LETTER TO THE EDITOR

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Unexpected pharmacological and toxicological effects of tafenoquine

Dear Sir,
I read with interest the recent case report by Cannon et al. [1], describing a case of occupational asthma resulting from exposure to the 8-aminoquinoline tafenoquine, a transmission-blocking antimalarial currently in late stage development [2,3].

Their report, the first describing the asthmagenicity of the drug, is particularly unexpected given historical literature from the 1950s and 1960s describing seemingly successful investigations into the use of quinolines as bronchodilators in the treatment of bronchial asthma [4,5]. More recent reports have also suggested that the quinolines may be effective anti-inflammatory agents [6,7].

Broader use of the 8-aminoquinolines has historically been limited owing to findings of idiosyncratic neurotoxicity [8,9], with a fatal human case marked by widespread neuronal degeneration within the brainstem [10]. The new finding of unexpected and idiosyncratic asthmagenicity suggests a need to more thoroughly define the potentially complex pharmacology and toxicology of tafenoquine prior to the drug’s more widespread use, particularly among asymptomatic populations in planned antimalarial mass drug administration. Pharmacogenetic investigations, particularly of common polymorphisms in drug metabolizing and transport enzyme genes [3], may provide insight into the drug’s unexpected effects and should be considered both in future pre-licensing studies and in occupational medicine investigations of idiosyncratic toxicity.

Conflicts of interest
The author has been retained as consultant and expert witness in criminal and civil cases involving claims of antimalarial toxicity. The author has no other financial or other conflicts of interest to report.

References


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