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Prevalence of asymptomatic Plasmodium vivax infection is associated with anaemia during pregnancy in malaria endemic population of Hazaribag, Jharkhand, India

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The escalating burden of malaria during pregnancy (MIP) is of public health concern across the globe. The combinatorial adverse impact on maternal health during MIP further perplexed the situation of prompt diagnosis, treatment and preventive strategies. This prompted us to evaluate the status of population at risk of MIP in Hazaribag, Jharkhand, India. Cross-sectional evaluation at antenatal clinics (ANC) and delivery units (DU) at Sadar hospital, Hazaribag. Malaria was screened by Giemsa-staining and/or rapid diagnostic test. Iron and ferritin were quantified by colorimetric method and complete blood counts were carried out for evaluating RBC indices in stratified groups during MIP. Pre-tested questionnaires were used to gather socio-demographic, clinical and obstetrical data. Prevalence of MIP was 5.4% and 4.3% at ANC and DU, and 13.2% malaria in women without pregnancy. Majority were infected with asymptomatic *P. vivax* (over 85%) at ANC and DU. Peripheral parasitemia were significantly associated with fever within past week, rural origin and first/second pregnancies in multivariate analysis, with highest risk factor associated with fever. Strikingly, anaemia was prevalent in 86% at ANC compared to 72% at DU; whereas severe anaemia was 13.6% and 7.8%, respectively. More anaemic situations were observed in MIP (88% and 89% at ANC and DU); whereas severe anaemia was 23% and 21% at ANC and DU, respectively. Anaemia were significantly associated with malaria, iron and ferritin, haemoglobin, formal education in cohort and MIP in univariate and multivariate analysis, with highest risk factor associated with haemoglobin. Further, significantly lower RBC content, RBC indices, iron, ferritin and haemoglobin levels were observed in *P. vivax* infection during MIP. In view of significant association of anaemia and parasitemia during asymptomatic infection of *P. vivax* in MIP suggests prompt diagnosis regardless of symptoms. Comprehensive drug regime should be offered in association with existing measures in clinical MIP, delivery and its outcome.

Biography

Mohammad Sohail completed his MS in Biotechnology from Hamdard University. He graduated from NIMR, New Delhi and is pursuing Post-Doc training at UC, Riverside & NYU, USA. He studied a population biology approach that combines epidemiology, immunology, bioinformatics and molecular biology, to study the immune responses to and pathology of malaria infections.

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