Revista Brasileira de Hematologia e Hemoterapia
Brazilian Journal of Hematology and Hemotherapy

www.rbhh.org

Scientific Comment

Comments on: frequency of alleles and haplotypes of the human leukocyte antigen system in Bauru, São Paulo

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Owing to the high degree of polymorphism, the human leukocyte antigen (HLA) system is one of the most widely used systems for immunogenetic and clinical studies, serves as an important reference for anthropogenetic studies and provides valuable information on population diversity.[1] Despite the use of various DNA markers, e.g., mitochondrial DNA, Y-chromosome, and microsatellites, HLA loci continue to be regarded as useful genetic markers in the determination of genetic relatedness and degree of admixture between different populations. It is also used to determine a probable genetic relationship between populations.[2,3]

The Brazilian population is one of the most heterogeneous populations in the world due to colonization and centuries of interethnic crosses mainly involving the Spanish, Italian, Portuguese, African, and German peoples. Therefore, a better understanding of the genetic characteristics of these populations is required taking into account the high degree of variations in the frequency of HLAs between different ethnic groups. This increases the difficulty of finding compatible donors for transplants of bone marrow and stem cells among unrelated individuals.[4,5]

Salvadori et al.[5] in their article entitled, "Frequency of alleles and haplotypes of the human leukocyte antigen system in Bauru, São Paulo" published in the current edition of the *Revista Brasileira de Hematologia e Hemoterapia*, aimed to determine the genetic diversity of HLA class I and II alleles as well as the frequency of the haplotypes in bone marrow donors in the Bauru region and to compare them with the frequencies observed in other regions of the country.

The authors studied a cohort of 3542 volunteer donors registered with the National Registry of Voluntary Bone Marrow Donors (REDOME) in Bauru, São Paulo, Brazil, selected from 2008 to 2012.[5] HLA typing was performed using the reverse line blotting procedure at a low resolution with the Dynal Relli SSO HLA Typing Kit and automated Dynal AutoRelli TM 48 device (Invitrogen, USA). In this study the authors identified 20 HLA-A*, 36 HLA-B* and 13 HLA-DRB* allelic groups, with HLA-A*02 (26.3%) being the most common followed by HLA-B*35 (12.0%) and HLA-DRB1*07 (14.9%). The most common haplotype was A*01-B*08-DRB1*03 (1.9%) in the study population. They also highlighted the most shared and most divergent alleles in different regions of the country as compared to the existing literature, thereby drawing attention to HLA*02, which was the most frequent allele observed in all the populations studied.

As expected, similarities were seen between the population of Bauru and the populations of Ribeirão Preto and São Paulo, which are located in the same state. An interesting finding is that populations located geographically close had fewer alleles in common than those in geographically distant regions. This finding shows that although similarities

DOI of original article: http://dx.doi.org/10.5581/1516-8484.20140026.

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http://dx.doi.org/10.1016/j.bjhh.2014.03.015

caused by the mixing of the populations exist, knowledge of the immunogenic profile of populations is essential to reduce the waiting time for a suitable transplant donor in the country.[5]

The current study is highly relevant and useful because it aids in the search for compatible bone marrow donors through REDOME, thereby minimizing the waiting time for transplantation due to an absence of a related donor.[5] Furthermore, many studies can use the data generated by this study as knowing the immunogenetic profile of normal individuals in a population enables comparisons with the profile of several diseases found in that population in order to identify disease markers. The large sample size used in this study makes the results obtained highly significant, and therefore, of great scientific value.

Conflicts of interest

The author declares no conflicts of interest.

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