In reply to ''Variables associated with survival free of severe neurological sequelae in patients recovered from cardiac arrest''☆

En respuesta a ''Variables asociadas al pronóstico tras parada cardíaca''

Sir,

We much appreciate the comments by Pérez-Castellanos et al., derived from their excellent and recently published study demonstrating the usefulness of diabetes and lactate – along with three other variables – as mortality and severe neurological impairment predictors in patients recovering from out-hospital cardiac arrest.[1,2]

In effect, we did not include diabetes mellitus among the comorbidities in the registry, because during the period in which the protocol of our multicenter study was developed (2011–2013), we adhered to the Utstein style cardiac arrest care templates,[3] which did not include diabetes. Although two previous studies (2005 and 2013) mentioned this risk factor, none of the multicenter registries consulted in that period contemplated diabetes among the comorbidities to be considered outside classical cardiovascular disease. Moreover, in relation to the predictive models of mortality or severe neurological impairment consulted in that period,[4,5] only one of them[4] cited diabetes, which was not selected in the multivariate analysis as a prognostic factor.

In relation to the determination of plasma lactate levels, the first observations referred to its usefulness in cardiac arrest appeared in 1985 and 1997. However, subsequent studies (carried out between 2007 and 2014) yielded contradictory results and were difficult to compare due to differences in the percentage application of therapeutic hypothermia and the heterogeneous characteristics of the analyzed population (in- or out-hospital cases). In our study, lactic acid was determined only in the 197 patients (29% corresponding to in-hospital cardiac arrest) in which hypothermia was used, at three different timepoints: before, during and after application of the latter technique. The results obtained did not allow the drawing of firm conclusions regarding the usefulness of lactic acid as a prognostic factor.

We consider it important to mention the difficulties posed by studies of this kind, due to the many variables and factors of all kinds involved, when seeking to recommend the use of risk factors that have been validated. Of the 10 published studies on predictive models, which Pérez-Castellanos et al. analyzed and compared versus their results, only two of them found the presence of diabetes (in one study) and lactate elevation (in the other publication) - among other many different variables - to behave as predictors of a poor patient outcome. It is clear that with so much information that sometimes proves confusing and difficult to apply in clinical practice, the study published by Pérez-Castellanos et al. is of great help in that it clearly evidences that only 5 easy-to-use variables should be regarded as relevant among the prognostic factors in patients recovering from out-hospital cardiac arrest, and that such variables should be included in future studies in this very complex scenario.

References

1. Martínez-Sellés Manuel, Castellanos Alberto Pérez. Carta al Editor: Variables asociadas a la supervivencia libre de secuelas neurológicas graves en pacientes recuperados de una parada cardíaca. Med Intensiva. 2020, https://doi.org/10.1016/j.medin.2020.04.019.
2. Pérez-Castellanos A, Martínez-Sellés M, Uribarri A, Devesa-Cordero C, Sánchez-Salado JC, Ariza-Solé A, et al. Development and external validation of an early prognostic model for survivors of out-of-hospital cardiac arrest. Rev Esp Cardiol (Engl Ed). 2019;72:535–42, http://dx.doi.org/10.1016/j.rec.2018.05.022.
3. Rea TD, Cook AJ, Stiell IG, Powell J, Bigham B, Callaway CW, et al. Predicting survival after out-of-hospital cardiac arrest: Role of the Utstein data elements. Ann Emerg Med. 2010;55:249–57, http://dx.doi.org/10.1016/j.annemergmed.2009.09.018.
4. Aguila A, Funderburk M, Guler A, McNitt S, Hallinan W, Daubert JP, et al. Clinical predictors of survival in patients treated with therapeutic hypothermia following cardiac arrest. Resuscitation. 2010;81:1621–6, http://dx.doi.org/10.1016/j.resuscitation.2010.07.004.
5. Grasner JT, Meybohm P, Lefering R, Wnent J, Bahr J, Messelken M, et al. ROSC after cardiac arrest–the RACA score to predict outcome after out-of-hospital cardiac arrest. Eur Heart J. 2011;32:1649–56, http://dx.doi.org/10.1093/eurheartj/ehr107.

A. Loza-Vázquez*, D. Macias-Guerrero, C. León-Gil

Unidad de Cuidados Intensivos, Hospital Universitario Nuestra Señora de Valme, Sevilla, Spain

*Corresponding author.
E-mail address: aloza@telefonica.net (A. Loza-Vázquez).

☆ Please cite this article as: Loza-Vázquez A, Macias-Guerrero D, León-Gil C. En respuesta a ''Variables asociadas al pronóstico tras parada cardíaca''. Med Intensiva. 2021;45:191–191.