EFFECTS OF A LOW-ENERGY MEAL REPLACEMENT PROGRAMME ON REVERSE CARDIAC REMODELLING IN ASYMPTOMATIC PEOPLE WITH TYPE 2 DIABETES: A COMPARISON BETWEEN SOUTH ASIANS AND WHITE EUROPEANS

Introduction: People with Type 2 Diabetes (T2D) are predisposed to heart failure (HF). South Asian (SA) people are disproportionately affected by T2D. Weight management orientated lifestyle treatments have proven successful in the reversal of T2D in the overweight population. There are no studies comparing the effect of a low-energy meal-replacement plan (MRP) on cardiovascular structure and function between South Asians (SA) and White Europeans (WE).

Objective: To ascertain if there was a difference in the cardiovascular structural and functional outcomes between SA and WE living with obesity and T2D undergoing a LCD.

Methods: Asymptomatic adults living with obesity and T2D and no cardiovascular disease were randomised to a low-energy (~108 kcal/day) MRP as part of the DIASTOLIC randomised controlled trial (NCT02932436). Participants underwent clinical and metabolic profiling, echocardiography, and comprehensive multiparametric cardiovascular magnetic resonance imaging with myocardial blood flow quantification. Data was collected at baseline and the change at 12 weeks were compared between SA and WE in the MRP group only. Change between the groups was compared using linear regression with baseline data corrected for sex and the regression model for change correcting for baseline measures.

Results: Fifteen WE participants and 12 SAs were randomised to the MRP. All WE participants completed the 12-week MRP compared to only 8 SAs. Table 1 details the baseline demographics and anthropometric measures between the groups corrected for sex. SA were younger than WE and systolic BP was lower in SA but there were no other significant differences. There were also no significant differences in renal function, fasting glucose or HbA1c, lipid profile, baseline C-peptide, insulin, adiponectin, and HOMA IR between groups. BNP was significantly higher in the WE group ((13.5 (8.5 - 23.7) ng/l) compared to the SA group ((6.9 (4.1 - 11.7) ng/l) (P<0.05). Both groups showed a dramatic decrease in weight and BMI, with mean change in weight of -15.0 ± 3.8 kg in WE and -12.0 ± 11.3 kg in SA. Both groups showed a significant decrease in insulin -18.0 (-24.8, -11.1) in WE and -14.8 (-28.7, -0.8) in SA but there were no other significant differences. There were also no significant differences between the groups for E/A or E/e′ on echocardiography or other measures of cardiac function on CMR.
Conclusion The compliance of the SA population to a LCD was reduced by a third compared to age matched WE with full compliance. Although similar improvements in insulin resistance and weight loss were achieved, there was trend towards less reverse concentric remodelling in the SA group and larger studies with longer follow up periods will be required to assess if the cardiovascular responses to weight loss are equally beneficial in ethnic minority populations.

Conflict of Interest None

Introduction The pathophysiology and trajectory of multimorgan involvement in post-COVID-19 syndrome is uncertain. We aimed to adjudicate the likelihood of myocarditis in post-COVID-19 patients.

Methods A prospective, longitudinal, cohort study involving post-COVID-19 patients enrolled in-hospital or early post-discharge (visit 1) and re-evaluated 28–60 days post-discharge (visit 2). Serial research blood tests (biomarkers), digital electrocardiography, and patient reported outcome measures were obtained at both visits. Chest computed tomography with pulmonary and coronary angiography, cardiovascular and renal magnetic resonance imaging, were acquired at visit 2. Magnetic resonance imaging, were acquired at visit 2.

Results 159 patients (mean age 55 years, 43% female) and 27 controls with similar age, sex, ethnicity, and vascular risk factors were enrolled from 22 May 2020 to 2 July 2021 and had a primary outcome evaluation. Adjudicated likelihood of myocarditis was not (n=17; 11%), unlikely (n=56; 35%), probably (n=65; 41%) or very likely (n=21; 13%). Healthcare worker status (odds ratio, 95% confidence interval: 2.99 (1.01, 8.89); p=0.048), acute kidney injury (3.26 (1.00, 10.64); p=0.050) and HbA1c (0.64 (0.42, 0.99); p=0.044) were multivariable associates of adjudicated myocarditis. During convalescence, COVID-19 was associated with worse health-related quality of life (EQ5D-5L) (p<0.001), illness perception (p<0.001), anxiety and depression (p<0.001), physical activity (p<0.001) and predicted maximal oxygen utilization (mL/kg/min) (p<0.001). These measures were associated with adjudicated myocarditis.

Conclusion The illness trajectory of COVID-19 includes persisting cardio-renal inflammation, lung damage and hemostasis activation. Adjudicated myocarditis occurred in one in eight hospitalized patients and was associated with impairments in health status, physical and psychological wellbeing during community convalescence.

Conflict of Interest Nil