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HLA Antigen Distribution in Selected Gujarati Subcaste from Mumbai, Maharashtra, India

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ABSTRACT Indian population is well known for its genetic diversity. Among the numerous endogamous communities, which are restricted very much by custom, marriage and occupation we have collected 178 unrelated Gujarati speaking individuals, belonging to Lohanas, Banyas and Gujarati Brahmins caste groups. We present here the HLA- A, B, C and DR locus antigen distribution of these endogamous caste groups compared with each other. The HLA antigens were identified by using the standard complement mediated NIH microlymphocytotoxicity assay. The phenotypic frequencies of HLA- A2, A9, B5, B35, B40, DR2, DR3 in Banyas, A10, A19, B8, B17, Cw3, DR7 in Lohanas and A1, B7, B22, Cw5, DR1 in Gujarati Brahmins were found to be significantly increased. The phenotype frequencies of A10, B13, DR6 in Banyas, B15, B22, DR4 in Lohanas and A2, A10, B8, B13, B37, Cw7, DR6 in Gujarati Brahmins were found to be significantly decreased among the HLA antigens tested. Haplotype analysis revealed that A33-B44-DR7 haplotype were present in all the three caste groups while, A1-B17 in Brahmins, A11-B35, A2-B5, A3-B18 in Lohanas and A11-B62, A3-B40 in Banyas were unique among the caste groups. Haplotype A24-B5 was identified among Lohanas and Banyas. The observed antigen frequencies and linkage disequilibrium among the three Gujarati caste groups suggest the influence of genetic drift caused by selection, geography and culture. The study also reveals that the caste groups in 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 allogeneic bone marrow transplantation in India.

[Home](#)

[Back](#)
