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EDITORIAL COMMENT

Acute total occlusion of the unprotected left main coronary artery: Solid data on a catastrophic scenario

Oclusão total aguda de tronco comum desprotegido – dados sólidos de um cenário catastrófico

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There is no lack of evidence of the clinical severity of acute total occlusion of the unprotected left main coronary artery (LMCA). Nevertheless, every center has its success stories, with anecdotal evidence of patients who are successfully reperfused and have an uneventful outcome. Given the extremely low number of such cases, robust epidemiological data were clearly missing in the international literature.

In their study published in this issue of the *Journal*, Calvão et al. collected data from three hospitals in Porto and Gaia in northern Portugal, and described the clinical presentation, management and outcomes of patients with acute total LMCA occlusion in a large database.[1] Despite its retrospective nature, this is a solid study that analyzed 11 036 emergent coronary angiographies between 2008 and 2020. In this period, 0.5% of cases were acute total occlusions of the LMCA, confirming the extremely low number of these patients who reach the catheterization laboratory. Unsurprisingly, patients presented with cardiogenic shock or aborted cardiac arrest, and primary percutaneous coronary intervention (PCI) was attempted in the majority (90%) of cases, with angiographic success in around half (56%) of the procedures.

Patients were young (mean age 61 years), and most presented with chest pain (93%) and ST-segment elevation (81%). Getting these cases to a catheterization laboratory as soon as possible is, of course, a crucial first step. Since nearly 20% did not have ST-segment elevation, a high clinical suspicion is necessary in shock patients with ongoing chest pain or significant ST-segment depression. Although this is clearly stated in the guidelines,[2,3] less experienced physicians are likely to benefit from ongoing training on this subject.

Interestingly, mechanical circulatory support was used in 63% of patients, by intra-aortic balloon pump (IABP) or venoarterial extracorporeal membrane oxygenation (VA-ECMO). The use of these devices did not predict short-term prognosis. This is in agreement with the neutral trial results of the 2012 landmark IABP-SHOCK II trial,[4] and also the long-awaited results of the ECMO-CS trial, published in November 2022.[5] Despite all the hopes of the medical community concerning the benefit of mechanical support devices, it is safe to say that the randomized evidence for their lack of benefit is robust.

Concerning outcomes, in-hospital mortality was 58%, and survivors had a high (92%) one-year life expectancy. These findings are similar to the longstanding figure of 50% mortality for cardiogenic shock complicating myocardial infarction.[6,7] This mortality rate varies according to the severity of shock,[8] but this fact is not reported by the authors. The five-year life expectancy for in-hospital survivors was also high, at 67%. This figure is in line with the long-term follow-up of the IABP-SHOCK II trial.[9] It appears that those who make it through the initial storm enjoy a calm ride thereafter.

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In conclusion, Calvão and colleagues are to be praised for filling the literature gap on the outcomes of acute total occlusion of the LMCA. Hopefully, after successful reperfusion, the prognosis of these very severe patients is probably similar to the overall prognosis for cardiogenic shock. After the neutral results of randomized trials for IABP and VA-ECMO, we must continue to rely on the skill and dedication of the interventional cardiology and cardiac intensive care teams.

Conflicts of interest

The author has no conflicts of interest to declare.

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