30. DIHYDROARTEMISININ-PIPERAQUINE FOR MALARIA PREVENTION IN HIV-POSITIVE PREGNANT WOMEN: SYSTEMATIC REVIEW AND META-ANALYSIS OF CLINICAL TRIALS

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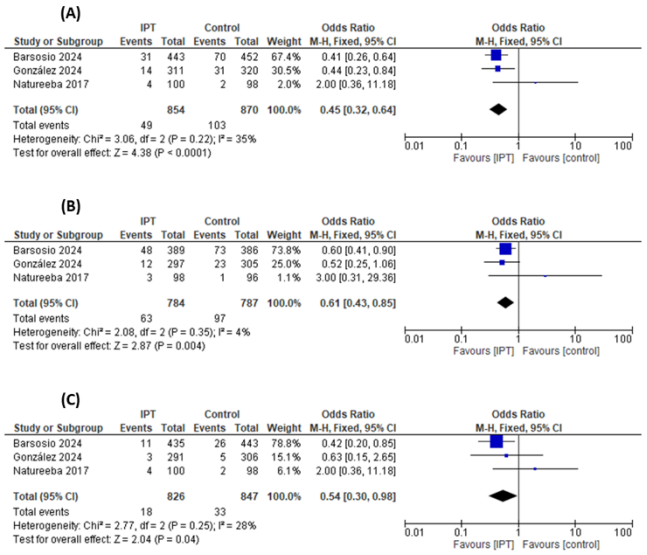
https://www.youtube.com/live/fSpXH-3Xy5w?t=17381s

BACKGROUND: Dihydroartemisinin-piperaquine (DP) is a long-acting artemisinin combination treatment that provides effective chemoprevention and has been proposed as an alternative antimalarial drug for intermittent preventive therapy in pregnancy (IPTp). Prevention of malaria infection during pregnancy in HIV-negative women currently relies on the use of long-lasting insecticidal nets together with intermittent preventive treatment in pregnancy with sulfadoxine-pyrimethamine (IPTp-SP). Increasing sulfadoxine-pyrimethamine resistance in Africa threatens the current prevention of malaria during pregnancy. Thus, a replacement for IPTp-SP is urgently needed, especially for locations with high sulfadoxine–pyrimethamine resistance. Dihydroartemisinin-piperaquine is a promising candidate. This systematic review aimed to assess the effectiveness and safety of IPTp-DP in HIV-positive pregnant women. **METHODS:** This systematic review and meta-analysis followed Cochrane guidelines. Our inclusion criteria were clinical trials on HIV-positive pregnant women using dihydroartemisinin-piperaquine regimens compared to any control group. Primary outcomes included maternal, placental, and cord malaria incidence; secondary outcomes included maternal and neonatal health and adverse effects. We searched PubMed, the Cochrane Library, and Scopus for relevant articles. Two independent reviewers screened the articles. A third reviewer resolved the discrepancies. Meta-analysis was done using RevMan 5.3. Fixed- or random-effects models were used based on heterogeneity, with odds ratios comparing intervention and control groups. **RESULTS:** Intermittent preventive treatment with dihydroartemisinin-piperaquine (IPT-DP) during pregnancy significantly reduces the risk of malaria-related outcomes. Specifically, IPT was associated with a 55% decrease in the odds of having malaria during pregnancy (OR = 0.45, 95% CI: 0.36, 11.18, P ≤ 0.001); a 39% decrease in the odds of placental malaria (OR = 0.61, 95% CI: 0.43, 0.85, P = 0.004); and a 46% decrease in the odds of malaria at delivery (OR = 0.54, 95% CI: 0.30, 0.98, P = 0.04) (Figure 1). However, there was no significant reduction in the risk of adverse events (OR = 0.94, 95% CI: 0.73, 1.20, P = 0.61); low birth weight (OR = 0.94, 95% CI: 0.73, 1.20, P = 0.61); foetal loss (OR = 1.14, 95% CI: 0.67, 1.94, P = 0.62); or stillbirth (OR = 1.03, 95% CI: 0.56, 1.89, P = 0.93). On the other hand, there was a statistically significant increase in the risk of miscarriage in the IPT group compared to the control (OR = 3.37, 95% CI: 1.08, 10.51, P ≤ 0.001). This is 3.37 times the odds of miscarriage with IPT use. **CONCLUSION:** Dihydroartemisinin-piperaquine reduces the risk of malaria and placental malaria in HIV pregnant women. Also, it does not significantly impact adverse pregnancy outcomes such as low birth weight, foetal loss, or stillbirth. However, DP increases the risk of miscarriage. This indicates the need for careful prescriptions for HIV pregnant women.

Figure: Effect of IPT on Malaria Outcomes in Pregnant Women; (A) Malaria During Pregnancy, (B) Placental Malaria, (C) Malaria at Delivery.



Key Words: Artemisinins, Malaria, HIV, Pregnant Women.