

The global effect of Covid-19 on acute coronary syndromes management

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Funding Acknowledgement: Type of funding sources: None.

Aim: Covid-19 has had a dramatic impact on the healthcare systems globally. Despite efforts to maintain systems of cardiovascular care during the pandemic, public health responses to the virus have contributed to adverse cardiovascular outcomes. Herein, we summarize current evidence detailing the impact of Covid-19 on interventional cardiology.

Methods: According to PRISMA criteria, a systematic review was performed through Medline, Embase, and Cochrane databases, to identify reports on the impact of Covid-19 on interventional cardiovascular procedures. We identified 50 published studies that met the prespecified inclusion and exclusion criteria.

Results: In the acute setting, several datasets report a reduction of acute coronary syndrome (ACS) admission by 40% globally (–40%, 95% CI 37–43 from the National Health Service hospital trusts in England). Most surveys and registries reported a numerically higher impact on NSTEMI/unstable angina cases compared to STEMI (–42%, 95% CI 38–46 and –23%, 95% CI 16–30 respectively, from the National Health Service hospital trusts in England).

In STEMI care pathways, several studies report increased delays between symptom onset and first medical contact (105 min, 95% CI 45–222 during the pandemic vs 71 min, 95% CI 30–180 before it, $p < 0.001$, from the National STEMI registry in Spain), with a subsequent increased duration

of the ischaemic period (200 min, 95% CI 140–332 during the pandemic vs 233 min, 95% CI 150–375 before it, $p < 0.001$, from the National STEMI registry in Spain). Importantly, hospital “door-to-balloon” times were unchanged.

Most studies suggest similar in-hospital mortality for STEMI during the pandemic compared to historic controls (1.7% vs 1.8%, $p = 0.67$ from British National Institute of Cardiovascular Outcomes Research database). An increased incidence of mechanical complications were observed (41.2% vs 19.6%, $p = 0.030$, from an Italian monocentric experience).

In the United States (New York city), overall mortality from ischemic heart diseases depicted a 2-fold increase during the pandemic (relative change 2.39, 95% CI 1.39–4.09). Of note, in the same city home deaths increased from 35/day in 2013–2017 to 200/day during the pandemic. These data suggest that ACS incidence has not decreased, but more likely patients presenting ischemic symptoms may have not contacted health care services, and have died at home.

Conclusions: The Covid-19 pandemic has adversely impacted outcomes in patients with ischemic heart disease (IHD). The diagnosis and treatment of IHD should be designated a health system priority that remains intact during pandemic events as the magnitude of harm induced by its interruption is substantial.