posting out a lithium heparin tube alongside an electronic phlebotomy request. Patient's cases were discussed at the MDT if NT-pro-BNP was greater than 1000 pg/ml, had ICD shocks, low blood pressure, recurrent hospitalisations, or difficulty with hypotension (I need help criteria). Medications, device therapy, advanced care planning and advanced heart failure therapy options were reviewed in conjunction with co-morbidities which would preclude transplantation.

Results 420 patients were under the age of 65. 180 had left ventricular ejection fraction < 35%, 37 had defibrillators, and 19 had cardiac resynchronisation therapy. 270 patients had NT-pro-BNP sampling, 61 had a NT-pro-BNP >1000 pg/ml. 2 patients had left ventricular assist devices already implanted. After the audit & MDTs, 13 patients were identified who might benefit from defibrillators or device therapy, 8 patients were not fit for transplantation and 2 were referred to palliative care. 6 patients were judged to be appropriate for referral for evaluation for cardiac transplantation. Medication changes were also made.

Conclusions A systematic audit of all patients under the age of 65 identified a cohort of patients who were at risk of deteriorating. These patients could benefit from life prolonging therapy or advanced care planning.

Conflict of Interest none

163 PREDICTION OF OUTCOMES IN PATIENTS WITH HYPERTENSION USING CLINICAL LABORATORY BIOMARKERS - A REAL-WORLD ANALYSIS USING A GLOBAL FEDERATED DATABASE

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Background Hypertension is a recognised risk factor for heart failure. The use of biomarkers in heart failure is long established, however little is known about the prognostic significance of these in hypertension when heart failure has been excluded.

Aim This study aimed to investigate the prognostic significance of routine cardiac biomarkers in hypertensive patients when heart failure has been excluded.

Methods A retrospective cohort study was performed using electronic medical records from a global federated research network. The database was searched on 20th February 2024. Cardiac biomarkers were the first reported result within 1 month of diagnosis of hypertension, excluding patients with heart failure. Cohorts were grouped according to biomarker-specific thresholds. Cohorts were 1:1 propensity-score matched for demography (age, gender, & ethnicity), baseline comorbidities (hypertension, diabetes mellitus, ischaemic heart disease, AF & smoking status), laboratory data (eGFR & proteinuria) and medication use. Logistical regression produced odds ratios with 95% CI for incident 5-year major adverse cardiac events (MACE). MACE was defined, a priori, as a composite of acute myocardial infarction, heart failure, atrial fibrillation, stroke, acute heart failure and all-cause mortality. All statistical analyses were performed on the networks online platform.

Results The results for NTproBNP and Troponin T are shown in tables 1 and 2 respectively. Only results that reached statistical significance (P<0.05) are presented.

Abstract 163 Table 1 5-year incident outcome in patients with hypertension without heart failure related to NTproBNP concentration

Outcome	Number with outcome	Odds Ratio	95% CI	P-value
NTproBNP; Threshold <400 pg/ml = Reference Group (N=87,350; mean age 68[13]; 48% male)				
MACE	23791	1.90	1.84–1.96	<0.0001
All-cause mortality	22268	2.11	2.04–1.17	<0.0001
Heart Failure	6714	1.30	1.23–1.36	0.0001
AMI	3949	1.33	1.24–1.42	0.0001
Atrial Fibrillation	6763	1.40	1.32–1.46	0.0001

Abstract 163 Table 2 5-year incident outcome in patients with hypertension without heart failure related to Troponin T concentration

Outcome	Number with outcome	Hazard Ratio	95% CI	P-value
Troponin T; Threshold <14ng/L = Reference Group (N=26,076; mean age 69[13]; 49% male)				
MACE	5947	1.59	1.48–1.69	0.0001
All-cause mortality	3968	1.41	1.33–1.49	0.0001

Conclusion Elevated NTproBNP and cardiac troponin T in hypertensive patients who do not have heart failure demonstrate a significant risk of MACE and its individual components. Further prospective validation is warranted to evaluate the prognostic significance of these markers in hypertension, especially those where HF has been excluded. The combination of clinical and laboratory variables into a single risk prediction model should be developed and validated.

