Abstract 6 Table 1 CMR characteristics of Apical vs non-Apical HCM

CMR findings:	Total Cohort (n = 104)	Non-apical (n = 73)	Apical (n = 31)	P-value
Mean LVEF (%)	69.7	68.4	72.6	0.0552
Mean LVEDVI (mL/m ²)	73.7	76.7	66.8	0.0718
Mean LVESVI (mL/m ²)	23.8	25.5	20.1	0.1177
Mean indexed stroke volume	53.1	55.9	46.4	0.0333
Mean max. LV wall thickness (mm)	18.2	19.3	15.6	0.0001
Mean indexed LV mass	93.5	98.4	82.4	0.0102
LVOTO	35.2	41.1	12.5	0.0403
SAM	31.4	38.9	6.25	0.0143
LGE (%)	86.9	85.7	89.7	0.8063

LVEF, left ventricular ejection fraction; LVEDVI, left ventricular end diastolic volume index; LVESVI, left ventricular end systolic volume index; LVOTO, Left ventricular outflow tract obstruction; SAM, systolic anterior valve motion; LGE, late gadolinium enhancement.

Conclusions Our study suggests that prevalence of apical HCM is almost 1/3rd of all observed cases. It also demonstrates that prevalence of LGE was high in apical HCM, suggesting that better prognosis of apical HCM based on the absence of myocardial fibrosis, should be reconsidered. Further large trials are needed to better understand the pathophysiology.

7 CLINICAL IMPACT OF CARDIOVASCULAR MAGNETIC RESONANCE ON THE MANAGEMENT OF ACUTELY HOSPITALISED PATIENTS

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Background Cardiac Magnetic Resonance (CMR) is invaluable for assessing ischaemic and non-ischaemic cardiomyopathies. However, evidence regarding the incremental impact of CMR in acutely hospitalised patients is scarce. We evaluated the impact of CMR on diagnosis and clinical decision-making in this cohort.

Methods We evaluated 2481 consecutive scans (Jan 2014-Dec 2014) at a large tertiary cardiothoracic centre, identifying 283 patients referred for inpatient scans. Protocol included short axis-long axis cines, T2-weighted oedema sequences, early and late gadolinium enhancement (LGE) images. Definitions for “significant clinical impact” of CMR included change in pre-CMR diagnosis, influence on hospitalisation period, change in medication and on decision making for invasive medical procedures (CABG, angiography, ICD implantation).

Results Of the 283 patients, 8 were excluded due to poor image quality, leaving 275 patients (66% male, mean age 59yrs), mean ejection fraction of $46\% \pm 19$. Patients underwent CMR for

Abstract 7 Figure 1 Change in diagnosis after performing CMR in patients admitted with chest pain (A), shortness of breath (B) and arrhythmias-out of hospital cardiac arrest (C). (D) Overall significant clinical impact of CMR in change in management and new diagnosis

further assessment of ischaemic heart disease, cardiomyopathy or congenital heart disease. CMR demonstrated significant clinical impact on 68% of patients. This included a completely new diagnosis in 27% of patients, change in management in 31% and 10% of patients that had both a new diagnosis and change in management. CMR results promoted invasive procedures on 27%, avoided invasive procedures on 16%; and influenced on hospital discharge on 15% of the patients (Figure 1). 84% of the patients had echocardiography prior to CMR. CMR confirmed echo diagnosis in 11%, complemented echo findings with significant new information in 41% and changed the echo diagnosis in 30% of the cases. In a multivariable model that included clinical/imaging parameters, age and presence of LGE were the only independent predictors of “significant clinical impact” (LGE p-value .007, OR 2.782, CI 1.328–5.828) (Table 1).

Conclusions CMR had significant impact in patient’s diagnosis and management in 68% of acutely hospitalised patients. Presence of LGE was the only independent predictor of significant clinical impact following CMR.

