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EDITORIAL COMMENT

What is the best treatment for patients with myocardial infarction with non-obstructive coronary artery disease?

Qual é o melhor tratamento para os doentes com enfarte do miocárdio com doença coronária não obstrutiva?

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The article ''Dual anti-platelet therapy in myocardial infarction with non-obstructive coronary artery disease – insights from a nationwide registry''[1] raises the issue of the paucity of guidelines for medical treatment in patients presenting with acute coronary syndrome with non-obstructive coronary disease and aims to outline which factors seem to influence a clinician's decision to prescribe dual antiplatelet therapy (DAPT) at discharge. In a population of more than 16 000 patients presenting type 1 myocardial infarction (MI), only 4.4% were categorized as myocardial infarction with non-obstructed coronary artery (MINOCA). Among these patients, more than a half were discharged under dual antiplatelet therapy. More often, DAPT treated patients were male and smokers, presented sinus heart rhythm and trivial coronary lesions on a coronary angiography.

To the best of our knowledge, this is the first report to date analyzing real-world data about out-of-hospital management of MINOCA patients. It is a multicenter nationwide registry and one of the largest published MINOCA cohorts. However, it has some limitations as it is a single country registry. This underlies its limited external validity and also, there was limited or no data verification (or at least it is not disclosed in the report). Furthermore, no information was provided about the non-invasive diagnostic investigation after the invasive coronary angiography nor about the work up on which the final diagnosis of MINOCA was established. The data provided are therefore insufficient to clarify whether DAPT prescription was appropriate.

Indeed, the most surprising finding of this report is the high percentage (55%) of patients being discharged under DAPT. The current trends in medical treatment of coronary artery disease patients is to treat them for the shortest possible period (one to three months) with DAPT and to reduce it thereafter to monotherapy.[2,3] This is particularly relevant in patients with high bleeding risk who may only need a potent P2Y12 inhibitor to prevent the excess when it is combined with aspirin.

Another important factor which compromises patient outcomes is the under recognition of the actual diagnosis. It may be harmful assuming non-obstructive disease excludes a plaque rupture-associated event with or without superimposed thrombus, which may or may not be apparent on angiography. Further, despite plaque rupture being responsible for two thirds of all coronary events,[4] care should be

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taken not to dismiss plaque erosion that can be treated solely with antiplatelet therapy and anticoagulation, avoiding unnecessary stenting of the lesion.

Cardiac magnetic resonance (CMR) has gained a main role in this setting. Due to its safety, lower inter-observer variability, quantitative accuracy, and ability to characterize the myocardium, it has become a key diagnostic tool in the assessment of patients presenting with MINOCA.[5] A meta-analysis gathering 46 publications,[6] revealed the presence of a typical MI in CMR imaging in 24% of patients, with myocarditis occurring in 33%. This is a warning against the indiscriminate use of DAPT in this MINOCA population. Thus, CMR results may be required before discharge to inform decisions on DAPT treatment.

However, CMR does not identify the underlying cause (plaque disruption or erosion, embolism, dissection or vasospasm), which can be readily obtained with intracoronary imaging. Two independent studies using optical coherence tomography and intravascular ultrasound (IVUS) identified plaque rupture or ulceration in 40%[7] and 24%[8] of patients with MINOCA respectively, and 25% of those with plaque disruption identified in IVUS presented a normal CMR. These findings pose the question of whether invasive and non-invasive imaging should both be required in all MINOCA patients, as none of the imaging methods individually provide all the information needed to make the best clinical decision with regards to medical treatment.

The under recognition of the underlying cause of MINOCA may delay prognosis-modifying interventions, undermine or misguide lifestyle advice (restrictions or promotion of exercise, accordingly) and lead to a false sense of reassurance for both patients and clinicians. To conclude, efforts should be made to follow recommendations,[5] clarify the diagnosis, treat and follow-up these patients and avoid unnecessary medication.

As stated by Poku and Noble (2016), ''a more efficient management strategy may solely rely on an individualized approach in order to improve outcomes.''[9]

Conflicts of interest

The authors have no conflicts of interest to declare.

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