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THE ASSOCIATION BETWEEN BLOOD GROUPS AND DENGUE AND DENGUE HAEMORRHAGIC FEVER

Kalamathy Murugananthan[1,3]*, **Kumanan Thirunavukkarasu [2], Sivaganesh Subramaniyam[3], Natkunam Ketheesan[4] and Faseeha Noordeen[5]**

[1]*Department of Pathology, Faculty of Medicine, University of Jaffna, Sri Lanka*
[2]*Department of Medicine, Faculty of Medicine, University of Jaffna, Sri Lanka*
[3]*Regional Epidemiology Unit, Jaffna, Sri Lanka*
[4]*James Cook University, Australia*
[5]*Department of Microbiology, Faculty of Medicine, University of Peradeniya, Sri Lanka*
*kalamathy6@gmail.com

In Sri Lanka dengue fever (DF) and dengue haemorrhagic fever (DHF) epidemic continues to be a major public health problem, with a large number of cases being reported from south west and central parts of the island. However, from 2009, there has been a rapid increase in DF/DHF cases in the northern part of Sri Lanka. A few previous studies have suggested the influence of blood group/s on the outcome of DF, as some blood groups are thought to be associated with severe forms of DF. The aim of the present study was to investigate the association of blood groups in DF/DHF patients (clinical and serological features identified) admitted to Teaching Hospital (TH), Jaffna.

Blood samples were collected from 465 DF/DHF suspected patients admitted to the medical and paediatric wards of Teaching Hospital, Jaffna from 2010 to 2012. Four millilitres (mL) of blood was collected for serological testing for DF and 0.5 mL blood was collected into an EDTA bottle for blood grouping. Standard hemagglutination assay recommended by the National Blood Bank, Sri Lanka was used to type the blood. The clinical and demographic data were entered into a pre-tested questionnaire. Dengue IgM and IgG ELISA (Pan Bio, Australia) and blood grouping were performed for each sample. Frequencies of A, B, AB and O blood-groups in clinically suspected DF/DHF cases, as well as in the analysis of associations with disease severity were calculated. Chi-Square analysis for A, B, AB and O blood groups (2×2 contingency tables) was used to calculate the level of significance and $P < 0.05$ was considered as significant. Of the 465 patients, 257 (55.2%) were males and the mean age of this cohort was 26.8 years with a mean fever duration of 5.53 days. The common symptoms noted were fever, arthralgia, myalgia, retro-orbital pain, rash and haemorrhages. Of the 465 patients tested, 234 (50.32%) and 254 (54.6%) were positive for IgM and IgG, respectively. Of the 465, 411 patients were clinically categorized having DF and 54 patients were clinically categorized having DHF. Of the 411 with DF, 31.38% (n=129) had blood group B; 30.41% (n=125) had blood group O; 24.5% (n=101) had blood group A and the rest were AB (n=56). Of the 54 with DHF, 31.4% (n=17) had blood group B; 20.4% (n=11) had blood group O; 20.4% (n=11) had blood group A and the rest were AB (n=15). The results of the present study suggested an association of blood group B in DF and DHF as this blood group was noted to be higher in the study cohort than that is in the Sri Lankan population. However, the association observed here is not statistically significant ($P > 0.05$).