

Distribution of A1A2BO and Rhesus Blood Groups Among Brahmins of Sagar District, Madhya Pradesh

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ABSTRACT The blood groups A1A2BO and Rhesus have been studied in 200 Brahmin individuals of Rahat Garh, Madhya Pradesh. The allele frequencies for A1A2BO are: $ABO^*A1 = 0.1450$; $ABO^*A2 = 0.0276$; $ABO^*B = 0.2512$ and $ABO^*O = 0.5762$. Ninety per cent of the tested individuals are Rh positive with a *D* allele frequency of 0.6838.

The present study was conducted on the Brahmins of Rahatgarh, Sagar District of Madhya Pradesh. Rahatgarh is situated at an altitude of 468.4 meters, 73 miles north-east of Bhopal, the capital of Madhya Pradesh.

The preponderant populations of Rahatgarh comprise of Hindus, Muslims and Jains. The Brahmins of Rahatgarh are an endogamous group having five sub-castes viz. Kankupj, Sanardya, Sarjupari, Jhanjhotya and Narmadi and many Gotras.

MATERIALS AND METHODS

A total of 200 samples of blood were collected from apparently healthy unrelated individuals of both sexes and analysed for A1A2BO and Rhesus blood groups. The samples were collected from households and some educational institutions. Serological tests were performed using standard techniques as advocated by Boorman et al. (1988). Gene frequencies were calculated by following the examples given in Bhasin and Chahal (1996).

RESULTS AND DISCUSSION

The results of the analysis of A1A2BO and Rh(D) blood groups of the study have been summarised in table 1 and 2, respectively.

In case of A1A2BO blood group system, phenotype B has the highest frequency (36.5%), followed closely by O (35.0%) and then A

(24.0%). Testing with anti-D serum revealed that 90 per cent of the individuals tested were Rh positive and only 10 per cent were Rh negative.

Table 1: Observed and expected phenotype frequencies of A1A2BO blood groups among Brahmins of Rahat Garh

Pheno- type	Observed		Expected number	Allele frequency
	Number	Per cent		
O	70	35.0	66.64	$ABO^*O = 0.5762$
A1	41	20.5	39.28	$ABO^*A1 = 0.1450$
A2	7	3.5	6.52	$ABO^*A2 = 0.0276$
B	73	36.5	70.29	$ABO^*B = 0.2512$
A1B	8	4.0	14.51	
A2B	1	0.5	2.76	
Total	200	100.0	200.00	1.0000

$D/\sigma = 1.636$ $\chi^2 = 4.43$; n.s.

Table 2: Distribution of Rh(D) phenotype and allele frequency among Brahmins of Rahat Garh

Phenotype	Number	Per cent	Allele frequency
Rh+ve	180	90.0	$D = 0.6838$
Rh-ve	20	10.0	$d = 0.3162$
Total	200	100.0	1.0000

There are very few serogenetic studies reported from the large state of Madhya Pradesh. In case of A1A2BO, there is only one study on non-tribal Hindus of unspecified caste groups (Roberts et al., 1974). There is a solitary report on the Rh(D) polymorphism (see Bhasin et al. 1992, 1994) from the whole of Madhya Pradesh. Khan et al. (1985) reported *d* allele frequency of 0.1826 among the Brahmins of Madhya Pradesh.

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