Improving Acute Cardiac Syndrome Outcomes by Adopting the Occlusion Myocardial Infarction (OMI/NOMI) Classification

Melhorando os Desfechos da Síndrome Coronária Aguda com a Integração da Classificação OMI (OCA/NOCA)

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Keywords: Acute Coronary Syndrome; Non-ST Elevated Myocardial Infarction; ST Elevation Myocardial Infarction.

Palavras-chave: Infarte do Miocárdio com Supradesnível do Segmento ST; Infarte do Miocárdio sem Supradesnível do Segmento ST; Síndrome Coronária Aguda

We read with great interest the clinical case report by Rocha *et al*, where the diagnosis of an acute coronary occlusion (ACO) was suspected in a patient with an acute cardiac syndrome (ACS) without classic ST-segment elevation through the identification of the Aslanger Pattern, a pattern suggestive of an inferior ACO.[1] We congratulate the authors on their astute recognition and commend the team's effective management of the patient.

We would like to take this opportunity to discuss some numerical data presented, to contribute to a deeper understanding of the occlusion myocardial infarction (OMI) paradigm. Specifically, we believe that some of the figures regarding the diagnostic accuracy of electrocardiograms (ECGs) for ACO might be even more concerning than reported. The authors mention that 15% to 35% of patients had false-positive ECGs for STEMI, citing Meyers[2] and Aslanger (the DIFOCCULT study).[3] However, this range may not fully reflect the current evidence. In a recent meta-analysis,[4] which included these two studies, there was found a pooled specificity of 96.5% for ECG criteria in diagnosing OMI. This translates to a false-positive rate of only 3.5%, a significantly lower figure than the 15% to 35% reported. More importantly, there was observed a low pooled sensitivity of 43.6%, indicating that more than half of the patients presenting with ACO do not exhibit ST-segment elevation. When we evaluated additional signs indicative of ACO, were evaluated, sensitivity increased to 78.1%, while specificity remained high at 94.4%. The positive likelihood ratio improved from 12.51 to 13.85. These findings suggest that ECGs, when interpreted with comprehensive OMI-specific criteria, are more reliable than previously thought for the early detection of OMI.

The timely recognition of patients with ACS remains a challenge for acute care physicians such as internal medicine doctors, and the misdiagnosis of acute myocardial infarction (AMI) can result in significant morbimortality. While the ECG is an essential diagnostic tool in the evaluation of patients with chest pain, relying solely on ST-segment elevation criteria may not be sufficient.

To overcome this identification problem, "OMI Manifesto" provided a theoretical framework for the early recognition and management of AMI.[5] This classification (Fig. 1) encompasses both STEMI and STEMI equivalents, aiming for a quicker identification to shorten door-to-balloon time and improve patient outcomes.[6] Additionally, the aforementioned observational studies found a beneficial advantage of the OMI/non-OMI classification compared to the traditional STEMI/non-STEMI.[2,3] Recognizing the importance of this paradigm, some of us collaborated with the original proponents to launch a Portuguese version of the OMI Manifesto).[7] In this version, the terms "*Oclusão Coronária Aguda* (OCA)" and "*Ausência de Oclusão Coronária Aguda* (NOCA)" were adopted to better reflect the concept in our language and facilitate its understanding within the Portuguese-speaking medical community.

Therefore, we believe that this case report published in *Revista da Sociedade Portuguesa de Medicina Interna*, holds significant importance in alerting the Portuguese medical community to the necessity of a paradigm shift from the traditional STEMI/non-STEMI classification to OMI/non-OMI – or OCA/NOCA in Portuguese – such as it has been alerted in the international community.[8] Such an approach is in alignment with the recent expert consensus statement from the American College of Cardiology, which urges clinicians dealing with acute chest pain not to overlook "STEMI equivalents,"[9] as well as with the latest guidelines from the European Society of Cardiology that identify non-STEMI patients with high-risk criteria potentially representing acute occlusion.[10] However, more concerted efforts from these

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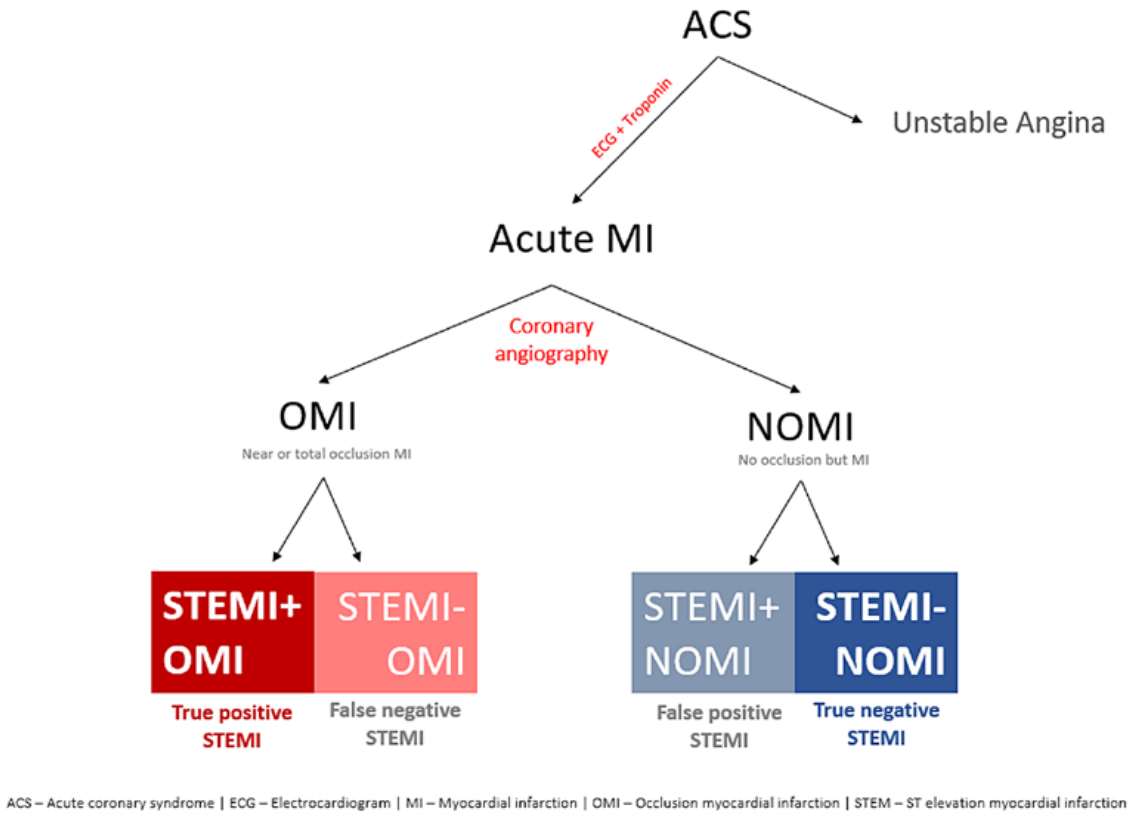

Figure 1: Visual theoretical conception of OMI/NOMI (or OCA/NOCA) and STEMI/NSTEMI (not a diagnostic algorithm).

institutions are still needed to fully embrace and promote this paradigm shift. By redefining how we classify and name this condition, we can improve our diagnostic capabilities and, consequently, our treatment strategies, ultimately leading to better patient outcomes. ■

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BVP - Original idea, conception, writing and creation of the figure and revision
MAF, JNA - Conception, writing and revision
All authors approved the final version to be published.

Declaração de Contribuição

BVP – Ideia original, concepção, escrita e criação da figura e revisão
MAF, JNA - Concepção, escrita e revisão
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