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HLA Alleles in Anti-Endothelial Cell Antibody Positive Indian SLE Patients

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ABSTRACT Anti-endothelial cell antibodies (AECA) are heterogeneous group of antibodies against a variety of antigenic determinants of endothelial cells (EC). AECA plays an immunopathogenic role in triggering EC activation leading to vascular damage. The presence and the strength of AECA have been found to correlate with disease activity in various systemic vasculitic diseases like systemic lupus erythematosus. To assess the involvement of HLA alleles in AECA production, 45 clinically and histopathologically proven cases of class IV lupus nephritis were studied for their HLA A and HLA B alleles by standard NIH microlymphocytotoxicity assay. All patients fulfilled ARA classification criteria for SLE. AECA were detected by indirect immunofluorescence using cultured human umbilical vein endothelial cells (HUVEC). Forty percent of the SLE patients possessed the AECA antibodies. The HLA alleles A9 (24) (OR=2.90, EF=0.29,p value 0.08) and B21 (OR=74, EF= 0.11, p value 0.038) were significantly increased while HLA A1 (OR=0.27, PF= 0.35, p value 0.039) and B40 (OR= 0.29, PF= 0.25, p value 0.076) were significantly reduced among AECA positive SLE patients when compared with AECA Negative patients. Further two-locus haplotype analysis revealed that A19-B35, A3-B21, and A28-B21 were observed with significant T value among AECA positive patients. The common clinical symptoms among the AECA positive patients observed were lupus nephritis (84%), involvement of skin (22%), involvement of joints (17%) and CNS as well as hematological involvement (11%). Our findings suggest that immunogenetic mechanism may be involved in AECA antibody production leading to the immunopathogeneis in a subset of SLE patients.