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Study of Blood Group Distribution among Koyalanchal Medical Students

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Abstract
This study is to determine the blood group distribution among medical students of Koyalanchal which was conducted with 308 students of Patliputra Medical College Dhanbad. The tests were conducted at PMCH Dhanbad by glass slide and tube methods. The records are preserved in academic section of the college. The results showed the blood group B to be the commonest among both the genders followed by blood group O. AB blood group was the least and Rh positive were 96% in comparison to Rh negative. Knowledge of blood grouping and Rh typing in a particular geographical area is helpful in having access to safe and sufficient blood storage and supply.
Keywords: *Blood group, Distribution, blood group B, Koyalanchal.*

Introduction

Knowledge of blood group distribution in a particular geographical area is important in access to safe and sufficient blood storage and supply. It helps in reducing many preventable deaths, its relation with different diseases and environment helps in better clinical studies of diseases and forensic study. Therefore present study was conducted to know the ABO & Rh blood group distribution among medical students. It may also be useful for health planners to face medical emergencies. There has been no such study done to determine the distribution of blood grouping of medical students in Koyalanchal (Jharkhand) and it may be considered a kind of pilot study.

Materials & Methods

308 students (145 Boys & 163 Girls) of Patliputra Medical College, Dhanbad of different batches were subjected to blood group determination in the Medical College Hospital .The ABO blood grouping and Rh typing was determined by glass slide and glass tube methods after collecting blood samples by finger prick method with aseptic precaution. Blood sample were collected from one of the middle three fingers and three separate glass marked as A B D were used to detect blood groups and their Rh factor. Commercially available standard Anti A, Anti B and Anti D were used for agglutination test to detect blood groups. Glass slides marked as A B D were used to mix suspended RBCs with Anti A Anti B and Anti D sera. Separate applicator sticks were used

to mix blood drops with Anti sera for three glass slides to prevent false results. The Mixtures were observed for agglutination macroscopically & again microscopically for confirmation and compared with control.

The glass slide methods of blood group determination are based on Ag-Ab agglutination reaction. The oligosaccharides present as antigen on surface of RBCs agglutinates with Ab present in antisera. Hence blood group was determined based on agglutination with corresponding antisera. If agglutination was present on slide marked A then it belonged to A blood group, agglutination in blood drop slide B –B blood group, agglutination in both drops A & B – AB group and if there was no agglutination an both A & B drop then O group. Similarly agglutination in blood drops slide marked D was considered Rh positive & no agglutination as Rh negative. The data were expressed in percentages.

Majority students were from Jharkhand origin & after prior informed consent & institutional ethical clearance - samples were collected.

Results

The results are distributed as follows

Blood Group	Total	Percentage
A	64	25.80
B	109	43.95
AB	19	07.66
O	105	42.33

Rh Types

Rh+	Rh-
96%	04%

In our study blood group B was most common in both genders followed by blood group O and AB was the lowest.

Discussion

The need for blood group prevalence study is not only important for transfusion medicine but also for organ transplantation and genetic research.

The results of shaik YA et al & Yousaf et al study from Bhagalpur and Durgapur of west Bengal by Nag et al found the predominance of blood group of O followed by A>AB>B.

In our study blood group B was the commonest. Blood group distribution differs in different population group inside India and also within different district in each state.

Some blood group are known to have genetic association with some diseases like blood group O is a risk factor for duodenal ulcer and blood group B has highest frequency of diabetes mellitus type II and ovarian carcinoma in our population. So everyone should have knowledge of their blood group although more research is required for its association with diabetes. Blood group A people are more prone for cardiovascular diseases and gastric carcinoma.

Distribution of blood group knowledge can also help in-drafting national transfusion policies and supply of blood during emergency situation.

The blood group distribution also differs with origin of different Races- O and A were common in Australian origin where as B group was common in Africans. In USA O is the commonest.

Conclusion

Blood group B was found to be more common among the medical students of Koylanchal. Whereas AB group was found to be the least. Rh positive blood group most common than Rh negative. In situation of emergency transfusions of yet to be cross matched blood is required.

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