

Myocardial Infarction Management and Decreased Utilization of Percutaneous Coronary Intervention During the Era of COVID-19 Pandemic

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To the Editor

We read with great interest the article, 'Reduction in ST-Segment Elevation Cardiac Catheterization Laboratory Activations in the United States during COVID-19 Pandemic' [1]. This study's primary focus was to determine the efficacy of hospital resources' response and capability amid the coronavirus disease (COVID-19) outbreak and suspected consequences for patients with myocardial infarction that are eligible for percutaneous coronary intervention (PCI) [1]. In this study, STEMI activations at a total of 9 high-volume (>100 PPCIs/year) cardiac catheterization laboratories in the United States were analyzed [1]. Data was collected between January 1, 2019, to March 31, 2020; and March 1, 2020, was considered the start of COVID-19 era with categorizing study cohort into pre and post COVID-19 era. As a result, there was decrease in STEMI activations of 38% (95% confidence interval: 26% to 49%; $p < 0.001$) in post COVID-19 [1]. Such results were also noted in Spain [2]. In Spain, there was a 40% decrease in STEMI from the pre-pandemic to the pandemic period [2]. The authors also found a decrease in other cardiovascular procedures like diagnostic procedures (-56%), coronary therapeutic (-48%), structural therapy (-81%) [2]. As a result, the study showed a significant decrease in the number of patients treated with MTs during the COVID pandemic,

with prolonged delays in care [1]. Similarly, a study done at Queens Hospital, a comprehensive stroke center, in Hong Kong, during COVID-19 showed similar results [3]. As noted in the study, the median stroke onset to door time as about 60 minutes longer during COVID-19 compared to pre-COVID-19 (154 versus 95 minutes, $P = 0.12$), and the proportion of individuals with onset-to-door time within 4.5 hours was significantly lower (55% versus 72%, $P = 0.024$). COVID-19 has significantly affected the care and treatment of myocardial infarction, especially STEMI. Several studies have been done during this period which has concluded this phenomenon to other cardiovascular diseases such as ischemic

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stroke [3,4]. After reviewing the study in discussion and several others, the main reasons for treatment delays are mainly patient fear and concerns of COVID-19 contamination risk at hospitals [1,2]. Hospitals are trying to maintain strict adherence to guidelines and protocols surrounding COVID-19 and have altered the selection process. As a healthcare provider, it is even more challenging to treat patients during this time, as they are also at risk of acquiring COVID-19 infection. Our analysis warrants the need for a public education campaign to educate the community about the secondary complications of an untreated myocardial infarct and reduce the burden on an already fragile healthcare system. Implementation of robotic-assisted

catheterization is a possibility as this may help reduce the risk of transmission. In conclusion, further studies and new guidelines are required to address these concerns and better risk stratification of the STEMI patient population during this COVID-19 era.

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