

The long wave of COVID-19: Persisting effects on acute coronary syndromes' incidence, management, and outcomes

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Related article

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The COVID-19 pandemic deeply impacted the organization of healthcare systems all over the world. In order to effectively face the pandemic, healthcare systems implemented strategies to optimize diagnostic and treatment pathways, which resulted in a shift of resources towards the management of patients with COVID-19 and penalizing other elective and acute conditions [1]. Among many others, these included invasive cardiology procedures such as diagnostic coronary angiographies and elective percutaneous coronary interventions (PCI) in patients with known or suspected acute or chronic coronary syndromes (ACS). In addition to the predictable reduction of planned procedures, a significant decline in primary PCIs for ACS was reported during the COVID-19 outbreak in Europe, America, and Asia [2–4]. Data from all over the world are consistent and report the hospitalization rate for ACS decreased by up to 50%, with a detrimental impact on survival after ACS [2].

One of the main explanations for this phenomenon is people's fear of contagion, which strongly discouraged attendance at emergency departments (EDs). It is plausible that patients, consciously or unconsciously, underestimated or ignored symptoms because they worried about potential SARS-CoV-2 infection. This hypothesis of delayed presentation is partly supported by an observed increase in out-of-hospital cardiac arrests [5] and overall mortality [6] during the COVID-19 pandemic.

In this issue of *Kardiologia Polska* (*Kardiologia Pol, Polish Heart Journal*), Jankowska-Sanetra

and colleagues [7] present the results of a multi-institutional Polish registry including patients hospitalized for ACS from June to October 2020, following the first wave of the COVID-19 pandemic. The authors collected data from more than 4500 subjects and then compared them with those from patients hospitalized for ACS during the corresponding time frame in 2019 before the pandemic outbreak. The main objective of their survey was to assess the impact of the first lockdown on ACS incidence, modality of treatment, and outcomes. Rather than focusing on the first COVID-19 wave, the authors specifically addressed the period immediately after to provide a picture of the population's health status following the first lockdown. As compared to June-October 2019, a higher number of ACS hospitalizations (mainly ST-segment elevation myocardial infarction [STEMI] and unstable angina [UA]) in relation to the overall hospitalizations for invasive procedures was reported in the corresponding time frame of 2020 (57.9% ACS vs. 42.1% elective cases in 2020 and 52.9% ACS vs. 47.1% elective cases in 2019). In 2020, patients admitted for ACS had a worse cardiovascular risk profile with a higher prevalence of hypertension, diabetes mellitus, hyperlipidemia, and smoking habits. Moreover, procedural data showed that the percentage of percutaneous vs. surgical revascularizations increased following the first COVID-19 wave, and multivessel coronary disease was more often treated in a single rather than in multiple staged procedures.

The investigators should be congratulated for their effort, aiming to provide a clear picture of the health status of acute cardiac patients immediately after the first COVID-19 wave. The focus on this specific time frame provides readers with new insights into the impact of the COVID-19 pandemic on cardiac patients. In particular, the following topics are addressed: (1) the influence of the first lockdown on lifestyle habits; (2) the reasons for hospital admissions following the first COVID-19 wave; and (3) the temporal changes of ACS management during the COVID waves.

First, as evidenced by the higher prevalence of cardiovascular risk factors as compared to the non-pandemic period, the lockdown negatively influenced lifestyle habits. This hypothesis is in line with previous studies, reporting a diffuse worsening of lifestyle behaviors during the COVID-19 pandemic with a concomitant increase in stress, sedentariness, smoking, and alcohol consumption [8, 9]. A concurrent decline in cardiovascular risk factor control, such as hypertension and diabetes, has been previously reported [10, 11].

Second, the authors describe an increased hospitalization rate for ACS, mainly explained by a higher incidence of UA and STEMI cases in the post-lockdown period as compared to the previous non-pandemic year. These data should be interpreted in light of several considerations. The above-mentioned worsening of risk factor control, the under- or misdiagnosed cardiac conditions during the first wave, and the increased ED admissions due to subsiding fear of contagion may have contributed to these findings. Interestingly, the overall number of ACS patients remained stable as compared to the previous year (2620 vs. 2801 in 2020 and 2019, respectively). This finding is in line with a large epidemiological UK study reporting a partial reversion of ACS reduction following the first pandemic wave in 2020 [12]. Taken together these data suggest that the fear of COVID-19, in addition to the disease itself, negatively impacted clinical conditions of cardiac patients and that the pandemic effect on the healthcare system and reduction of elective procedures continued beyond the first lockdown.

Finally, this article provides important insights into the management of ACS during the COVID-19 pandemic. The higher incidence of STEMI led to a higher number of primary PCIs, whereas the stable ACS rate (similar to the previous years) indicates that there was a marked preference for PCI over cardiac surgery. As suggested by previous research, this might be explained by the policy of healthcare systems to optimize resources [12, 13], by Heart Teams' concerns about the risk of patients contracting the infection in post-acute care facilities [14], and by the extreme shortage of beds in intensive care units [15].

The findings by Jankowska-Sanetra et al. [7] are intriguing and lead one to wonder whether the subsequent

pandemic waves had a similar effect on cardiac patients, or whether a better disease understanding along with improved resource allocation led to different outcomes.

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