

Awareness on MINOCA

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Reports from various studies reveal the frequency of MINOCA (myocardial infarction with non-obstructive coronary arteries) in patients with ACS (acute coronary syndrome) ranges from 5-25% (Sucato et al 2021). The increased frequency of MINOCA seems to be attributed the raising performance of angiographic procedures immediately after ACS. In Bangladesh, there are growing numbers of centers performing primary PCI (percutaneous coronary intervention) or pharmaco invasive procedures. Hence we are expecting to confront many more cases of MINOCA. For that reason, awareness regarding MINOCA seems to be very time demanding.

Beltrame JF in 2013 demonstrated the term MINOCA (myocardial infarction with non-obstructive coronary arteries) as a group of patients, who were diagnosed with myocardial infarction (MI) without angiographically significant ($\geq 50\%$ diameter stenosis) obstructive coronary artery disease (CAD). MINOCA is a collection of various disorders, not a single entity. There are various reasons for MINOCA. Causes are from coronary spasm, SCAD (spontaneous coronary dissection), plaque disruption, microvascular diseases & many other dysfunctions (Niccoli G et al, 2015, Agewall S et al, 2016). MINOCA is a disorder, which has considerable mortality and morbidity.

Although the coronary plaques are insignificant, it should not be equated with the concept that MINOCA is a benign disease. Rather the management of MINOCA is quite challenging and it should include to identify the specific cause & to manage accordingly. In order to achieve the whole range of causes it requires expensive & expertise dependent investigations.

For example, optical coherence tomography (OCT) may be required to exclude spontaneous coronary artery dissection (SCAD) in selected patients.

Bucciarelli V et al, 2023 and many studies recommended Cardiac MRI (CMR) for the diagnosis and therapeutic strategies of these patients. CMR may be desired to differentiate MINOCA from myocarditis and also needed for the diagnosis of microvascular diseases as one of the causes for MINOCA. In certain cases like vasculitis or

metastatic tumor compressing coronary artery requires CT scan or CT coronary angiogram. On the other hand, detection of coronary spasm requires very complicated provocative invasive coronary investigation.

Keeping above matters in our mind, we are far behind both in terms of technology & expertise in Bangladeshi settings. This is the time to become aware of the situation and take all the necessary steps.

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References:

1. Sucato V, Testa G, Puglisi S, Evola S, Galassi AR, Novo G. Myocardial infarction with non-obstructive coronary arteries (MINOCA): Intracoronary imaging-based diagnosis and management. *Journal of Cardiology*. 2021; 77(5): 444-451. <https://doi.org/10.1016/j.jjcc.2021.01.001>.
2. Beltrame JF. Assessing patients with myocardial infarction and nonobstructed coronary arteries (MINOCA). *J Intern Med*. 2013; 273:182-185. doi: 10.1111/j.1365-2796.2012.02591.x.
3. Niccoli G, Scalone G, Crea F. Acute myocardial infarction with no obstructive coronary atherosclerosis: mechanisms and management. *Eur Heart J*. 2015; 36:475-481. doi: 10.1093/eurheartj/ehu469.
4. Agewall S, Beltrame JF, Reynolds HR, Niessner A, Rosano G, Caforio AL, De Caterina R, Zimarino M, Roffi M, Kjeldsen K, Atar D, Kaski JC, Sechtem U, Tornvall P. ESC working group position paper on myocardial infarction with non-obstructive coronary arteries. *Eur Heart J*. 2016; 38 (3):143-153. doi: 10.1093/eurheartj/ehw149.
5. Bucciarelli V, Bianco F, Francesco AD, Vitulli P, Biasi A, Primavera M, Belleghia S, Ciliberti G, Guerra F, Seferovic J, Dello Russo A, Gallina S. Characteristics and Prognosis of a Contemporary Cohort with Myocardial Infarction with Non-Obstructed Coronary Arteries (MINOCA) Presenting Different Patterns of Late Gadolinium Enhancements in Cardiac Magnetic Resonance Imaging. *J Clin Med*. 2023 Mar 15;12(6):2266. doi: 10.3390/jcm12062266. PMID: 36983267; PMCID: PMC10051168.