COVID-19: Troponin, Abx, Chloroquine, X-rays, Rationing Tests, Public Health Responsibilities

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In this episode I speak with Dr. Rick Pescatore, Chief Physician for Preparedness for the state of Delaware and a front-line emergency physician. While the general topic is the COVID-19 pandemic, specific issues discussed include: triage decisions, X-rays, troponin, what to do when there's limited testing ability, antibiotics, chloroquine, viable strategies for managing homeless populations, and more. Let's go.

Pearls

- **We're in this strange time of limited testing capacity (due to insufficient swabs, testing kits, universal transport media, lab equipment, etc.) with an exploding infection. If you are working in an area where COVID is rampant and you can only test a select population, what is the highest yield?**
- When you have a dearth of tests, they need to be rationed. Patients who come in in respiratory distress and with obvious upper and lower respiratory illness need to be assumed to have COVID until proven otherwise.The decision has to move away from identifying who is at risk for deterioration or for having the disease and needs to move toward identifying who is at risk for infecting others.This is a constantly evolving process and recommendations will change. But FOR NOW, when tests are limited, Rick recommends we use those tests to mitigate disease spread. DO NOT TEST: the asymptomatic or the mildly symptomatic.DO TEST: hospitalized patients with respiratory illness, symptomatic people who are likely to put others at risk (health care workers, mass transit drivers, law enforcement officers, firefighters, EMS providers.
- **As emergency physicians, it's incumbent upon us to not forget about our differential diagnosis.**
- We don't want to focus so much on COVID that we miss pulmonary emboli and other life-threatening causes of respiratory distress.

- **Are there specific symptoms that can identify who is more likely to deteriorate?**
- The only sign or symptom that seems to have any discriminatory capability for severe disease is a patient complaint of shortness of breath.

    - Other risk possible factors: males, elderly, diabetics.
- **Tent management**
- Who should get a chest x-ray?
    - Have a low threshold for CXR in those with chest pain, SOB, severe cough, rhonchi, and/or rales.
    - We must remember, however, that the Chinese data showed that the overwhelming majority of patients had radiographic findings whether or not they had severe disease.
- **When should we send patients to the ED for further testing (CBC, ECG, troponin, other labs) and advanced treatment?**
    - Lacking evidence to guide us, we rely on our gestalt to separate the sick from the not sick.
    - If there's any concern about myocarditis, ED evaluation is mandatory.
    - Pneumonia severity scoring tools can be helpful to guide disposition.
- **Should we give antibiotics to the "not so sick" patient with infiltrate(s) on x-ray?**
    - Yes.
    - Azithromycin is the antibiotic of choice due to its antibacterial and immunomodulatory properties.
- **What about hydroxychloroquine or chloroquine?**
    - There is limited but justifiable data showing that implementation of one of these agents may be effective at stopping viral replication.
    - Dosing recommendations are all over the map, but many suggest a 400 mg loading dose followed by 2oo mg bid for the duration of the illness.
    - Studies in California are looking at hydroxychloroquine for prophylaxis for providers.
    - These drugs have few side effects and are not at this time a limited resource.
    - Both azithro and chloroquine are QTc prolonging
- **Once a patient is triaged from the tent to the ED, what is the inflection point for admission to the hospital and what work-up should be initiated?**
    - Many who are identified to be sick enough to come into the ED are going to require hospitalization.

        - Labs should include: CBC, BMP, troponin, CRP, and procalcitonin.
        - Troponin elevation has been found more common in non-survivors and those with critical illnessCRP is one of several inflammatory markers that, when elevated, can indicate cytokine storm. This subset of patients has a prognosis of severe disease with different avenues of treatment.Procalcitonin has been used in China to help determine when antibiotics can be stopped.
- **What should be the disposition for homeless patients with suspected COVID who do not meet admission criteria based on their clinical severity?**
    - These patients are going to need assistance from the public health infrastructure of the state or region. There will need to be structures (tents, buildings, etc.) dedicated to house these patients.
    - The general public will soon recognize what we have known for ages: the social safety net of the ED and of the hospital cannot continue to weather the strain of the social service failures that are prevalent throughout the nation.

Reference:

Troponin in COVID

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