



MONTGOMERY COUNTY FIRE AND RESCUE SERVICE

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TO: All Credentialed MCFRS ALS Clinicians
FROM: Roger M. Stone MD, MS
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SUBJECT: Some reasons why COVID-19 is not just bad flu: Don't forget the basics

In my last advisory about ALS assessment, I mentioned that COVID-19 is tricky and capable of hiding, mimicking or exacerbating disease processes.

- There is growing evidence that COVID-19 is at least partially a vascular and thrombotic disease; this evidence is being validated by both clinical care and autopsy.
- SARS-CoV2 can cause inflammation around cells leading to multi-system failure and can disrupt the lining of blood vessels anywhere in the body. This is a trigger for clotting.
- While COVID-19 can exist with good lung compliance, decreased flow through capillary veins in the alveoli can occur due to damage in endothelial cells which causes clots. Thus, "happy hypoxic" patients are still at simultaneous risk for other diagnoses we clinicians are usually in tune with that are also caused by clots:
 - ACS or STEMI
 - Increased clotting over top of plaques can cause coronary obstruction
 - Dysrhythmias in inferior ischemia
 - Strokes
 - Pulmonary embolism and DVT
- The virus can directly infect cardiac cells (myocarditis, pericarditis causing heart failure).
- While many of our respiratory patients might seem like COVID pneumonia, the complaints may harbor the very same high-risk conditions that we try not to miss.

Bottom line – do not forget assessments, ECGs, aspirin, stroke scales, pulses, and cardiac monitoring that we would USUALLY consider for any patient with the same symptoms.

For more clinical information about the micro-angiopathic (blood vessel) effects of COVID-19 patients, please refer to the following recent references:

<https://www.nejm.org/doi/full/10.1056/NEJMoa2015432>

<https://www.youtube.com/watch?v=PIUFibXtDxQ> (MedCram 5-15 min mark)

[https://www.thelancet.com/journals/lanhae/article/PIIS2352-3026\(20\)30145-9/fulltext](https://www.thelancet.com/journals/lanhae/article/PIIS2352-3026(20)30145-9/fulltext)

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