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The role of CMR versus conventional diagnostic markers in myocardial infarction with non-obstructed coronary arterties (MINOCA)

Abstract: P551

The role of CMR versus conventional diagnostic markers in myocardial infarction with non-obstructed coronary arterties (MINOCA)

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Objectives: Definite diagnosis of patients with myocardial infarction with non-obstructed coronaries (MINOCA) has a vital role in management. MINOCA represents a diagnostic challenge, and CMR could play an important role in establishing the underlying aetiologies. Robust evidence of the role of CMR in MINOCA is lacking. Our goal was to evaluate the role of CMR in patients presenting with MINOCA, comparing with the conventional diagnostic markers.

Methods: In this observational registry study, consecutive patients with MINOCA referred for CMR were analysed. (between September 2011 and January 2016). 402 consecutive patients (mean age 56±17 yrs, 52% male) were identified. 1.5T CMR was performed using a comprehensive protocol including cines, T2-weighted, and late gadolinium enhancement (LGE) sequences. Patients were grouped into 4 categories based on their CMR diagnosis: myocardial infarction (MI), myocarditis, cardiomyopathy (CM) and normal CMR. For statistical analysis we used Graphpad Quickcalc version.

Results: In 106 (26%) cases, the CMR scan was normal, myocardial infarction was reported in 105 (26%), cardiomyopathy in 94 (23%), myocarditis in 97 (24%) cases. Scans were performed after the admission in a median of 37 (IQR: 7–56) days. The mean BMI was 26±5, and 19% (77/402) of the patients presented with ST-segment elevation on the presentation ECG. Myocarditis was less common in females (23%) as compared to normal scans (51%), to cardiomyopathy (63%) or to MI (55%), p<0.001. Myocarditis group was younger than any other group. Troponin T levels can be seen in the table. The performance of conventional diagnostic markers individually or together to make the final diagnosis was poor compared to CMR.

Conclusion: In a large cohort (largest to date) of consecutive patients with MINOCA, CMR established a definitive diagnosis in 73% of cases with subsequent important clinical implications. CMR has an inevitable role in finding the definite diagnosis and thereby guiding in the proper therapy for patients with MINOCA.

Table 1. Results: Characteristics and comparison

	Total (n=402)	MI (n=105)	Myocarditis (n=97)	Cardiomyopathy (n=94)	Normal (n=106)	p
Mean age (SD)	56 (17)	62 (12)	43 (18)	64 (12)	54 (16)	a (<0.001), c (0.001), d (<0.001), e (<0.001) f (<0.001)
Female sex %	48	55	23	63	51	a (<0.001), d (<0.001), e (<0.001)
Troponin T ng/L median	478	668	900	423	182	b (0.041), c (<0.001), d (0.001), e (<0.001)

Pairwise comparison: a, MI vs Myocarditis; b, MI vs Cardiomyopathy; c, MI vs normal; d, Myocarditis vs cardiomyopathy; e, Myocarditis vs normal; f, Cardiomyopathy vs normal. STEMI: ST elevation myocardial infarction; LVEF: left ventricular ejection fraction; RWMA: regional wall motion abnormality; LGE: late gadolinium enhancement.