

## 1 PREVALENCE OF EXTRA-CARDIAC FINDINGS DETECTED BY CARDIAC MRI IN INHERITED VS ACQUIRED CARDIOVASCULAR DISEASES

<sup>1,2,\*</sup>AM Amadu, <sup>1</sup>A Baritussio, <sup>1</sup>A Ghosh Dastidar, <sup>1</sup>JCL Rodrigues, <sup>2</sup>P Crivelli, <sup>2</sup>GB Meloni, <sup>2</sup>M Conti, <sup>1</sup>C Bucciarelli-Ducci. <sup>1</sup>Bristol Heart Institute, Bristol NIHR Cardiovascular Biomedical Research Unit (BRU), Bristol, UK; <sup>2</sup>Department of Surgical, Microsurgical and Medical Sciences, Institute of Radiological Sciences, University of Sassari, Sassari, Italy

10.1136/heartjnl-2016-309668.1

**Introduction** With its large field of view, Cardiovascular Magnetic Resonance (CMR) allows the detection of extra-cardiac pathologies (ECP). Both cardiologists and radiologists should be able to recognise ECP and identify those requiring further investigation. The aim of our study is to assess the difference in prevalence of ECP in patients with suspected inherited cardiac conditions vs acquired heart disease.

**Materials and methods** We reviewed 1,817 consecutive clinical CMR studies performed in the biggest CMR department in Southwest England to look for ECP. Demographic characteristics and scans indications were also recorded. For each scan the presence of ECP and its relevance (need for further investigation, i.e. suspected lung malignancy) was assessed. The internal record system (Picture Archiving and Communication System, PACS) was used to check whether the ECP were previously known, or whether it represents a new finding.



**Abstract 1 Figure 1** (A) Axial Haste showed a nodule (arrow) in the superior lobe of the right lung. (B) On the High Resolution Computed Tomography (HRCT), performed to further assess the ECP, the presence of the nodule in the superior lobe of the right lung was confirmed (head-arrow)

**Results** We analysed 1,817 scans, referred for the assessment of inherited cardiac condition (Group A, n = 906) and acquired heart disease (Group B, n = 911). There was no significant difference in prevalence of ECP between the two groups (p =

0.63). ECP were found in 26% of patient in Group A, 4% of which requiring further assessment; 69% previously unknown (Figure 1). ECP were reported in 27% of patients in Group B, 5% requiring further assessment; 68% were previously unknown.

**Conclusion** One in four patient has an extra-cardiac finding and the prevalence of ECP did not differ in patients presenting with inherited conditions vs acquired heart disease.

## 2 CLINICAL APPLICATION OF CARDIOVASCULAR MAGNETIC RESONANCE IN PATIENTS WITH MR-CONDITIONAL DEVICES: SAFETY, FEASIBILITY AND CLINICAL IMPACT

\*A Baritussio, E De Garate, A Ghosh Dastidar, N Ahmed, A Scatteia, J Rodrigues, C Lawton, A Nisbet, E Duncan, T Cripps, I Diab, G Thomas, C Bucciarelli-Ducci. Bristol Heart Institute, Bristol NIHR Cardiovascular Biomedical Research Unit (BRU), Bristol, UK

10.1136/heartjnl-2016-309668.2

**Background** Implanted cardiac devices were previously considered unsuitable for CMR. With the development of MR-conditional devices, access to CMR has increased, despite concerns regarding image quality and diagnostic accuracy. We aimed to assess the clinical application of CMR in patients wearing MR-conditional devices.

**Materials and methods** We retrospectively enrolled patients wearing MR-conditional devices undergoing a comprehensive CMR protocol (cine, early and late gadolinium enhancement, LGE) in a 1.5T scanner (June 2012–November 2015). Every sequence was analysed by two independent observers and scored according to the effect of artefacts on image quality and interpretation (no, minor and major artefacts). Inter-observer agreement was assessed per sequence and as overall judgement on scan quality and interpretation. Clinical impact of CMR was defined as a change in diagnosis and in management. All devices were interrogated before and after CMR.

**Abstract 2 Table 1** Cohen's kappa for inter-observer agreement on image quality and interpretation per sequence and as overall judgement

	Cohen's kappa	p
HASTE	0.378	0.001
Long Axis Cine	0.356	0.001
Short Axis Cine	0.532	<0.001
EGE	0.398	0.003
Long Axis LGE	0.284	0.005
Short Axis LGE	0.516	<0.001
Overall Judgement	0.454	<0.001

EGE, early gadolinium enhancement; LGE, late gadolinium enhancement.

**Results** We enrolled 46 consecutive patients (28 male, mean age  $56 \pm 16$  years) wearing MR-conditional pacemaker (22, 48%) and implantable loop recorder (24, 52%). All CMR scans were successfully completed and diagnostic: minor artefacts were recorded in 17 scans (37%), major artefacts in 7 (15%), and no artefacts in 22 (48%). Additional FLASH sequences were performed in 9 patients (20%) to overcome artefacts. Inter-observer agreement on image quality and interpretation was moderate, both overall (kappa 0.454, p < 0.0001) and per sequence, with the exception of long-axis LGE sequences, for which it was fair