

A-06 Association between ABO blood groups and disease severity in *Plasmodium falciparum* malaria

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The severity of clinical disease in *Plasmodium falciparum* malaria has been associated with several host genetic and parasite virulence factors. The objective of this study was to investigate the relationship between the ABO blood group antigens and the disease severity in *P. falciparum* infections. The ABO blood group composition in 2 clinical categories of *P. falciparum*-infected patients, having severe and complicated (SC) and uncomplicated (UC) infections, was analysed. Blood group composition of the SC category of patients was significantly different from that of the UC category ($p < 0.001$) as well as from that of a population control ($p < 0.0001$); it was comparable between the uncomplicated category and the population control. However, the comparison of ABO blood groups of another category of severe and complicated patients with infectious origins other than malaria, showed that it was comparable to that of both uncomplicated category and the population control, but significantly different from that of SC malaria patients ($p = 0.0089$).

The occurrence of blood group O in the SC category of patients was significantly lower compared to that in the UC category ($p = 0.0013$) and in the population control ($p < 0.0001$). Incidence of blood group AB in the SC category was significantly higher than that of either the UC category ($p < 0.01$) or the population control ($p < 0.0001$). These findings suggest that (i) the blood group O antigen may be protective against, and/or the blood group AB antigen confers susceptibility to the development of severe and complicated disease; (ii) this preferential susceptibility to develop severe disease is specific for *P. falciparum* malaria. Further, there is no evidence from this study to suggest that the ABO blood group system affects susceptibility to infection with *P. falciparum* malaria, however, the data suggest that it does influence significantly, the susceptibility of persons with *P. falciparum* infection to progress to a severe and complicated state.