

Distribution of Blood Groups Among Dhobis - A Washerman Caste Population of Andhra Pradesh

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ABSTRACT The distribution of A, A₂, BO, Rh (D), MN, P and ABH secretor status have been studied among the Dhobis, a caste population of Visakhapatnam city of Andhra Pradesh, South India. All the genetic parameters reported here exhibited usual distribution similar to that recorded in the caste populations so far studied earlier in Andhra Pradesh.

INTRODUCTION

The state of Andhra Pradesh, South India, harbours a number of castes and tribes, which are ideal source for studies of human variation. The present serological investigation attempts to study the distributions of 5 markers, namely, A₁A₂BO, Rh (D), MN, P and ABH secretion among Dhobis of Visakhapatnam city.

Dhobis are an endogamous caste population, a name used for washerman by Anglo Indians all over India (Thurston, 1975). However, presently some of their members are also involved in a number of other pursuits like Government jobs and trade. They are included in the list of backward class communities (Group-B) by the Government of Andhra Pradesh.

MATERIAL AND METHODS

Blood samples from 200 untreated, healthy adult Dhobis residing in different localities of Visakhapatnam city, were collected by finger pricking in sterile test tubes containing ACD solution as an anticoagulant. Blood grouping of the specimens was done promptly using anti-A, -A₁, -B, -Rh (D), -M, -N, -P₁ and -H. For ABH studies saliva samples collected by means of cotton swabs from the subjects were tested by inhibition. Suitable controls were employed in all

the serological tests. The gene frequencies were calculated after Mourant et al. (1976). The frequencies of MN, P and ABH systems were estimated by directed gene counting method.

RESULTS AND DISCUSSION

ABO Blood Groups: Phenotypes and gene frequencies for the five serological systems are shown in table 1. The Dhobi caste shows high frequency of B gene (27%) as compared to that of A gene. This trend is in agreement with that generally observed in the earlier reports on caste populations of Andhra Pradesh (Naidu et al., 1990).

With regards to subtypes of A group, the frequency of the A₁ gene is higher (11%) than that of the A₂ gene (4%).

Rh(D) Blood Groups: The d gene frequency is found to be 29%, which is slightly higher than the mean value reported earlier among the pooled data of castes of Andhra Pradesh (Naidu et al., 1990).

MN Blood Groups: In the present sample the frequency of the M gene is higher (71%) than the N gene (29%). Among the other caste populations so far studied from Andhra Pradesh by different authors, the M gene frequency is quite high, the highest was reported in Reddis (79%) (Naidu, 1974) and the lowest in Golla caste (Narahari et al., 1980).

P Blood Groups: The P_1 gene frequency among Dhobis is higher (52%) than P_2 gene frequency, this corresponds to our earlier finding

Table 1: Phenotypes and gene frequencies of blood group systems among Dhobis

System	Phenotype		Gene	Frequency
	No.	Per cent		
ABO				
O	70	35.0	A_1	0.1102
A_1	31	15.5	A_2	0.0399
A_2	4	2.0	B	0.2729
B	74	37.0	O	0.5770
A_1B	11	5.5		
A_2B	10	5.0		
Total	200	100.00		1.0000
Rh (D)				
Positive	183	91.5	D	0.7085
Negative	17	8.5	d	0.2637
Total	200	100.0		1.0000
MN				
M	58	58.00	M	0.7150
MN	27	27.00		
N	15	15.00	N	0.2850
Total	100	100.00		1.0000
P				
P	79	77.45	P_1	0.5252
P_1	23	22.55	P_2	0.4748
Total	102	100.00		1.0000
ABH				
Secretors	161	80.50	Se	0.5584
Non-secretors	39	19.50	se	0.4416
Total	200	100.00		1.0000

(Ramesh et al., in communication). Whereas in studies of Simmons et al. (1953) and Roberts et al. (1980) among other caste populations the reverse trend was observed.

ABH Secretion: The frequency of secretor gene (Se) is higher than the non-secretor (se) gene in Dhobis. Further the value of Se (56%) in Dhobis is also found to be higher than the other two castes namely Reddis (50%) and Kammas (51%) reported earlier by Naidu et al. (1978).

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