Rev Port Cardiol. 2018;37(5):423–424

Revista Portuguesa de Cardiologia
Portuguese Journal of Cardiology
www.revportcardiol.org

EDITORIAL COMMENT

Identifying predictors of patient delay for reperfusion in myocardial infarction: Does it matter?☆

Identificar preditores de demora do doente para a reperfusão no enfarte do miocárdio: Algum valor?

Jorge Ferreira

Serviço de Cardiologia, Hospital de Santa Cruz, CHLO, Carnaxide, Portugal

The guidelines recommend that reperfusion therapy be performed expeditiously in patients with ST-elevation myocardial infarction (STEMI), and that primary percutaneous coronary intervention (PCI) is the preferred strategy.[1] In addition to limiting infarct size and increasing survival, early primary PCI reduces hospitalizations for heart failure,[2] which account for high consumption of healthcare resources.[3,4]

Recording time to reperfusion, including patient delay and system delay, is recommended by the guidelines and is essential for monitoring these important quality indicators in the management of STEMI patients.[1] System delay, measured from first medical contact to reperfusion, has been the subject of organizational measures in Portugal, although they have had little impact.[5,6] On the other hand, although patient delay, measured from onset of symptoms to first medical contact, has generally been considered less amenable to organizational improvements, median patient delay in Portugal improved from 182 min in 2002 to 157 min in 2007.[5]

The factors associated with patient delay can be grouped into four categories: sociodemographic (older age, female gender and low socioeconomic status or educational level), behavioral (delay in seeking help or not calling the emergency services), clinical (history of heart disease, diabetes, and atypical or mild symptoms), and contextual (symptom onset at home or in the early morning).[7–10]

In this issue of the *Journal*, Pereira et al. analyze predictors of patient delay for primary PCI in nearly 1000 STEMI patients included in the Stent for Life initiative at 18 Portuguese centers between 2011 and 2015.[11] The study showed that time to primary PCI in Portugal is still very high (median 250 min), of which patient delay accounts for approximately 45%. Although the change in patient delay between 2011 and 2015 was not statistically significant, the absolute value of the median delay (108 min) decreased by 40% compared to 2002.

The authors identified age ≥75 years, symptom onset between midnight and 8:00 a.m., and first medical contact at a non-PCI center as independent predictors of patient delay, while calling 112 (the national emergency number) and transportation by the emergency medical services to a PCI center were independent predictors of shorter patient delay.

The positive association between age and longer patient delay has been reported in various studies,[7,8] and a linear relationship between the two has been described.[9] This association may be due to the increased prevalence of atypical symptoms associated with age, or it may reflect

☆ Please cite this article as: Ferreira J. Identificar preditores de demora do doente para a reperfusão no enfarte do miocárdio: Algum valor? Rev Port Cardiol. 2018;37:423–424.

E-mail address: jorge_ferreira@netcabo.pt

decreased access to healthcare services or limited family and social support.[10] Symptom onset in the early morning and use of primary healthcare services have also been associated with longer patient delay.[7–9] On the other hand, activation of and transportation by the emergency services have been associated with significant reductions in patient delay.[10]

In terms of relative importance, the factor that most affected patient delay was first medical contact being at a non-PCI center, associated with a 76-min longer delay, but this only occurred in 10% of cases. Age ≥75 years was associated with a 42-min increase (19% of patients), and symptom onset between midnight and 8:00 a.m. resulted in a 17-min increase (27%). Calling 112 (39% of patients) and transportation by the emergency medical services to a PCI center (15% of patients) were associated with reductions in patient delay of 48 and 55 min, respectively.

The main limitation of the study is that it is not fully representative of the overall situation in Portugal, given that the Central, Alentejo and Algarve regions accounted for around 19% of the patients but contain 35% of the Portuguese population. However, all of the predictors of patient delay identified by the authors have also been identified in previous studies in other populations, which confirms the reproducibility of the results.

Identifying predictors of patient delay is important and can be used to develop interventions aimed to reduce it, thereby helping to enhance the benefit of reperfusion therapy. By taking into account the factors identified in this study, a strategy can be designed that is aimed at raising awareness of the symptoms of STEMI, especially in the elderly. This could be carried out at health centers with the slogan ''Heart attack symptoms? Don't go to your health center. Call 112 at any time.''

Conflicts of interest

The author has no conflicts of interest to declare.

References

1. Ibanez B, James S, Agewall S, et al. 2017 ESC Guidelines for the Management of acute myocardial infarction in patients presenting with ST-segment elevation: the Task Force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European Society of Cardiology (ESC). Eur Heart J. 2018;39:119–77.
2. Stone GW, Selker HP, Thiele H, et al. Relationship between infarct size and outcomes following primary PCI: patient-level analysis from 10 randomized trials. J Am Coll Cardiol. 2016;67:1674–83.
3. Ambrosy AP, Fonarow GC, Butler J, et al. The global health and economic burden of hospitalizations for heart failure: lessons learned from hospitalized heart failure registries. J Am Coll Cardiol. 2014;63:1123–33.
4. Fonseca C, Brito D, Cernadas R, et al. For the improvement of heart failure treatment in Portugal – consensus statement. Rev Port Cardiol. 2017;36:1–8.
5. Santos JF, Aguiar C, Gavina C, et al. Portuguese Registry of Acute Coronary Syndromes: seven years of activity. Rev Port Cardiol. 2009;28:1465–500.
6. Pereira H, Pinto FJ, Calé R, et al. Stent for life in Portugal: this initiative is here to stay. Rev Port Cardiol. 2014;33:363–70.
7. Goldberg RJ, Steg PG, Sadiq I, et al. Extent of, and factors associated with, delay to hospital presentation in patients with acute coronary disease (the GRACE Registry). Am J Cardiol. 2002;89:791–6.
8. Ribeiro S, Gaspar A, Rocha S, et al. Predictors of pre-hospital delay in patients with ST-segment elevation myocardial infarction. Rev Port Cardiol. 2010;28:1521–32.
9. Sheifer SE, Rathore SS, Gersh BJ, et al. Time to presentation with acute myocardial infarction in the elderly: associations with race, sex, and socioeconomic characteristics. Circulation. 2000;102:1651–6.
10. Horne R, James D, Petrie K, et al. Patients' interpretation of symptoms as a cause of delay in reaching hospital during acute myocardial infarction. Heart. 2000;83:388–93.
11. Pereira H, Calé R, Pinto FJ, et al. Factors influencing patient delay before primary percutaneous coronary intervention in ST-segment elevation myocardial infarction: the Stent for life initiative in Portugal. Rev Port Cardiol. 2018;37:409–21.