

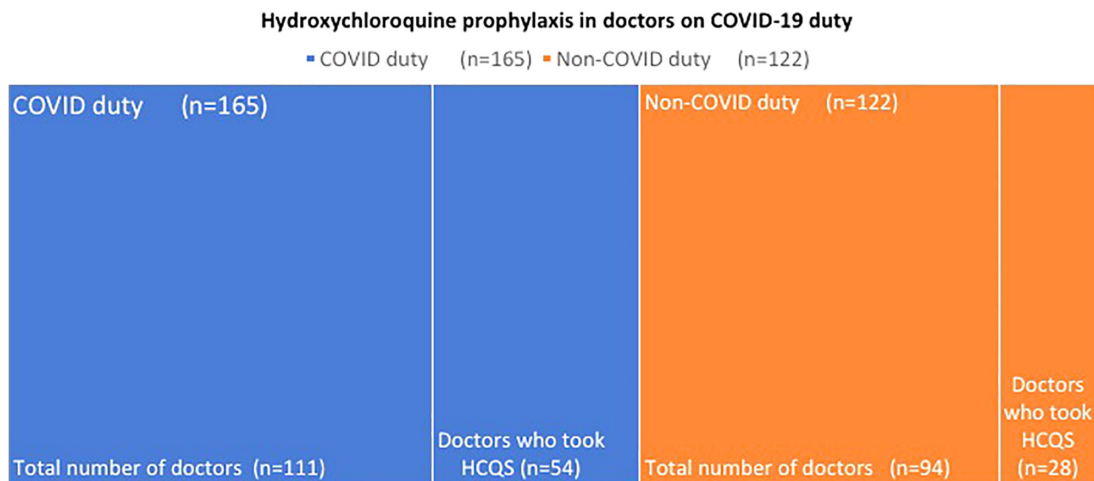
LETTER

# The COVID-19 chemoprophylactic conundrum: Are we limiting available resources?

Dear Editor,

Amidst the novel coronavirus pandemic (COVID-19), there is an ongoing quest for an effective and safe agent for pre-exposure and post-exposure prophylaxis against the betacoronavirus (SARS-CoV-2). For this purpose, drugs such as oseltamivir, lopinavir, ritonavir, remdesivir, chloroquine, hydroxychloroquine sulfate (HCQ), and certain vaccines are being investigated.<sup>1</sup> There are limited data supporting the use of HCQ.<sup>2</sup> Hydroxychloroquine has demonstrated anti-SARS-CoV-2 action in vitro as it inhibits angiotensin-converting enzyme-2 receptor and viral polymerases.<sup>2-4</sup> The recommended dosage for HCQ chemoprophylaxis is 400 mg BD on day 1 followed by 200 mg weekly for next 7 weeks.<sup>2,5,6</sup> The authors conducted a survey among doctors to assess consumption of HCQ and the perceived risk of exposure to the coronavirus. The questionnaire was disseminated across the globe via electronic mail and social media platforms WhatsApp and Facebook. It consisted of eight tick-box and drop-down type of questions including demographic distribution, charter of duties, existing comorbidities, and consent to share data. A total of 327 doctors were reached and 204 (63.3%) completed the survey. On analyzing the data, most participants were in the age bracket of 20-40 years (n = 164). The geographic distribution was nonhomogenous. The majority of completed surveys were from India (n = 174), followed by the United States (n = 20), and a handful was from other countries. Regarding the charter of duties, 39.6% (n = 44) in intensive care units, 21.6% (n = 24)

in isolation wards, 10.8% (n = 12) in quarantine wards, and 27.9% (n = 31) in screening departments. These were referred to as "active COVID duties" (54.4%, n = 111); 45.6% (n = 93) were on non-COVID duties—general wards (29.7%) and routine specialty clinics (24.4%). The remainder, that is, 45.7% (n = 44) was off duty. The active COVID duty cohort had the highest potential for exposure, and 48.6% (n = 54) of them took HCQ. Incidentally, 29.7% (n = 28) of the group that was not on active COVID duty also took hydroxychloroquine. The head-to-head comparison was tabulated and put into perspective using a treemap (Figure 1). Alarming, 6.8% (n = 14) who were off duty also took pre-exposure chemoprophylaxis, without any seeming risk of exposure. Another interesting perspective stemming from this survey was the existence of comorbidities and the willingness to consume HCQ. Next, 31.3% (n = 64) of the survey group had associated comorbidities—43.7% (n = 28) had hypertension, 35.9% (n = 23) had type 2 diabetes mellitus, and 20.3% (n = 13) had coronary artery disease. Among them, 57.8% (n = 37) took HCQ as prophylaxis. This was despite knowledge of the serious side effects that might occur due to concomitant HCQ usage, which include QT prolongation, ventricular arrhythmias and cardiotoxicity.<sup>5,7</sup> Expectedly, the current pandemic has created a state of confusion and uncertainty, even among well-informed doctors. This is corroborated statistically by our survey, which shows that a total of 82 doctors (40.2%), 54 on COVID duty and 28 on non-COVID duty, took HCQ chemoprophylaxis despite an



**FIGURE 1** Treemap distribution of Healthcare Workers who took hydroxychloroquine with their relative charter of COVID-19 duties

absence of clear cut guidelines.<sup>6</sup> It is imperative for health care professionals to discourage inadvertent use of these agents to maintain an available stock of these and to circumvent adverse drug reactions. In addition, we must educate the masses against overzealous use of the same, even if it does not align with directives by public figures. The need of the hour is to conduct expedited randomized clinical trials to repurpose therapeutic agents for use against COVID-19. To the best of our knowledge, this is the first survey that studies the behavior of doctors with respect to HCQ usage. However, we recognize that there are limitations to the study design, such as the lack of free-text responses to questions. Qualitative interviews, while not within the remit of this survey, would allow exploration of the reasons that doctors do, and do not, decide to use HCQ.

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