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STUDY OF UTILIZATION OF BLOOD AND BLOOD COMPONENTS IN BLOOD BANK OF TERTIARY CARE HOSPITAL IN SOUTHERN RAJASTHAN

Immunohaematology

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KEYWORDS

INTRODUCTION

Blood is an indispensable component of health care. It contains both cellular component and plasma which supplies oxygen, nutrients to different parts of the body. Transfusion of blood and blood components is an precious part of health care system. Many times there is inappropriate use of blood and its products among patients which causes unnecessary burden to the patients as well to blood bank .

The cellular components include red blood cells, white blood cells and platelets. Plasma contains coagulation factors. Blood is essential for human survival. Till now there is no effective substitute for blood has been found. Hence, transfusion of donated blood is the main stay of treatment in variety of medical and clinical conditions[1].

Blood transfusion was first performed successfully by James Blundell in the year 1818 [1,2]. Blood component therapy has gained much of the interest in recent years because of its benefits over whole blood transfusion like, it reduces volume overload on patient ,has greater shelf life and better patient management[2]. Component therapy was introduced between 1950 and 1960s to maximize the benefits of all components present in the whole blood [3-8]. Inappropriate use of blood for transfusion can lead to serious consequences for recipients including transmission of infectious agents [6,7]. In developing countries there are limited resources of blood and increasing demand, hence it is necessary to make an efficient use of blood [8,9].

Data on the use of blood products are limited. Studies have revealed high proportion of inappropriate use of blood transfusion often in both developed and developing countries [10,11,12]. Evaluation of pattern of blood component usage, its demand and good audit management is needed to ensure appropriate utilization of precious resource.

OBJECTIVE

To Study the Trend of Utilization of Blood and Blood Components in Blood Bank of Tertiary care centre in Southern Rajasthan.

MATERIALS AND METHODS

This study carried out over a period of 6 month from 1st september 2018 to 28th february 2019 in Blood Bank of Rnt Medical College,Udaipur.Necessary datas were collected from blood bank registors and computers.

We collected data of monthly collection and utilization of blood and blood components from the record books in the blood bank. It included cross matched and issued blood units. We also studied utilization of blood and its products by department of surgery, orthopaedics, ENT and gynaecological specialities and non-surgical specialities like medicine, nephrology and neurology.

RESULTS

In this study, we noted total of 10,199 units of blood collection. This included 4630 (45.4%) units of whole blood, 2560 (25.1%) packed red cells and 1826 (17.9%) units of fresh frozen plasma and 1183 (11.6%) units of platelet concentrates.

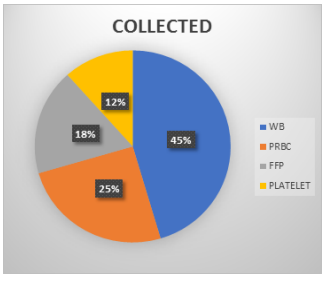
Among collected blood units, 9941 units were utilized. Whole blood constituted 5090 (51.2%) units, red cells were 2127 (21.4%) units,FFP and platelets constituted 1879 (18.9%) and 845 (8.5%) units respectively. Remaining 258 (2.5%) blood units were discarded due to transfusion transmitted infections like HBsAg, HIV and HCV, VDRL positivity. Other causes were sub optimal collection of blood because of donor disapproval and expiry of the shelf life.

Majority of the blood units were supplied to the department of Gynaecology which accounted for 1839 (18.5%) units, followed by department of Medicine which received 1640(16.5%) units. Supply to the surgical wards was 1600 (16.1%) units. Demand from the labour room was 1581 (15.9%) units which were met. In our hospital least requirement for blood units (0.5%) was from department of ENT during the study period.

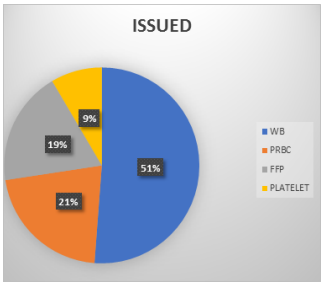
Table1 Showing number and percentage of blood units utilized by different specialities.

Department	Number of units	Percentage
Surgery	1600	16.1
Orthopaedics	1173	11.8
Gynaecology	1839	18.5
Labour room	1581	15.9
ENT	50	0.5
Neurology	100	1
Nephrology	89	0.9
Medicine	1660	16.7
Paediatrics	1163	11.7
Trauma	686	6.9
	9941	100.0

UNITS OF BLOOD COMPONENTS COLLECTED



UNITS OF BLOOD COMPONENTS ISSUED



CONCLUSION

There is no uniformity in distribution of blood and its components according to clinical specialities. In surgical cases blood and components are often ordered due to anticipated loss than actual one. This leads to overuse of blood products, wastage and unnecessary exposure of patients to various haematological antigens and infections.

This also increases workload on blood bank staff, which could be utilized for processing blood for more needy patients. Hence, inappropriate use of blood and blood components should be avoided.

Strict guidelines should be formulated for transfusion practices for improving the appropriate use of precious resource. Periodic evaluation of utilization pattern, demand for different blood products also helps to maintain the blood

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