

## Distribution of ABO and Rh (D) Allele Frequencies among Four Endogamous Groups of Haryana

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### Abstract

The present investigation was planned on four endogamous groups of Haryana viz. Banjara, Jatav, Nai and Rajput, and the distribution of serological traits, ABO and Rh (D) blood groups was determined. In the ABO blood group system the frequency of A allele ranged from 0.102-0.285, that of B allele ranged from 0.201-0.348 and of O allele from 0.370-0.654. In Rh (D) blood group system the frequency of d allele ranged from 0.000-0.583 while the frequency of D allele varied from 0.417-1.000. The frequency range of ABO alleles conformed to the range of other populations of North West India studied earlier whereas that of d allele deviated from the upper maxima.

**Keywords:** ABO; Allele frequency; Endogamous groups; Rh (D) blood group.

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### Introduction

In Haryana, 82 communities have been identified.[1] These communities are endogamous in nature. Even with their genetic richness and a wide distribution, very few studies are available about the distribution of ABO and Rh (D) blood groups in the various endogamous groups of Haryana.[2-14]. During the current investigation, original data on these two serological markers of four endogamous groups, viz. Banjara, Chamar, Nai and Rajput, of Haryana was obtained and analyzed for genetic diversity.

### Subjects and Methods

#### Subjects

The present study was approved by the Institutional Ethics Committee of the Kurukshetra University, Kurukshetra. Blood samples from a total of 400 individuals of both sexes from four endogamous groups (Banjara, Chamar, Nai and Rajput) were collected. For each caste group a total of 100 unrelated individuals of both sexes were studied. Donor subjects were selected randomly from all over Haryana.

#### Methods

Blood samples from the subjects were collected intravenously in vacuum tubes containing EDTA (Vacutainer, Becton Dickinson, France). Slide method following the standard techniques of serology and manufacturer's directions enclosed with the different blood grouping reagents were used on whole blood to type the ABO and Rh (D) blood group systems. The method of Yasuda<sup>[15]</sup> was used to calculate the allele frequency in the ABO blood group system. The frequency of d allele was estimated by square root method.

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