A Novel Plan to Deal with SARS-CoV-2 and COVID-19 Disease.

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As we write this report in April 2020, more than two million people worldwide have been infected with the SARS-CoV-2 coronavirus and more than 150,000 have died of COVID-19 disease. International economies have been brought to a standstill, and social isolation based on palpable fear of death remains the order of the day. Appropriately or not, the United States government is talking about resuming work activities and social interaction to boost economic recovery. While this makes financial sense, from a medical perspective our population will be left defenseless in the absence of a viable treatment strategy for SARS-CoV-2. Herein we present a plan to deal with this looming threat.

We run a medical practice that specializes in treating patients with Lyme and associated tick-borne diseases. Our practice has treated more than 5,000 patients over the years from all over the world, and we currently have about 700 active patients with Lyme disease, relapsing fever *Borrelia*, *Babesia*, *Anaplasma*, *Ehrlichia*, *Bartonella*, *Rickettsia* and/or *Tularemia* infection in our practice. Most of our patients are taking prolonged combination antibiotic therapy for their tick-borne infections. A recurring theme is that the earlier one can treat the tick-borne diseases, the better the outcome for patients. Conversely, many of our patients require prolonged antibiotic therapy because they were not diagnosed and treated promptly due to insensitive tick-borne disease testing [1,2]. Although prolonged combination antibiotic therapy modeled on treatment for HIV/AIDS, hepatitis C virus and tuberculosis is controversial when it comes to tick-borne diseases, we and others have published our positive results and we continue to see benefit for our patients.[1,2]

One unexpected benefit is that none of our active patients on antibacterial treatments have come down with severe COVID-19 disease. None. The closest we have seen is a patient with severe asthma on steroid treatment who was hospitalized with cough and respiratory distress. Her SARS-CoV-2 test was negative, and she turned out to be infected with human metapneumovirus. Her steroid dose was reduced, and she improved while continuing her antibacterial regimen. Other patients who had Herxheimer reactions (treatment-induced “die-off” of bacteria) or side effects from their medications all tested negative for SARS-CoV-2.

What does this tell us? A strong possibility is that being on antibacterial treatment somehow protects against SARS-CoV-2 and severe COVID-19 disease. This rather heretical concept flies in the face of medical dogma: you cannot use antibacterial medications to treat a viral infection. There is good reason to adhere to this dogma during normal times to avoid overuse of antibiotics, but these are not normal times. In fact, the arrival of SARS-CoV-2 has forced us to review the extensive medical literature that demonstrates antiviral effects of numerous antibacterial agents.[3-9] While this literature has been suppressed and ignored until now, we can no longer afford to do so. We must act now.

So we present this proposal based on our experience with early treatment of tick-borne diseases. If a person goes back to work, he or she must have a finger pulse oximeter to measure PO_2 . If the person develops respiratory symptoms or other symptoms associated with SARS-CoV-2 (fever, dyspnea, chest pain, severe headache, diarrhea, nausea,

anosmia, ageusia, conjunctivitis, “chilblains”-type rash or other flu-like symptoms) and/or the PO₂ drops below 92mmHg (normal, >95mmHg), he or she will immediately start treatment with doxycycline or minocycline at 100mg twice daily and continue for one week with monitoring of PO₂. The keyword here is “immediately.” If the individual delays treatment, he or she may succumb to COVID-19 disease. For patients who cannot tolerate the tetracycline derivatives, a generic macrolide (clarithromycin or azithromycin) can be substituted. If symptoms worsen and the PO₂ drops despite early treatment, the individual should seek further medical care.

We do not see this as a “cure” for SARS-CoV-2. We are simply trying to avoid serious complications from viral infection in people who will undoubtedly be exposed when social interaction resumes. There are certainly other treatments that may be feasible, but the tetracycline derivatives are cheap, have a proven track record especially for short-term use, and are known to have antiviral properties.[10-14] So while we are waiting for the randomized controlled trials of new intravenous “wonder drugs” and the theoretical coronavirus vaccine that will save us all, let’s do something simple when social isolation is lifted and get everyone back to work with a treatment plan. The time to alleviate fear of death and institute this policy is now.

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