Impact of Plasmodium falciparum and hookworm infections on the frequency of anaemia in pregnant women of rural communities in Enugu, South East Nigeria

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Abstract

Introduction: Malaria and hookworm infections are common in sub-Saharan Africa and they increase the prevalence of anaemia in pregnancy with resultant poor pregnancy outcomes. This study was carried out to assess the impact of Plasmodium falciparum and hookworm infections on the frequency of anaemia among pregnant women in two rural communities in Enugu, South East Nigeria.

Methods: A cross sectional study descriptive was carried out in a total of 226 women attending antenatal clinics at two rural Primary Health Centres (PHC) from April 2011 to July 2011 (each PHC with 113 subjects). Socio-demographic data were collected through a structured questionnaire. Blood and stool samples were evaluated for haemoglobin estimation and malaria parasites, and stool samples examined for parasitic infection in all the women. Data was analyzed using STATA 10 software statistical analysis package. Student t-test was used for comparing mean values and chi square test for comparing categorical variables and level of significance set at p<0.05 and logistic regression was used to identify the risk factors associated with malaria in pregnancy.

Results: The mean age of the women was 27 years with range 18 - 38 years and SD of 5 years. Most of the women were housewives and over 50% in their second trimester. 53% of them had malaria parasites while 27% had hookworm infection. About 40% of the women were anaemic (haemoglobin <10g/dl). There was a significant difference in mean haemoglobin (0.84 g/dl) between those with malaria and without malaria (p < 0.001). Similar association was found between hookworm infection and anaemia (p < 0.001). Though both malaria and hookworm infections greatly increase the odds for anaemia (AOR 18.06, CI 18.15 -39.99, P<0.001) and (AOR 5.28, CI 2.26 -12.38, P<0.001) respectively, the odds for having anaemia in pregnancy was higher for malaria than hookworm infections.

Conclusion: Plasmodium falciparum and hookworm infections have significant impact on the high frequency of