Original Research

Clinical and demographic profile of blood transfusion recipients in tertiary care centre

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ABSTRACT
Background: Blood transfusion plays important role in medical and surgical practice. The present study assessed clinical and demographic profile of blood transfusion recipients. **Materials & Methods:** It comprised of 128 blood transfusion recipients of both genders. Ethical clearance was taken prior to the study. All patients were informed regarding the study and written consent was obtained. General information such as name, age, gender etc. was recorded. Data such as blood group, product requested, ward and clinical diagnosis was obtained. Results thus obtained were subjected to statistical analysis. **Results:** Out of 128 recipients, males were 61 and females were 67. Maximum recipients were of A^+ (67) followed by O^+ (50), B^+ (3) respectively. The difference was significant (P< 0.05). Clinical wards of recipients was medical in 3, orthopedics in 31, surgical in 42, gynae in 20, casualty in 15, ENT in 10 and pediatrics in 7 cases. The difference was significant (P< 0.05). **Conclusion:** Most of the patients were A^+ recipients. Maximum cases of blood transfusion were seen in surgical ward.
Key words: Blood transfusion, Surgical, Medical.

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INTRODUCTION

Blood transfusion plays important role in medical and surgical practice. In order to achieve these, critical review and continuous evaluation of the use of blood and its components becomes essential. These entails studying the pattern of blood components use, the clinical conditions and wards requiring blood transfusion, the risks associated with blood transfusion and the demographic characteristics of the blood transfusion recipients in a population. Evaluation of blood requisition and utilization is essential in assessing the present and future demands for blood and avoiding unnecessary requests and transfusions.

Blood obtained from voluntary non-remunerated blood donors is a scarce and precious resource, which must be effectively managed and stocked. The patterns of blood transfusion have changed considerably in the recent years due to advances in blood banking techniques, increased frequency of complex surgical procedures, aging populations, initiatives aimed at improving health care standards and a decrease in donor availability because of stringent screening criteria.

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Monitoring blood utilization is one way of assessing the present and future demands for blood and reducing unnecessary transfusions. Data on blood utilization is especially helpful in resource-limited settings in which there are always competing needs for scarce resources. Blood is one such scarce health resource and ensuring its safety and clinical effectiveness requires a great deal of investment, both human and financial. Information on blood utilization will assist in conducting cost effectiveness analyses, establishing clinical practice guidelines, planning efforts for recruitment of new blood donors and streamlining resources for the therapeutic benefit of patients. The present study assessed clinical and demographic profile of blood transfusion recipients.

MATERIALS & METHODS

The present study was conducted in the Department of General Pathology of Padmasree Dr. D Y Patil Hospital and Research Centre, Nerul, Navi Mumbai. It comprised of 128 blood transfusion recipients of both genders. Ethical clearance was taken prior to the study. All patients were informed regarding the study and written consent was obtained.

General information such as name, age, gender etc. was recorded. Data such as blood group, product requested, ward and clinical diagnosis was obtained. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 128		
Gender	Males	Females
Number	61	67

Table I, graph I shows that out of 128 recipients, males were 61 and females were 67.

Table II Distribution of ABO blood groups of blood transfusion recipients

Blood group	Number	P value
A^+	67	0.01
A^-	1	
B^+	3	
B^-	2	
AB^+	2	
AB^-	1	
O^+	50	
O^-	2	

Table II, graph I shows that maximum recipients were of A^+ (67) followed by O^+ (50), B^+ (3) respectively. The difference was significant (P< 0.05).

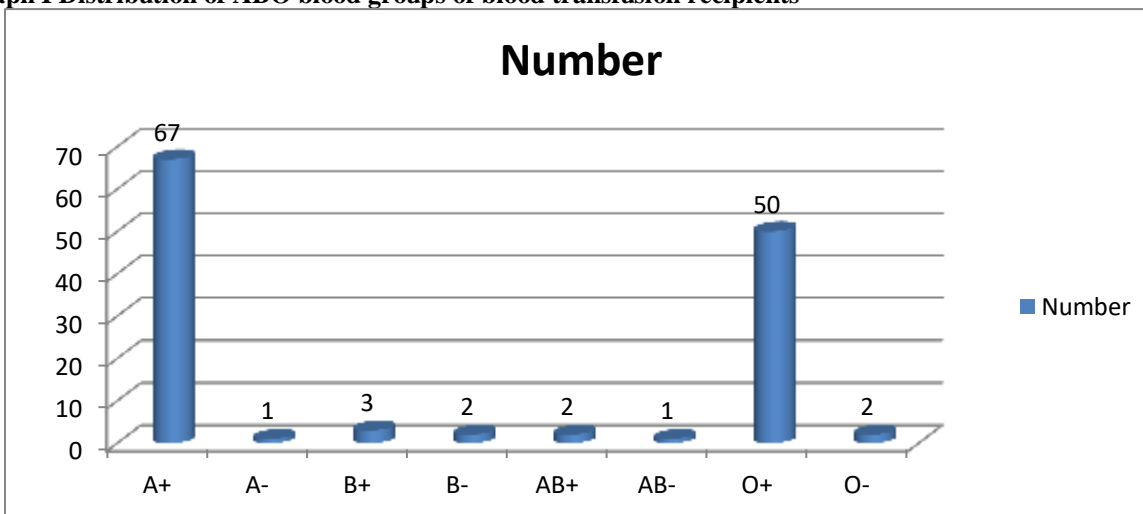**Graph I Distribution of ABO blood groups of blood transfusion recipients**

