Hydroxychloroquine and Outpatient COVID-19 Treatment

By David Williams, MD

In previous works on coronavirus, I have documented my practice history as a physician.  In years past I have done everything from primary care to urgent care to emergency room work.  For the last decade, my practice has focused on wellness medicine.  Wellness medicine is largely about prevention.  I strive to prevent, or reduce the severity of, diseases such as hypertension, diabetes, osteoarthritis, hyperlipidemia, and cancer.  If one’s body were an automobile, it is better to change the oil than replace the engine.  As a consequence, my original pieces were focused on illustrating the disastrous implications of our response to SARS-CoV-2 and attempting to avoid further damage.  However, I still treat many things.  From an infectious disease standpoint, in the last year I have treated influenza, upper respiratory illnesses, sinusitis, folliculitis, conjunctivitis, mastitis, cellulitis, and I have diagnosed appendicitis.  I have also treated those infected with SARS-CoV-2.  As it turns out, treatment of this disease is all about prevention.

To explain further, let’s start with some definitions.  Coronaviruses compose a family of common respiratory viruses.  They are largely zoonotic, meaning animals are their natural hosts, but four strains circulate among humans in the form of the common cold.  MERS, SARS-1, and SARS-CoV-2 are potentially deadly strains.  SARS-CoV-2 is the source of our current pandemic.  COVID-19 is the illness caused by SARS-CoV-2.  Initial symptoms consist of some combination of nasal congestion, cough, fatigue, fever, headache, body aches, anorexia, and loss of taste and/or smell.  In this respect COVID-19 mimics symptoms of the flu and the common cold.  However, COVID-19 can progress to an exaggerated inflammatory response.  If a patient’s immune system reacts to the virus with a cytokine storm, the result can be damage to the lungs and other vital organs.  Severe acute respiratory syndrome may occur, hence the name SARS.  Another potentially exaggerated response involves blood clotting.  If this transpires, the patient becomes vulnerable to multiple clots in various organs including the brain and lungs.  Successful treatment of COVID-19 is focused upon preventing its progression to the inflammatory, and subsequently clotting, stage.

I began researching the treatment of COVID-19 shortly after the release of my first paper on the virus.  *The Truth (and Lies) about Coronavirus*[1](https://coronavirustruthandlies.com/) was written on April 19.  For reasons elucidated in the addendum dated April 23, we will never know the true fatality rate of the virus in this country.  It is more dangerous than the seasonal flu to the elderly, particularly if left untreated.  It is not as dangerous to those who are young.  Those who are college-aged and below are at significantly more risk from the seasonal flu.  Hence, my original recommendations centered on reducing risk of exposure for the elderly while maintaining routine health visits and immunization schedules for everyone else.  Shortly after the paper circulated the internet, though, my office received a phone call from a gentleman asking if I would prescribe prophylactic hydroxychloroquine (HCQ).  He was not my patient and I knew little at the time about HCQ as it related to COVID-19.  I asked my nurse to politely tell him we could not accommodate his request.  It would be the last time I had not researched HCQ.  Ironically, it would not be the last such call I would get.

In March and April, dozens of doctors from several countries, including the US, described success utilizing HCQ to treat COVID-19.   Meanwhile, it was strangely and vociferously attacked by the media and some in government.  Governor Cuomo even issued an executive order[2](https://www.google.com/amp/amp.washingtontimes.com/news/2020/apr/5/rudy-giuliani-urges-andrew-cuomo-lift-hydroxychlor/) banning its use in his state despite daily appearances declaring New York the virus’ epicenter.  Several European countries would also move to restrict its use, citing safety concerns.  YouTube would remove any video posted by the aforementioned doctors and file it as “misinformation.”

As I have pointed out in previous works, there is a great disconnect between information available before 2020 and some of the information frequently delivered in 2020.  Although the possibility of QT prolongation (an effect on the heart) exists, the use of HCQ was previously considered so safe it was available over the counter, or without a prescription, in many countries.  It is on the World Health Organization’s List of Essential Medicines.  The medications listed there are considered to be the most effective and safest to meet the important needs in a health system.  Rheumatologists everywhere, who have used HCQ for years in the same patients at appropriate doses and for appropriate conditions, have affirmed its safety.  In fact, many feel it is safer than either acetaminophen (Tylenol) or ibuprofen (Motrin).

As a consequence, I found the attacks on HCQ baffling.  They continued, however, as infectious disease experts began to assert studies were showing it not only to be ineffective against COVID-19 but dangerous to patients in the trials.  If I was previously baffled by the media attacks on HCQ, I was not just confused but angered by the design of some of these trials.  To elaborate, I would like to expound on one such study.  First, let me explain how using HCQ in COVID-19 is recommended.  None of the YouTube posts ever suggested HCQ should be used in hospitalized patients.  Those physicians outlined early, outpatient use at doses usually in the range of 200mg twice a day (so 400mg a day) in combination with azithromycin (or doxycycline) and zinc.  The RECOVERY trial is frequently cited by opponents of HCQ.  In this case, patients were not treated until they were hospitalized with advanced COVID-19, including severe respiratory symptoms, and then were given 800mg of HCQ as a loading dose followed by another 800mg in 6 hours[3](https://www.nejm.org/doi/full/10.1056/NEJMoa2022926).  This adds up to 1600mg.

