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Commentary

On the Frontline of the Battle against the 2019 Novel Coronavirus (2019-nCoV) and COVID-19 (A Compelling Communique from an Anonymous Emergency Medicine Physician)

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Introduction

Recently, I received a forwarded email from a friend that contained the following memorandum from an anonymous emergency medicine physician at an undisclosed hospital in New Orleans, Louisiana, USA. For nearly a day, I pondered what I should do with this urgent report. It pursued me as a demon in my dreams; sleep was unsteady. The content contained in the e-mail seemed too critical and consequential to wallow in my inbox. This dramatic story had to be shared beyond our group of friends and colleagues.

All of us around the world—whether healthcare providers, public health or government officials, or the general public—have been besieged by data and anecdotal evidence regarding the 2019 novel coronavirus (2019-nCoV) and coronavirus disease 2019 (COVID-19); 2019-nCoV to COVID-19 is herein likened to HIV to AIDS—the former being the causative agent, the latter the resultant disease or syndrome. In the panic of stocking food and supplies, in the isolation of being physically restricted and locked down, it has been trying to impossible to make sense of this pernicious virus and global pandemic.

As I read the memorandum, I was affected by its straightforwardness and succinctness—reading like real-life, real-experience bullet points from a soldier on the frontline of the battle against 2019-nCov and COVID-19.

By way of full disclosure and admission, whether the observations our benefactor has offered are accurate, I do not know, nor, as an evidenced-based medical doctor and Ph.D. and MPH degree-holding researcher, can I confirm. However, I felt compelled to share this anonymous physician's observations and insights—for, through the clamor, the comments rang clear.

Discussion

The anonymously-authored memorandum regarding 2019-nCoV and COVID-19 follows, verbatim:

I am an ER MD in New Orleans. Every one of my colleagues have now seen several hundred Covid 19 patients and this is what I think I know.

Clinical course is predictable.

2-11 days after exposure (day 5 on average) flu like symptoms start. Common are fever, headache, dry cough, myalgias (back pain), nausea without vomiting, abdominal discomfort with some diarrhea, loss of smell, anorexia, fatigue.

Day 5 of symptoms- increased SOB, and bilateral viral pneumonia from direct viral damage to lung parenchyma.

Day 10- Cytokine storm leading to acute ARDS and multiorgan failure. You can literally watch it happen in a matter of hours.

81% mild symptoms, 14% severe symptoms requiring hospitalization, 5% critical.

Patient presentation is varied. Patients are coming in hypoxic (even 75%) without dyspnea. I have seen Covid patients present with encephalopathy, renal failure from dehydration, DKA. I have seen the bilateral interstitial pneumonia on the x-ray of the asymptomatic shoulder dislocation or on the CT's of the (respiratory) asymptomatic polytrauma patient. Essentially if they are in my ER, they have it. Seen three positive flu swabs in 2 weeks and all three had Covid 19 as well. Somehow this ***** has told all other disease processes to get out of town.

China reported 15% cardiac involvement. I have seen covid 19 patients present with myocarditis, pericarditis, new onset CHF and new onset atrial fibrillation. I still order a troponin, but no cardiologist will treat no matter what the number in a suspected Covid 19 patient. Even our non covid 19 STEMIs at all of our facilities are getting TPA in the ED and rescue PCI at 60 minutes only if TPA fails.

Diagnostic

CXR- bilateral interstitial pneumonia (anecdotally starts most often in the RLL so bilateral on CXR is not required). The hypoxia does not correlate with the CXR findings. Their lungs do not sound bad. Keep your stethoscope in your pocket and evaluate with your eyes and pulse ox.

Labs- WBC low, Lymphocytes low, platelets lower then their normal, Procalcitonin normal in 95%.

CRP and Ferritin elevated most often. CPK, D-Dimer, LDH, Alk Phos/AST/ALT commonly elevated.

Notice D-Dimer- I would be very careful about CT PE these patients for their hypoxia. The patients receiving IV contrast are going into renal failure and on the vent sooner.

Basically, if you have a bilateral pneumonia with normal to low WBC, lymphopenia, normal procalcitonin, elevated CRP and ferritin- you have covid-19 and do not need a nasal swab to tell you that.

A ratio of absolute neutrophil count to absolute lymphocyte count greater than 3.5 may be the highest predictor of poor outcome. the UK is automatically intubating these patients for expected outcomes regardless of their clinical presentation.

An elevated Interleukin-6 (IL6) is an indicator of their cytokine storm. If this is elevated watch these patients closely with both eyes.

Other factors that appear to be predictive of poor outcomes are thrombocytopenia and LFTs 5x upper limit of normal.

