

## A call for increased surveillance: Monitoring the use of hydroxychloroquine to prevent retinopathy

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*Dear Madam,* Hydroxychloroquine (HCQ) and chloroquine (CQ) are the main drugs used in the control and treatment of malaria. Although the toxicity of these drugs is rare, it has been reported in high-dose ingestions or chronic intravenous administration. Of these retinal manifestations are one of the most common following the poisoning of CQ.

A recent study by Melles et al. found that the overall risk of hydroxychloroquine retinopathy is 8.6% after chronic use with higher dose of HCQ dose being associated with a progressively greater risk for incident retinopathy.<sup>1</sup> Retinopathy can lead to serious complications in patients; in fact in most patient's vision loss. In Melles et al's study, it mostly led to complaints like reading difficulties, diminished vision, missing centre vision, glare, hazy vision, light flashes, and metamorphopsia, while some patients were asymptomatic. The majority of patients exhibited a fundoscopic bull's-eye sign. Other signs include paracentral, central, and peripheral visual field loss, which were present in almost all patients. In the early stages of retinopathy, colour vision is typically unaffected, but it too begins to be compromised in the later stages.<sup>2</sup>

Malaria is endemic in Pakistan. In 2023 pooled malaria prevalence in Pakistan was found to be 23.3%, with *Plasmodium vivax*, *Plasmodium falciparum*, and mixed infection rates of 79.13%, 16.29%, and 3.98%, respectively. According to the World Health Organization (WHO), Pakistan is one of the seven countries in the Eastern Mediterranean Region that account for 98% of the total malaria burden in the region. Around 217 million people in Pakistan are at moderate risk of malaria and 63 million are at high risk. Approximately 0.47 million malaria cases and 800 deaths have been reported in 2020.<sup>3</sup> The recent

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rise in climate change-induced flooding and other weather changes, waterborne diseases such as malaria, are also rising leading to higher HCQ use. Furthermore, CQ and HCQ are also being used in treating COVID 19.<sup>4</sup> This, combined with factors such as lack of surveillance, self-medication practises, and rampant over-the-counter use in Pakistan greatly increase the risk of patients taking improperly high doses of HCQ or CQ and, consequently, suffering from retinopathy. To prevent the HCQ-associated retinal toxicity proper surveillance methods should be employed, and the prescription and distribution of these drugs should be monitored. Patients and physicians prescribing HCQ should be aware of its toxicity risks.<sup>5</sup> Those taking HCQ, should be screened periodically to look for early oculopathies so they can be treated while the condition is still reversible.

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ZT, RK: Concept, design, data acquisition, analysis, interpretation, drafting, revision, final approval, agreement to be accountable for all aspects of the work.