Furthermore, we also showed that the interventricular septum is the segment with lowest deformation values. These findings are important, as a comprehensive understanding of normal intraventricular regional variation is needed before this new tool can be implemented in routine clinical practice.

**METHODS**

15 patients with IHD and ejection fraction (EF) <45% were included. Patients underwent adenosine stress perfusion at 3T (Philips Achieva) using high-resolution k-t turbo-field-echo sequence and dual bolus approach. Perfusion and LGE images were analysed both qualitatively and quantitatively (using validated high-resolution deconvolution analysis and conventional semi-quantitative analysis with SSD). For combined analysis, perfusion and LGE images were matched in terms of position and cardiac phase using a deformable template segmentation method. High-resolution MPR and LGE maps were then generated and ischaemic burden calculated ±LGE (Figure 1).

**RESULTS**

The average EF was 33 ± 9.5%. All patients showed scar and perfusion defects at visual assessment. The average scarred area was 18 ± 6.8%. Average MPR was 2.3 ± 2.4, 3.2 ± 0.6 in viable area (LGE-) and 1.05 ± 0.69 in non-viable areas (LGE+) (p = 0.001 Vs LGE-). 27% (4/15) of patients had a perfusion defect extending only in LGE area. The overall ischaemic burden (MPR threshold 1.5) was 23.2 ± 13.5%, but after excluding LGE dropped to 12.4 ± 7.6% (p = 0.001).

**CONCLUSIONS**

Our study demonstrates the potential of combined high-resolution assessment of stress perfusion and LGE to provide more accurate measurements of ischaemic burden excluding areas of scar, which frequently result in false positive perfusion defects and possible overestimation of ischaemic burden, had an MPR<1, as expected in areas of scar.
ASSESSMENT OF THE EFFECTS OF TECHNIQUE ON PULMONARY ARTERIAL PULSE WAVE VELOCITY MEASUREMENT

Aim

The flow-area (QA) technique allows measurement of pulse wave velocity (PWV) from a single phase contrast slice. However, in the pulmonary circulation reflected waves arrive during systole and may cause erroneous measurements using this technique. The aim of the study was to compare three post-processing calculations, one of which avoids the reflected wave, and the other which corrects for it, on the measurement of pulmonary PWV and its reproducibility.

Materials and methods

10 young healthy volunteers (YHV) (30% male, mean age 31.5 ± 7.6) and 20 older healthy volunteers (OHV) (45% male, mean age 60.2 ± 4.0) underwent MRI using phase contrast sequences through the main pulmonary artery (MPA), right pulmonary artery (RPA) and left pulmonary artery (LPA).

Abstract 23 Figure 1

Perfusion defect extending beyond the area of scar. A: LGE image shows a subendocardial scar involving the lateral and inferior wall; B: perfusion defect in the lateral and inferior wall; C: high-resolution perfusion map show area of scar (black), areas of ischaemia (dark grey) and normal areas of myocardium (light grey).

Abstract 24 Figure 1

Bland-Altman plots comparing interscan PWV repeatability using the 3 techniques in the 3 pulmonary arterial locations.