

A Study of ABO and Rh(D) Blood Groups among Kurmi (Backward Caste) of Jaunpur District

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ABSTRACT The distribution of ABO blood groups and Rh(D) factor has been studied among the Kurmi of Backward population of Jaunpur (Uttar Pradesh). The O, A, B, and AB blood group percentage were recorded as 26.89%, 25.47%, 33.96% and 13.68% respectively. The Rh negative incidence was recorded as 1.42%. The allele frequencies of O, A, B and AB groups in the combined data were found to be 0.5073, 0.2183, and 0.2743 respectively and Rh(D) positive allelic frequency was 0.8808.

INTRODUCTION

The ABO blood group distribution varies in different geographical and ethnic groups. ABO blood group genes are mapped at 9q34.2. The ABO typing is the most important test performed in transfusion practice today and the single most common cause of transfusion related fatalities is due to patient being transfused with ABO incompatible blood. During the last five decades, numerous studies have been carried out on the distribution of blood groups and genetic composition of various endogamous population groups in India (Bhasin et al. 1992; 1994). In this paper an attempt is made to study the distribution of ABO and Rh(D) blood group systems among the Kurmi caste of Jaunpur district.

MATERIALS AND METHODS

Blood Samples from a total of 212 unrelated

individuals of both sexes were drawn from the Kurmi (Backward caste) settlements of Jaunpur district of U.P. 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). The details of each subject such as name, age, sex etc. were collected using a brief questionnaire

RESULT AND DISCUSSION

The frequency distribution of ABO phenotypes with gene frequencies are presented in table 1. It is clear from the table that B phenotype has the highest frequency (33.96%) followed by O (26.89%), A (25.47%) and AB (13.68%). The overall picture of phenotypic frequencies of ABO blood groups is B > O > A > AB. The decreasing order of allele frequency in Kurmi

Table 1: Distribution of the ABO blood group and their allele frequencies among the Kurmi (Backward caste) (Number of samples analyzed=212)

Phenotype	Observed number	Percentage	Expected Number	Allele Frequency
O	57	26.89	54.57	A=0.2183
A	54	25.47	57.07	B=0.2743
B	72	33.96	74.94	O=0.5073
AB	29	13.68	25.4	

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is O (0.5073) > B (0.2743) and A (0.2183). The table also shows the distribution of observed and expected percentage frequencies of ABO Phenotypes. In case of Rh (D) blood groups 98.58% were positive and 1.42% were negative. The allele frequencies were recorded 0.8808 for D and 0.1192 for d (Table 2).

Table 2: Distribution of the Rh(D) blood group and their allele frequencies among Kurmi (Backward caste)

<i>Phenotype</i>	<i>Observed Number</i>	<i>Percentage</i>	<i>Allele Frequency</i>
Rh(D)-positive	209	98.58	$D=0.8808$
Rh(D)-negative	3	1.42	$d=0.1192$

REFERENCES

- Bhasin MK, Chahal SMS 1996. *A Laboratory Manual for Human Blood Analysis*. Delhi: Kamla-Raj Enterprise.
- 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*. Delhi: Kamla-Raj Enterprises.
- Mourant AE, Kopec ADA, Domanieswska-Sobezek K 1976. *The Distribution of the Human Blood Groups and Other Polymorphisms*. 2nd Edition, London: Oxford University Press.