

Outcomes of ST elevation myocardial infarction (STEMI) hospitalizations during corona virus disease 19 (COVID 19) era

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Multiple studies reports a reduction of STEMI hospitalizations rates during COVID 19 pandemic outbreak. Contradictory STEMI complications rates are reported during COVID 19 pandemic regarding case fatalities rates, cardiogenic shock, life threatening arrhythmias and others.

Purpose. To evaluate the impact of the COVID 19 outbreak on STEMI patient outcomes and complication rates in country with low COVID 19 incidence and mortality and without changes in Cardiology hospital services.

Methods. Was conducted a retrograde study collecting data for STEMI hospitalizations, revascularization procedures and case fatalities and other complications from March 9th 2020 (first COVID 19 case in our country) to April 30th (period of total lockdown) compared with the same period of 2019 in our center. Incidence rate ratio (IRR) was used to compare STEMI admissions and revascularization procedures and risk ratio (RR) to compare case fatality rate and other complications rate.

Results: Hospital admissions for STEMI declined during 2020 (COVID 19 period) from a total of 217 patients in 2019 to 155 patients hospitalization in 2020 representing IRR 0.72 ($p = 0.009$). Reduction were observed in the number of primary PCI from 168 procedures in 2019 to 113 in 2020 (IRR 0.67 $p = 0.001$). Symptom onset to our ICU (including regional transportation) was significantly higher in 2020 than in 2019 (939.97 ± 1122 versus 436.15 ± 383 minutes $p < 0.0001$) The STEMI case fatality was importantly increased during pandemic outbreak (13.55%) compared to 2019 (8.3%) (RR= 1.63 $p = 0.001$), but a similar a primary PCI-STEMI case fatality 6.2% versus 5.95%. Also an increase was observed for cardiogenic shock (IRR =1.75 $p = 0.003$).

Results; Hospitalizations and related invazive revascularization procedures for STEMI significantly reduced during COVID 19 pandemic. We identified a substantial increase of STEMI case fatalities and cardiogenic shock during pandemic outbreak. Delayed timely reperfusion by primary PCI has an important impact on infarct related mortality.