A retrospective study was carried out on 140,320 blood donors (male and female) during a period of four years from January 1, 2007 to December 31, 2010 in the State Blood Bank, Department of Transfusion Medicine, Chhatrapati Shahuji Maharaj Medical University, Lucknow.

The frequency of ABO and Rh blood groups in a total of 140,320 males and females, donor population was compared. Among Rh-positive male donor’s blood, group B (53,400, 39.84%) was found to be the most prevalent group followed by group O (39,000, 29.10%), A (29,135, 21.73%), and AB (12,485, 9.33%). Among Rh-positive female donors, again blood group B was most common (100, 35.08%) followed by group O (75, 26.31%), A (65, 22.83%), and AB (45, 15.78%). Rh-negative donors were 6,015 (4.29%) among the total donors. On further analysis, female donors showed a relatively higher incidence of Rh negativity (35, 10.93%) as compared with males (5,980, 4.28%). Among Rh-negative males, blood group B (2,500, 41.80%) was the commonest followed by group O (1,997, 33.39%), A (800, 13.39%), and AB (683, 11.42%), whereas in Rh-negative females, blood group B (20, 57.14%) was followed by O (8, 22.86%) and A (7, 20.00%). None of the female donors showed AB negative. The total of ABO blood group was group B (56,020, 39.92%) followed by group O (41,080, 29.27%), group A (30,007, 21.38%), and group AB (13,213, 9.43%). In religion wise, Hindu blood donors were 11,290 (80.02%) and Muslim were 28,030 (19.98%). The Rh-positive donors were 1,34,305 (95.71%) and Rh-negative were 6,015 (4.29%).

Research on ABO group system has been of immense interest, due to its medical importance in different diseases. The ABO blood group system is not only important in blood transfusions, cardiovascular diseases, organ transplantation, erythroblastosis in neonates, but also one of the strongest predictors of national suicide rate and a genetic marker of obesity.[3]

In our study, the ABO blood groups and Rh positivity in male and female donors showed that the blood group B positive was most prevalent in both male and female followed by group O, A, and AB. In contrast, blood group A is the most prevalent group in Russian Federation.[3]

India is a country with a lot of diversity in race, religion, and creed. Hence, diversity has been observed in the distribution of blood groups in population within the country. In our study, we observed that the Hindu blood donors were higher in percentage as compared with Muslim donors. Similarly, Ray et al. observed that highest blood donation was from Hindu donors (93.00%) as compared to donors from other religions.[4]

Sir,

The ABO blood group system was the first human blood group system to be discovered by Landsteiner in 1900. The ABO blood group system is the only system in which antibodies are consistently and predictably present in the serum of normal individuals whose red cells lack the antigens.[1] There are only two Rh-D phenotype such as Rh-D positive and Rh-D negative, depending on whether Rh-D antigen is present on the red cell or not. The frequency of ABO and Rh-D phenotypes in different populations has been extensively studied. Different blood groups have been shown to be particularly associated with different diseases as well. Rh system emerged as second most important blood group system due to hemolytic disease of newborn and its importance in RhD-negative individuals in subsequent transfusions once they develop Rh antibodies.[1] The D antigen, after A and B, is the most important red cell antigen in transfusion practice. Unlike the situation with A and B, persons whose red cell lacks the D antigen do not regularly have anti D in their serum. Blood bank usually has a problem of everchanging stock position and it being very difficult to predict the incidence of a particular blood group at a particular time. The present study was done to assess the distribution of blood groups in different categories of Northern India.

Letters to the Editor

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Our study represented mainly Uttar Pradesh which is the highest populated state of Northern India. Furthermore, we observed that none of the female donors were AB negative. In contrast, a Swat (Pakistan) study showed that the blood group AB negative was 0.92% in female donors.\[5\] This discrepancy may be due to the small number of negative donors included in our study.

In our study, donor population showed Rh negativity of 4.29% as compared with 17% in Britain. This suggests that the expected frequency of Rh isoimmunization would be lower in our population than that encountered in the Britain population.

To conclude, the commonest ABO blood group was group B in Northern India with Rh negativity at only 4.29%. This was in contrast to the prevalence of ABO and Rh blood groups in other parts of the world as well as also within the country. Besides this, the knowledge of the blood groups and genotypes in regards to the health of an individual is important and useful for medical diagnosis, genetic information, genetic counseling, forensic medicine needs, and also for the general wellbeing of individuals.

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