

COVID-19 pandemic stresses trigger ST-elevation and non-ST-elevation acute myocardial infarction in Middle Eastern individuals not infected with the virus

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Background. The vicarious stresses associated with the covid-19 pandemic have been reported to cause psychosocial behavioral changes in individuals not infected with the virus. No reports have evaluated the effect of these stresses on triggering acute ST-segment elevation and non-ST-segment elevation myocardial infarction (STEMI and NSTEMI, respectively) in such individuals. Purpose. We sought to study the nature of MI triggers and clinical profiles in non covid-19 individuals during the pandemic. Methods: Patients not infected with the covid-19 virus admitted to 9 hospitals with STEMI and NSTEMI during the pandemic crisis in Jordan from February through December 2020 were evaluated for pre-MI exposure to psychosocial and economic triggers related to the pandemic, lockdown and shutdown. Results: Of 144 patients enrolled, 58 (40.3%) had STEMI and 86 (59.7%) had NSTEMI. Compared with the NSTEMI group, the STEMI group tended to be younger (59.0 + 13.8 vs. 62.3 + 12.7 years, $p = 0.14$), had significantly more men than women (94.9% vs. 75.6%, $p = 0.005$), were more likely to be smokers (75.9% vs. 55.8, $p = 0.02$) and had lower prevalence of prior coronary revascularization (17.2% vs. 45.3%, $p = 0.001$). In-hospital mortality among the 133 patients who were alive upon hospital arrival was 1.5%. All patients reported exposure to at least one psychosocial stressful trigger, including lockdown and loneliness stress (65.3%), fear of contacting covid-19 infection or of uncertainty (26.4%), anger (18.8%), and death of a significant person during the pandemic (4.2%) Financial hardship and volatile income were reported by 42.4% of patients. STEMI and NSTEMI patients did not have significant differences in the frequency of psychosocial (100% vs. 99.9%, respectively, $p = \text{NS}$) or economic triggers (34.5% vs. 47.7%, respectively, $p = \text{NS}$). Conclusions. Exposure to psychosocial and financial stresses related to the covid-19 pandemic and its related lockdown can trigger acute MI. An increase in the number of these events may become a potentially serious health issue with longer duration of the unremitting pandemic.