

Treatment of asymptomatic carriers with artemether-lumefantrine: an opportunity to reduce the burden of malaria?

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This article discusses the prospective role of community-based treatment of asymptomatic carriers of *Plasmodium falciparum*, with artemisinin-based combination therapy (ACT). The potential of this intervention was considered by key scientists in the field at an Advisory Board meeting held in Basel, in April 2009. This article summarizes the discussions that took place among the participants.

Presentation of the hypothesis Asymptomatic carriers do not seek treatment for their infection and, therefore, constitute a reservoir of parasites and thus a real public-health risk. The systematic identification and treatment of individuals with asymptomatic *P. falciparum* as part of a surveillance intervention strategy should reduce the parasite reservoir, and if this pool is greatly reduced, it will impact disease transmission.

Testing the hypothesis This article considers the populations that could benefit from such a strategy and examines the ethical issues associated with the treatment of apparently healthy individuals, who represent a neglected public health risk. The potential for the treatment of asymptomatic carriers to impair the development of protective immunity, resulting in a 'rebound' and age escalation of malaria incidence, is also discussed. For policymakers to consider the treatment of asymptomatic carriers with ACT as a new tool in their malaria control programmes, it will be important to demonstrate that such a strategy can produce significant benefits, without having a negative impact on the efficacy of ACT and the health of the target population.

Implications of the hypothesis The treatment of asymptomatic carriers with ACT is an innovative and essential tool for breaking the cycle of infection in some transmission settings. Safe and effective medicines can save the lives of children, but the reprieve is only temporary so long as the mosquitoes can become re-infected from the asymptomatic carriers. With improvements in rapid diagnostic tests that allow easier identification of asymptomatic carriers, the elimination of the pool of parasites is within reach.