

To compare the effects of intermittent treatment with sulfadoxine-pyrimethamine (SP) given during the second and third trimester of pregnancy, the use of insecticide-treated nets (ITN), or the combination of both on haemoglobin (Hb) levels during pregnancy, a randomized, placebo-controlled intervention trial was conducted in a malaria-endemic area of western Kenya from July 1997 to September 1999. Primigravidae and secundigravidae were enrolled into the study and randomized into 4 intervention groups: (i) ITNs and SP, (ii) ITNs and placebo SP, (iii) SP alone, and (iv) placebo SP. All groups were offered case management and iron and folic acid supplementation. Seven hundred and fifty-two women were followed until delivery (53.2% were primigravidae and 46.8% secundigravidae). Among primigravidae in all the groups there was a significant improvement in Hb levels at delivery (107.6 g/L) compared with recruitment (101.9 g/L) ( $P < 0.006$ ) with the greatest improvement in the combination ITNs + SP group. The protective efficacy of ITNs + SP on anaemia was 55.8% (95% CI 30.6–71.8), of SP alone 50.9% (95% CI 22.2–69.0), and of ITNs 41.6% (95% CI 9.8–62.3). Among secundigravidae, Hb levels were slightly lower at delivery compared with recruitment ( $P = 0.03$ ). It was concluded that malaria is a major cause of anaemia in primigravidae but that other causes play a more significant role in secundigravidae, and that intermittent treatment with SP or use of ITNs benefits primigravidae more than secundigravidae.