

## Hydroxychloroquine: balancing the needs of LMICs during the COVID-19 pandemic

I want to thank the Editor for bringing attention to the effect of a potential shortage of hydroxychloroquine on existing patients with autoimmune diseases during the ongoing COVID-19 crisis.<sup>1</sup> The drug has shown both promising and not so promising results against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), and more testing needs to be done to fully assess its efficacy in this context; however, hydroxychloroquine is already known to be an effective treatment for patients with autoimmune disorders such as systemic lupus erythematosus.<sup>2</sup>

Patients with autoimmune disorders living in low-income and middle-income countries (LMICs) could be left particularly vulnerable to hydroxychloroquine shortages as high-income countries call for additional supplies of hydroxychloroquine for potential COVID-19 prophylaxis. Without protection from their own governments and international agencies, these patients are at risk of losing access to their medication. There is a risk that people in LMICs with existing autoimmune conditions will be neglected. These people are dependent on this inexpensive medication. Socioeconomic deprivation is already associated with unfavourable disease outcomes in diseases such as systemic lupus erythematosus.<sup>3</sup>

A surge in demand, price competition, and foreign diplomacy could concentrate hydroxychloroquine in the hands of a few select high-income countries.<sup>4</sup> There is already a shortage of hydroxychloroquine in both high-income countries and LMICs, and prices of raw materials for manufacturing hydroxychloroquine are also increasing.<sup>4</sup> This situation could also lead to a shortage in chloroquine, which is an inexpensive medication for malaria, putting millions of people

in malaria endemic regions at risk. However, a chloroquine shortage might be mitigated by the fact that many LMICs are adopting artemisinin-based therapies for treatment of malaria.

If hydroxychloroquine is successful in clinical trials against SARS-CoV-2, it could be used for large-scale prophylaxis for COVID-19.<sup>5</sup> However, this potential use should be balanced with the need to meet the demands of existing patients who depend on hydroxychloroquine in all countries, regardless of income. Supply chains might not be able to meet the shock of increased demands of raw materials needed to produce the drug.

Stocks of this inexpensive medication should be earmarked for patients with autoimmune diseases living in LMICs, and adequate supplies of raw materials for producing hydroxychloroquine should also be provided to pharmaceutical plants. This will require a coordinated response from international organisations such as WHO and other nations. A balanced and staged approach that considers the needs of both high-income countries and LMICs is required towards hydroxychloroquine during the COVID-19 crisis.

I declare no competing interests.

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