

Trend of ABO and Rh Blood Group Among the Students of Community Based Medical College Bangladesh.

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Abstract

This cross sectional study was done at department of Transfusion Medicine in Community Based Medical College (CBMCB) to know the Prevalence of ABO blood group and Rh group systems among the students selected for admission into CBMCB. Sample size was 555. Male female ratio was 67:33 with mean age was $\pm$ 19 years. Maintaining aseptic precaution blood samples were collected by venepuncture with disposable syringe without anticoagulant. Antigen-antibody agglutination test was done in slide method for ABO and Rh(D) blood grouping by mixing individual blood sample with Anti A, Anti -B, Anti-D human antisera. Results were taken by visually and under microscope in low power. Blood group differs person to person due to genetically determined antigen. This study showed highest frequency of blood group B(33.5%) followed by O(32.5 %), A (23.37%) and AB (10.63%) in ABO system and In Rhesus system, frequency of Rh-positive was 97.12% and Rh-negative was 2.88%. results were comparable with different foreign studies . Fair blood grouping assist the safe blood transfusion and reduce the morbidity and mortality considerably.

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Key words : ABO blood group, Rh (D) blood group.

Introduction

ABO blood group system was the first human blood group system in blood transfusion practice discovered by Karl Land Steiner in 1900¹. Blood groups are A, B, AB, and O. Nomenclature of different blood groups based on presence or absence of particular Antigen on the surface of red blood cells. The gene A,B,O locate on each chromosome no.9. ABO antigens are found in all the tissues of the body. Later Land Steiner and Weiner defined Rh blood group in 1940. Five antigen, D,C,E, c and e were detected of which D is the most potent and immunogenic. This is followed by C and E antigens. The terms Rh +(positive) and Rh – (negative) depend on the presence or absence of D antigen which locates on the chromosome1 and controls the genetic trait. These two blood group systems ABO and Rh have proved to be the most important in transfusion medicine.

Objectives:To know the prevalence of ABO blood group and Rh group systems among the students of CBMCB.

Methods

This cross sectional study was done in the department of transfusion medicine of

Community Based Medical College Hospital Bangladesh, Mymensingh. Study period was 2011 to 2015. Study population was the Students whowere selected for admission into Community Based Medical College Bangladesh.All the students were study subjects who came for routine medical checkup in the department of Transfusion Medicine. Blood sample was collected from each student through venepuncture with disposable syringe maintaining the proper

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aseptic precaution without anticoagulant. Blood grouping was done by agglutination test using Anti- A, Anti-B, Anti-D human anti sera in slide method.

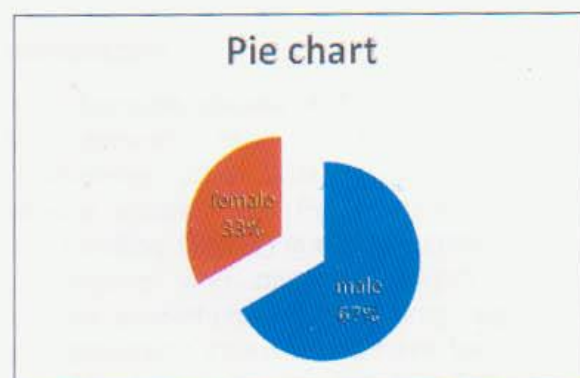
Results

Sample size was 555. Mean age was ± 19 years. Male female ratio was 67:33. In this study, in ABO system, Blood group B was predominant (33.5. %), this is followed by Blood group O (32.5%). Blood group A and AB were 23.37% and 10.63 % respectively. Rh(D) positive was 97.12% and rest 2.88% was Rh (D) negative.

Table- 1: sex distribution of students for blood groups. n= 555.

sex	number of students	percentage
male	370	66.67
female	185	33.33

male female ration= 67:33



Pie chart showing the percent of male and female.

Table-II:Pattern of ABO blood group.

Blood group	number of student	Percentage
A	130	23.37%
B	186	33.5%
O	180	32.5%
AB	59	10.63%
Total	555	100%

Table III: - Patterns of Rh (D) blood group .

Rh (D)	number of student	Percentage
Positive	539	97.12%
negative	16	2.88%
Total	555	100 %

Discussion

Blood groups depend on genetically determined antigen. It differs from individual to individual due to genetic antigen and Gene of ABO antigen and Rh- antigen present on 9th and 1st chromosm respectively¹. ABO and Rh(D) blood groups vary nation to nation, ethnically from population to population . results of this study showed highest frequency of blood group B (33.5%) followed by O (32.5% %), Blood group A (23.37 %)and AB (10.63%) which is co-relates of study carried out Wargahat et al² and Rai et al³ . Findings of this study also in close conformity with the findings of an international study conducted by Rahman et al ⁴ and results are also comparable with the study carried out by Ahmed (1988)⁵ . Results of this study also co-relate with the study conducted by Rahman (1978)⁶. In Rhesus system, frequency of Rh-positive was 97.12% and Rh-negative was 2.88 % revealed in this study which are in close conformity with the results of study carried out by Rahman (1978)⁶ and Ahmad (1998)⁷ . Results of this study are very similar to the studies conducted in different parts of India⁸ . Rh D positive bloodgroup is predominant and frequency is more or less same found in different studies. Distribution and frequency of Rh- positive blood group in Nepal was 96.7% and in Pakistan and saudi-Arabia 93% ⁹ of blood donors which was similar to the result of this study. The frequency of Rh-negative blood group 4.8% in Nigeria, in Nepal it was 3.3% while in Pakistan and saudi-Arabia it was 7% among the blood donors but in this study it was 2.88% which is close conformity to the result of Nepal.

Conclusion: Results of this study are co-related with different studies done by different researchers. Successful blood grouping helps

in management of blood transfusion, geographic /ethnic information, and forensic studies and decrees morbidity and mortality.

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