Artemisinin resistance in Plasmodium falciparum

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In *The Lancet Infectious Diseases* Benoit Witkowski and colleagues reported a simple and rapid in vitro method to detect artemisinin resistance of *P falciparum*.¹ They show that the slow clearance of [A: OK?] parasites by artemisinin combination therapies is a result of a drop in susceptibility among young ring form parasites whereas susceptibility is maintained in mature stages. However, the clinical relevance of this finding to treatment failure is unclear since these infections could

be still successfully be treated with artemisinin combination therapies.

Experiences in China also suggest that such resistance could be overcome if the right strategies are used. In China, the recommended duration of monotherapy with artemisinin drugs for treatment of falciparum malaria—particularly the chloroquine-resistant strain—is 5–7 days.² A study of patients treated with dihydroartemisinin (60 mg) daily (120 mg on day 1) for 3, 5, or 7 days showed no recrudescences in the 7-day group, compared with recrudescence in 66% of patients in the 5-day group and 52% in the 3-day group. Therefore, it was recommended that the 7-day course, with a total dose of 480 mg of dihydroartemisinin, should be the optimum regimen for treatment of *P falciparum* infection.³ Another feature of clinical malaria management in China is the quarantine of patients during treatment to prevent transmission and hamper the spread of resistance.

Combination of artemisinin drugs with other antimalarial treatments gives better [A: Better in what way? More effective?] treatment at the early stage of malaria infections, although, it is becoming clear that the number of treatment days has a major impact on efficacy of artemisinin treatment either as monotherapy or in combination, especially if ineffective partner drugs are used.⁴ Although we do not have evidence to demonstrate this hypothesis so far, increasing the duration of artemisinin treatment and use of efficacious partner drugs could sustain the efficacy of artemisinin combination therapies.

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