

Distribution of ABO and Rh (D) Blood Groups among Irulas, a Tribal Population of Pondicherry, India

A.B. Subhashini

*Department of Anthropology, Sri Venkateswara University, Tirupati 517502,
Andhra Pradesh, India
E-mail: suhhashamud@yahoo.com*

KEYWORDS Blood Groups. Irulas. Scheduled Tribe. Pondicherry.

ABSTRACT The distribution of ABO blood groups and Rh (D) factor has been studied among Irulas one of the most dominant hunting tribe of Pondicherry. The frequency of O, A, B and AB blood groups were recorded 34.0%, 20.5%, 39.5 and 6%, respectively. Rh negative found to be 6.5%. The results were compared with available such data such on tribal populations of neighbouring State of Andhra Pradesh

INTRODUCTION

Irulas the most predominant hunting and gathering scheduled tribe are spread over a region from Karnataka, Kerala, Andhra Pradesh to Pondicherry. Most of the Irulas are however distributed in surrounding villages of Pondicherry. They are medium in stature with dark complexion. Irulas look generally healthy. The language is a corrupt form of Tamil with many canarese words and phrases. The Irulas are known by different names depending upon the region they inhabit, such as Poolai, Pujari, Erulas, Irular etc. (Thurston, 1909). They are economically poor. Their activities include hunting, gathering, rat trapping, agriculture labour and wage labour. Majority of them are illiterates. They are skilled in catching the snakes and selling their skins. Consanguineous marriages are more predominant. They are Hindu by religion. The present study was undertaken to study the distribution of ABO and Rh (D) blood groups among Irulas of Pondicherry and to compare the results with the other available data of tribal population of adjoining Andhra Pradesh.

MATERIAL AND METHODS

Blood samples were collected from 200 unrelated individuals of both the sexes from surrounding 19 villages of Pondicherry. The samples were analysed for ABO and Rh (D) blood groups following Race and Sanger (1962) with the antisera procured from Haffikine Institute, Bombay. Allele frequencies were calculated according to Mourant et al. (1976).

RESULTS AND DISCUSSION

The results of the ABO blood groups are presented in Table 1. It is observed from the table that blood group B occurs with highest frequency (39.5%) among Irulas followed by O (34.0%), A (22.5%) and AB (6.0%) with regard to the allele frequencies, O (0.5930) was observed with highest frequency followed by B (0.2634) and A (0.1436). The value of D/σ (0.9841) indicates that the population is under genetic equilibrium and value of χ^2 (0.9180) d.f.3 $0.90 > p > 0.80$ shows goodness of fit of the sample.

With regard to the distribution of the blood groups the present population falls within the range observed among some tribal populations of Andhra Pradesh. The highest frequency of the B (45.53%) was reported in Pardhan (Goud, 1977), Lambadi (46.6%) (RamaChandraiah, 1967) and in Kurivikarans (47.23%) (Pulla Reddy and Mukherjee 1981). For the ABO phenotypes the majority of the studied tribal population shows higher frequency of B than A. For ABO allele frequencies the present tribal population does not differ much from tribal populations of Andhra Pradesh.

The Table 2 shows Rh(D)+ve phenotype occurs with a frequency of 93.5% and of Rh (D)-ve with 0.5%. The frequency of allele D and d were found to be 0.7451 and 0.2549, respectively. Majority of the tribal populations of Andhra Pradesh show the highest frequency of Rh(D)+ve (97.6%) among Kondadora (Naidu and Veeraju, 1977) and the lowest (88.8%) in Kondakapu (Veeraju, 1973). The present study falls within the ranges observed for some tribal populations reported from the neighbouring state of Andhra Pradesh.

Table 1: ABO blood groups and allele frequencies among Irulas.

Phenotype	Observed number	Percentage observed	Expected number	Allele frequencies
O	68	34.0	69.03	O = 0.5930
A	41	20.5	39.05	A = 0.1436
B	79	39.5	76.01	B = 0.2634
AB	12	3.0	15.91	
Total	200	100.0	200.0	1.000

$\chi^2=0.9180$, d.f. 3, $0.90>p>0.80$, $D/\sigma = 0.9841$

Table 2: Rh (D) phenotypes and allele frequency among Irulas.

Phenotypes	Number observed	Allele frequencies
Rh (D) +ve	187 (93.50)	$D = 0.7450$
Rh (D) -ve	13 (6.50)	$d = 0.2550$
Total	200 (100.00)	1.0000

Figures in Parentheses are percentages

ACKNOWLEDGEMENT

The author is grateful for the financial assistance provided by University Grants Commission (UGC), New Delhi under Special Assistance Program.

REFERENCES

- Goud, J.D.: *Population Genetics of Five Endogamous Tribal Groups of Andhra Pradesh*. Ph.D thesis, Osmania University, Hyderabad (1977).
- Mourant, A.E., Kopec, A.C. and Domanieswska – Sobczek, K.: *The Distribution of the Human Blood Groups and Other Polymorphisms*, Oxford University, London (1976).
- Naidu, J.M. and Veeraju, P.: A₁A₂B, O and Rh (D) blood groups among tribals of Andhra Pradesh. *Acta Anthropogenetica*, **1**: 36-40 (1977).
- Pulla Reddy, A. and Mukherjee, B.N.: Genetic study of a nomadic tribe: Kurvikarans of Andhra Pradesh and Tamil Nadu. *Journal of Indian Anthropological Society*, **16**: 179-184 (1981).
- Race, R.R. and Sanger, R.: *Blood Groups in Man*. Blackwell, Oxford (1962).
- Ramachandraiah, T.: *A Genetic study of the Lambadis of Andhra Pradesh*. Ph.D thesis, Delhi University (1967).
- Thurston, E.: *Castes and Tribes of South India*. Vol. (5 &6), Govt. Press, Madras (1909)
- Veeraju, P.: *A Genetic Study of the Konda Reddis*. Ph.D Thesis, Andhra Univ., Waltair (1973).