

ASSOCIATION OF BLACK CARDIOLOGISTS COVID-19 FAQ WATCH

*Editors: Kevin M. Alexander, MD (Chair), Michelle A. Albert, MD MPH,
Peter Chin-Hong, MD MPH, Norrisa Haynes, MD MPH*

We know there are a lot of questions about COVID-19, and the impact is evolving every day. These frequently asked questions are for the health care provider audience. Please check www.abccardio.org for regular updates. You can also watch the [**ABC Webinar, At The Heart of The Matter: Unmasking the Invisibility of COVID-19 in Diverse Populations**](#), to learn more about the virus.

What are the clinical stages of COVID-19?

In the early stage of infection (day 1 – 7), the pathogenesis of the disease is driven by viral entry and replication. Common symptoms are fever, dry cough, body aches, headache, and fatigue; however, many persons may be asymptomatic. Viral load is highest in the early stage of infection when many individuals are asymptomatic. Hence, asymptomatic persons may be a source of spread. Additionally, some infected persons may have gastrointestinal symptoms, such as nausea and diarrhea. There are also increasing reports that some people may experience unusual symptoms, such as loss of smell (anosmia) or eye pain. Blood tests may reveal a low lymphocyte count (lymphopenia) and elevated markers or inflammation (e.g., C-reactive protein).

Some individuals may develop more severe lower respiratory tract infection. Signs and symptoms include shortness of breath, hypoxia, and lung abnormalities on chest X-ray or CT. Patients with respiratory symptoms may need to be evaluated in the emergency room and hospitalized for oxygen supplementation and supportive care.

A small subset of patients will further progress to advanced disease. While the progression to advanced disease can occur at any time, this tends to occur day 10 – 14. This late stage of COVID-19 is caused by a hyper-inflammatory response of the host against the virus. Patients can have acute respiratory distress syndrome, shock, and thrombosis. These patients require management in an intensive care unit (ICU).

Overall, approximately 80% of patients do not need hospitalization. However, patients who need ICU care with associated intubation have done poorly with death rates in excess of 60-80%.

| What are the cardiovascular complications associated with COVID-19?

Based on case reports, the most commonly described cardiovascular complications include acute cardiac injury (defined as troponin I elevation > 99th percentile of the upper reference limit which has been found to be a predictor of mortality based on **cohort studies from China**), myocarditis, myopericarditis, cardiogenic shock, and life-threatening arrhythmias, including ventricular tachycardia and heart block. Heart failure without cardiogenic shock may also occur. The etiology of heart failure is unclear but might include viral infection, cytokine effects, and stress-induced cardiomyopathy.

| What medical treatments are currently recommended for management of COVID-19?

There are currently no therapies specifically approved for COVID-19 infection prevention or treatment. There is no vaccine yet available for COVID-19, and one is not expected for at least 12 months. Most persons will recover with medications, such as acetaminophen (Tylenol) for fever. Data about treatment with hydroxychloroquine with or without azithromycin remains equivocal; thus, these medications are not recommended. Moreover, both drugs can potentially result in cardiac arrhythmias due to QT interval prolongation. Remdesivir, inhibits viral replication, is under evaluation for use in hospitalized patients. Convalescent COVID-19 plasma from recovered persons with COVID-19 is also being evaluated as a mode of treatment.

| How should interventional cardiologists and catheterization laboratories change their practice in the midst of the COVID-19 pandemic?

- ▶ The centers of Medicare and Medicaid services recommend that all elective procedures be delayed during the pandemic.
- ▶ According to the Society for Cardiovascular Angiography and Interventions (SCAI) <https://doi.org/10.1002/ccd.28887>, intubation in the catheterization lab should be avoided. If indicated, early intubation should be performed prior to presentation to the catheterization lab. Additionally, patients presenting with a myocardial infarction should be screened for COVID-19, and all patients should wear masks. Catheterization lab staff should all wear personal protective equipment.
- ▶ According to the SCAI guidelines, all patients should be screened for COVID-19. If negative, then proceed with standard of care. If the patient, however, is COVID-19 positive (or suspected of having COVID-19 if testing is not available), they should be risk stratified into high risk vs. low risk STEMI. For high risk STEMI in COVID-19+ patients, primary PCI should be performed (high risk is defined as an anterior STEMI,

hypotension, elevated Killip class, cardiogenic shock or a life-threatening presentation >12 hours). For low-risk STEMI presentations, fibrinolysis should be considered in those without contraindications (intracranial hemorrhage, prior stroke, recent trauma/surgery, intracranial malignancy/AVMs/aneurysm, active bleeding or uncontrolled hypertension), otherwise consider primary PCI or medical management.

