

HLA Antigens of Dengue Hemorrhagic Fever Patients

Principal Investigators :

Pimol Chiewsilp, M.D.*
Natth Bhamarapavati, M.D.*
Robert McNair Scott, LTC, MC

OBJECTIVE : To determine if children with dengue hemorrhagic fever (DHF) have a unique distribution of HLA types.

BACKGROUND : The serological response of DHF patients against dengue antigens may be classified into primary and secondary type responses (1). The severity of the disease appears to be more pronounced in females and in secondary dengue infections (2, 3). It is possible that some individuals are more susceptible to this particular infection than others. In addition, there may be some genetic markers that control the immunologic mechanisms.

The present investigation was undertaken to determine whether there were any significant deviations from the normal distribution of HLA-A and HLA-B in DHF patients.

MATERIALS AND METHODS : A retrospective study was carried out on 87 unrelated DHF patients from the case collection of Children's Hospital, Bangkok, Thailand (clinical data) and the AFRIMS (serological data). Clinical criteria for DHF followed those of Nimmannitya (4) and serological criteria those of Winter et al. (1). Eighty seven patients (39 male and 48 female) were included in this study. There were 8 and 79 patients with primary and secondary infections, respectively.

The analysis was carried out according to sex, primary and secondary responses, and grading of the patients.

The control group consisted of 138 apparently healthy and unrelated local blood donors, 109 male and 29 female.

HLA typing was done using the standard two-stage lymphocytotoxicity technique (NIH) (5). Fifty-nine antisera from NIH were used to detect the following HLA-A and B locus specificities: A1, 2, 3, 9, 10, 11, 19, 28, 29, w23, w 24, w25, w26, w30, w31, w32, w33, w34, w36; B5, 7, 8, 12, 13, 14, 15, 17, 18, 27, 40, w16, w21, w22, w35, w38, w41, w42.

RESULTS : HLA-A1 and A9 of the primary response group and HLA-A2 and B blank of secondary response groups were found to be significantly increased as compared with the normal control group. ($p < 0.05$). HLA-A2 was also significantly increased in the male patients ($p < 0.05$), while HLA-B17 was significantly increased among the female patients ($p < 0.05$). A significantly increased prevalence of HLA-B blank was observed in grade 3 and among all

* Faculty of Medicine, Ramathibodi Hospital, Bangkok.

DHF patients ($p < 0.05$). Decreased prevalences of HLA-B13 ($p < 0.05$) and HLA-B15 ($p < 0.05$) were observed in the secondary response group, and in grade 2 patients, respectively. However, the significance of these findings (and p values) should be open to question, since 38 antigens were tested for; it is not unlikely that the findings are due to chance.

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