## LETTER TO THE EDITOR

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# 'Do No Harm' Means Not Using Drugs of Unproven Efficacy

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What is the right thing to do in a pandemic? Should scientific rigor be relaxed in the face of a novel illness? What are the risks of allowing unproven drugs to be administered to patients? Is anything better than nothing?

In Medicine, the highest level of evidence to prove the efficacy of any treatment is Randomized Control Trials (RCT). When carefully conducted, it rules out errors due to chance, selection bias, observer bias, and other errors that may make us believe that a treatment is effective when in truth it isn't. Anecdotal evidence from case reports/series is among the lowest level of evidence because they are often biased by the observer. If a clinician believes a drug works, the measurement of clinical improvement will be biased-it is just basic human psychology, the optimism bias. Also, there is often no standardized measurement of improvement in these studies other than the clinician's subjective assessment (subject to affirmation bias). RCTs have 'blinding' for this reason-to introduce objectivity to clinical outcomes measurement. In addition to observer bias, there is also selection bias-the characteristics of patients who make up the case series/reports and who have the so-called good outcomes may be different from those of patients

with the condition in general.

Regarding Hydroxychloroquine use in patients with COVID-19, the best conclusion we can make from the available body of evidence is that there is anecdotal evidence of its effectiveness. The questions remain: among which group of patients is it effective? At what dose? Does it work singly or in combination? What is the side effect profile of single administration vs combination regimen? In what group of patients is it ineffective and potentially dangerous? Does it work before infection or before the onset of symptoms or for only mild cases? Only well-designed RCTs can answer these questions.

The primary tenet in Medicine is 'first, do no harm', and that includes not using drugs of unproven efficacy no matter the urgency of the situation. Indeed, science is painstakingly and frustratingly slow, creating an avenue for alternate and unscientific remedies to proliferate. I have seen firsthand the dangers of unproven remedies as a physician in a developing country; many lives have been lost and some irreparably damaged. Science is not sentimentality nor sensationalism; it is a process, guided by rigorous standards and regulations. These standards are placed for a reason: the protection of human lives.