MINI REVIEW

LONG TERM PRIMAQUINE ADMINISTRATION TO REDUCE *PLASMODIUM FALCIPARUM* GAMETOCYTE TRANSMISSION IN HYPOENDEMIC AREAS

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Abstract. Artemesinin-combination therapies (ACTs) for falciparum malaria reduce gametocyte carriage, and therefore reduce transmission. Artemisinin derivatives act only against young gametocytes, but primaquine acts against mature gametocytes (which are usually present in the circulation at the time the patient presents for treatment). Both artemisnin derivatives and primaquine have short half-lives (less than 1 hour and 8 hours, respectively). Therefore, asexual parasites and young gametocytes may remain after completing ACT. Single dose of primaquine (0.5-0.75 mg base/kg) at the end of ACT can kill only mature gametocytes (if present) but cannot kill young gametocytes (if present). Remaining asexual forms and sequestered young gametocytes remaining after completion of ACT may develop into mature gametocytes 7-15 days later. Some patients have the first appearance of gametocytemia 4-8/day after completion of ACT. Thus, additional doses of primaquine (0.5-0.75 mg base/kg) given 15-18 days after or concurrently with 3 day-ACT respectively or given 15-22 days after or concurrently with 7 day-ACT respectively may be beneficial in killing the remaining mature gametocytes and thus contribute to interruption of *P. falciparum* gametocyte transmission more affectively than giving only a single dose of primaquine just after completing ACT.

Key words: *Plasmodium falciparum*, artemesinin-combination therapies, primaquine, malaria transmission blocking

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