To illustrate this in a way I am sure all can understand, let’s talk this through with ibuprofen.  Most should know that at doses of 400 to 600mg ibuprofen can help alleviate early arthritis in the knee.  It is not without risk. GI side effects, including significant bleeds, do occur, but we understand its potential benefit.  Now, suppose a study was conducted in which ibuprofen was utilized only when a patient was admitted with advanced osteoarthritis as they awaited a knee replacement.  In addition, the dose utilized was 1600 to 2400mg per dose.  Any doctor should be able to surmise it would yield no benefit in that situation and GI bleeds would virtually be guaranteed.  Ironically, despite the seemingly toxic dose chosen by the investigators of RECOVERY, there was still no difference in the incidence of new major cardiac arrhythmia among patients receiving HCQ.

Meanwhile, not only was the safety of HCQ rarely questioned prior to 2020, the efficacy of chloroquine against SARS-1 was accepted by the medical community[4](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1232869/).  It was known to exhibit strong antiviral effects by elevating endosomal pH and interfering with terminal glycosylation of the cellular receptor, angiotensin-converting enzyme 2.  From a practical view, it inhibited spread of the virus in cell cultures.  It was especially effective when cells were treated prior to infection.  This is known as prophylaxis, or prevention of infection.  SARS-1 is remarkably similar to SARS-CoV-2, as it is reported to be 79% identical in genetic sequence.  Antiviral effects of chloroquine/HCQ were further explored in subsequent years and the inhibition of viral particle glycosylation is not limited to SARS[5](https://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099%2806%2970361-9.pdf).

To illustrate the effectiveness of HCQ in the real world, let’s compare India and the United States.  There are certainly physicians in the United States, including myself, who are successfully using HCQ in high risk patients diagnosed with SARS-CoV-2 infection.  However, widespread prophylaxis and early treatment does not occur here.  It does in India.  India’s population is 1.353 billion and they report 137,000 deaths due to COVID-19.  The US has a population of just over 327 million and reports 266,000 deaths.  That works out to a fatality rate in India due to SARS-CoV-2 to be just over 1/10th of the US fatality rate.  To be fair, other factors affect how vulnerable a population is to a particular disease.  Socioeconomic status, access to health care, and available nutrition come to mind.  But the US would seem to have the edge in all those categories.  The only factors I could think of decidedly in India’s favor would be a lower incidence in obesity and a younger overall population.

One of the really exciting things about HCQ with regard to its efficacy against SARS-CoV-2 relates to its use in a prophylactic role[6](https://www.google.com/amp/s/health.economictimes.indiatimes.com/amp/news/pharma/why-icmr-continues-to-stand-firm-on-using-hydroxychloroquine-as-prophylaxis/76172274). If it is safe at 200mg twice a day, it is surely even more safe at 400mg once a week.  Because it has a long half-life of 22 days, and because it concentrates in the lungs, this prophylactic treatment is easy to use, already available, and inexpensive.  Countries that have learned from the experiences in India and are utilizing once weekly HCQ have seen the demand for hospital beds drop and death rates have fallen sharply.

Another therapy originally recommended on YouTube and quickly censored is budesonide.  Understand that no treatment in medicine is likely to be 100% effective for anything.  Nevertheless, to this point when I, or physicians I have collaborated with, have needed to utilize budesonide it has always made a difference.  As many COVID-19 patients do not have experience with an inhaler, and are, by definition, already sick, it is best delivered via a nebulizer.  I employ it at the first sign of respiratory difficulty to penetrate the lungs and reduce inflammation.  Oral steroids, such as dexamethasone, also combat inflammation.  It is important to consider reducing the risk of blood clots.  Aspirin is an inexpensive choice if no contraindication exists.

It is also worth exploring the options presented by those who have vocally and aggressively criticized the above therapies.  The media, and the medical experts they interview, have endorsed the “Fauci strategy.”  Infected patients were to stay quarantined at home until they developed shortness of breath and had to go to the emergency room/be admitted to the hospital.  While avoiding the spread of illness is noble and worthwhile, the lack of early treatment is, for many, lethal.  It is literally the exact opposite of how this disease should be treated in high risk patients.  By the time COVID-19 reaches the inflammatory stage its consequences are far more severe.  Although pulmonologists and others caring for the hospitalized have made strides as they learned to combat this illness, intubation invariably leads to a prolonged hospital course and greatly increases the odds of death.

