



## Correspondence

### Hydroxychloroquine for chemoprophylaxis in COVID-19: A case of motivated perception?

Sir,

We came across a case-control study by Chatterjee *et al*<sup>1</sup>. Not only is this study well conducted and presented, but also it provides evidence for hydroxychloroquine (HCQ) for COVID-19 chemoprophylaxis. There are a few other points which need to be highlighted, especially the role of mask usage. Results say that the use of any mask provides significant protection against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection [odds ratio (OR): 0.35, 95% confidence interval (CI): 0.22-0.57,  $P < 0.001$ ]. This evidence re-stresses the policy implemented by the Government of India to promote the use of masks by healthcare workers (HCWs) and the general public<sup>2</sup>. This research also highlights that masks and gloves are the most important components of personal protective equipment (PPE) kit. The use of gowns, caps, shoe covers and face shields was not associated with any significantly protective benefit between groups. Wearing coveralls and doing duties in areas where central air conditioning is not functional can cause episodes of dehydration, fainting and dizziness among HCWs due to lack of breathability, which in itself is to provide protection against viral aerosols. Whether the use of gowns has any actual benefit in infection prevention is not known, and the same dilemma is reiterated here. In addition, this study provides the evidence in favour of HCQ usage by HCWs for COVID-19 chemoprophylaxis. Chemoprophylaxis is a vital tool in the fight against COVID-19, especially when there is no other proven treatment. Chemoprophylaxis does not mean dropping the shield of basics of infection control such as handwash and masks, but it is an added layer of protection acting through a different mechanism. HCQ carries various positives such as being inexpensive, widely available and having biologically plausible

mechanism of action. The Indian Council of Medical Research (ICMR) issued an advisory for its use as chemoprophylaxis among HCWs and close contacts<sup>3</sup>. This was followed by various evidences<sup>4</sup> disputing its role in the treatment of COVID-19, but evidence stood lacking, both in favour and against its use in chemoprophylaxis.

This study had some flaws which, if had been addressed, would have provided more strength to the results. First, in cases, only 60 per cent of the pre-defined sample size was collected. As this study was done only over 15-day duration (May 8-23, 2020), the urgency to analyze and publish was not clear. Reaching a sample size of over 600 could have reinforced these vital results. Second, baseline characteristics did not match between the two groups (gender and duration of work). Given that the selection of participants in the two groups was pre-planned in a defined time period, might have led to this shortcoming. Applying a randomization method for selection of the participants would have addressed this deficiency. Third, the authors analyzed the contribution of PPE kit as well as its components in protection of HCWs. While performing multivariate analysis, adjusting for the use of masks and gloves individually could have led to more meaningful results. As it is likely that other components of PPE are not adding to potential benefits to HCWs, adjusting only to the use of PPE kit might have diluted the effect size. Finally, highlighting the result of >80 per cent protection of HCWs by HCQ chemoprophylaxis ( $\geq 6$  maintenance doses) was not appropriate, especially when the subgroup of this particular category was <10 per cent of the actual sample size. This interpretation would have had more weightage if the sample size for this subgroup was large enough.

In addition, a few alarming findings were also highlighted in the study. Nearly 13 per cent of the HCWs were not using any kind of masks. Given the current state of rise in number of cases of COVID-19, such negligence from the healthcare community can be counterproductive and needs to be addressed immediately. Further, lack of electrocardiogram (ECG) monitoring among apparently healthy HCWs should not lead to the conclusion that arrhythmias were infrequent.

The effort of the authors is commendable and appreciable. In such sombre times, this study provides a glimmer of hope in the direction of chemoprophylaxis.

**Conflicts of Interest:** None.

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