n ferritin and haemoglobin during pregnancy, in a malaria-endemic area of western Kenya

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Abstract:

Between 2000 and 2004, a cross-sectional survey was conducted, as part of a prospective cohort study, among the women attending antenatal-care clinics in Bondo district, a malaria-endemic area of western Kenya. The aim was to assess the prevalence of iron deficiency and determine the predictors of haemoglobin and serum ferritin concentrations in the women who had a gestational age between 14 and 24 weeks. A standardized questionnaire was used to collect and store the relevant bio-data for the study. Haemoglobin and ferritin concentrations were evaluated, sickle-cell status was determined, and malarial parasitaemias were detected and evaluated, using blood samples collected at enrollment. Multiple regression analysis was then used to test for significant predictors of the haemoglobin and serum ferritin concentrations. Although 842 women were enrolled in the prospective cohort study, haemoglobin concentrations were evaluated for only 828 of them, serum ferritin levels for 621, and levels of parasitaemia for 812. The mean haemoglobin concentration recorded was 10.9 g/dl. Although 37.9% of the subjects had mild-moderate anaemia (7.0-10.5 g haemoglobin/dl), only 0.5% were severely anaemic (<7.0 g haemoglobin/dl). The geometric mean serum ferritin concentration recorded was 18.9 microg/litre, and 32.3% of the subjects evaluated had low serum concentrations of ferritin (<12 microg/litre). Among the parasitaemic primigravidae (but not the parasitaemic multigravidae), those found positive for sickle-cell trait had significantly lower haemoglobin concentrations than those found negative in a sickling test (P=0.01). Among the pregnant women of Bondo district, gravidity, malarial infection and sickle cell appear to be key predictors of haemoglobin concentration.