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**Prognostic evaluation of simplified echocardiographic parameters in acute myocardial infarction**

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**Introduction:** In an era where prognostic evaluation is increasingly being improved by echocardiography in acute myocardial infarction (MI), there are also classic 2D echocardiographic parameters that may have potential and practical utility in this area. The aim of this study was to evaluate the prognostic impact of left ventricular end-diastolic diameter (LVEDD), indexed left atrium volume (VOL) and indexed left ventricular mass (LVM) in ST-segment elevation myocardial infarction (STEMI) patients.

**Methods:** Retrospective study of consecutive patients with nonfatal STEMI who underwent percutaneous coronary intervention between January/2015 and December/2017. VOL was calculated by the "Area-Length" and LVM by "Cube formula", both indexed to the body surface area. High parameters were considered when: LVEDD >58mm in man or >52mm in woman; VOL >34mL/m<sup>2</sup>; LVM >115g/m<sup>2</sup> in man or >95g/m<sup>2</sup> in woman. At a median follow-up of 46 months (IQR 38-58), the endpoints evaluated were acute myocardial infarction (AMI), de-compensated heart failure (DHF), and overall mortality. The analysis of events was adjusted for possible confounding factors.

**Results:** A total of 200 patients were identified, 72% of whom were men and the mean age was 63.7 ± 13.0 years. There was an increase of the LVEDD in 17.5%, VOL in 42% and LVM in 16.5%.

In the multivariate analysis, LVEDD was able to predict significant DHF (HR 2.4, 95% CI 1.2-4.9) and AMI (HR 6.4, CI 95% 1.6-26.0) and VOL only AMI (HR 6.1, 95% CI 1.2-30.1), but not DHF (HR 1.3, 95% CI 0.7-2.6). The presence of increased LVM was not associated with more events of DHF (HR 1.4, IC95% 0.7-3.0) or AMI (HR 3.7, 95% CI 0.9-14.5). None of these parameters reached statistical significance for mortality (LVEDD: HR 1.0, 95% CI 0.3-3.0, VOL: HR 1.9, 95% CI 0.8-4.4, LVM: HR 1.3, 95% CI 0.5-3.5).

In the ROC curve analysis, LVEDD showed an area under the curve (AUC) of 0.7 (95% CI 0.6-0.8) for DHF and 0.6 (95% CI 0.5-0.8) for AMI, whereas VOL demonstrated an AUC of 0.7 (95% CI 0.5-0.9) for AMI.

**CONCLUSION:** In patients with nonfatal STEMI who underwent percutaneous coronary intervention, LVEDD and VOL are echocardiographic parameters that may still play some role in prognostic evaluation. The presence of elevated LVM was not associated with a significant increase in cardiovascular events.