

# COVID-19 and Acute Coronary Syndrome: Lessons for Everyone

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The Coronavirus Disease 2019 (COVID-19) pandemic has brought unprecedented changes to our world and healthcare system. In addition to millions of infected patients, non-COVID-19 care is also severely undermined due to change in human behaviour and resource availability. Treatment of medically emergent conditions like acute coronary syndrome (ACS) are particularly vulnerable and worldwide there were reports of reduction in ACS admissions with worsened in-hospital outcome.<sup>1-3</sup> In fact, healthcare avoidance and treatment delay were apparent<sup>2,3</sup> and may further translate into poorer medium or long term cardiovascular outcome such as higher incidence of heart failure (HF).

In the Lancet Regional Health Western Pacific, Liu He and colleagues<sup>4</sup> tried to address this issue by utilizing data from a large database of 31 tertiary hospitals in Beijing, China. Information on ACS admission, inpatient treatment and outcome from December 2019 to June 2020 were compared with those in the previous year. Moreover, HF admission incidence 7 months after the study period was also evaluated to assess the impact of COVID-19 on short term outcome of ACS survivors. The authors demonstrated that admissions for ST-elevation myocardial infarction (STEMI), Non-ST-elevation myocardial infarction (Non-STEMI), and unstable angina (UAP) amid pandemic reduced by 38.0%, 41.0%, and 63.3% respectively. Interestingly, proportion of ACS patients received revascularisation and STEMI patients receiving percutaneous coronary intervention (PCI) within 24 hours were higher during COVID-19 pandemic. In-hospital mortality was similar between the study and control period. Importantly, there was no increase in HF admissions within the 7 month interval after study period.

The lower incidence of ACS admissions during COVID-19 was in line with other reports.<sup>1-3</sup> Possible underlying reasons include reduction in human activities, social interaction, pollution and respiratory viral infections etc. Healthcare avoidance may also contribute to the trend and it is worrying to observe the increase in out-of-hospital cardiac arrest in some countries.<sup>5,6</sup> Indeed in current study, patients admitted during

pandemic tended to have higher clinical risk profiles which reflected patients were reluctant to seek care unless their symptoms were very severe. However, the authors lack data on out-of-hospital death and therefore it is difficult to conclude whether there was any detrimental effect of 'medical distancing' in authors' study population.

The intriguing observation of higher proportion of ACS and STEMI patients received prompt revascularisation revealed the change in interventional practice amid COVID-19 pandemic. In many countries, hospital administrations mandate cardiac catheterization laboratories (CCL) to stop or cut elective service for non-emergent cases. This aims to reserve resources for COVID-19 care and it also facilitates invasive management of ACS which is largely non-deferrable. Despite the study did not specify the rates of fibrinolytic use, more STEMI patients received PCI promptly and more ACS patients could be managed invasively which are recommended by clinical guideline.<sup>7</sup> In contrast, increasing evidence demonstrated that optimal medical therapy is the key to treatment of stable coronary artery disease. PCI is an adjunct to selected patients for improving symptoms or prognosis.<sup>7</sup> Although it is currently premature to conclude such a change of CCL practice is entirely beneficial, interventional cardiologists can start to consider what they should be offering to their patients. Further studies are required to investigate whether this may lead to better outcome for coronary artery disease patients overall.

Data showed current pandemic is causing excessive COVID-19 and non-COVID-19 deaths.<sup>8</sup> The authors showed no observed increase in in-hospital mortality of ACS patients and HF incidence in 7 months during the pandemic in Beijing, China. Although 7 months is a relatively short period and the full effect of COVID-19 on ACS may yet to be fully unveiled, the data are reassuring for health administrators. It must be emphasized that such favourable outcome including those reported by Chinese Center for Disease Control and Prevention<sup>9</sup> were achieved by massive collaborative effort of various parties to control the pandemic. The high transmissibility of SARS-CoV-2 can quickly evolve into explosive outbreak which places huge demand on medical resources and precipitates eventual healthcare system collapse. China adopted a strict, swift and decisive 'elimination' strategy to combat COVID-19 which preserves the

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healthcare system for the people and healthcare workers. Hopefully with the advent of vaccines and antivirals, we can finally see the way to end the war against COVID-19.

COVID-19 pandemic is changing the world and healthcare system. ACS admissions reduced but care quality maintained which resulted in similar in-hospital outcome and short term incidence of HF compared with pre-COVID-19 era. This can only be accomplished by a stable healthcare system which requires enormous effort to sustain when confronted by such an infectious disease. Notably, this necessitates concerted effort from everyone and collaboration is the key to success for all.

#### Declaration of interests

Nil

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