

ABSTRACT

Keywords : HLA system, leprosy, genetic susceptibility

Genetic factors are considered to be important in leprosy and influence both susceptibility to the disease and its mode of expression. In order to investigate the role of immunogenetic factors in determining the form of leprosy, the HLA class I and class II were studied by HLA typing serologically (Microlymphocytotoxicity) and by a PCR - SSO typing technique in 101 patients (20 TT types and 81 LL types) and 113 healthy controls. The diagnosis of leprosy was based on clinical, bacteriological, histopathological and immunological examination. The design of the study was a case - control. The data were analyzed by Chi-Square test or Fisher exact with Yates correction to compare the number of patients and controls positive for an antigen and alleles. The level of significance was set at 0,05. Estimated relative risk (OR) was calculated by Wolf formula and by Browner for the estimation of proportion on the sample size.

The result of the study showed: (1) There was a positive association between susceptibility to leprosy in the population of Bugis – Makassar with HLA-A1, HLA-B8, HLA-CW2, HLA-DRB1* 1501-1505, 1601-1603, 1605, 1606 (DR2) and HLA-DQW1 (OR 11, 15, 3, 2 and 1 times). (2) Based on the Odds Ratio (OR) of HLA-class I locus, highest than HLA-class II, it was concluded that HLA-class I plays more important in controlling for susceptibility to leprosy in the population of Bugis – Makassar. (3) The frequencies of HLA-A23(19), HLA-B17, HLA-CW2 and HLA-DRB1* 1501-1505, 1601-1603, 1605, 1606 (DR2) are highest in Tuberculoid leprosy groups than in healthy controls. It can called as the risk factors for Tuberculoid leprosy. (4) The frequencies of HLA-A28, HLA-B7, HLA-DRB1* 1501-1505, 1601-1603, 1605, 1606 (DR2) are highest in Lepromatous leprosy groups than in healthy controls. It can called as the risk factors for Lepromatous leprosy. (5) The antigens of HLA-A2, HLA-CW1, HLA-DQW2, HLA-DRB1* 1404 (= DR14) were the highest frequencies in healthy controls group compare in case groups in the population of Bugis – Makassar. It can called as a protective factors for leprosy. (6) The combination of allel HLA-DRB1* 1501-1505, 1601-1603, 1605, 1606 (DR2) with HLA-DRB5* 0101 or with HLA-DRB5* 0102, 0103, 0203 were found to increase the risk of leprosy. In the contrary, the combination of allel HLA-DRB1* 1201, 1202 with HLA-DRB3* 0201-0204 or with HLA-DRB5* 0101 were found to decrease the risk of leprosy. (7) Preliminary data shows that in Bugis – Makassar ethnics groups, HLA-antigen A2, has the highest frequency among HLA-class I antigens, where as among HLA-antigens class II, DR2 has the highest frequency.