Studies identify more effective treatment for malaria control during pregnancy in Africa

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A review of previous studies indicates that two doses of a malaria preventive therapy during pregnancy provides substantial benefit to HIV-negative women in Africa, with more frequent dosing apparently necessary for HIV-positive women, according to an article in the June 20 issue of JAMA.

In malaria-endemic regions, the burden of disease is primarily in young children and pregnant women. Women are particularly vulnerable to the adverse effects of malaria during their first and second pregnancies, according to background information in the article. Approximately 50 million women living in malaria-endemic areas become pregnant each year, half in areas of sub-Saharan Africa with stable Plasmodium falciparum (a parasite that causes malaria) transmission. In these regions, strategies to control malaria during pregnancy rely on case management of malaria illness and anemia, and a variety of preventive measures that consists of insecticide-treated nets (ITNs) and intermittent preventive therapy (IPT) with the malaria drug sulfadoxine-pyrimethamine.

Feiko ter Kuile, M.D., Ph.D., of the Liverpool School of Tropical Medicine, Liverpool, England and colleagues evaluated data to assess whether increasing the frequency of IPT with sulfadoxine-pyrimethamine during pregnancy could provide a temporary respite in areas in Africa with increasing sulfadoxine-pyrimethamine resistance.

The researchers identified four trials that compared 2-dose IPT with sulfadoxine-pyrimethamine to case management or placebo in women

during their first or second pregnancy. The IPT reduced the risk of placental malaria by 52 percent, the risk of low birth weight by 29 percent, and the risk of anemia by 10 percent. The effect did not vary by sulfadoxine-pyrimethamine resistance levels (range, 19 percent-26 percent).

Efficacy of IPT with sulfadoxine-pyrimethamine was lower among women using insecticide-treated nets. Three trials compared 2-dose with monthly IPT with sulfadoxine-pyrimethamine during pregnancy. Among HIV-positive women in their first or second pregnancy, monthly IPT resulted in less placental malaria and higher birth weight over the range of sulfadoxine-pyrimethamine resistance tested (8 percent-39 percent). Among HIV-negative women, there was no conclusive additional effect of monthly dosing.

“The deleterious effects of malaria during pregnancy can be substantially reduced by using IPT in pregnant women. Sulfadoxine-pyrimethamine is currently the only single-dose long-acting antimalarial drug that has ideal properties (low cost, documented safety, and ease of use) for use as an IPT during pregnancy. The current appraisal of available data on the efficacy of IPT with sulfadoxine-pyrimethamine as a function of sulfadoxine-pyrimethamine treatment responses in children provides policy makers with a clearer understanding of the value of different IPT regimens with sulfadoxine-pyrimethamine during pregnancy in the context of increasing sulfadoxine-pyrimethamine drug resistance,” the authors write.

“Reserving the use of sulfadoxine-pyrimethamine for IPT during pregnancy and for infants may reduce drug pressure and may prolong longevity of this valuable drug. Almost all countries in Africa are taking this course and have either implemented or are in the process of implementing the use of combination therapy for first-line treatment in the population, mostly with artemisinin-based [a type of antimalarial

drug] combinations. This will also limit the options to monitor the degree of sulfadoxine-pyrimethamine resistance in treatment studies in children in vivo, and future studies that aim to determine the effect of sulfadoxine-pyrimethamine resistance on the efficacy of IPT with sulfadoxine-pyrimethamine during pregnancy may need to rely on molecular markers."

Source: JAMA and Archives Journals