Southern African Training Academy

Letter to Editor

Human leukocyte antigen - DRB1 and cardiomyopathy in black central africans at LOMO medical center from Kinshasa, Limete, Democratic Republic of the Congo: scientific letter to editor

Sir,

Over 30 years I hypothesized possible relationships between idiopathic cardiomyopathies and human leukocyte antigen (HLA) complex at University of Bucharest, Romania, Free University of Brussels, Belgium, Katholieke Universiteit Leuven, Belgium, Baylor College of Medicine, Houston, USA, and University of Kinshasa, Democratic Republic of the Congo. Since I have been investigating HLA – DRB1 typing in patients with cardiomyopathy (CMP) to test for any genetic background of the immune response in that condition. 56 patients in severe congestive heart failure referred at the LOMO Medical Center, Kinshasa Limete, Democratic Republic of the Congo, between June and November 2006, were included in this study together with 56 gender and age matched controls. CMP was dilated in 46 cases (82.1%), hypertrophic in 6 (11%), and restrictive in 4 (7.1%). A 10 ml ethylenediaminetetraacetic acid blood sample was obtained from cases and controls for DRB1 typing (1). The phenotypic frequencies of HLA – DRB1 in cases and controls were compared using X2 and p adjusted for alleles numbers as statistical tests (2).

No significant difference in allelic frequencies of HLA antigens DRB1 could be demonstrated between cases and controls in this study. DRB1*1106 (DRB1*1101 or 1104) was found in 10 CMP patients and 18 controls. An increase in the phenotypic frequencies of HLA B27 and DR4 antigens have been reported in the Caucasians patients with dilated CMP (3). Such patients show humoral and cellular abnormalities of the immune response for which the pathogenesis is unknown.

HLA Class II antigens, HLA–DP, and DQ–DR are heterodimeric glycoproteins consisting of a "a" and a "b" chain which are cell-surface molecules mainly expressed on B cells, activated T cells, antigen-presenting cells, thymic epithelium; they are inducible by interferon. Class II antigens play a role in the presentation of foreign antigens to T cells to initiate an adequate immune response. They are also involved in the development of specific immune recognition of self by determining the repertory of expressed T-cell reception on mature T cells. In addition, they play a crucial role in the transplantation immunology and the susceptibility to autoimmune diseases. Most of the exposed HLA class II genes show an extensive allelic variability. The DRB subregion is unique in that the organization of the DRB genes is not the same for all haplotypes. Four expressed DRB genes, DRB1, DRB3, DRB4, and DRB5 have been characterized and depending on the haplotype, a maximum of 2 these DRB genes are encoded. Here we used a nonisotopic reverse dot blot assay for HLA Class II DRB1 genes. The method is based on the polymerase chain reaction amplification of the different second exons followed by hybridization to immobilized SSO3 and a nonisotopic visualization of the positive signals. The HLA antigens cell surface molecules involved in the control of immune response and alloreactivity are highly polymorphic, especially at Class II loci. There are, for instance, at least 60 alleles for locus HLA – DRB1 alone. To show this candidate protective (negative) association with CMP, a DRB typing of a larger group of patients and controls has to be performed. However, the lack of significant associations is in agreement with the fact that CMP is a multifactorial disease with unsure immunological input.

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REFERENCES

1. Buyase I, Decorate R, Baens M, Cuppens H, Semana G, Emonds MP, et al. Rapid DNA typing of class II HLA antigens using the polymerase chain reaction and reverse dot blot hybridization. Tissue Antigens. 1993;41:1-14.
2. Svejgaard A, Jersild C, Nielsen LS, Bodmer WF. HL-A antigens and disease. Statistical and genetical considerations. Tissue Antigens. 1974;4:95-105.
3. Schwartz RH. Acquisition of immunologic self-tolerance. Cell. 1989;57:1073-81.