stratification to optimise therapy and achieve/maintain a low risk profile. The COMPERA 2.0 four strata model is used to evaluate risk following initiation of therapy and includes assessment of: NT-proBNP, walk distance and WHO functional class. Physical activity as active minutes/day can be measured remotely using non- or minimally invasive devices. We sought to determine any sustained relationship from remote physical activity, obtained from an insertable cardiac monitor (ICM), to established ESC clinical markers of risk that support stability of risk score over time.

Methods Participants with pulmonary arterial hypertension (PAH) enrolled in the National Cohort Study of Idiopathic and Heritable PAH (NAIAD, NCT01907295) were implanted with an ICM (Linq - Medtronic) (n=80) which provides a remote measure of daily active minutes from an embedded single axis accelerometer. Patients within the low-risk category were compared as a control group. Activity data was risk stratified according to WHO functional class (WHO FC), incremental shuttle walk distance (ISWD), NT-proBNP and Emphasis-10 indicators. Continuous daily readings were evaluated for 6 months following implant and compared with 6 months of follow-up readings 2 years later.

Results Complete follow-up data for sub-group (n=57). Baseline demographics for the low risk group; Idiopathic and Heritable PAH (n=20); M:F 4:16; age 45±11 years; BMI 28±7kg/m²; baseline resting heart rate (RHR) 73±9 beats per minute (bpm). Baseline demographics for the intermediate and high risk groups; Idiopathic and Heritable PAH (n=37); M:F 10:27; age 55±16 years; BMI 30±6kg/m²; baseline RHR 78±12 bpm. There was no difference between groups by RHR, BMI or gender (p>0.05). Those in the lower risk group were younger (p<0.05). While age is known to independently increase risk in PAH, there was no significant difference in age-related physical activity between the low and intermediate or high-risk groups at baseline (p=0.334). Table 1 summarises daily rolling average median physical activity (active min/day) at baseline and follow-up. Independent t-tests between all risk groups compared to control were significant (p<0.0001) at baseline and follow up for all risk indicators (table 1).

Conclusions An ICM-measure of daily active minutes is associated with established measures of clinical risk at baseline and after 2 years follow-up. With additional physiological parameters, physical activity may be used to evaluate risk remotely in patients with PAH. Further analysis to determine ‘cut-off values’ for remote daily physical activity by risk stratification is underway.

Conflict of Interest None

Introduction Pulmonary arterial hypertension (PAH) is a condition driven by endothelial dysfunction and vascular
remodelling of the small pulmonary vasculature, causing right-heart failure. In patients with PAH, cardiopulmonary haemodynamics and exercise capacity relates to clinical outcomes, and exercise training improves cardiopulmonary function. Public health measures that limit physical activity have been widely enforced to reduce COVID-19 transmission. In addition, COVID-19 infection causes endothelial dysfunction, which is central to the pathophysiology of PAH. Here, we describe the temporal effects of UK government restriction measures on daily activity and quality of life (QoL) in patients with PAH and the acute effect of COVID-19 infection on remotely monitored cardiopulmonary haemodynamics and physical activity.

Methods Patients were enrolled in FIT-PH (NCT04078243) and implanted with remote monitoring devices that provided daily measures of mean pulmonary artery pressure (mPAP), cardiac output (CO; CardioMEMS, Abbott), day/night heart rate (DHR/NHR), heart rate variability (HRV), and physical activity (PA; Medtronic LinQ). Data were transmitted and reviewed in accordance with established clinical protocols. A
Abstracts

156 LEFT ATRIAL DILATATION ON CARDIOVASCULAR MAGNETIC RESONANCE IMAGING PREDICTS ADVERSE OUTCOMES IN ACUTE HEART FAILURE

Rumneek Hampal, Lisa Anderson, Nicholas Bunce, Kristopher Knott, Cory O'Sullivan. St. George’s University Hospitals NHS Foundation Trust

Abstract 156 Table 1 Multivariate logistic regression analysis of CMR parameters associated with MACE and re-admission at 30 days

<table>
<thead>
<tr>
<th>Corrected LA area (cm^2/m^2)</th>
<th>0.048*</th>
</tr>
</thead>
<tbody>
<tr>
<td>LVEDV (ml)</td>
<td>0.567</td>
</tr>
<tr>
<td>LVESV (ml)</td>
<td>0.596</td>
</tr>
<tr>
<td>LVEF (%)</td>
<td>0.412</td>
</tr>
<tr>
<td>RV mass (g)</td>
<td>0.596</td>
</tr>
<tr>
<td>RVEDV (ml)</td>
<td>0.761</td>
</tr>
<tr>
<td>RVEF (ml)</td>
<td>0.652</td>
</tr>
<tr>
<td>RVEF (%)</td>
<td>0.627</td>
</tr>
</tbody>
</table>

