

Epidemiology of plasmodium-helminth co-infection in Africa: populations at risk, potential impact on anemia, and prospects for combining control.

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Abstract

Human co-infection with *Plasmodium falciparum* and helminths is ubiquitous throughout Africa, although its public health significance remains a topic for which there are many unknowns. In this review, we adopted an empirical approach to studying the geography and epidemiology of co-infection and associations between patterns of co-infection and hemoglobin in different age groups. Analysis highlights the extensive geographic overlap between *P. falciparum* and the major human helminth infections in Africa, with the population at coincident risk of infection greatest for hookworm. Age infection profiles indicate that school-age children are at the highest risk of co-infection, and re-analysis of existing data suggests that co-infection with *P. falciparum* and hookworm has an additive impact on hemoglobin, exacerbating anemia-related malarial disease burden. We suggest that both school-age children and pregnant women--groups which have the highest risk of anemia--would benefit from an integrated approach to malaria and helminth control.