



ORIGINAL RESEARCH PAPER

Physiology

PREVALENCE OF HEMOGLOBIN E DISEASE AND HEMOGLOBIN E TRAIT IN AHOM COMMUNITY OF DIBRUGARH TOWN

KEY WORDS:

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INTRODUCTION:-

Hemoglobinopathies are among the most common inherited diseases around the world. Studies in the past have pointed out that various abnormal hemoglobin structures of human blood are widely prevalent among some populations of Upper Assam1. Haemoglobinopathies particularly haemoglobin S and E (HbS, HbE) and β -thalassaemia are important challenges for ethnic population of northeast india. Among these abnormal hemoglobin structures, HbE is widely prevalent among some populations of Upper Assam in North-East India2. Ahom community is most populous in and around dibrugarh district. Therefore this study was undertaken to show the prevalence of HbE and Ahom community in dibrugarh.

MATERIALS AND METHODS:

In this cross sectional study 500 young individuals in the age group of 10-35years were selected from the ahom community of Dibrugarh randomly.Of the total study group 273were females and 227 were males.The ethical committee clearance and an informed consent of the subjects were taken. Subjects with a history of blood transfusion within last four months and age group outside the defined age range were excluded.

4 ml of venous blood were collected in the EDTA vacutainer from each subject. The hemosylate is prepared fresh on the same day the electrophoresis is performed. The sample is prepared by washing the red blood cells lysing the cells and pipetting the hemosylate. The hemosylate is made to run on Agarose gel electrophoresis. The total haemoglobin in blood was estimate by cyanmethaemoglobin method.

Statistical analysis of data was carried out using SPSS Version16. The study population was divided into groups based on their sex.

RESULT AND OBSERVATION:

The figure1 shows the division of population into different group and number and percentage of individuals in each group.

The number and percentage of haemoglobin e disease and haemoglobin E trait and normal haemoglobin individuals in the study population is shown in table 1.It is seen that the percentage of individuals having haemoglobin E disease and haemoglobin E trait is more in females as compared to males.Table 2 also shows that individual having normal haemoglobin is more in males as compared to females.Figure 2 shows that of the total study population 69.2% had abnormal haemoglobin as compared 31.85% who had normal hemoglobin

Number of cases

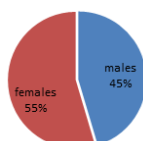


Figure 1: Showing the division of population into different group based on sex

Table 1: Showing the number and percentages of individual having haemoglobin E disease and haemoglobin E trait and normal hemoblobin based on their sex.

sex	Haemoglobin E disease		Haemoglobin E trait		Normal hemoglobin	
	Number of cases	% of cases	Number of cases	% of cases	Number of cases	% of cases
males	65	28.6	82	36.1	80	35.2
females	85	31.1	117	42.8	71	26.0

Table 2: Showing The Number And Percentage Of Individuals Having Normal Haemoglobin And Abnormal Haemoglobin

sex	Abnormal hemoglobin		Normal haemoglobin	
	Number of cases	% of cases	Number of cases	% of cases
males	147	65.3	80	35.2
females	202	85.4	71	26.0

Types of hemoglobin

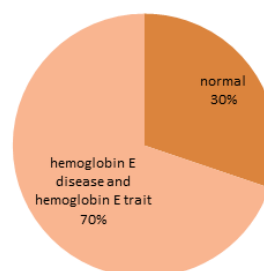


Figure 2: Showing the percentage of individual having abnormal hemoglobin

DISCUSSION:-

The present study showed that haemoglobin E disease and haemoglobin E trait has a high prevalence in the Ahom community.This is inconsistent with high prevalence of haemoglobin E (>80%) observed among the Soui, Thai Khmer, So, Yor and Puthai populations inhabiting the region near Cambodia and Laos, higher frequency of HbE in the Phayeng (a Chakpa) of Manipur can be taken as a favour on the hypothesis of association of Austroasiatic race and HbE.3.Abnormal haemoglobin level was higher in females as compared to males,. This finding is inconsistent with the findings of Beutler E et al 4 and Flatz G 5.The high prevalence of haemoglobin E ahom community is similar to findings of Abanti B et al 6. The Ahom community is considered to be migrants from south east asia and this may explain this higher prevalence rate in our study.

CONCLUSION:-

Informations on hemoglobinopathies in north east india is still limited, considering there are more than 1000 variants of

hemoglobin described so far 7, The awareness of this Hb variant in this part of India may help in the clinical diagnosis and management of these patients, and may also help in prenatal diagnosis and genetic counselling. Although the study population were all asymptomatic carrier but early diagnosis may prevent the future complications related to this disease, and prevent the future burden of this disease

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