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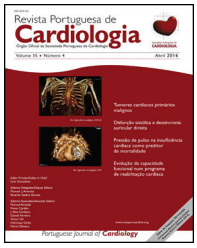

EDITORIAL COMMENT

Beta-blocker therapy after myocardial infarction or acute coronary syndrome: What we don't know

Terapêutica com β-bloqueantes após enfarte do miocárdio ou síndrome coronária aguda: o que não sabemos

José Ilídio Moreira

Serviço de Cardiologia, Centro Hospitalar de Trás-os-Montes e Alto Douro (Hospitais de Vila Real, Chaves e Lamego), Vila Real, Portugal

Despite significant advances in the management of acute coronary syndromes (ACS) over recent decades, there are still some gaps in evidence.

The importance of beta-blockers in the context of pharmacological treatment during and after an ACS is well recognized. The indications concerning patients with left ventricular (LV) systolic dysfunction and ejection fraction (EF) <40% are clear. Unless there is a contraindication or the patient is in overt heart failure, the European and American guidelines confer a class I recommendation for beta-blocker use after both ST- and non-ST-segment elevation ACS (NSTE-ACS).[1–4]

The data are not as conclusive in patients without LV dysfunction. Several registries, meta-analyses and population-based studies question this indication,[5] especially in the setting of ST-segment elevation myocardial infarction (STEMI) after primary percutaneous coronary intervention.[6] In their paper published in the current issue of the *Journal*, Velásquez-Rodríguez et al. focus on this issue.[7] Despite the limitations of their observational study, which are recognized by the authors, the results in patients with LV systolic dysfunction who tolerate beta-blocker therapy at hospital discharge are consistent. By contrast, for the LVEF >40% patient group, the results are inconclusive and raise questions.

Other observational studies in contemporary ACS populations suggest that the benefits of beta-blocker use after ACS are still significant in patients with preserved LV systolic function.[8]

These uncertainties are more understandable when we take a closer look at the guidelines. The European Society of Cardiology (ESC) guidelines confer a class IIa recommendation, level of evidence B, in patients without heart failure and preserved LVEF, for routine beta-blocker therapy in the acute, subacute and long-term phases after STEMI.[1] Nevertheless, the ESC recognizes that the role of maintenance beta-blocker therapy for patients without heart failure and/or low LVEF has not been prospectively tested in reperfused STEMI patients.

The most recent ESC statement on the management of NSTE-ACS[3] attributed the same class of recommendation – IIa, level of evidence B – for the use of beta-blockers in patients with preserved LV function (class I in patients

E-mail address: jimoreira2@gmail.com

with ongoing ischemic symptoms). It is important to emphasize that, in these guidelines, the value of long-term beta-blocker therapy in patients with LVEF >40% is listed among the gaps in evidence regarding care and future research.

The American ACS guidelines[2,4] recommend beta-blocker therapy for all patients without contraindications, regardless of heart failure or LVEF, with class I indication. The only exception is the class IIa recommendation, level of evidence C, assigned for chronic long-term therapy in patients after NSTE-ACS and with normal EF.

Many other guidelines and scientific statements, addressing different clinical settings, can be integrated into the management of these patients.

The ESC guidelines for the management of chronic coronary syndromes[9] state that the need for and duration of beta-blocker therapy following myocardial infarction (MI) in the absence of LV systolic dysfunction are unknown, referring to this as a gap in the evidence.

The American Heart Association (AHA) and American College of Cardiology (ACC) guideline for secondary prevention[10] states, as a class I recommendation, that beta-blocker therapy should be continued for three years in all patients with normal LV function who have had MI or ACS. Additionally, it states that it is reasonable to continue beta-blockers beyond three years as chronic therapy in all patients with normal LVEF after an ACS, in this case with a class IIa recommendation, level of evidence B.

Another important issue has to do with the age of the population, since the incidence of ACS increases with age, and patients aged >75 years are known to be underrepresented in most cardiovascular trials. Likewise, those with complex comorbidities, significant physical disabilities, cognitive impairment or frailty are excluded. A statement from the AHA, ACC and American Geriatrics Society on knowledge gaps in cardiovascular care of the older adult population[11] emphasizes that current guidelines are unable to provide evidence-based recommendations for the diagnosis and treatment of older patients who are typical of those encountered in routine clinical practice. Among numerous recommendations, it states that more studies are needed to assess the benefits, risks, intensity, and duration of pharmacological agents, including beta-blockers, in older patients with ACS, paying particular attention to multimorbidity and polypharmacy.

In conclusion, I believe there is insufficient evidence to support the systematic use of beta-blockers for ACS patients with preserved EF, especially when treated with modern reperfusion therapies. Certainly, most of them benefit from this medication, but not all. Randomized clinical trials within this group are needed that include a broad spectrum of patients who are representative of those seen in clinical practice.

Meanwhile, we should not forget that the selection of a medical regimen should be individualized to each patient on the basis of in-hospital findings, life expectancy, functional and cognitive status, preferences, goals, comorbidities, frailty, risk of adverse effects and drug tolerability or interactions.

Conflicts of interest

The author has no conflicts of interest to declare.

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