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RESEARCH ARTICLE

PREVALENCE OF BLOOD GROUPS IN A GROUP OF PATIENTS IN TERTIARY CARE HOSPITAL

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(A+) A Positive blood group, (B+) B Positive blood group, (AB+) AB Positive blood group, (O +) O Positive blood group, (A-) A Negative blood group, (B -) B Negative blood group, (AB-) AB Negative blood group, (O -) O Negative blood group.

ABSTRACT

In this study, the aim was to find out the prevalence of blood groups in a group of patients in World College of Medical Sciences & Research and Hospital, Jhajjar, Haryana, India. In this study, the blood groups of 612 patients were evaluated. In this study, the results showed that the prevalence of different blood groups among one group of 612 patients was approximately: B+ 36%, O+ 28%, A+ 19%, AB+ 8% and Rh negative- 9 % (O- 4%, B- 3%, A- 1% & AB- 1%). Thus, B+ is the most common blood group in our study. By conventional criteria, this difference was considered to be extremely statistically significant. It is also concluded that the B gene is the most frequent, about 39% (B+ 36% & B- 3%), followed by O gene (O+ 28% & O- 4%), whereas the A gene is infrequent, in the present study.

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INTRODUCTION

The prevalence of different blood groups among one group of persons studied was approximately: O + 47 %, A+ 41 %, B+ 9% and AB+ 3%. It is obvious from these percentages that the O and A genes occur frequently, whereas the B gene is infrequent (Vaz Mario *et al*., 2013). About 85 % of all white people are Rh positive and 15 % are Rh negative. In American blacks, the percentage of Rh positives is about 95 %, whereas in African blacks, it is virtually 100 % (Vaz Mario *et al*., 2013). Data from the low-to middle income countries are limited.

Aims and Objectives: To find out the prevalence of blood groups in a group of patients in World College of Medical Sciences & Research and Hospital, Jhajjar, Haryana.

MATERIALS AND METHODS

Study Setting and Period of Study: The study was conducted in the Department of Pathology, World College of Medical Sciences & Research and Hospital, Jhajjar, Haryana, India during the period of 18th July 2018 to 22nd August 2019.

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Study Design: The study was a Hospital Based Study, conducted in the Department of Pathology, World College of Medical Sciences & Research and Hospital, Jhajjar, Haryana, India.

Sample Size: For the present study, blood groups of a total of 612 patients were recorded and studied.

Sampling Design: The study was done as Random Sampling of the patients that attended various clinical departments in World College of Medical Sciences & Research and Hospital, Jhajjar, Haryana.

Study Variables: Blood Groups of patients

Inclusion Criteria/ Selection Criteria: Participants in the study eligible for inclusion were:

Patients of either sex of all age groups who attended World College of Medical Sciences & Research and Hospital, Jhajjar, Haryana, India. Neonates & children were included after obtaining proper informed written consent from their parent / guardian. Adult patients were included after obtaining proper informed written consent from them.

Study Characteristics: In this study, the blood groups of 612 patients were evaluated respectively.

The demographic information, history, physical examination, and type of blood group in the patient's questionnaire were recorded. In this study, blood group was recorded after collecting blood samples from patients under all aseptic procedures. Patients that satisfied the inclusion criteria were selected and the patients who did not meet the inclusion criteria were excluded.

Data Collection Methods and Tools: Patients' history information was collected in questionnaires and blood groups data were collected and reported, and then statistical analysis of data was performed using SPSS software. Calculations of P values were done using QuickCalcs-Graphpad Software.

Statistical Methods and Statistical Interpretation: Chi-square test was used to calculate Two-tailed P values in our study. When presenting P values, it was helpful to use the asterisk rating system as well as quoting the P value: P < 0.05*, it is statistically significant, P < 0.01 **, it is very statistically significant, P < 0.001***, it is extremely statistically significant.

