

HLA Antigen Distribution in Selected Caste Groups from Mumbai, Maharastra, India

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ABSTRACT Indian population is well known for its genetic diversity. Among the numerous endogamous communities, which is restricted very much by custom, marriage and occupation, we have collected a total of 229 individuals from 1996 – 1999 comprising of Parsee, Patels and Vatalia Prajapathi (VP) caste groups. We present here the HLA antigen distribution of these endogamous caste groups and compare their distribution of HLA antigens with other caste groups reported from other parts of India. Blood samples from random 229 healthy individuals belonging to six different caste groups referred for HLA tissue typing during 1996 – 1999 were studied for HLA -A, and -B Loci antigens. The HLA class I antigens were identified by using the standard complement mediated NIH microlymphocytotoxicity assay. The HLA antisera used were commercial (Biotest, Germany; Behring, Germany; Pelfreez, USA) as well as indigenous in origin. The phenotypic frequencies of HLA A9, A19, B12, B13, and B14 were significantly increased among the Parsee community when compared to other caste studied and all the populations reported from India. The phenotype frequencies of HLA A9, A19, B5, B73 in Vatalia pajapathis, A1, A3, A11, B8, B15, B16, B18, B21, B22, B51, B62 in Patels were found to be significantly increased. The phenotype frequencies of HLA B12, B22, B37, in Vatalia prajapathis, A10, A36, B13, B27, B48, B55, B63, B60 in Patels were significantly decreased among the HLA antigens tested. Two Locus haplotype analyses revealed that A19-B14 in Parsee; A2-B73 in Vatalia prajapathis, A24-B49 in Patels was unique in each of the caste groups. The other haplotypes were in concordance with the Indian haplotypes, which have been commonly reported. The observed antigen frequencies haplotype frequencies and linkage disequilibrium among the caste groups suggest the influence of genetic drift caused by selection, geography and culture. Further the study reveals that the caste groups of India cannot be considered as a single panmictic population with reference to genetic characteristics, which may have a clinical relevance in unrelated donor selection for allogenic Bone marrow transplantation in India.

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