Table III Distribution of blood transfusion recipients based on clinical wards

Ward	Number	P value
Medical	3	0.01
Orthopedics	31	
Surgical	42	
Gynae	20	
Casualty	15	
ENT	10	
Pediatrics	7	

Table III shows that clinical wards of recipients was medical in 3, orthopedics in 31, surgical in 42, gynae in 20, casualty in 15, ENT in 10 and pediatrics in 7 cases. The difference was significant (P< 0.05).

DISCUSSION

Red blood cell (RBC) transfusion is an essential resource in the treatment of onco-hematological diseases, hemoglobinopathies and chronic renal failure (CRF). As a consequence of multiple transfusions, RBC alloimmunization is a common complication among these patients.[1,2] The antigenic difference between donor and recipient, the patient's immune status and the immunogenicity of the RBC antigen are some of the factors that influence the formation of alloantibodies. More than 300 RBC antigens have already been discovered and organized in 36 systems, in particular ABO, Rh, Kell, Duffy, Kidd and MNS.[4] This high number of antigens increases the risk of RBC alloimmunization, making it difficult to obtain compatible RBCs, which can result in hemolytic transfusion reactions of variable severity including fatal in some cases. Patients with hemoglobinopathies present frequencies of RBC alloimmunization of between 4% and 50%. In individuals with onco-hematological diseases the percentage varies from 9% to 13%[7] and in patients with CRF it is from 6.1% to 13.1%. The present study assessed clinical and demographic profile of blood transfusion recipients.

In this study, out of 128 recipients, males were 61 and females were 67. We found that maximum recipients were of A^+ (67) followed by O^+ (50), B^+ (3) respectively. Bugge et al[8] in a retrospective study, 153 multi-transfused patients from 2006 to 2014 were evaluated. Sixty-eight had onco-hematological diseases, 64 had hemoglobinopathies and 21 had chronic renal failure. Descriptive analyses were carried out with the proportions being compared using the chi-square test, with the significance level set at 5%. The Rh system was the most frequently involved (53.11%) and anti-E and anti-K (Kell system) were the most prevalent alloantibodies (21.87% each). Autoantibodies were found in ten patients (6.54%) with the percentages of autoimmunization in alloimmunized and non-alloimmunized individuals being 29.16% and 2.32%, respectively ($p = 0.0001$). There was a significant difference between autoimmunization and the number of transfusions (16.21% in 6–10 vs. 5.26% <6 vs. 2.56% >10; $p = 0.0203$) and diseases (19.04% in chronic renal failure vs. 6.25% in hemoglobinopathies vs. 2.94% in onco-hematological diseases.

We found that clinical wards of recipients was medical in 3, orthopedics in 31, surgical in 42, gynae in 20, casualty in 15, ENT in 10 and pediatrics in 7 cases. Natukunda et al[9] found that most of the 1,793 transfusion recipients studied were female (63.2%) and in the reproductive age group, i.e. 15-49 years (65.3%). The median age of the recipients was 33 years (range, 0-93). The majority of these recipients (n=1,642; 91.6%) received a red blood cell transfusion. The majority of the patients were diagnosed with conditions related to pregnancy and childbirth (22.3%), and diseases of blood and blood-forming organs (17.7%). The median time spent in hospital was 8 days (range, 0-214) and in-hospital mortality was 15.4%.

Geiβler et al[10] found that majority of the 2336 transfusion recipients studied were females (69.09%) and are in the reproductive age group; 15–49 years (75.23%). The median age of the recipients was 35 years (range, 0–89). Most of the recipients (n = 1636; 70.04%) received whole blood transfusion. Majority (94.46%) of the cross–matched units were issued giving C/T ratio of 1.06. The common blood group type was O Rhesus positive (62.63%). Obstetrics and Gynecology had the highest blood requisition (41.40%). The majority of the patients were diagnosed with conditions related to pregnancy and childbirth (38.70%), conditions originating in prenatal period (14.38%). The age range of 25–54 years had the highest blood transfusion requests (n = 501; 51.07%), of these, females were majority (n = 390; 77.84%).

CONCLUSION

Most of the patients were A^+ recipients. Maximum cases of blood transfusion were seen in surgical ward.

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