ABSTRACT

Background: Malaria affects over 219 million and kills over 660 000 people every year, 90% of whom are in Africa and 85% of whom are children under five years of age. In endemic regions of Uganda such as the north western, malaria presents with diversity of clinical phenotypes that may be attributed to a number of factors including blood group. In the Ugandan setting, there is limited information on the relation between blood group distribution and malaria. Furthermore, available data on the relationship between blood group and malaria is contradictory. Thus, the aim of this study was to determine the distribution of ABO blood groups and its association with the clinical presentation of malaria among patients seeking medical attention at Mungula Health Centre IV (HCIV) in endemic Adjumani district.

Methods: This was a cross sectional study that involved 275 participants of age between 6 months-45 years seeking medical attention at Mungula HCIV in Adjumani district. Blood samples were collected for blood smear microscopic examinations and blood group determination by the direct tiles method. Associations between blood group phenotypes and malaria presentation were determined using Chi square statistics. For all statistical tests, a P value of $<$ 0.05 was considered significant.

Results: The predominant phenotype among the study population was blood group A (48.7%), followed by O (32.4%), B (14.2%) and AB (4.7%). The prevalence of uncomplicated malaria was 89.1%, where as 10.9% presented with severe/complicated malaria. Blood group „A" were 4.9 times more likely to suffer from complicated/severe malaria than blood group B [OR (95% CI) = 4.887 (1.109-21.53), P-value=0.0283]. None of the participants with blood group O or AB presented with severe malaria.

Conclusion: Results indicated that blood group A phenotype may modulate severe disease. Absence of severe malaria among blood groups O and AB may suggest a protective role conferred by these blood groups against severe malaria.