

## Study of ABO and Rh (D) Blood Groups in Kodide Reddis of Anantapur District, Andhra Pradesh

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In this paper an attempt is made to study the distribution of ABO and Rh.(D) blood group systems among the Kodide Reddis, a sub-caste of a major caste Reddi and to account inter population variation by comparing with other sub-castes of Reddis. The Reddis, one of the predominant caste populations of Andhra Pradesh, is divided in to more than 80 sub-castes, which till today are by and large endogamous. Kodide Reddis selected for the present study is found distributed mainly in the Anantapur district of Southern Andhra Pradesh. Agriculture is their main occupation. Literacy rate is moderate. Strict endogamy is maintained and nuclear families are more common.

### MATERIALS AND METHODS

The blood samples were drawn from randomly selected 190 unrelated individuals of both the sexes from six villages. The blood samples were collected according to the methods of Race and Sanger (1962). The ABO allele

frequencies were calculated according to Mourant et al. (1976).

### RESULTS AND DISCUSSION

Distribution of ABO phenotypes and their allele frequencies is presented in table 1. In the present population O phenotype recorded highest frequency (45.26%) followed by B (31.05%), A (16.32%) and AB (7.37%). The order of ABO percentage frequencies are  $O > B > A > AB$ . With regard to the allele frequency in the Kodide Reddis,  $O$  (0.6728) is observed with highest frequency than  $B$  (0.2153) and  $A$  (0.1264) and the order is being  $O > B > A$ . Insignificant  $\chi^2$  value shows less variation between expected phenotype frequencies calculated from allele frequencies. The study population is under genetic equilibrium and the observed fluctuations are due to chance alone. In case of Rh (D) blood group system, 93.16% were positive and 6.84% were negative and the allele frequencies are being 0.9316 for  $D$  and 0.0684 for  $d$  (table 2).

Comparison of the ABO phenotypic and as well their allele frequencies of Kodide Reddi sub-caste with other Reddi sub-castes of Andhra Pradesh exhibit high frequency of  $O$  blood group (above 50%) in all sub-castes except Palle Reddis (28.80%) (Chandrasekhar Reddy, 1984). The Palle Reddis, who are listed under backward caste, show similarity with other backward castes of Southern India (Undevia et al., 1981). Among all the sub-castes of Reddis,  $O$  blood group is followed by  $B$  and  $A$  except in Pedakanti Reddis and Panta Reddis, wherein  $O$  is followed by  $A$  (29.60% and 30.80%) and  $B$  (16.40% and 13.60%) (Chandrasekhar Reddy, 1984). In general, the Reddi sub-castes show higher frequencies of  $O$  followed by  $B$  and  $A$  as the case with other Southern India populations.

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**Table 1: Percentage distribution of ABO phenotypes and allele frequencies**

| Phenotypes | Observed number | %      | Expected number | Allele frequency |
|------------|-----------------|--------|-----------------|------------------|
| A          | 31              | 16.32  | 30.05           | $A = 0.1264$     |
| B          | 59              | 31.05  | 59.76           | $B = 0.2153$     |
| O          | 86              | 45.26  | 85.14           | $O = 0.6728$     |
| AB         | 14              | 7.37   | 15.05           |                  |
| Total      | 190             | 100.00 | 190.00          | 1.0000           |

$$\chi^2 = 0.1205 \quad D/\sigma = 1.7769$$

**Table 2: Percentage distribution of Rh (D) Phenotypes and allele frequencies**

| Phenotypes | No  | %      | Allele frequency |
|------------|-----|--------|------------------|
| Rh + ve    | 177 | 93.16  | $D = 0.9316$     |
| Rh - ve    | 13  | 6.84   | $d = 0.0684$     |
| Total      | 190 | 100.00 | 1.0000           |

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**ABSTRACT:** The present study reports ABO and Rh(D) blood groups among 190 unrelated subjects from Kodide Reddis of Anaparthi district, Andhra Pradesh. The overall picture of ABO percentage is O (45.26%) > B (31.05%) > A (16.32%) > AB (7.37%). The frequency of Rh +ve (93.10%) is more than Rh -ve (6.84%). The present data were compared with the data available on the other sub-castes of Reddis of Andhra Pradesh to understand the affinity between them.

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