Conflicts: Nil

Background The 2011 British Society of Cardiovascular Magnetic Resonance (BSCMR) national survey demonstrated a marked year-on-year increase in the number of CMR scans per centre (2008–2010) and in the total number of CMR scans performed annually in the UK overall.¹

Methods We undertook the second national survey on behalf of the BSCMR to identify all adult CMR providers within the UK in 2014. The questionnaire was sent to the lead clinician for CMR at each site and electronically reported.

Results Of the 68 adult CMR centres identified in the UK, 55 (81%) responded to the questionnaire. Thirty three (60%) were tertiary cardiac centres and 22 (40%) were district general hospitals. Thirty six hospitals (65%) had a level 3 accredited trainer on site with 559 trainees (87% cardiology) at various levels of training. One hundred and twenty five trainees were at the level 3 stage of training (75% of which were from 5 centres). Thirty three hospitals (60%) had a formal training program for cardiology and 17 (31%) for radiology trainees. The majority of hospitals (44 (80%)) had a quality control program in place.

For activity in 2013: 5 centres (9%) provided no details on total numbers of scans, 9 (16%) performed <300 scans, 14 (25%) 300–500, 7 (13%) 501–1000 and 20 (36%) >1000 scans. The total number of reported scans increased by 253% between 2008 (23,216) and 2013 (58,936). Mean number of scans per centre are shown in Figure 1.

Abstract 26 Figure 1 Annual mean number of CMR scans reported in the 2014 British Society of Cardiovascular Magnetic Resonance Survey between years 2008–2013 inclusive (2008:704 scans (range 10–5500); 2009:828 (10–5600); 2010:893 (65–5700); 2011:1007 (35–6000); 2012:1058 (40–6200); 2013:1179 (48–6500))

Conclusion There is evidence of a sustained increase in CMR service provision in the UK. Most centres provide a CMR training program and quality assurance.

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REGIONAL VARIATIONS IN MYOCARDIAL T1 RELAXATION TIMES IN HEALTHY ADULTS AT 1.5 AND 3.0 TESLA

¹S Rauhalammi, ^{1,2}D Carrick, ¹K Mangion, ¹G Clerfond, ¹P Hall Barrientos, ¹C McComb, ¹A Radjenovic, ^{1,2}C Berry. ¹BHF Glasgow Cardiovascular Research Centre, University of Glasgow, UK; ²Golden Jubilee National Hospital, UK

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Background Limited information is available on regional differences in myocardial T1 relaxation times in healthy adults. We used cardiac magnetic resonance (CMR) imaging at two field strengths, 1.5- and 3.0 Tesla (T), to assess regional distribution of T1, in milliseconds (ms), in myocardial regions-of-interest (ROIs) in healthy adults.

Methods Healthy adults without history of cardiovascular disease underwent CMR at 1.5 T (Avanto) and 3.0 T (Verio). T1 maps were acquired in three left ventricular (LV) short-axis slices, using an optimised modified Look-Locker inversion recovery (MOLLI) investigational prototype sequence (Siemens WIP 448). ROIs were delineated using the American Heart Association 16-segment model.

Results 80 consecutive volunteers (41 (51.3%) male, mean age 44 ± 18 years) underwent scans 1.5 $\pm$ 1.4 days apart. Because of artefacts related to cardio-respiratory motion and susceptibility effects, 44 (3.4%) segments imaged at 1.5 T and 71 (5.5%) at 3.0 T were excluded, respectively, with a preponderance occurring at the distal LV. Mean T1 values at 1.5 T/3.0 T were 946.5 ± 50.3 ms/ 1152.0 ± 54.9 ms. At 1.5 T there were regional differences across 16 segments (Table 1); T1 values from myocardial septal ROIs (956.7 ± 44.8 ms) were higher than non-septal ROIs (941.8 ± 52.0 ms, $p < 0.001$). T1 was lower in lateral ROIs (939.7 ± 54.1 ms) vs. non-lateral ROI (949.6 ± 48.1 ms, $p < 0.005$). The regional differences were similar at 3.0 T (Table 1).

Conclusion T1 values vary according to myocardial location. The explanation may be related to myocardial structure/function relationships and merits further study.

Abstract 27 Table 1 Segmental myocardial T1 times (mean $\pm$ SD, ms)

	1.5 T	3.0 T
Basal slice		
Anterior	940.6 $\pm$ 56.5	1132.5 $\pm$ 43.3
Anterioseptal	958.9 $\pm$ 34.6	1152.0 $\pm$ 33.6
Inferioseptal	964.5 $\pm$ 32.9	1150.8 $\pm$ 30.7
Inferior	963.6 $\pm$ 42.6	1151.1 $\pm$ 40.2
Inferiolateral	969.8 $\pm$ 45.8	1139.3 $\pm$ 42.8
Anteriolateral	931.7 $\pm$ 46.7	1133.4 $\pm$ 42.1
Mid-ventricular slice		
Anterior	921.9 $\pm$ 49.3	1136.5 $\pm$ 80.2
Anterioseptal	944.1 $\pm$ 50.0	1154.6 $\pm$ 51.2
Inferioseptal	957.3 $\pm$ 39.1	1154.3 $\pm$ 45.7
Inferior	943.8 $\pm$ 47.2	1139.4 $\pm$ 54.0
Inferiolateral	945.1 $\pm$ 58.1	1149.9 $\pm$ 69.0
Anteriolateral	915.8 $\pm$ 57.1	1136.5 $\pm$ 80.2
Apical slice		
Anterior	934.5 $\pm$ 42.2	1176.2 $\pm$ 62.2
Septal	962.9 $\pm$ 47.7	1185.3 $\pm$ 55.4
Inferior	943.0 $\pm$ 51.7	1156.0 $\pm$ 59.4
Lateral	936.5 $\pm$ 48.0	1189.8 $\pm$ 53.0