



## EDITORIAL COMMENT

## The impact of Covid-19 pandemic on acute coronary syndrome admissions at a tertiary care hospital in Portugal

### O impacto da pandemia de Covid-19 nas admissões de síndrome coronária aguda num hospital de cuidados terciários em Portugal

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The coronavirus disease 2019 (COVID-19) outbreak has become a worldwide healthcare emergency, and has had a particular impact on the diagnostic and treatment pathways for patients presenting with acute coronary syndromes (ACS).<sup>1</sup>

Globally, the fear of contagion led to fewer emergency medical services (EMS) activations for cardiac symptoms, which led to a reduction in the number of hospitalizations for ACS. On the other hand, EMS were focused on COVID-19 allocating most of the health resources to the pandemic.<sup>2,3</sup> Concomitantly, there was an increase in time from the first medical contact to coronary revascularization in patients with acute ST-elevation myocardial infarctions (STEMI). This is a very important issue because the delay in reperfusion therapies has a negative prognostic impact.<sup>4</sup>

In this issue of the Journal, Calvão et al.<sup>5</sup> report on their study assessing the impact of the early period of the COVID-19 pandemic on ACS admissions and clinical course in the Cardiology Department of Centro Hospitalar Universitário de São João, a tertiary care hospital in Porto's metropolitan area. This retrospective, case-control study included

patients admitted with a diagnosis of ACS during March and April of 2020 (pandemic group) and in the same period of 2019 (control group). Clinical course and complications were also assessed.

During the pandemic period, there were fewer ACS admissions but with more severe presentations; a larger proportion of STEMI (54.9% vs. 38.8%,  $p=0.047$ ), higher maximum troponin levels and greater prevalence of left ventricular systolic dysfunction at discharge (58.0% vs. 35.0%,  $p=0.01$ ).

The higher proportion of STEMI in the pandemic group was driven not only by a decrease in the number of non-ST-elevation myocardial infarction and unstable angina patients (49 vs. 32) but also by an increase in the absolute number of STEMI (31 vs. 39). Among STEMI admissions, although not statistically significant, there was a longer period between time of onset of symptoms to first medical contact (FMC), during the pandemic (control vs. pandemic; median  $145\pm 178$  min vs.  $180\pm 360$  min,  $p=0.31$ ) and the time from FMC to emergent percutaneous coronary intervention (PCI) ( $150\pm 270$  min vs.  $120\pm 492$  min,  $p=0.56$ ). There was no difference between the proportion of STEMI patients who underwent PCI in both periods (87.1% vs. 82.1%,  $p=0.41$ ). The non-significance of these findings may be related to the small sample size.

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In the clinical course, there was no difference in relation to Killip class, the maximum Troponin I was significantly higher in the pandemic group ( $19\,439 \pm 70\,265$  ng/L vs.  $10\,222 \pm 36\,870$  ng/L,  $p=0.03$ ) and there were also significantly more patients with left ventricular systolic dysfunction at discharge (58.0% vs. 35.0%,  $p=0.01$ ). There was a higher proportion of patients in the pandemic group with in-hospital complications (23.9% vs. 13.8%,  $p=0.11$ ) and in-hospital (5.6% vs 1.3%,  $p=0.15$ ) and 30 days (7.0% vs. 2.5%,  $p=0.18$ ) mortality. The difference in complication rate may relate to the higher proportion of STEMI in the pandemic group and the delays in reperfusion. They did not reach statistical significance due to the small sample size.

The authors recognize some limitations to the study as it was a single-center study, with a relatively low number of patients. Acute morbidity and mortality may be underestimated, since patients that died in the pre-hospital phase/emergency room or were admitted at other intensive care units in the same hospital were not included.

This work emphasizes the importance of carrying out multicenter studies and registries that enable larger samples to be more easily attained in terms of statistical significance. Considering that time is myocardial, health services must have organizational models that convey confidence and security to patients so that, in case of symptoms suggestive

of ACS, they immediately call the emergency department for earlier diagnosis and reperfusion. This will lead to reduction in complications so that cardiovascular mortality does not increase as an indirect effect of COVID-19.

## Conflicts of interest

The author has no conflicts of interest to declare.

## References

1. Chieffo A, et al. EAPCI position statement on invasive management of acute coronary syndromes during the COVID-19 pandemic. *Eur Heart J.* 2021;41:1839–51.
2. Rosa S, et al. Reduction of hospitalizations for myocardial infarction in Italy in the COVID-19 era. *Eur Heart J.* 2020;22:2083–8.
3. Faria D, et al. The fall in acute coronary syndrome admissions during the COVID-19 Portuguese lockdown. *Rev Port Cardiol.* 2021;40:251.
4. Freitas A, et al. Impact of SARS-CoV-2 pandemic on ST-elevation myocardial infarction admissions and outcomes in a Portuguese primary percutaneous coronary intervention center: preliminary data. *Rev Port Cardiol.* 2021;40:465–71.
5. Calvão J, Amador AF, Costa CM, et al. The impact of COVID-19 pandemic in acute coronary syndromes admissions in a tertiary care hospital in Portugal. *Rev Port Cardiol.* 2021;40.