LA: left atrial, LVEDV: left ventricular end-diastolic volume, LVESV: left ventricular end-systolic volume, LVEF: left ventricular ejection fraction, RVEDV: right ventricular end-diastolic volume, RVESV: right ventricular end-systolic volume, RVEF: right ventricular ejection fraction

*p<0.05

Introduction Acute hospital admissions due to heart failure account for significant morbidity and mortality. Identifying determinants of adverse outcomes in patients with acute heart failure is vital to ensuring patients are medically optimised and to prevent re-admission. Cardiovascular Magnetic Resonance (CMR) imaging has become a key investigation in patients with heart failure. We sought to determine the utility of CMR in acute heart failure admissions and identify any potential CMR biomarkers, which may be associated with adverse outcomes.

Methods We reviewed all acute heart failure admissions to our tertiary centre Heart Failure Unit (HFU) who had an inpatient CMR scan over a 4.5-year period (August 2018 – December 2022). Patient demographics, indication for CMR and scan findings were recorded from electronic patient records. Morbidity and mortality data including major adverse cardiovascular events (MACE) including stroke and arrhythmia were recorded from the patient notes including community patient records.

Results 85 patients were included in the study, 75% (64) patients were male, and the mean age was 69±13 years. Primary reason for admission in 80% patients was dyspnoea and peripheral oedema. The majority of patients (78%) had heart failure with a reduced ejection fraction (HFrEF, EF <40%). The main indication for CMR was to investigate the aetiology of new left ventricular systolic dysfunction (56%). CMR for viability studies were requested in 16% patients. 76% patients had invasive coronary angiogram prior to CMR imaging. Following CMR, the aetiology of heart failure was non-ischaemic in 65% patients. 10 (12%) patients were re-admitted in 30 days following hospital discharge. There were MACE in 6% (5) patients including arrhythmia and stroke. Mortality was 2% (2 patients) during admission, no patients died within 30 days of discharge, 1 patient died within 90 days of discharge. A logistic regression analysis to determine the association of CMR parameters with re-admission and mortality at 30 days was performed (Table 1). LA area was the only CMR parameter significantly associated with death or re-admission.

Conclusions Left atrial enlargement (LAE) on CMR imaging was independently associated with death, increased morbidity and re-admission in patients with acute heart failure. This is the first study to evaluate LAE on CMR and its association with poor prognostic outcomes in acute heart failure. This specific sub-group of patients may benefit from earlier treatment intervention given the association with poorer outcomes. Further prospective studies targeting these patients with earlier follow up and closer monitoring should be considered.

Conflict of Interest None

157 ASSOCIATION BETWEEN IMMUNE CHECKPOINT INHIBITORS AND HEART FAILURE HOSPITALISATIONS: A POPULATION-BASED SELF-CONTROLLED CASE SERIES

Gary Tse, Tong Liu, Kennick Ng, Athena Lee, Jeremy Hui, Teddy Lee, Wing Tak Wong, Fung Ping Leung, Jeffrey Chan, Edward Christopher Dee, Oscar Chou. Hong Kong Metropolitan University; Second Hospital of Tianjin Medical University; University College London; Chinese University of Hong Kong; University of Hong Kong; Chinese University of Hong Kong; Chinese University of Hong Kong; Cardiovascular Analytics Group; Memorial Sloan Kettering Cancer Center; University of Hong Kong

Abstract 157

Background Immune checkpoint inhibitors (ICIs) have become a common treatment for many types of cancer. However, the effects of ICIs on HF hospitalisations (HHF) remained unexplored. This self-controlled case series (SCCS) thus explored possible associations between ICIs and HHF.

Methods Data were acquired from the Clinical Data Analysis and Reporting System (CDARS), a prospective population-based database of all patients attending public healthcare facilities in Hong Kong with linked, governmental mortality data. Patients with cancer who received any ICI (programmed cell death protein-1 inhibitors [PD1i], PD ligand-1 inhibitors [PDL1i], or cytotoxic T-lymphocyte associated protein-4

Conflict of Interest Nil

10.1136/heartjnl-2023-BCS.156

10.1136/heartjnl-2023-BCS.157