A brief guidance for Cardiology patient care for Acute Coronary Syndromes in the times of the COVID-19 pandemic

Background

- COVID symptoms can often overlap with cardiac symptoms, especially in cases with acute coronary syndrome (ACS) so extreme precautions to be taken while approaching these cases

- It is important to rapidly identify and triage patients who have suspected COVID-19 infection and underlying cardiovascular disease

- All such cardiac patients coming to emergency need screening for COVID-19 risk

What should be the screening strategy in the triage area

- **Based on History**
  - Symptoms of breathlessness, cough, fever, contact, travel

- Based on above, the exposure risk can be categorized according to the following:
  - Low risk: No Sx of breathlessness, cough, fever, contact,travel
  - High risk: Above symptoms ++, pt on O2, or abnormal X ray, if available

- However cardiac and COVID-19 patients can often have an overlap of such symptoms esp breathlessness/cough and in times of possible community spread h/o contact and travel may not be very discerning in this regard

So what is the best screening strategy

- Ideally, ALL patients with acute coronary syndromes being considered for admission need to be lab tested for COVID BEFORE proceeding for admission

- The advantage of such an approach will be to avoid a RERTOSPECTIVE diagnosis of a positive COVID-19 case after admission, which, if happens, means inadvertent exposure to a large number of health care workers as well as other patients

- Logistics often preclude rapid discrimination of negative or positive status, as results are currently available only after 12-24 hours

- Hence an isolation ward/facility needs to be available where such patients can wait while their test report is pending

When to intervene in a case of ACS

- The decision to intervene from a cardiac point is individualized and needs to be balanced between
  - Risks of exposure to staff and inappropriate utilization of PPE
  - Perceived urgency of the procedure: This is best a joint decision between the cardiologists/other clinicians as needed/and of course the patient

ST elevation MI

- In stable patients with STEMI (within 12 hours), send the COVID-19 test, perform thrombolysis (in isolation area) using all necessary precautions to avoid exposure to healthcare workers.
  - Transfer to Cardiology Ward for further management if COVID test –ve
  - Transfer to dedicated COVID facility if test is +

- In stable patients with STEMI (> 12 hours), where benefits of a delayed thrombolysis may be debatable, it is always prudent to await the result of the COVID test before considering PCI

- In any unstable patients with STEMI and ongoing ischemia, send the COVID-19 test first, and if proceeding to cath lab is considered very urgent and life-saving pending test report, perform procedure under full PPE cover

Non ST elevation MI

- Remember troponin leaks reflecting Type II myocardial injury may be seen in ~ 5-10%

- Hence don't over-rely on troponins

- In stable, NSTEMI patients, conservative treatment is preferred until a COVID-19 negative test has been obtained, and further decisions can then be made
  - Transfer to Cardiology Ward for further management if COVID test –ve
  - Transfer to dedicated COVID facility if test is +

- In unstable NSTEMI patients, where instability is perceived to be due to ACS, if proceeding to cath lab is urgent, send the test, and perform procedure under full PPE cover

Catheterization lab rules

- Although to be avoided, if a patient undergoes an urgent cardiac catheterization, and COVID-19 test report is still awaited, the case be done with full precautions and PPE cover. Also for all such cases, interventions should have concurrence of team faculty members since each procedure puts all staff involved at considerable risk

- Patients with severe ARDS like picture should not be brought to the catheterization laboratory, patients with COVID-19 or suspected COVID-19 requiring intubation should be intubated prior to arrival in the lab

- Make efforts to avoid emergent intubation in the catheterization laboratory as this is an aerosol generating procedure with increased exposure risk to the lab personnel

- Deferment of all non-urgent procedures to reduce demand on beds, use of PPE, staff and other resources

Catheterization lab rules

- All cardiology team members should be familiarized with correct protocols of donning and doffing of PPE.
- Fragmentation of staff into teams is desirable and can reduce risk of exposure
- All efforts should be made to minimize the number of scrubbed operators to decrease the risk of exposure and over-utilization of PPE kits
- Specific institutional protocols for vigorous terminal clean following the procedure. (Remember that most catheterization labs do not have –ve pressure ventilation). If possible restriction of cases to a dedicated laboratory may be considered

Disinfecting the cardiac catheterization lab

- UV light exposure to 56°C for 30 min, Lipid solvents (Diethyl ether, 75% ethanol, Chlorine containing disinfectants, Per acetic acid &Chloroform) effectively inactivate COVID-19 organism while Chlorhexidine is considered ineffective *
- Hydrogen peroxide (3%) spray * (mist/fogging)can be used for air disinfection
- Instruments should be cleaned with 2000 mg/L chlorine-containing disinfecting solution * or 1% hypochlorite and wiped with water after 30 minutes
- The floor and wall (1.5 m from the floor and below) should be wiped with 2000 mg/L Chlorinated disinfectant solution, and sprayed with 3% hydrogen peroxide again if necessary *

- After disinfection, the Hospital infection control committee/Microbiology should be consulted prior to using the lab again

* Ref: Tamil Nadu Government Heart Attack Management Program Tamil Nadu Accident and Emergency Initiative - National Health Mission-Tamil Nadu COVID-19 outbreak -Focused recommendations for cardiac management Dated 3rd April 2020 and Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum