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 minority population groups.

Conflict of Interest Nil

MULTI-SYSTEM INVESTIGATION OF COVID-19 ILLNESS

Introduction The pathophysiology and trajectory of multimorbid 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. 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.

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 None

COMMON REASONS OF REJECTED TRANSTHORACIC ECHOCARDIOGRAM REQUESTS IN A TERTIARY REFERRAL HOSPITAL

Introduction Transthoracic echocardiogram (TTE) is routinely requested in the clinical setting as it is a non-invasive investigation that provides invaluable diagnostic information. However, inappropriate requests impact the quality of service provision to other patients in a timely and effective manner. Rejected TTE (rTTE) requests were evaluated over two months to determine common themes of inappropriate referrals in a tertiary unit.

Methods The study design utilised both retrospective and prospective methods to analyse rTTE requests from September to October 2021. A collaboration with the local echocardiography unit identified rTTE requests within the aforementioned time frame. A retrospective cohort study was performed in the first month to evaluate the underlying reason of rTTE requests. This was accomplished by entering patient unique identifiable number on the electronic request system to obtain the data. On 01/10/2021, a trust-wide oral presentation aimed at medical practitioners was organised to facilitate the understanding of TTE indications and contraindications in accordance with British Society of Echocardiography (BSE).

Abstract 158 Figure 1 Reasons of rejected transthoracic echocardiogram requests in September and October 2021

158 COMMON REASONS OF REJECTED TRANSTHORACIC ECHOCARDIOGRAM REQUESTS IN A TERTIARY REFERRAL HOSPITAL

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guidelines. Subsequently, a prospective cohort study observed a similar technique to generate reproducible data in the later half of the study duration. After compiling all anonymous data on a table, this information was translated into pie charts.

**Results** A total of 329 rTTE requests were identified in the study. Duplicated requests and lack of indications contributed predominantly to the number of recognised cases, at 115 (34.95%) and 98 (29.79%) cases respectively. Other significant reasons including recent TTE performed (n=31; 9.42%), cancellation by clinician (n=28; 8.51%) and patient death (n=24; 7.29%) also led to similar outcomes. Additionally, trivial reasons formed less than five percent of cases each (table 1).

Out of 98 (29.79%) cases as above, cardiac-suspected morbidities or symptoms prompted TTE requests – infective endocarditis (n=39; 39.80%), left or right ventricular failure (n=25; 25.51%) and syncope/arrhythmia (n=19; 19.39%) in that order – but insufficient clinical information entered saw these requests being rejected. The common reasons of rejection in these circumstances were no indications as per modified Duke criteria, normal B-natriuretic peptide (BNP) level and lack of clinical symptoms as per BSE guidelines respectively. Promoting the understanding of TTE indications and contraindications appeared to reduce the number of rTTE requests especially in the domains of duplicated requests and lack of indications, which observed a decrement of 11 (3.3%) and 14 (4%) cases respectively.

<table>
<thead>
<tr>
<th>Insufficient indication</th>
<th>September 2021 n (%)</th>
<th>October 2021 n (%)</th>
<th>Total n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infective endocarditis</td>
<td>27 (27.05%)</td>
<td>12 (12.24%)</td>
<td>39 (39.60%)</td>
</tr>
<tr>
<td>LV/RV failure</td>
<td>12 (12.17%)</td>
<td>12 (12.24%)</td>
<td>24 (24.51%)</td>
</tr>
<tr>
<td>Syncope/arrhythmia</td>
<td>8 (8.18%)</td>
<td>11 (11.02%)</td>
<td>19 (19.59%)</td>
</tr>
<tr>
<td>No clear indication</td>
<td>5 (5.05%)</td>
<td>4 (4.00%)</td>
<td>9 (9.18%)</td>
</tr>
<tr>
<td>Chest pain</td>
<td>2 (2.04%)</td>
<td>0 (0.00%)</td>
<td>2 (2.04%)</td>
</tr>
<tr>
<td>Pre-operative assessment</td>
<td>1 (1.02%)</td>
<td>1 (1.02%)</td>
<td>2 (2.04%)</td>
</tr>
<tr>
<td>Intra-cardiac mass</td>
<td>0 (0.00%)</td>
<td>1 (1.02%)</td>
<td>1 (1.02%)</td>
</tr>
<tr>
<td>Vascular defect</td>
<td>0 (0.00%)</td>
<td>1 (1.02%)</td>
<td>1 (1.02%)</td>
</tr>
<tr>
<td>Pre-operative assessment</td>
<td>1 (1.02%)</td>
<td>1 (1.02%)</td>
<td>2 (2.04%)</td>
</tr>
</tbody>
</table>

**Conclusions** Promoting the understanding of TTE indications and contraindications amongst clinicians led to reduction of inappropriate referrals. This suggests the overall benefit may be enhanced by implementing a series of questions prior to electronic request submission.

**Conflict of Interest** None to declare

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**Table 1 Comparison image quality and reporting times of late gadolinium enhancement by sequence - 2D SAX and 3D Whole Heart Imaging (3D-WHI).**

<table>
<thead>
<tr>
<th>Number of Slices, mean</th>
<th>&quot;Good&quot; Image quality, n(%)</th>
<th>LGE Interpretation time (seconds), mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>2D</td>
<td>115</td>
<td>9 (60)</td>
</tr>
<tr>
<td>SAX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3D-WHI</td>
<td>12</td>
<td>9 (60)</td>
</tr>
</tbody>
</table>

**Introduction** Compared to standard 2D imaging (2D SAX), 3D free-breathing whole heart imaging (3D-WHI) allows for the acquisition of smaller voxel size. The subsequent increased spatial resolution could provide significant benefit in research and cardiology electrophysiology procedures especially when combined with late gadolinium enhancement (LGE). However, the perception that increased series size may result in longer reporting times and the possibility of worsened image quality have prevented this modality from being adopted into routine clinical practice. We aimed to investigate if the reporting time for 3D-WHI was longer compared to standard 2D SAX imaging and if a difference in image quality was present. Methods: 15 consecutive cases of clinically indicated myocardial viability scans with same-sitting 2D SAX and 3D-WHI were duplicated with one LGE modality removed resulting in 15 pairs of 2D SAX only and 3D-WHI only cases. LGE visual reporting of paired cases was undertaken in 2 sittings, 3 months apart, by a single level 3 trained, Cardiac imaging consultant and analysed using Medis (Medical Imaging System, Leiden, The Netherlands) according to SCMR recommendations. The interpreter had access to all other non-LGE images obtained during the initial acquisition. Interpretation time was recorded from the time of series opening to report completion. Additional image quality assessment was undertaken quantitatively using features previously described by Klinke et al. (0–19, good to bad respectively) and qualitatively on a likert scale 0–2 (uninterpretable, poor/fair, good respectively) taking diagnostic utility and technical quality into account. Interpretation Time and quantitative image quality was compared with the Wilcoxon signed-rank test. Qualitative scores were compared narratively.

**Results** Of the 15 cases included, aetiologies were 10 ischaemic, 4 non-ischaemic and 1 normal case with LGE present in all but the normal case. Mean number of slices for the 2D SAX and 3D-WHI were 12 and 115 respectively. There was no difference in mean time taken to interpret 2D SAX and 3D-WHI LGE images (197.9 vs. 175.2 seconds, p=0.609). No statistical difference between 2D SAX and 3D-WHI LGE was seen in mean image quality by quantitative analysis (1.5 vs 1.4).