



LETTER TO THE EDITOR

Determinants of safety of early discharge after primary percutaneous coronary intervention



Determinantes de segurança na alta antecipada após intervenção coronária percutânea primária

To the Editor,

I read the article entitled "Applicability of the Zwolle risk score for safe early discharge after primary percutaneous coronary intervention in ST-segment elevation myocardial infarction" by Tralhão et al.,¹ published in *Revista Portuguesa de Cardiologia* in 2015, with great interest. The investigators reported that the Zwolle risk score (ZRS) showed excellent discriminative ability to identify low-risk ST-elevation myocardial infarction (STEMI) patients who could be safely discharged within 72 hours of primary percutaneous coronary intervention (PPCI).¹

According to current recommendations, patients with a ZRS ≤ 3 are considered at low risk and are eligible for discharge 72 h after PPCI.² The ZRS is based on age, heart failure signs, localization of infarction, ischemia time, number of diseased coronary vessels, and post-procedural angiographic result, and has been shown to predict 30-day post-discharge mortality.²

Natriuretic peptides have been shown to provide additional prognostic information in patients with STEMI.³ Brain natriuretic peptide (BNP) levels can act as a global marker reflecting myocardial damage and heart failure.³ Ganovska et al.⁴ reported that patients with high ZRS and BNP ≤ 200 pg/ml had similar mortality and hospital stay to those with low ZRS. In this context, it might be useful to measure serum natriuretic peptide levels due to their prognostic significance.

Microvascular obstruction (MVO) occurs frequently in patients with STEMI even after prompt revascularization of the culprit artery. Depending on the severity of the ischemic

injury, microvascular injury can lead to MVO, and MVO can lead to intramyocardial hemorrhage (IMH). Microvascular damage and reperfusion injury after STEMI are important markers of outcomes. Cardiac magnetic resonance (CMR) provides a comprehensive analysis of myocardial infarction, including assessment of myocardial scar, MVO, and IMH.⁵ In this context, it might be beneficial to assess MVO and IMH by CMR in order to identify patients eligible for early discharge.

Conflicts of interest

The author has no conflicts of interest to declare.

References

1. Tralhão A, Ferreira AM, Madeira S, et al. Applicability of the Zwolle risk score for safe early discharge after primary percutaneous coronary intervention in ST-segment elevation myocardial infarction. *Rev Port Cardiol.* 2015;34:535–41.
2. Melberg T, Jørgensen M, Ørn S, et al. Safety and health status following early discharge in patients with acute myocardial infarction treated with primary PCI: a randomized trial. *Eur J Prev Cardiol.* 2015;22:1427–34.
3. Schellings DA, Adiyaman A, Giannitsis E, et al. Early discharge after primary percutaneous coronary intervention: the added value of N-terminal pro-brain natriuretic peptide to the Zwolle Risk Score. *J Am Heart Assoc.* 2014;3:e001089.
4. Ganovska E, Arrigo M, Helanova K, et al. Natriuretic peptides in addition to Zwolle score to enhance safe and early discharge after acute myocardial infarction: a prospective observational cohort study. *Int J Cardiol.* 2016;215:527–31.
5. Hamirani YS, Wong A, Kramer CM, et al. Effect of microvascular obstruction and intramyocardial hemorrhage by CMR on LV remodeling and outcomes after myocardial infarction: a systematic review and meta-analysis. *JACC Cardiovasc Imaging.* 2014;7:940–52.

Levent Cerit

Department of Cardiology, Near East University, Nicosia, Cyprus
E-mail address: drcecit@hotmail.com

DOI of original article: <http://dx.doi.org/10.1016/j.repc.2015.04.006>

<http://dx.doi.org/10.1016/j.repc.2016.07.006>

0870-2551/© 2016 Sociedade Portuguesa de Cardiologia. Published by Elsevier España, S.L.U. All rights reserved.