

review article

Effects of Malaria and Human Immunodeficiency Virus co-infection during pregnancy

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ABSTRACT

HIV and malaria share a common geographic distribution, sub-Saharan Africa being the most affected. Since the adverse effects of malaria in pregnancy are immunity-dependent, co-infection with the human immunodeficiency virus (HIV) poses a great problem to the pregnant woman. HIV nullifies the parity-dependent immunity to affect of malaria in pregnancy, thus putting all HIV-infected pregnant women at risk. HIV-infected pregnant women living in malaria-endemic areas should as a matter of utmost importance, sleep under an insecticide treated net. The reduced response to chemotherapy noted among HIV-infected individuals has necessitated the increase from 2 to 3 doses of sulphadoxine-pyrimethamine (SP) used for intermittent preventive treatment of malaria in HIV-infected pregnant women to ensure adequate protection from the effects of malaria. Considering that the HIV-infected pregnant woman, depending on the level of CD4+ T cells, might need medication to sustain a reduction in the viral load, prevent mother to child transmission of HIV, and combat opportunistic infections. The possible interactions of these antiretroviral drugs with antimalarial drugs used for malaria chemoprophylaxis in pregnancy such as SP and cotrimoxazole need to be addressed. Sulfadoxine-pyrimethamine should be prescribed cautiously in women concurrently receiving daily nevirapine and/or zidovudine, and should be avoided in women on daily co-trimoxazole. Chemo-prophylactic option depends on the level of immunosuppression as determined by clinical or laboratory staging: for those that are not immuno-compromised, intermittent preventive treatment of malaria with SP and antiretroviral therapy is adopted; while for the immuno-compromised, antiretroviral therapy and daily co-trimoxazole is used. Thus, for the co-infected pregnant woman, effective delivery of interventions for the prevention and control of both malaria and HIV, including prevention of mother-to-child transmission of HIV as appropriate, is vital.

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INTRODUCTION

In sub-Saharan Africa, human immunodeficiency virus (HIV) and malaria are among the leading causes of morbidity and mortality during pregnancy. The HIV pandemic has been superimposed on the longstanding malaria pandemic, where *P. falciparum* malaria is consistently one of the major causes of infant and child mortality. The high prevalence of both HIV and malaria infection in Africa is an indication that interactions between the two could have substantial effects on populations.

Approximately, one million pregnancies per annum are thought to be complicated by coinfection with malaria and HIV in sub-Saharan Africa.¹ Both maternal malaria and HIV infections have been separately associated with maternal anaemia, infant low birth weight, maternal and infant morbidity and mortality.^{2,3} HIV-associated risk of maternal malaria affects women of all gravidities, thus attenuating or even eliminating the decrease in malaria parasitaemia normally seen in HIV-negative multigravidae.⁴ The coinfection of malaria and HIV increases the risk of congenital malaria by significantly increasing placental parasite density.⁵

The prevalence of maternal anaemia and incidence of low birthweight are both higher in pregnancies affected by HIV/malaria coinfection than in pregnancies affected by malaria or HIV alone. In the presence of coinfection, anaemia prevalence and low birthweight incidence may both exceed 35% in some subgroups.⁶

With the inception of the Roll Back Malaria partnership in 1998, there was the recognition that previous gradual declines in malaria mortality had been reversed during the 1990's, and that interactions between malaria and HIV could be one contributor.⁷ As HIV spreads, it interacts with other infectious diseases, facilitated by the increase in numbers of immunosuppressed individuals, and its clinical course can be altered by other infections.

High rates of antenatal attendance by pregnant women in Africa suggest that the effects of HIV and malaria during preg-