In addition, for the first time I am aware of in US medical history, health care personnel have been told they have no liability regardless of how cases are handled[7](https://www.google.com/amp/s/www.mlmic.com/blog/physicians/new-york-physician-immunity-during-pandemic/amp). Furthermore, patients are denied visitors, and therefore, advocates.  While I believe the majority of health care providers are compassionate and conscientious, I also believe most physicians would recognize it is best for patients to have loved ones assist in their care.  The psychological impact of isolation vs. compassion should be obvious to all.  However, they also tend to focus on the details.  There have been several instances which led me to recommend always having a family member with a hospitalized patient.  I will relate only one.  One night while moonlighting at a VA Medical Center, we received a nursing home resident back from a treating hospital.   The hospitalist who provided his care had clearly copied and pasted daily notes.  The weight listed was unchanged day after day.  Upon his arrival, his legs were so swollen they were almost weeping and his groin so edematous he appeared to have two cannon balls between his legs.  His actual weight was over 20 lbs. higher than the consistent weight of the progress notes.  Not only had the hospitalist not performed the exams he documented, but many nursing evaluations were either not completed or no action had been taken on what was discovered.  I was recently provided a budesonide testimonial which reinforces the need for a patient advocate.  It can be found here[8](https://m.youtube.com/watch?feature=youtu.be&v=h58ccJP0DdU).

I do need to mention most COVID-19 patients will not require prescription medications. The treatments above are generally reserved for high risk patients. As the author of *A Sensible and Compassionate Anti-COVID Strategy*[9](https://imprimis.hillsdale.edu/sensible-compassionate-anti-covid-strategy/) points out, “the single most important fact about the COVID pandemic – in terms of deciding how to respond to it on both an individual and a governmental basis – is that it is not equally dangerous for everybody.” The reality is the majority of younger patients, as verified by testing of controlled populations such as businesses, universities, and athletic teams, will be asymptomatic. Those under 50 will survive COVID-19 at a rate of 99.95% or better. Mortality increases over 50 and with advancing age. This is especially true for those with comorbidities such as obesity, diabetes, heart disease, lung and/or kidney disease.

Following are a list of suggestions and supplements one might consider employing to minimize their risk of infection with SARS-CoV-2.

Good Hygiene – washing one’s hands with soap and water is critical in reducing your odds of contracting all kinds of infections. Disinfecting surfaces at home, particularly those used in food preparation, is also helpful.

Sunlight and fresh air – both contribute to good health and fighting COVID. Direct sunlight is also a free source of vitamin D. Low vitamin D is a risk factor for contracting SARS-CoV-2 and is associated with more severe illness.

Adequate hydration – especially water. It keeps your body healthier and immune system functioning.

Healthy food intake - providing your body and immune system with essential nutrients.

Reduce inflammation – avoid beverages loaded with sugars and additives and foods high in sugars, fat, salt, or additives. It is clear inflammation increases the possibility of severe illness.

Mouthwash – rinsing for 30 seconds may kill over 99% of coronavirus. Unfortunately, there is a trade off. It will also kill bacteria in the mouth which help convert nitrate to nitrite. This has been found to impact levels of nitric oxide, important to cardiovascular health.

Zinc sulfate, gluconate, or citrate – the recommended anti-viral dose is 50mg of elemental zinc. Zinc helps block the virus from multiplying.

Vit D3, preferably in oil (capsules) for better absorption. Typical dose is 5000 IU daily for 5-30 days.

Vit C with bioflavonoids for antioxidant, anti-inflammatory effects. Typical dose is 1000mg from one to four times a day.

Quercetin – a flavonoid present in foods, including fruits and vegetables, that functions as an antioxidant and may boost immunity, fight inflammation, and combat allergies among other possible benefits. It acts to improve zinc uptake into cells. It is much less potent that HCQ as a zinc transporter, however, and should not replace HCQ for the treatment of COVID-19. A common supplemental dose is 500mg once or twice a day.

Probiotics – possibly the most underestimated factor affecting our health is the human microbiome. The human body contains trillions of microorganisms – outnumbering human cells by 10 to 1. It is important enough for me I mentioned the potential impact of mouthwash above and I use regular, as opposed to antibacterial, soap. These microorganisms play a vital role in our well-being. Nowhere are they more important than the gut. Kombucha and kefir are great sources of probiotics.

Disclaimer: This paper is not meant to be a definitive guide on the outpatient treatment of COVID-19 and does not explore all possible interventions. A more complete guide is available at [AAPSonline.org](https://aapsonline.org/), the website of the The Association of American Physicians and Surgeons.

Additional Resources: As I found with *The Question of Masks*, there are articles which cover the situation regarding HCQ in great detail. An article by Steven Hatfill asks [Why is the Media Suppressing Information About Hydroxychloroquine's Effectiveness Against COVID?](https://thefederalist.com/2020/08/20/why-is-the-media-suppressing-information-about-hydroxychloroquines-effectiveness-against-covid/) Another by Iain Davis describes [The Hydroxy-chloroquine Scandal](https://www.ukcolumn.org/article/the-hydroxychloroquine-scandal).

A recent study now accepted for peer review reports an 84% reduction in hospitalizations in high risk patients treated with hydroxychloroquine, azithromycin, and zinc early in their disease course[10](https://www.theblaze.com/news/peer-reviewed-hydroxychloroquine-study-hospitalizations).