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Properdin Factor B (Bf) Polymorphism in Haryana, India

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ABSTRACT This report presents baseline phenotype and allele frequency data on the distribution of properdin factor B (Bf) polymorphism in Haryana, a North Indian state.

INTRODUCTON

Properdins are a group of factors which can activate complement by an alternative pathway. Properdin factor B (Bf), also known as C3 proactivator or glycine-rich beta glycoprotein (GBG), is a main component of this group. The genetic variation in Bf was first reported by Alper et al. in 1972. Since then, the polymorphism of this immunologically important serum protein in Indian populations has been little investigated, and although in recent years there have been few reports from North Indian states of Uttar Pradesh (Papiha and Agarwal, 1980), Punjab (Chahal and Papiha, 1981) and Himachal Pradesh (Papiha et al., 1982), no such data are available from Haryana. The aim of this communication therefore is to present baseline data on the distribution of Bf polymorphism in Haryana sample.

MATERIAL AND METHODS

Plasma samples from 90 healthy individuals belonging to various caste groups of the Haryana state were subjected to high voltage agarose gel electrophoresis in veronal buffer (Alper and Propp,1968), within 48 hours of collection. This was followed by immunofixation (Alper and Johnson, 1969) using monospecific anti-human Bf serum (goat) obtained from Incstar Corporation, Minnesota, U.S.A., and staining with amido black 10B.

RESULTS AND DISCUSSION

The distribution of the Bf phenotypes and allele frequencies is shown in table 1. The observed numbers are in close agreement with those expected assuming Hardy-Weinberg equilibrium (χ^2_1=0.074, 0.80 > p > 0.70). No rare variant was found. The Bf^F allele frequency in the Haryana sample is 38.9%.

Table 1: Bf phenotypes and allele frequencies in Haryana

Phenotype	*Observed number*	*Expected number*	*Allele frequencies*
S	33	33.60	Bf^S = 0.611
SF	44	42.78	Bf^F = 0.389
F	13	13.62	

There are as yet only limited data available on Bf variation in India for comparison. The frequency of the Bf^F allele in North India varies from about 25% in Koli, a Scheduled Caste of the Kinnaur district in Himachal Pradesh (Papiha et al., 1982) to 41% in random urban population of Lucknow, Uttar Pradesh (Papiha and Agarwal, 1980). The frequency observed in the present sample (38.9%) therefore fits well within this North Indian range.

Bf variants due to rare alleles such as Bf^{S1} and Bf^{F1}, albeit in low proportions, have usually been encountered in previous reports from North India. The absence of any such rare Bf phenotype

in this study may well be due to small sample size. However, to fully appreciate the Bf variation in Haryana, further investigations of different population groups of the state are required.

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