Abstract 7 Table 1 Logistic Regression Variables in the Equation

	Sig.	Odds ratio	95 Conf. Interval	
			Lower	Upper
Sex	.486	.766	.361	1.622
Age	.028	1.026	1.003	1.050
Troponin	.469	1.000	1.000	1.000
LVEF	.945	.999	.972	1.027
iEDV	.827	1.001	.989	1.014
RWMA	.053	2.440	.987	6.033
LGE	.007	2.782	1.328	5.828
Oedema	.672	.904	.566	1.444

Variable(s): Sex, Age, Troponin, LVEF, iEDV, RWMA, LGE, Oedema.

8 DIAGNOSTIC PERFORMANCE OF ECG DETECTION OF LEFT ATRIAL ENLARGEMENT IN PATIENTS WITH ARTERIAL HYPERTENSION RELATIVE TO THE CARDIAC MAGNETIC RESONANCE GOLD-STANDARD: IMPACT OF OBESITY

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ECG may demonstrate evidence of left atrial enlargement (LAE), which has adverse prognostic implications. We sought to determine the accuracy of 5 ECG criteria of LAE in a hypertensive cohort relative to CMR and to investigate the confounding effect of obesity.

Methods Consecutive referrals for CMR from a tertiary hypertension clinic were reviewed. Patients with any concomitant cardiac pathology were excluded. ECGs were assessed, blinded to CMR data, for: 1) P wave >110ms, 2) P-mitrale (notched P wave with inter-peak duration >40ms), 3) P wave axis <30°, 4) Area of negative P terminal force in lead V1 (NPTF-V1) >40ms•mm and 5) Positive P terminal force in aVL (PPTF-aVL) >0.5mm. Maximal LA volume index (LAVI) was measured by the biplane area-length method.

Abstract 8 Table 1 A) Diagnostic performance of the various ECG parameters at detecting left atrial enlargement; B) Obesity subgroup analysis of diagnostic performance of the various ECG parameters at detecting left atrial enlargement

A) Diagnostic performance of the various ECG parameters							
	Prevalence ECG LAE (%)	ROC-AUC (95 th CI)	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	ACC (%)
P > 110 ms	9	0.497 (0.384 – 0.610)	9	91	25	74	69
P mitrale	1	0.495 (0.382 – 0.608)	0	99	0	74	73
P axis < 30°	27	0.437 (0.328 – 0.546)	18	70	17	71	56
NPTF-V1 > 40 ms.mm	17	0.465 (0.355 – 0.576)	12	81	18	72	63
PPTF-aVL > 0.5 mm	8	0.502 (0.389 – 0.616)	9	92	27	74	70
Any ECG criteria for LAE	46	0.387 (0.279 – 0.495)	29	48	17	65	43
B) Subgroup analysis by obesity							
P > 110 ms							
Non-obese	10	0.515 (0.352 – 0.679)	12	91	33	74	70
Obese	9	0.519 (0.357 – 0.681)	12	92	33	75	72
P mitrale							
Non-obese	2	0.529 (0.364 – 0.695)	0	98	0	74	73
Obese	0	0.500 (0.340 – 0.660)	0	100	0	75	75
P axis < 30°							
Non-obese	21	0.560 (0.395 – 0.725)	29	83	38	76	68
Obese	34	0.467 (0.309 – 0.625)	29	64	22	73	55
NPTF-V1 > 40 ms.mm							
Non-obese	11	0.504 (0.342 – 0.667)	12	89	29	73	68
Obese	21	0.478 (0.320 – 0.636)	18	78	21	74	63
PPTF-aVL > 0.5 mm							
Non-obese	6	0.537 (0.371 – 0.703)	12	96	50	75	73
Obese	10	0.469 (0.314 – 0.625)	6	88	14	73	67
Any ECG criteria for LAE							
Non-obese	41	0.620 (0.462 – 0.778)	59	65	38	81	63
Obese	51	0.475 (0.315 – 0.635)	47	48	24	73	48

(LAE = left atrial enlargement, ROC-AUC = receiver operator curve-area under curve, CI = confidence interval, PPV = positive predictive value, NPV = negative predictive values, ACC = accuracy)

Results 130 patients were included (age: 51.4 ± 15.1 years, 47% male, 51% obese, systolic blood pressure: 171 ± 29 mmHg,