

Distribution of A_1A_2 BO, Rh (D) Blood Groups and ABH Secretor Factor Among The Lodhas of Midnapur, West Bengal, India

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ABSTRACT In the present study, phenotype and gene frequency data on two blood groups - A_1A_2 BO and Rh(D), and ABH secretion factor among the Lodha - a tribal group of Midnapur, West Bengal have been presented.

Due to relevance of serological markers in population genetics, the present work has been undertaken to study the distribution of A_1A_2 BO and Rh(D) blood groups, and ABH secretor factor among the Lodha tribal groups of Midnapur, West Bengal.

The Lodhas are one of the denotified communities in West Bengal as per the revocation of the Criminal Tribes Act, 1952. However, the stigma of criminality attached to this tribe has resulted in their social isolation and this preventing their merger with the societies around. The Lodhas mainly live in Midnapur district of West Bengal and some adjoining areas of neighbouring states such as Mayurbunjh district of Orissa and Singhbhum district of Bihar, in the midst of both tribal and non-tribal communities. The total population of the Lodhas is estimated around 20,000. They speak in distorted Bengali and their economy is mainly of pre-culture stage. Though some of them, especially those who live in the eastern part of Midnapur district, have taken to agriculture, most others are still prone to anti-social activities. Their society is grouped into exogamous totemistic kins.

MATERIAL AND METHODS

The present study was conducted among the inhabitants of Narayangarh, Doharpur, Radhapur and Vidisha villages of Midnapur district,

West Bengal. In all 133 blood samples were collected from unrelated subjects (both males and females) and analysed for blood groups— A_1A_2 BO (tested with anti- A_1 , - A_2 and -B) and Rhesus (tested with anti-D) and ABH secretion factor following standard techniques. The gene frequencies were calculated after Mourant et al. (1976).

RESULTS AND DISCUSSION

A_1A_2 BO

Table 1 shows that among the Lodhas of present study, the frequency of gene A ($A_1 + A_2$) (29.55 per cent) is higher than that of gene B (24.00 per cent). In fact, among various total groups of east India, the frequency of gene A has been reported higher than that of gene B. The present Lodhas are showing similarities with Dudh Kharia (Bhattacharjee and Kumar, 1969) and Munda (Kumar and Bhattacharjee, 1976) tribal groups, in the distribution of the A_1A_2 BO system.

The gene A_2 has been found quite frequent (10.93 per cent) in the present sample. Usually, the frequency of this gene has been reported low among the population groups of east India, barring aboriginal tribes of Orissa (Sarkar, 1956) in which a high frequency of A_2 gene (13.97 per cent) has been reported.

Table 1: Phenotypes and gene frequencies of A_1A_2BO blood groups among Lodhas

Phenotype	Number		Gene frequencies
	Observed	Expected	
O	28	29	
A_1	37	36	A_1 - 18.72
A_2	12	12	A_2 - 10.93
B	38	37	B - 24.00
A_1B	10	11	O - 46.35
A_2B	8	8	
Total	133	133	100.00

$$\chi^2_{(2)} = 0.1802; .95 > p > .90$$

Rhesus Blood Groups System

It has been observed from the table 2 that the gene *d* is quite frequency (33.55 per cent) among the present Lodha tribal group. Such high frequency of this gene has also been reported among the non-tribals of West Bengal (Bajpai and Bajpai, 1990); Jalari (Reddy et al., 1989) and Gadaba (Deka and Patojoshi, 1975) of Orissa.

Table 2: Phenotypes and gene frequencies of Rhesus blood groups among Lodhas

Phenotype	Number observed	Gene frequencies
Rh +	118	D - 66.42
Rh -	15	d - 33.58
Total	133	100.00

ABH Secretion

Table 3 shows that the frequency of secretor gene *Se* has been found to be higher (65.32 per cent) than that of non-secretor gene *se* (34.68 per cent). Among most of the tribal groups of East India such as Khasi (Miki et al., 1960); Nocte Nagas (Bhattacharjee, 1957) of Assam, Munda (Kumar and Bhattacharjee, 1976) of Bihar,

Table 3: Phenotypes and gene frequencies of ABH secretor factor among Lodhas

Phenotype	Number observed	Gene frequencies
Secretor	117	<i>Se</i> - 65.32
Non-Secretor	16	<i>se</i> - 34.68
Total	133	100.00

almost similar distribution of secretor factor has been reported.

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