

Distribution of The ABO and Rh(D) Blood Groups Among The Sugalis - A Tribal Population of Andhra Pradesh

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ABSTRACT The present study was carried out to investigate the distribution pattern of the ABO and Rh(D) blood groups in the Sugali tribe of Andhra Pradesh. The frequency of allele *O* was recorded maximum (0.602), followed by that of *B* (0.229) and *A* (0.169) alleles. The incidence of Rh(D)-ve phenotype was found to be 9.6%. The results have been compared with neighbouring caste and tribal populations of the state.

INTRODUCTION

The discovery of blood groups and their simple mode of inheritance initiated various studies elucidating the phenomenon of blood group polymorphisms, their association with diseases and linkage with other genetic traits. In fact the ABO and Rh(D) blood groups are two most thoroughly investigated genetic markers of human populations. In the present study an attempt has been made to investigate the distribution of these two blood groups among the Sugalis, a tribal population of Cuddapah District of Andhra Pradesh.

The Sugali is the largest and an advanced tribe of Andhra Pradesh. It is also known as Lambadi, Lambani, Banjari, Brinjari in various parts of India. The Sugalis are supposed to be the descendants of the original Aryan Gypsies or Roma Banjaras of North-West India, whose descendants are also found in various parts of the Central and Southern Europe and in Central Asia. They live in exclusive settlements of their own called Thandas named after the headman of the group. The traditional dress pattern of the Sugali is colourful and attractive and is a distinctive identity marker of the community. The Sugali language closely resembles

the Marvari language of Rajasthan both in accent and in script. Owing to their cultural contact with the surrounding Telugu people, the Sugalis became bi-linguistic and can speak Telugu fluently. They present a complete picture of transition of a group of people from pastoral nomads to settled peasantry. The economic life of the people varies from agriculture, lime-selling, fire-wood selling and agriculture-labour.

MATERIAL AND METHODS

Data for the present study were collected from 250 unrelated Sugali subjects of both sexes inhabiting Bakkannagaripalli and Nelavaram Thandas of Cuddapah District of Andhra Pradesh. Blood samples were obtained by finger prick and were analysed using anti-A, anti-B and anti-D (Haffkine Institute, Bombay) sera, following standard techniques as suggested by Race and Sanger (1968).

RESULTS AND DISCUSSION

The ABO System

The distribution of the ABO blood groups among Sugalis is presented in table 1. There was a good agreement between observed and expected phenotype numbers ($\chi^2 = 1.725$, d.f. = 3, $p > 0.05$). The D/σ value (1.29) also indicates that the population is in genetic equilibrium. The percentage of blood group *O* was recorded highest (37.6%), followed by that of *B* (31.2%), *A* (21.6%) and *AB* (9.6%) groups. The frequency of allele *O* was found to be highest (0.602), followed by that of *B* (0.229) and *A* (0.169) alleles.

Table 1: Distribution of the ABO blood groups among the Sugalis

Blood group	Number observed	Per cent observed	Number expected	Allele frequencies	
O	94	37.6	90.51	O	0.602
A	54	21.6	58.10	A	0.169
B	78	31.2	82.01	B	0.229
AB	24	9.6	19.38		
Total	250	100.0	250.00		1.000

The Rh(D) System

Table 2 shows the distribution of the Rh(D) blood groups among Sugalis. The frequency of the Rh(D)-ve phenotype was recorded 9.6%, and that of the *d* allele 0.310.

Table 2: Distribution of the Rh(D) blood groups among the Sugalis

n	Phenotype		Allele frequencies	
	Rh(D)+ve	Rh(D)-ve	D	d
250	226 (90.4%)	24 (9.6%)	0.690	0.310

As anywhere else in India in majority of the Andhra Pradesh populations the proportion of the O blood group is the highest. In the caste population of Andhra Pradesh the

incidence of the B blood group is usually higher than that of the A blood group. While in the tribal population the opposite was true more often than not. Viewed against this background the ABO profile of the Sugalis of the present study is more akin to that of the caste rather than the tribal population of the state. But this is not surprising since another sample of this tribe (referred to as Lambadi) studied by Ramachandraiah (1967) had also shown similar pattern of the ABO distribution.

Thus it is evident that the genetic constitution of Sugalis is quite different from most tribal populations of Andhra Pradesh, and in fact preponderance of the blood group B over group A in two different samples of this tribe place them closer to caste population of the state. This study therefore provides genetic basis to the known ethno-history of the Sugalis and suggests a non-autochthonous origin of this tribe.

REFERENCES

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