

Study of ABO and Rh(D) Blood Groups in Sunni Muslims of Jaunpur District, Uttar Pradesh, India

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ABSTRACT The present study reports the distribution of ABO blood groups and Rh (D) factor among the Sunni Muslim population of Jaunpur (Uttar Pradesh), north India. The percentage of A (30.5%), B (30%), O (28%) and AB (11.5%) groups and the frequencies of O, A and B alleles were found to be (0.5270, 0.2381, and 0.235, respectively) were similar to previously reported data on ABO system from Jaunpur. The percentage of Rh-positive and Rh-negative individuals is 97% and 3%, respectively.

INTRODUCTION

The ABO blood groups and Rhesus (Rh) D blood group antigens are the most frequently studied genetic markers in a large number of populations worldwide (Mourant et al. 1976). Several studies have been carried out on the distribution of blood groups among several ethnic and caste group populations in India (Bhasin et al. 1992, 1994). The studies on the genetic markers among Muslim population is very few, therefore an attempt has been made to study blood groups ABO and Rh (D) distribution among Sunni Muslim population of Jaunpur district.

MATERIAL AND METHODS

Blood samples from 200 unrelated individuals of both sexes were drawn from the Sunni (Muslim) settlements of Jaunpur district. Blood samples were taken from finger pricks, and the usual open slide method of testing for ABO blood groups and Rh (D) factor was followed (Bhasin and Chahal 1996). The ABO allele frequencies were calculated according to Mourant et al. (1976).

RESULTS AND DISCUSSION

The frequency distributions phenotypes and the allele frequencies of ABO and Rh (D) blood groups are presented in tables 1 and 2, respectively. It has been observed that in the Sunni Muslim A phenotype has the highest preponderance (30.5%), followed by B (30%), O (28%) and AB (11.5%) and alleles frequencies are O (0.527), A (0.238) and B (0.235) (Table 1). Majumdar (1943) reported the distribution of ABO blood groups in the Shia Muslim population of Jaunpur in which the percentages of different types reported were B(34%), O(36%), A(25%) and AB (5%). In the present study, most subjects tested positive for Rh (D) blood groups (97%) while only 3% were Rh (D) negative. The frequencies for D

Table 1: Distribution of the ABO blood groups and allele frequencies in the Sunni Muslims of Jaunpur

Pheno-type	Number observed	Percentage	Number expected	Allele frequency
O	56	28.0	55.5	A=0.238
A	61	30.5	61.5	B=0.235
B	60	30.0	60.6	O=0.527
AB	23	11.5	22.4	
Total	200	100.0	200.0	1.000

Table 2: Distribution of the Rh(D) blood groups and allele frequencies in the Sunni Muslims of Jaunpur

Phenotype	Observed number	Percentage	Allele frequency
Rh(D)+	194	97.0	D=0.827
Rh(D)-	6	3.0	d=0.173
Total	200	100.0	1.000

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and *d* alleles are 0.827 and 0.173, respectively (Table 2).

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REFERENCES

- Bhasin MK, Chahal SMS 1996. *A Laboratory Manual for Human Blood Analysis*. Delhi: Kamla-Raj Enterprises.
- Bhasin MK, Walter H, Danker-Hopfe H 1992. *The Distribution of Genetical, Morphological and Behavioural Traits among the Peoples of Indian Region*. Delhi: Kamla-Raj Enterprises.
- Bhasin MK, Walter H, Danker-Hopfe H 1994. *People of India: An Investigation of Biological Variability in Ecological, Ethno-economic and Linguistic Groups*. New Delhi: Kamla-Raj Enterprises.
- Majumdar DN 1943. Blood groups of tribes and castes of U.P. with special reference to the Korwas. *J Asiat Soc Beng*, 9: 81-94.
- Mourant AE, Kopec AC, Domaniewska-Sobczak K 1976. *The Distribution of the Human Blood Groups and Other Polymorphisms*. London: Oxford University Press.