

Prevalence of ABO blood groups and rhesus (Rh) factor in the population residing in and around Amritsar, Punjab (a 4-year study from June 2007 to June 2011)

Sir,

As we know ABO and rhesus (Rh) blood group antigens are the most frequently studied genetic markers in a large group of people. The knowledge of the distribution of ABO and Rh blood groups is essential for effective management of blood banks inventory, be it a facility of smaller local transfusion service or a regional or national transfusion service. Apart from the importance in blood transfusion practice, the ABO and Rh blood groups are useful in population genetic studies, researching population migration patterns as well as resolving certain medico-legal issues, particularly of disputed parentage.^[1] The present study reports the distribution of ABO blood groups and rhesus (D) factor among the population residing in and around Amritsar (Punjab), India. We studied 14,725 subjects (both male and female) between June 2007 to June 2011 at Sri Guru Ram Das Institute. Our aim was to determine the distribution of different blood groups in the people residing in and around Amritsar and to compare it with population residing in different parts of India. There are no such data available for Amritsar (Punjab), India. In rhesus blood grouping system 13,441 (91.28%) individuals were rhesus (D) positive and 1,284 (8.72%) were rhesus (D) negative shown with general formula B>O>A>AB [Table 1]. These blood group frequencies with respect to ABO and rhesus (D) positive can be shown with general formula B>O>A>AB and for ABO and rhesus (D) negative, the formula is O>B>A>AB. In our study we did the grouping of 8,728 males and 5,997 females. The prevalence of ABO blood group was OM> BM> BF> OF> AM> AF> ABM > ABF [Table 2]. A study done in and around Bangalore in Karnataka showed the blood group frequency to be O>B>A>AB.^[2] These studies usually follow the asiatic trend of O>B>A>AB. These findings are in contrast to our finding of group B predominance which has been also shown by Nanu and Thapliyal in the north Indian population.^[3] Another study in Pakistan (Punjab) showed the frequency of blood group antigen to be B (36.16%)>O(34.14%)>A(21.20%)>AB(9.05%).^[4] The similarity of frequency of ABO blood groups in the Indian Punjab and Pakistan Punjabi population could be attributed to their common agricultural

Table 1: Frequency of ABO and Rhesus (D) blood group among the Population residing in and around Amritsar

Rh group	ABO blood groups				Total
	A	B	O	AB	
Rh +ve	2361 (16.04%)	5212 (35.38%)	4650 (31.58%)	1218 (8.28%)	13441 (91.28%)
Rh -ve	291 (1.97%)	394 (2.68%)	402 (2.73%)	197 (1.34%)	1284 (8.72%)
Total	2652 (18.01%)	5606 (38.06%)	5052 (34.31%)	1415 (9.62%)	14725 (100%)

Table 2: Gender wise distribution of ABO blood group

Gender	ABO blood groups				Total
	A	B	O	AB	
Male	1708 (11.60%)	2966 (20.14%)	3123 (21.21%)	931 (6.32%)	8728 (59.25%)
Female	944 (6.41%)	2640 (17.92%)	1929 (13.10%)	484 (3.30%)	5997 (40.73%)
Total	2652 (18.01%)	5606 (38.06%)	5052 (34.31%)	1415 (9.62%)	14725 (100%)

and historical background. Similar high degree of similarity with a distant population has been attributed to their common history.^[5] So the data generated can be helpful to health planners to face the health challenges of the region. In conclusion these studies generate a simple database of blood groups at regional level which can be helpful in case of calamities as well as prediction of future disease burden.

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