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HLA Association in Seronegative Spondyloarthritis Patients From Mumbai, India

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ABSTRACT Seronegative spondyloarthropathies (SSA) are a group of inflammatory disorder, which clinically involves axial skeleton, sacroiliac and shoulder joints. These patients often complain of low back pain with prominent morning stiffness or nocturnal pain. The association of HLA-B27 allele and its novel subtypes with spondyloarthropathy remains one of the best examples of a disease association with a hereditary marker. The study population comprises of 6180 suspected SSA patients who were referred to the HLA Laboratory of Sir Hurkisandas Nurrotumdas Hospital, Mumbai, India, from September 1985 to May 2005, for their HLA antigen profile. These were compared with 5000 ethnically matched control group whose HLA typing was performed during the same period by the standard NIH microlymphocytotoxicity assay using commercially available sera, defining a single HLA specificity. Our results revealed that HLA-B27 (8.49% vs. 2.37%) is significantly associated with SSA when compared to controls. Among the B7 CREG alleles such as HLA-B7, HLA-B40, HLA-B22 and HLA B42, the HLA-B7 (10.14% vs. 2.42%) and HLA B-40 (10.28% vs. 5.03%) allele frequencies were significantly increased among the HLA-B27 negative patients when compared to the HLA-B27 positive patients. HLA B27 allele distribution among the different caste and population groups revealed that maximum allele frequencies were observed among the Gujarathi and Maharastrians with distinctive variations among the caste groups studied and reported from India. Our results confirm the HLA B27 association in SSA patients, but the strength of this association varies considerably between racial and ethnic groups. Further, HLA-B7 and HLA B-40 alleles may also be associated with HLA-B27 negative patients with clinical symptoms of spondyloarthropathy.