Disposition

I had never discharged multifocal pneumonia before. Now I personally do it 12 - 15 times a shift. 2 weeks ago we were admitting anyone who needed supplemental oxygen. Now we are discharging with oxygen if the patient is comfortable and oxygenating above 92% on nasal cannula. We have contracted with a company that sends a paramedic to their home twice daily to check on them and record a pulse ox. We know many of these patients will bounce back but if it saves a bed for a day we have accomplished something. Obviously, we are fearful some won't make it back.

We are a small community hospital. Our 22 bed ICU and now a 4 bed Endoscopy suite are all Covid 19. All of these patients are intubated except one. 75% of our floor beds have been cohorted into covid 19 wards and are full. We are averaging 4 rescue intubations a day on the floor. We now have 9 vented patients in our ER transferred down from the floor after intubation.

Luckily we are part of a larger hospital group. Our main teaching hospital repurposed space to open 50 new Covid 19 ICU beds this past Sunday so these numbers are with significant decompression. Today those 50 beds are full. They are opening 30 more by Friday. But even with the "lockdown", our AI models are expecting a 200-400% increase in covid 19 patients by 4/4/2020.

Treatment

Supportive

Worldwide 86% of covid 19 patients that go on a vent die. Seattle reporting 70%. Our hospital has had 5 deaths and one patient who was extubated. Extubation happens on day 10 per the Chinese and day 11 per Seattle.

Plaquenil which has weak ACE2 blockade doesn't appear to be a savior of any kind in our patient population. Theoretically, it may have some prophylactic properties but so far it is difficult to see the benefit to our hospitalized patients, but we are using it and the studies will tell. With Plaquenil's potential QT prolongation and liver toxic effects (both particularly problematic in covid 19 patients), I am not longer selectively prescribing this medication.

We are also using Azithromycin, but are intermittently running out of IV.

Do not give these patient's standard sepsis fluid resuscitation. Be very judicious with the fluids as it hastens their respiratory decompensation. Outside the DKA and renal failure dehydration, leave them dry.

Proning vented patients significantly helps oxygenation. Even self proning the ones on nasal cannula helps.

Vent settings- Usual ARDS stuff, low volume, permissive hypercapnia, etc. Except for Peep of 5 will not do. Start at 14 and you may go up to 25 if needed.

Do not use Bipap- it does not work well and is a significant exposure risk with high levels of aerosolized virus to you and your staff. Even after a cough or sneeze this virus can aerosolize up to 3 hours.

The same goes for nebulizer treatments. Use MDI. you can give 8 - 10 puffs at one time of an albuterol MDI. Use only if wheezing which isn't often with covid 19. If you have to give a nebulizer must be in a negative pressure room; and if you can, instruct the patient on how to start it after you leave the room.

Do not use steroids, it makes this worse. Push out to your urgent cares to stop their usual practice of steroid shots for their URI/ bronchitis.

We are currently out of Versed, Fentanyl, and intermittently Propofol. Get the dosing of Precedex and Nimbex back in your heads.

One of my colleagues who is a 31 yo old female who graduated residency last may with no health problems and normal BMI is out with the symptoms and an SaO_2 of 92%. She will be the first of many.

I PPE best I have. I do wear a MaxAir PAPR the entire shift. I do not take it off to eat or drink during the shift. I undress in the garage and go straight to the shower. My wife and kids fled to her parents. The stress and exposure at work coupled with the isolation at home is trying. But everyone is going through something right now. Everyone is scared; patients and employees. But we are the leaders of that emergency room. Be nice to your nurses and staff. Show by example how to tackle this crisis head on. Good luck to us all! [1,2].

End of Communique

Conclusion

COVID-19 is a frightening and formidable prospect. Its abrupt arrival into our collective lives presents a threat that most of us, especially the younger generation, have never known. COVID-19 is the spectre of our worst imaginings.

If not already on notice, after reading this e-mail, we surely will be. Take care of yourself, take care of your family, and take care of the family of humankind. Moreover, as we confront the fallout, challenges, and stresses imposed on us by this seeming relentless virus, let us maintain our humanity, compassion, and dignity. For now, these distinct human attributes are our only safe harbor in this COVID-19 storm.

From me, and many now better-informed readers, goes a heartful "thank you" to this selfless and dedicated emergency care physician as well as all emergency care personnel worldwide. Stay well. You are today's heroes.

Conflict of Interest Statement

The author declares that this paper was written in the absence of any commercial or financial relationship that could be construed as a potential conflict of interest.

Supplementary Note

After thoughtfully composing and formatting this manuscript, I discovered that the email I received was likely sourced from one of two blogs (see "References" section). Nonetheless, in each blog was an appeal to "share this information", which herein I have complied. My intent was not to appropriate the information but share it as the original author and subsequent bloggers implored.

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