

Blood Groups and ABH Secretion Among Viswa Brahmins of Visakhapatnam, Andhra Pradesh

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ABSTRACT The distribution of A_1A_2BO and Rh(D) blood groups and ABH secretion among Viswa Brahmin, an artisan caste population of Visakhapatnam city, Andhra Pradesh has been studied.

INTRODUCTION

The present paper reports the distribution of A_1A_2BO and Rh(D) blood group and ABH secretion among Viswa Brahmins, an endogamous Telugu speaking caste population inhabiting all over the Visakhapatnam city of Andhra Pradesh. They are basically divided into five artisan caste groups viz. goldsmiths, carpenters, sculptors, blacksmiths and brassmiths, out of which the former two were studied.

MATERIAL AND METHODS

Blood samples were collected intravenously into sterile test tubes from unrelated individuals of both sexes from each of the two subgroups of Viswa Brahmins considered viz., goldsmiths (VB-I) and carpenters (VB-II) from different localities of the city. Blood grouping of the samples was done using standard antisera. For ABH status saliva samples were collected by means of cotton swabs from subject and analysed by absorption inhibition test. Suitable controls were employed in all serological tests. The gene frequencies were calculated after Mourant et al. (1976).

RESULTS AND DISCUSSION

Distribution of phenotypes for different

blood groups systems and ABH secretion are shown in table 1 and allele frequencies in table 2.

A_1A_2BO System

Blood the sub-groups of Viswa Brahmins studied have shown highest frequency of O group (VB-I=49% : VB-II=41%) followed by B group (VB-I=24% : VB-II=40%)

The frequencies of A_1 , A_2 and O alleles appear to be similar, but as for the B allele there is striking difference between the two subgroups VB-I (0.1462), VB-II (0.2470) table 2.

With regards to sub-types of A group, the frequency of A_1 group is higher (VB-I=19% : VB-II=14%) than that of A_2 group (VB-I=5% : VB-II=2%). The chi-square test for goodness of fit between observed and expected phenotypes is statistically non-significant for both sub-groups of Viswa Brahmins (VB-I=1.464; d.f.=2; $0.50 > p > 0.30$; VB-II: 1.6363; d.f.=2; $0.50 > p > 0.30$).

The inter-group chi-square test also showed non-significant values ($\chi^2=7.4540$; d.f.=5; $0.20 > p > 0.10$) between these two endogamous sub-groups of Viswa Brahmins.

Rh(D) System

In Rh system, the Rh(D) negative recorded a value of 3% among VB-I while in VB-II it was completely absent. The inter-group chi-square test between these sub-groups of Viswa Brahmins was found to be non-significant ($\chi^2=3.0456$; d.f.=1; $0.10 > p > 0.05$). The incidence of d allele was found to be 0.1732 and nil, respectively in VB-I and VB-II (Table 2).

Table 1 : Distribution of blood groups and ABH secretion among Viswa Brahmins

System	VB-I		VB-II		Pooled	
	No. obs.	% obs.	No. obs.	% obs.	No. obs.	% obs.
<i>A₁A₂BO</i>						
O	49	49.99	41	41.00	90	45.00
A ₁	19	19.80	14	14.00	33	16.50
A ₂	5	5.00	2	2.00	7	3.50
B	24	24.00	40	40.00	64	32.00
A ₁ B	3	3.00	2	2.00	5	2.50
A ₂ B	0	0.00	1	1.00	1	0.50
Total	100	100.00	100	100.00	200	100.00
<i>Rh(D)</i>						
Rh(D) +ve	97	7.00	100	100.00	197	98.50
Rh(D) -ve	3	3.00	0	0.00	3	1.50
Total	100	100.00	100	100.00	200	100.00
<i>ABH Secretion</i>						
Secretors	60	60.00	44	44.00	104	52.00
Non-secretors	40	40.00	56	56.00	96	48.00
Total	100	100.00	100	100.00	200	100.00

Table 2 : Allele frequencies of blood groups and ABH secretion among Viswa Brahmins

System/Allele	VB-I	VB-II	Pooled
<i>A₁A₂BO</i>			
A ₁	0.1175	0.0841	0.0932
A ₂	0.0288	0.0166	0.0210
B	0.1462	0.2470	0.3260
O	0.7075	0.6523	0.5598
<i>Rh(D)</i>			
D	0.8262	1.0000	0.8775
d	0.1732	0.0000	0.1225
<i>ABH Secretion</i>			
Se	0.3675	0.2517	0.3072
se	0.6325	0.7483	0.6928

ABH System

For ABH system the frequency of secretors was higher in VB-I (60%) where as in VB-II it was 44%. The frequencies of the

dominant secretor (*Se*) allele were 0.3675 and 0.2517 respectively in VB-I and VB-II (Table 2). The chi-square test between the sub-groups of Viswa Brahmins showed non-significant difference ($\chi^2=5.1280$; d.f = 1; $0.05 > p > 0.02$).

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