**Cardiac Magnetic Resonance Imaging and Optical Coherence Tomography in patients with a clinical diagnosis Of Myocardial Infarction with Non-obstructive Coronary Arteries - A Systematic Review and Meta-analysis.**

**Background:**

Myocardial Infarction with Non-Obstructive Coronary arteries (MINOCA) is defined as acute Myocardial Infarction (MI) despite the absence of severe coronary artery stenosis on angiography, and no alternative diagnosis.1 MINOCA remains a serious diagnostic and therapeutic challenge given the various possible underlying etiologies.2 Cardiac Magnetic Resonance Imaging (CMR) can distinguish between acute myocarditis (AM), MI, and Takotsubo cardiomyopathy (TCM) which are some of the commonest causes of MINOCA.3 Hence, The European Society of Cardiology recommend CMR in all MINOCA patients with an unclear etiology.4 Intracoronary Optical coherence tomography (OCT) is a high-resolution imaging modality that allows for assessment of the integrity of the atheroma.5 We aimed to study the efficacy of CMR and OCT in detecting the etiology in MINOCA patients, which has the potential to guide medical therapy.

**Methods:**

A systematic search was made in PubMed and Cochrane database. Search terms: Myocardial infarction, Coronary angiography, Normal coronary arteries, CMR, and OCT. Inclusion criteria were met by 18 studies. Meta-analysis was performed with 14 studies.

**Results:**

A total of 2474 patients were included in the meta-analysis. The mean age was 51.5 and 56.4% were men. CMR was able to establish diagnosis in 74% of the patients; 30.4% had AM, 21.3% had true MI and 12% had TCM. A diagnosis was established in 85-100% cases by incorporation of OCT with CMR, which was better at finding the etiology than CMR alone.

**Conclusion:**

CMR is integral in finding the cause of MINOCA. Coupling coronary OCT and CMR is better than either modality alone in detecting the etiology.



**References:**

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