35 pg/ml revealed a Stage B population more likely to experience any CV events (IRR = 1.31) or HF events (IRR = 1.41). A Stage B patient with a BNP of ≥35 pg/ml versus a Stage A patient with a BNP ≥35 pg/ml, was three times more likely to have a CV event (IRR = 3.135).

Conclusions/Implications We reviewed a large sample of preclinical HF community patients. We found significant progression/regression and identified predictors of progression. We found Stage A patients with a BNP ≥35 pg/ml are not equivalent to Stage B patients as suggested by the new AHA/ACC guidelines. This suggests additional analysis is needed to further define the Stage B (pre-HF) population. Finally, we identified that BNP plays a significant role in differentiating risk in a patient with an abnormal TTE.

40  Preliminary Data Assessing Change in Left Ventricular Ejection Fraction in Patients Initiated on SGLT2 Inhibitor Therapy – An Ongoing Observational Study

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Aims Sodium-glucose Cotransporter-2 (SGLT2) Inhibitors are now advised as standard front line therapy for heart failure reduced ejection fraction (HFrEF) patients irrespective of whether diabetes is present or not. There has now been a multitude of positive trials in favour of SGLT2 inhibitor use with little information on how routine community HFrEF populations respond to this intervention in the setting of already taking maximum tolerated conventional disease modifying therapies. We therefore set out to assess changes in left ventricular ejection fraction (LVEF) for patients attending our outpatient heart failure unit who were recently commenced on SGLT2 inhibitors.

Methods All patients commenced on SGLT2 inhibitors as additional medical therapy for HFrEF in a twelve-month period were included in the study. SGLT2 inhibitor therapy was initiated once patients were fully optimised on conventional medical therapy and stable from a heart failure perspective. The patients most up-to-date echocardiogram prior to being initiated on a SGLT2 inhibitor was compared with the patients most recent echocardiogram after initiation. For it to be included the repeat echocardiogram must have occurred at least one month after initiation of the SGLT2 inhibitor and the patient had to still prescribed their SGLT2 inhibitor. All data was obtained from the electronic patient record.

Results There were 184 patients commenced on SGLT2 in the 12-month period studied of which 78% (144 patients) were male and 26% (48 patients) were diabetic. The average age was 69 years old. Of the 184 patients enrolled, 176 patients (96%) had a recent echocardiogram prior to their SGLT2 inhibitor commencing and the mean left ventricular ejection fraction (LVEF) was 31%. There are 90 patients to date who have had a follow-up echocardiogram after initiating their SGLT2 inhibitor and the mean LVEF of these was 39% (carried out at a mean time interval of 6months). The difference in LVEF being significant (p value of 0.0001). 69 out of the 90 patients (77%) had an overall improvement in their LVEF and 48 patients (53%) had an LVEF improvement that was ≥5%. Of these 90 patients with a repeat echocardiogram, 48 patients (59%) had an initial LVEF that was <35%, and, of these 48 patients, 27 patients (56%) had LVEF ≥35% after the addition of the SGLT2 inhibitor which had brought these patients out of the territory for requiring an implantable cardiac defibrillator.

Conclusions We have seen evidence of interval improvements in the LVEF of our cohort of HFrEF patients attending our heart failure unit who had been commenced on SGLT2 inhibitors as additional HFrEF therapy. Whilst half of our patients have yet to have a repeat echocardiogram, this initial analysis of the first 90 patients is promising and our observational study is ongoing.