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EDITORIAL COMMENT

Is there still a place for new echocardiographic parameters in risk stratification after acute myocardial infarction?☆

Ainda haverá lugar para novos parâmetros ecocardiográficos na estratificação de risco após enfarte agudo do miocárdio?

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Left atrial (LA) function is essential for correct left ventricular filling and is directly related to diastolic function, and LA volume index (LAVI) is an important parameter in the guidelines for evaluation of diastolic function.[1] It is also of acknowledged prognostic value in various heart diseases, including atrial fibrillation, aortic valve stenosis, congenital heart disease, heart failure and others,[2–6] and has recently taken the place of previously used parameters such as LA anteroposterior diameter and area by planimetry.

In the current issue of the *Journal*, Cordeiro et al.[7] analyze the prognostic impact of LAVI, a simple echocardiographic measure, in patients with ST-segment elevation myocardial infarction treated by primary percutaneous coronary intervention and enrolled over a five-year period. LA volume was determined by the area-length method and indexed to body surface area, and was increased in 42% of patients. In a median follow-up of 28 months, 7.0% of the subjects died, 26.5% had the cardiac composite endpoint and 29% had the cardiovascular composite endpoint. These events were more frequent in patients with LA enlargement, which was an independent predictor of mortality and the composite endpoints.

The study is not original, since this association has been suggested by previous studies with similar population sizes.[8,9] Nevertheless, it has the merit of being carried out in Portugal and thus validating these findings for this country. However, there are some contentious points. The authors calculated LA volume using the area-length method, which although one of the techniques recommended for LA assessment, assumes that the atrium is ellipsoidal in shape, which is not always the case. Other authors have shown that the area-length method gives higher values than the other main recommended technique, the method of disks, and that if the latter is applied up to 18% of patients will be reclassified on the basis of the 2015 guidelines.[6] At all events, increased LA volume is associated with worse prognosis irrespective of the thresholds considered or the techniques used.

In addition, in their multivariate analysis, the authors did not adjust for other clinical and laboratory variables with known prognostic impact in acute coronary syndrome, including renal function, Killip class, heart rate and blood pressure, or for the presence of hypertension, which affects LA dimensions. If these variables had been included, they might have reduced or nullified the independent effect

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observed. Another variable that was not accounted for was ischemia time. It is now known that longer ischemia time is associated with increased LA volume, and so this parameter should have been included in the statistical analysis.[10]

Finally, another important limitation – acknowledged by the authors – is the sample size, which, although reasonable, is insufficient for the proposed analysis, and the rather low number of certain events, obliging the authors to use composite endpoints. The consequences are particularly evident in the wide confidence intervals presented for some events, as well as in the absence of statistical significance in some comparisons between groups despite clear differences in values and percentages.

The use of LAVI, an easily obtained echocardiographic parameter, appears to be a promising tool for prognostic assessment. Echocardiographic assessment is in fact mandatory according to quality criteria in acute coronary syndromes, and therefore any information with prognostic value that echocardiography can provide should always be taken into account. However, certain questions need to be borne in mind. Should we increase the complexity of risk stratification by adding the new parameters that are continually being described? Is the prognostic value of LA volume superior to that of other well-established parameters, used in isolation or as part of risk scores such as GRACE? What are the real clinical implications of a dilated left atrium, and should its presence alter clinical practice? These issues require further investigation, for which larger studies, with sufficient statistical power, will be needed.

Conflicts of interest

The author has no conflicts of interest to declare.

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