The impact of lockdown enforcement during the SARS-CoV-2 pandemic on the timing of presentation and early outcomes of patients with ST-elevation myocardial infarction

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We aimed to explore whether the lockdown enforced during the SARS-CoV-2 pandemic in Israel impacted the characteristics of presentation, reperfusion times, and early outcomes of ST-elevation myocardial infarction (STEMI) patients.

Methods: A multicenter prospective cohort comprising all STEMI patients treated by primary percutaneous coronary intervention admitted to four high-volume cardiac centers in Israel during lockdown (20/3/2020 - 30/4/2020). STEMI patients treated during the same period in 2019 served as controls.

Results: The study comprised 243 patients, 107 during the lockdown period of 2020 and 136 during the same period in 2019, with no difference in demographics and clinical characteristics. Patients admitted in 2020 had higher admission and peak troponin levels, had a 2.4 fold greater likelihood of Door-to-balloon times> 90 min (OR 2.4, 95% CI: 1.2-4.9, p = 0.01) and 3.3 fold greater likelihood of pain-to-balloon times> 12 hours (OR 3.3, 95%CI: 1.3-8.1, p < 0.01). They experienced higher rates hemodynamic instability (25.2% vs 14.7%, p = 0.04), longer hospital stay (median, IQR [4 ,3-6 Vs 5, 4-6 ,p = 0.03]), and fewer early (<72 hours) discharge (12.4% Vs 32.4%, p < 0.001).

Conclusions: The lockdown imposed during the SARS-CoV-2 pandemic was associated with a significant lag in the time to reperfusion of STEMI patients.

| Lockdown period 2020 | OR (95% CI) | P value |
|----------------------|------------|---------|
| D2B > 90 min         | 2.4 (1.2-4.9) | 0.01    |
| P2B > 12 hours       | 3.3 (1.3-8.1) | <0.01   |

D2B: Door-to-Balloon, P2B: Pain-to-BalloonReference group: 2019 admissions; Adjusted to age, gender, ischemic heart disease, hypertension, Smoker, diabetes mellitus, and dyslipidemia. D2B: Door-to-Balloon, P2B: Pain-to-Balloon