RESULTS AND OBSERVATION

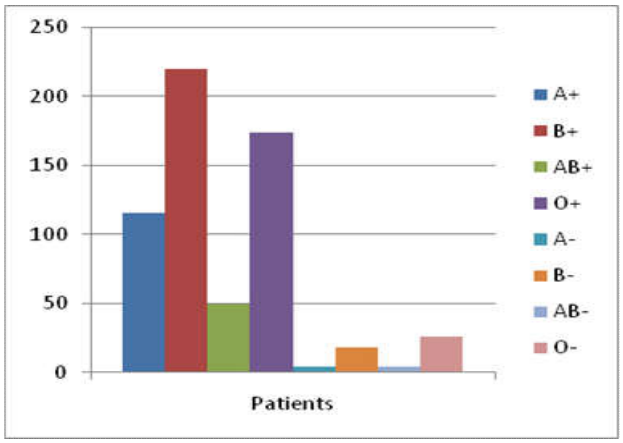

Figure 1(i). Bar Diagram showing prevalence of Blood Groups in a group of Patients in tertiary care hospital

Table 1(i). Prevalence of Blood Groups in a group of Patients in tertiary care hospital

Population sampled	A+	B+	AB+	O+	A-/B-/AB-/O-	Total	P value
Patients	116	220	50	174	4/18/4/26	612	<0.0001
Patients%	19%	36%	8%	28%	9%(1/3/1/4)%	100	<0.0001

DISCUSSION

In this study, it is evident that the most common blood group in patients was B positive (36%), followed by O+ (28%), and further followed by A+ (19%) and AB+ (8%). The Rh negatives were about 9 %. The two-tailed P value was less than 0.0001***, in the Chi-square test. By conventional criteria, this difference was considered to be extremely statistically significant. It is also concluded that the B gene is the most frequent, about 39% (B+ 36% & B- 3%), followed by O gene (O+ 28% & O- 4%), whereas the A gene is infrequent, in the present study.

Following studies partly support our observations

- The prevalence of different blood groups among one group of persons studied was approximately: O + 47%, A+ 41 %, B+ 9 % and AB+ 3 %. It is obvious from these percentages that the O and A genes occur frequently, whereas the B gene is infrequent (Vaz Mario *et al*., 2013). But in the present study, B and O genes occur frequently, whereas the A gene is infrequent. B+ is the most common blood group in our study.
- About 85 % of all white people are Rh positive and 15 % are Rh negative. In American blacks, the percentage of Rh positives is about 95 %, whereas in African blacks, it is virtually 100 % (Vaz Mario *et al*., 2013). The present study results (Rh negatives is about 9% in the patients) is intermediate between the percentage of Rh negatives of about 5 % in American blacks and 15% in white people.

Summary

In this study, the aim was to find out the prevalence of blood groups in a group of patients in World College of Medical Sciences & Research and Hospital, Jhajjar, Haryana, India. In this study, the blood groups of 612 patients were evaluated respectively. Participants that satisfied the inclusion criteria were selected and the participants who did not meet the inclusion criteria were excluded. Patients' history information was collected in questionnaires and Blood Groups Data were collected and reported, and then statistical analysis of data was performed using SPSS software. Calculations of P values were done using QuickCalcs-Graphpad Software. The Chi-square test was used to analyze the collected data. In this study, the results showed that the prevalence of different blood groups among one group of patients was approximately: B+ 36%, O+ 28%, A+ 19%, AB+ 8% and Rh negative- 9%. Thus, B+ is the most common blood group in our study. The two-tailed P value was less than 0.0001***, in the Chi-square test. By conventional criteria, this difference was considered to be extremely statistically significant. It is also concluded that the B gene is the most frequent, about 39% (B+ 36% & B- 3%), followed by O gene (O+ 28% & O- 4%), whereas the A gene is infrequent, in the present study.

Conclusion

From this study, it is concluded that the prevalence of different blood groups among one group of patients was approximately: B+ 36%, O+ 28%, A+ 19%, AB+ 8% and Rh negative- 9%. Thus, B+ is the most common blood group in our study. By conventional criteria, this difference was considered to be extremely statistically significant. It is also concluded that the B gene is the most frequent, about 39% (B+ 36% & B- 3%), followed by O gene (O+ 28% & O- 4%), whereas the A gene is infrequent, in the present study.

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