- ▶ For NSTEMI in COVID-19+ patients, the recommendation is early angiography (<2 hours) for very high-risk patients (refractory chest pain, heart failure, cardiogenic shock, life-threatening arrhythmias), and conservative management for low- or moderate-risk patients.

In the setting of the COVID-19 pandemic, what are the new recommendations for transthoracic echo (TTE) and transesophageal echo (TEE) procedures?

According to the American Society of Echocardiography (ASE) https://www.asecho.org/wp-content/uploads/2020/03/COVIDStatementFINAL4-1-2020_v2_website.pdf, elective TTEs and TEEs should be deferred. At this time, TTEs and TEEs should only be performed if they will directly impact the management of patients. If the TTE/TEE is indicated and the patient is known to have COVID-19 or is suspected to have COVID-19, the following precautions should be taken:

- ▶ According to the ASE, for TTEs or stress tests performed in the echo lab, ward, EP or cath lab, or the ED, droplet precautions should be taken (surgical mask, gown and gloves)
- ▶ According to the ASE, for TTEs performed in the OR, ICU, or on an intubated patient or a patient on NIPPV, airborne precautions should be taken (N-95 mask, gown, gloves and face shield)
- ▶ According to ASE, TEEs are high risk procedures and should be deferred whenever possible. If a TEE is absolutely necessary, then airborne precautions should be used
- ▶ Alcohol based solutions are typically adequate for disinfecting machine surfaces, however, ASE has links to each manufacturer's official cleaning recommendations <https://www.asecho.org/covid-19-resources/>.

Is it safe to continue taking angiotensin converting enzyme inhibitors or angiotensin receptor blockers?

SARS-CoV-2, the virus that causes COVID-19, enters host cells via an interaction with cells' angiotensin converting enzyme 2 (ACE2). Preclinical studies suggest that ACE inhibitors and ARBs may increase the expression of ACE2, and thus in theory, increase the pathogenicity of SARS-CoV-2. To date, there are no clinical data demonstrating an increased risk of adverse outcomes in COVID-19 patients taking an ACE inhibitor or ARB. Furthermore, abrupt discontinuation of these drugs, in the certain populations, such as heart failure patients, has been associated with adverse outcomes. Therefore, the Heart Failure Society of America, American College of Cardiology, and American Heart Association recommend that patients currently on ACE inhibitors or ARBs continue to take these medications.

Are African Americans at increased risk of contracting SARS-CoV-2 and are they at increased risk of more severe disease from COVID-19?

African Americans are not at increased risk of contracting COVID-19 due to any genetic predisposition that we are currently aware of, however, many people of color live in metropolitan, densely populated areas, often in multi-generational households and rely on public transportation, all of which can increase the rate of transmission and risk of contracting COVID-19. In regard to the risk of severe disease, the African American community on an epidemiological level is at an increased risk of severe disease due to a higher prevalence of risk factors such as hypertension, diabetes, cardiovascular disease, asthma, and obesity.

How can communities of color mitigate the spread of COVID-19 and decrease their risk of infection?

To decrease the rate of transmission, it is important to stay home if feeling unwell to avoid potentially spreading COVID-19 to others. Additionally, if unwell, it is also important to contact a health care provider to help determine next steps. Symptoms of shortness of breath should result in urgent seeking of medical care. It is also important to wash your hands with soap and water frequently. Hand washing should be with soap and water for at least 20 seconds or use of a hand-sanitizer with > 70% alcohol content if soap is unavailable.

The CDC also recommends practicing social distancing (at least 6 feet apart) and wearing a mask in public settings. In circumstances where a mask is unavailable, use of a homemade mask or bandanna although not optimal is okay. If possible, it is advisable to walk to work or to grocery stores to avoid public transportation. It is also important to be physically and mentally healthy during these challenging times. Try to eat a diet rich in fruits and vegetables as much as possible especially because there is some evidence that vitamins, such as vitamin C, may be beneficial. Also, stay in frequent communication with friends and family via telephone or video chat to combat feelings of isolation. It is essential to continue all medications provided by a health care provider as conditions, such as heart attack and stroke, remain significant causes of disability and death in all at-risk persons, especially in communities of color.