

Prevalence of Haemoglobinopathies Among Different Populations of Jabalpur, Madhya Pradesh

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ABSTRACT Present study has been carried out on the prevalence of haemoglobinopathies among various population groups viz., Scheduled Castes, Scheduled Tribes, Other Backward Classes and General category of Jabalpur, Madhya Pradesh. The analysis of data revealed that highest incidence of haemoglobinopathies (14.2%) was found in Scheduled Tribes. This may be due to endogamy among the tribal population. Imparting health education is needed as a preventive measure at school level. The incidence of sickle cell trait and β -thalassaemia trait are high among Scheduled Tribes (11.5%) and Other Backward Classes (4.1%).

INTRODUCTION

Haemoglobinopathies are disorders of haemoglobin which are inherited in nature and result in anaemia. These include sickle cell disease, thalassaemia and presence of other abnormal haemoglobins. Sickle cell haemoglobin and thalassaemia are reported to be common in central India, especially in Madhya Pradesh (Bhatia and Rao, 1986; Pande et al., 1992; Gupta et al., 1991; Bhasin et al., 1994). Present study has been carried out to estimate the prevalence of haemoglobinopathies among different populations of Jabalpur, Madhya Pradesh.

MATERIALS AND METHODS

A total of 1229 children have been screened

randomly from 30 schools of different areas of Jabalpur city. The school children included 637 Scheduled Castes, 148 Scheduled Tribes, 293 Other Backward Classes and 151 General Category subjects.

Blood samples were collected in EDTA vials for screening of β -thalassaemia and abnormal haemoglobins. Presence of sickle haemoglobin identified by sickling test with 2% sodium metabisulphite. Haemoglobin electrophoresis was carried out on cellulose acetate sheets with TEB buffer at pH 8.6. Quantitation of HbA2 was done by micro column chromatography (Dacie and Lewis, 1991).

RESULTS AND DISCUSSION

Table 1 shows the prevalence of various haemoglobinopathies among different populations of Jabalpur city. The haemoglobinopathies were found to be highest (14.2%) in Scheduled Tribes as compared to 6.8% in Scheduled Castes and Other Backward Classes. This may be due to endogamy which is common among tribal population. The highest percentage of sickle cell trait (11.5%) is also observed among Scheduled Tribes followed by Scheduled Castes (4.4%), Other Backward Classes (2.7%). No case of homozygous sickle cell disease was observed in all the groups except one in General category.

Table 1: Haemoglobinopathies among the different populations of Jabalpur city

Population	n	Normal (AA)	Sickle cell trait (AS)	Sickle cell disease (SS)	β -Thal trait	Hb-E trait (AE)	Total abnormal haemoglobin cases
Scheduled Castes	637	594 (93.2)	28 (04.4)	0	15 (2.4)	0	43 (06.8)
Scheduled Tribes	148	127 (85.8)	17 (11.5)	0	4 (2.7)	0	21 (14.2)
Other Backward Classes	293	273 (93.2)	8 (02.7)	0	12 (4.1)	0	20 (06.8)
General category	151	143 (94.7)	0	1 (0.7)	6 (3.9)	1 (0.7)	8 (05.3)
Total	1229	1137 (92.5)	53 (04.3)	1 (0.1)	37 (3.0)	1 (0.1)	92 (07.5)

Figures in parenthesis denote the percentages.

The incidence of β -thalassaemia trait varied from 4.1% in Other Backward Classes to 2.4% in Scheduled Castes. The only case of Hb-E trait is found in General category. Keeping all these in mind, it appears necessary to adopt different preventive measures such as imparting health education regarding haemoglobinopathies at the school level.

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