

## EDITORIAL

# Management of ACS patients in COVID 19 Pandemic is another Challenge

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Corona virus disease 2019 (COVID-19) has created a new challenge for the healthcare communities. It has placed an enormous strain on the health care systems. Cardiac injury is a common co-morbidity in COVID 19 patients. Acute myocardial infarctions, myocarditis simulating a STEMI presentation, stress and other nonischemic cardiomyopathy, coronary spasm and arrhythmias are the examples of myocardial injury.

Here we will discuss about a systematic approach for the care of patients with acute coronary syndrome (ACS) during the COVID-19 pandemic.

In COVID 19 patients with STEMI, the complex activity of cytokine storm, microthrombi, hypoxic injury, rupture of plaque and direct vascular injury, all of which will through a challenge to cardiologists to identify true STEMI patients who could benefit from an invasive treatment. STEMI mimickers are type II MI, Takotsubo cardiomyopathy, myocarditis. But time is crucial to choose the standard care of reperfusion modality in ACS patient. Time requires ascertaining the COVID status. While dealing with COVID-19 and ACS patients, the balance of cath lab staff exposure and patient benefit will need to be weighed carefully.

The joint statement from the American College of Cardiology (ACC) Interventional Council and the Society for Cardiovascular Angiography and Interventions (SCAI) discussed about the issues facing the catheterization laboratory personnel during this pandemic. They suggested deferring procedures for percutaneous coronary intervention for stable ischemic heart disease.

According to ESC, if primary PCI can be performed in 120 minutes from symptom onset, it is the first-line therapy for STEMI. Up to 60 minutes extra time delay can be considered due to COVID pandemic. When the delay is longer than that fibrinolysis is the choice.

Fibrinolysis can be considered for a relatively stable patient of STEMI with known COVID-19. Even in non PCI capable hospital, it is the only option. Other anti-ischemic drugs like antiplatelet, statin, ACEI, beta blocker etc. should be given in tolerant dose. Standard COVID treatment can be started with anti-ischemic therapy.

During primary PCI, in patients with active or suspected COVID-19, all staffs in cath lab should wear appropriate personal protective equipment (PPE). Which includes gown, cover all, gloves, goggles, N95/FFP2/FFP3 mask, face shield and shoe covers.

It is reasonable to use powered air-purifying respirator systems, especially for patients who may need suction, cardiopulmonary resuscitation (CPR) and/or intubation. In this way one can avoid aerosol dispersion.

There should be a dedicated cath lab for suspected and confirmed COVID-19 patients. In our country, the catheterization laboratories are not designed for infection isolation. They have either normal or positive ventilation systems. Therefore, catheterization laboratories will require a terminal clean following the procedure.

Approximately 5-25% of hospitalized COVID-19 cases show elevations in cardiac Troponin and mortality rate is higher in these patients.

Mild elevations (<2-3 times the upper limit of normal [ULN]) in cardiac troponin T/I may occur in an older patient with pre-existing cardiac disease. We can assure that it is not the type 1 myocardial infarction (MI), unless strongly suggestive of angina and/or (ECG) changes.

We should keep in mind that marked elevations (>5 times the ULN) of cardiac troponin T/I concentrations may present in severe respiratory failure, systemic hypoxemia, shock, myocarditis, Takotsubo syndrome or type 1 MI triggered by COVID-19. If symptoms or ECG changes do not relate to type 1 MI, echocardiography should be considered to confirm the diagnosis.

Treatment algorithm of very high-risk NSTEMI and STEMI are similar. But high-risk NSTEMI should be tested before coronary angiography. If possible intermediate-risk NSTEMI can be tested with coronary computed tomography angiography (CCTA). During thorax CT scan in COVID patients, we can consider adding CCTA in intermediate-risk NSTEMI.

Rapid discharge of patients with primary PCI or any other revascularization is important to maximize bed availability and reduce patient exposure within the hospital. Follow-up through telemedicine could be satisfactory in most cases.

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