Prevalent HLA class II alleles in Mexico City appear to confer resistance to the development of amebic liver abscess.

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The 500 years of admixture among Amerindians, Europeans, primarily Spaniards and African slaves, has formed the majority of the contemporary population of Mexico. Spanish-speaking population is commonly referred to as Mestizo and currently makes up about 93% of the total population. Different studies show clearly that the genetic structure varies along the country; the Mexicans from North area of Mexico have a greater proportion of European genetic component compared with Mexicans from the Central area, which have a greater percentage of Amerindian genes. Amebiasis is an endemic disease and a public health problem throughout Mexico, the incidence rates of amebic liver abscess (ALA) vary among the geographic regions of the country. Notably, incidence rates are high in the northwestern states compared with the central region (Mexico City with a rate of 0.69/100,000 inhabitants). These data may be related to host genetic factors that are partially responsible for resistance or susceptibility. We think that due to its biological function in the immune response, polymorphisms in genes of the HLA class II molecules (DRB1 and DQB1) are relevant candidates for studying their possible influence on the outcome of infection. We studied 55 ALA patients, from General Hospital in Mexico City, clinically diagnosed by sonography and positive serology; genomic DNA was extracted from peripheral blood mononuclear cells. To establish the genetic identity of the population, 15 STR's, were analyzed with multiplexed PCR, and the allelic frequencies of HLA were studied by PCR-SSO. The allele frequencies obtained were compared to an ethnically matched healthy control group (84 individuals). We found interesting trends in the population from Mexico City. The less frequent alleles in ALA patients were *DRB1*08* (0.118 vs 0.238 in controls; p=0.01; OR=0.42) and *DQB1*04* (0.109 vs 0.214; p=0.02; OR=0.40) considered to be markers of Amerindian populations. The haplotype *DRB1*08/DQB1*04* also demonstrated a protective trend against the development of this disease (0.081 vs. 0.178; p=0.02; OR=0.40). The *DQB1*02* allele frequencies were higher in ALA patients compared to the control group (0.127 vs 0.047; p=0.01; OR=2.9) this allele is common in Caucasian population. These trends suggest that the prevalent alleles in the population of Mexico City may be associated with protection against the development of ALA.