Conflict of Interest N/A

164 THE EFFECT OF BETA-BLOCKERS ON HEART FAILURE WITH PRESERVED EJECTION FRACTION: A SYSTEMATIC REVIEW

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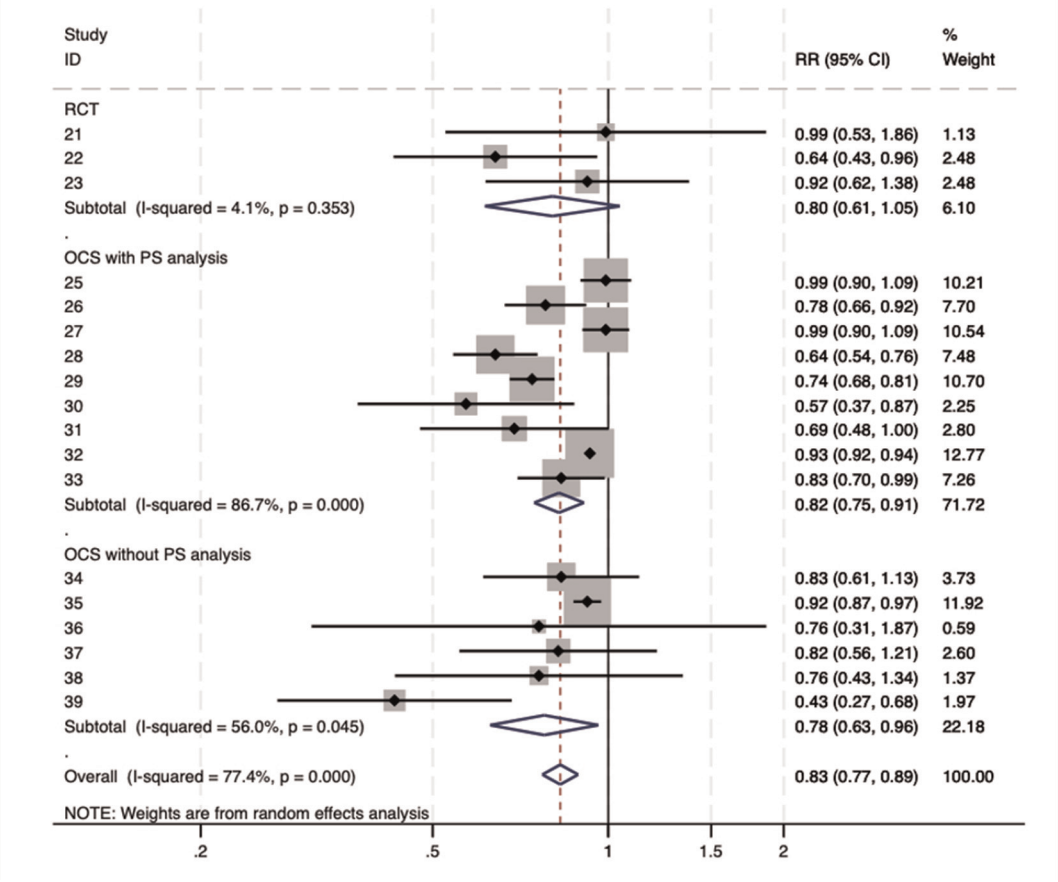
Introduction Beta-blockers (BB) have systematically proven to improve outcomes in patients with heart failure with reduced ejection fraction (HFrEF). Their use is recommended by the NICE guidelines for managing HFrEF. Controversially, BB are also commonly prescribed to treat heart failure with preserved ejection fraction (HFpEF) despite contradicting evidence regarding their benefit. Furthermore, recent data has suggested that potential adverse effects might incur from BB treatment in this patient group. This project aimed to investigate the effect of BB on all-cause mortality and cardiovascular mortality as well as all-cause hospitalisations and heart failure (HF) hospitalisations in patients with HFpEF.

Methods A comprehensive meta-analysis of randomised control trials (RCTs) and observational cohort studies (OCSs)



Abstract 164 Figure 1 Forest plot illustrating the pooled study effect of BB treatment vs. no BB treatment or placebo on all-cause mortality

published up to October 2023 was performed. The OCSs were further subdivided between those with propensity score (PS) analyses and those without. Study inclusion criteria were (i) a HFpEF diagnosis defined by a left-ventricular ejection fraction of ≥ 40% or ≥ 50% on cardiac magnetic resonance and/or cardiac positron emission tomography and/or transthoracic echocardiogram, (ii) the intervention was either the initiation or continuation of BB treatment, (iii) the comparator was no BB treatment or placebo, (iv) at least one of the following outcomes must have been measured : all-cause mortality, cardiovascular mortality, all-cause hospitalisation, HF hospitalisation and a composite of all-cause mortality and/or HF hospitalisation.

Results A total of 19 studies were selected from an electronic databases search : 3 RCTs (1 046 participants), 10 OCSs with PS analysis (455 220 participants) and 6 OCSs without PS analysis (16 247 participants). Overall, BB treatment was associated with a significant 17% reduction of all-cause mortality compared with no BB treatment (risk ratio (RR) 0.83, 95% confidence interval (CI) 0.77–0.89). Significant statistical heterogeneity was observed between OCSs, both with and without PS analysis (I-squared = 86.7% and 56.0% respectively). The meta-analysis yielded insignificant results for cardiovascular mortality, all-cause hospitalisations, HF hospitalisations as well as the composite of all-cause mortality and/or HF hospitalisations (RR 0.85, 95% CI 0.66–1.09 ; RR 0.96, 95% CI 0.90–1.03 ; RR 1.15, 95% CI 0.84–1.56 and RR 0.93, 95% CI 0.81–1.05 respectively).

Conclusion This review suggests a potential benefit of BB treatment in reducing all-cause mortality in patients with HFpEF ; however, their effect on cardiovascular mortality, all-cause hospitalisation and HF hospitalisation remains unclear. Data was predominantly obtained from OCSs. This highlights a lack of rigorous and adequately powered clinical trials within the current pool of evidence.

Conflict of Interest None.

165 SKELETAL MUSCLE ENERGETICS IN HEART FAILURE ASSESSED BY 31P MAGNETIC RESONANCE SPECTROSCOPY- A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction Skeletal muscle (SkM) abnormalities are well recognised in heart failure (HF). Sarcopenia is characterised by the progressive loss of SkM mass/quality and function. SkM energetics can be assessed non-invasively by 31 Phosphorus Magnetic Resonance Spectroscopy (31P MRS). Phosphocreatine (PCr) regenerates Adenosine Triphosphate (ATP) via its transfer of Inorganic Phosphate (Pi) and is relatively quantified as PCr/Pi or PCr/ATP. We aimed to systematically review studies of SkM energetics in patients with HF at rest and post-exercise using 31P MRS.

Methods A systematic search of cross-sectional studies was conducted across 7 databases from inception to September 2023, using predefined search terms related to HF, SkM