COVID-19 Part IV

Questions and Controversies

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I am trying to keep everyone up-to-date on the latest thoughts regarding control, prevention, and treatment past the onslaught of information/misinformation probably overwhelming you. As most of you know, my varied training gives me an ability to synthesize data in a way that should keep us ahead of the curve. Which is why sometimes my recommendations differ from other supposed "authorities" who often are attached to one way of thinking. Furthermore, my thoughts on the best approaches must evolve with the growing pandemic.

Name/Origin of this Virus: I am sticking with the "older" name of *COVID-19* for this novel coronavirus. Most medical journals have switched to *SARS-CoV-2* as this is the second novel coronavirus to induce Severe Acute Respiratory Syndrome. SARS-CoV-1 also originated in China, utilizes the same receptor site as the current virus (see below), and has a known transmission pattern from bats to civet cats to humans. The MERS-CoV utilizes a different receptor site, dipeptidyl peptidase 4 (DPP4), and is considered a distinct class of coronaviruses. It also has a known transmission sequence from bats to camels to humans. SARS-CoV-2, although the pattern is not yet fully elucidated, most likely was transmitted from bats to pangolins (or a bamboo rat) to humans. This is not a bioengineered virus! If you can extract yourself from the myriad conspiracy theories and wish to know more about coronaviruses please read**: "**Potential Factors Influencing Repeated SARS Outbreaks in China" at https://www.mdpi.com/1660-4601/17/5/1633 The switch in name in the middle of a pandemic does nothing to improve outcomes, but be aware of this naming problem. If anyone calls this the China virus, they are a racist. If you support people who call COVID-19 this, you are also a racist; yes, it is that simple.

- **Medicines to Avoid:** As most of you are aware the severe morbidity and mortality of *COVID-19* is primarily among type 1 and 2 diabetics, hypertensives, and those with coronary heart disease. All of these conditions are associated with the upregulation and expression of an enzyme known as Angiotensin Converting Enzyme – 2 (ACE-2). This enzyme has high prevalence in respiratory epithelium (lungs), blood vessels, intestine and kidney and serves as the receptor binding site for *COVID-19*. Furthermore, the medicines used to commonly treat these conditions known as ACE Inhibitors (ACEI) and Angiotensin Receptor Blockers (ARBs), significantly further upregulate this receptor site for *COVID-19!* My strongest recommendation to everyone, including my patients, is to contact your provider and switch to a different medicine ASAP. The following is a list of theses medicines:

    - benazepril (Lotensin, Lotensin Hct),
    - captopril (Capoten),
    - enalapril (Vasotec),
    - fosinopril (Monopril),

- lisinopril (Prinivil, Zestril),
- moexipril (Univasc)
- perindopril (Aceon),
- quinapril (Accupril),
- azilsartan (Edarbi)
- candesartan (Atacand),
- eprosartan (Teveten),
- irbesartan (Avapro),
- telmisartan (Micardis),
- valsartan (Diovan),
- losartan (Cozaar), and
- olmesartan (Benicar).

Be clear these are "good" medicines in the setting of diabetes, hypertension and CAD; however, I would clearly choose a different medicine than one that evidently increases my chance of severe infection with COVID-19 until this pandemic resolves. I am primarily choosing calcium channel blockers like amlodipine to replace these medicines whenever possible. See: "Are patients with hypertension and diabetes mellitus at increased risk for COVID-19 infection?" https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(20)30116-8/fulltext Aldosterone inhibitors, although affecting this system, do not appear to upregulate ACE-2!

- **Medicines to Avoid Part II:** Other medicines to avoid include the diabetes medicines known as thiazolidinediones (primarily **Actos**), and the NSAID **ibuprofen** (Advil and others) as they also upregulate ACE-2. My opinions on all of these medicines are evolving. But other options to all these medicines exist; why use them when biological plausibility dictates to avoid them?

- **On Treating Fever:** Fever is part of the healing response, suppressing it makes no sense at all, especially with ibuprofen (for COVID-19). If one must suppress fever, please don't medicate unless the temperature exceeds 103 F. Consider cooling baths as an option, acetaminophen is also good first option.

- **Antivirals:** The first trial of a toxic combo of lopinavir–ritonavir failed to improve outcomes in hospitalized patients https://www.nejm.org/doi/full/10.1056/NEJMoa2001282?query=featured_home (you need a subscription to NEJM to see this) Please see our first articles and be aware that the ***acute viral protocol*** (vitamin D downregulates ACE-2 expression, more importantly activates our innate immune system) has helped so many and ***Intravenous Vitamin C*** is already a proven therapy. I hope you realize the power of the pharmaceutical industry at suppressing this information from all mainstream media! Please also be clear that no medicine is approved for treatment and no responsible medical professional is suggesting any medicine. The combination mentioned in the New England Journal of Medicine had a greater likelihood of working than other medicines that have yet to be studied, and it failed.

- **Vaccine:** Thank heavens for the western medical scientific approach to medicine, and when a double-blind, placebo-controlled, randomized clinical trial documents the safety and efficacy of a vaccine, I will prescribe it for my patients. We are at least a year away from any vaccine, which will certainly have no adequate safety testing, as vaccine medicine eschewed the scientific method long ago, somehow, I am still hopeful this vaccine might be different.

- **Transmissibility:** Primarily through droplet transmission which means hand to mouth is most likely, and why hand washing and gloves provide the best protection along with the public health "shelter-in-place" strategy. Aerosol transmission can occur but I would only wear a facemask if I was contained in a room with a COVID-19 suspect. Please also read "COVID-19 in Wuhan China: a Retrospective Cohort Study" in the Lancet, at https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30566-3/fulltext Please note that the average median viral shedding time for those who recover is 20 days (usual range 17-24 days, but up to 37 days in one person!) This correlates very well with the persistence of cough (19 days), and gives people a more realistic idea of how long their quarantine might last.

- **Smoking:** Don't! Common sense dictates that even if you enjoy cannabis you can partake in so many other ways, so please let's not challenge our lungs right now.

- **Economic Fallout:** Read: https://www.washingtonpost.com/us-policy/2020/03/22/vast-coronavirus-stimulus-bill-limbo-crunch-times-arrives-capitol-hill/ We are heading for a Depression. Everyone must stand together and hope people are valued more than corporate slush funds.

- **Prevention:** Please read: https://www.nytimes.com/2020/03/22/health/coronavirus-restrictions-us.html?action=click&module=Spotlight&pgtype=Homepage We can stop this, but it will take everyone from every walk of life working together. Yet, America is so divided by misinformed people who will spread this virus. It was never a hoax. We never tested enough; it is more about riding out the storm at this point.

Hopefully I have addressed most of your areas of concern, if not please contact us at info@middlepathmedicine.com.

Your Journey to Health and Healing,

Gary E Foresman MD