

ORIGINAL RESEARCH

Assessment of transfusion practices in a known population: An observational study

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ABSTRACT:

Background: Provision of adequate safe blood is challenging in developing countries due to the paucity of voluntary blood donors, poor facilities for storage and blood component preparation as well as inappropriate blood ordering and utilization. Hence; the present study was undertaken for assessing transfusion practices in a known population. **Materials & methods:** The present study was undertaken for assessing transfusion practices in a known population. All the data of patients who underwent elective or emergency procedures, for which blood was ordered, were analyzed. Patients' age and sex, diagnosis, type of procedure performed, pre-procedure haemoglobin level and number of blood units required to be cross matched and transfused were obtained. The blood which was cross matched but not transfused was considered as wasted. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. **Results:** 57 percent of the patients belonged to the age group of more than 40 years. 59 percent of the patients were males while the remaining were females. Total units of blood prepared were 445 and all the 445 units of blood were cross-matched. Total units of blood transfused were 312 while total units of blood wasted were 133. **Conclusion:** Although blood transfusion is a life-saving measure for many patients, it should be restricted to patients who are in real need for transfusion.

Key words: Transfusion, Practices

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INTRODUCTION

Provision of adequate safe blood is challenging in developing countries due to the paucity of voluntary blood donors, poor facilities for storage and blood component preparation as well as inappropriate blood ordering and utilization. In addition, excessive ordering of blood can lead to an unintentional misuse of blood bank services. It appears that surgeons and physicians order request for cross-matching of blood on the basis of habit or as part of hospital routines, and there is a tendency in most emergency medical and surgical departments to order more units of blood than what are actually needed. The use of blood products has declined over the past two decades due to the improvement in the surgical skills and better technological advancement. However, at many centers, the conventional practice of unnecessary blood

requisitions continues. Any blood bag which is ordered by the operating room physicians becomes unavailable for other patients who require transfusion.¹⁻³ Hence; the present study was undertaken for assessing transfusion practices in a known population.

MATERIALS & METHODS

The present study was undertaken for assessing transfusion practices in a known population. All the data of patients who underwent elective or emergency procedures, for which blood was ordered, were analyzed. Patients' age and sex, diagnosis, type of procedure performed, pre-procedure haemoglobin level and number of blood units required to be cross matched and transfused were obtained. The number of units prepared, cross matched and transfused as well as the number of

patients for whom cross matching and transfusion were done was collected. The blood which was cross matched but not transfused was considered as wasted. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

RESULTS

In the present study, data of 100 patients was analysed. 57 percent of the patients belonged to the age group of more than 40 years. 59 percent of the patients were males while the remaining were females. Total units of blood prepared were 445 and all the 445 units of blood were cross-matched. Total units of blood transfused were 312 while total units of blood wasted were 133.

Table 1: Demographic data

Variable		Number of patients	%
Age group (years)	Less than 40	43	43
	More than 40	57	57
Gender	Males	41	41
	Females	59	59
Total units of blood prepared		445	100
Total units of blood cross-matched		445	100
Total units of blood transfused		312	70.11
Total units of blood wasted		133	39.89

DISCUSSION

The transfusion of blood and blood products is an integral and essential part of hospital services. The blood requisition in elective and emergency procedures from Surgery, Trauma and Obstetrics and Gynaecology Departments are often associated with excessive demand for cross matching of blood which is often more than the required blood and blood products. This is usually based on worst case assumptions leading to overestimation of blood usage. The transfusion services, thus, are burdened in terms of unnecessary reagent usage, time and manpower. Over-ordering of blood leads to financial loss for the patient, increase in cost during the hospital stay and increase in demand for blood.⁴⁻⁶ By demanding excessive blood units in routine for elective surgeries, of which little is ultimately used, results in consumption of valuable supplies, resources, time, and manpower. This also leads to extra strain on blood banks, especially on those with limited resources.⁷⁻⁹ Hence; the present study was undertaken for assessing transfusion practices in a known population.

In the present study, data of 100 patients was analysed. 57 percent of the patients belonged to the age group of more than 40 years. 59 percent of the patients were males while the remaining were females. Total units of blood prepared were 445 and all the 445 units of blood were cross-matched. Total units of blood transfused were 312 while total units of blood wasted were 133. Raghuwanshi B et al investigated the blood ordering pattern and transfusion practices so as to incorporate a blood ordering schedule for streamlining the use of blood in various hospital departments. The study was conducted over a period of 19 months in a 350 bedded tertiary teaching hospital. Source of data was blood bank requisition forms and

blood bank registers of patients who underwent elective or emergency procedures in the hospital, for which blood was ordered. The blood bank was requested to prepare 10,594 units of blood for 2556 patients. The blood utilised was 16.04% of total cross matched blood, leaving 83.9% of units cross matched but not transfused to patient for whom it was prepared, i.e., wasted. The surgery department had the highest number of units cross matched and transfused. The least number of units cross matched and wasted due to non-transfusion were from the Department of Oncology. The current deficiency of explicit maximum blood order schedule in our hospital is the major factor responsible for high cross match: transfusion ratio.¹⁰

Zulfiqar Ali et al studied the cross match to transfusion ratio and to review the blood utilization practices (transfusion index and maximal surgical blood order schedule) in elective neurosurgical procedures. A total of 740 patients underwent elective surgical procedures. Among these, 346 patients were requested to prepare 614 units of blood. Out of these 740 patients, there were 56 patients who were in the pediatric age group. A total of 178 units were transfused in 102 patients. One hundred and forty-two units were transfused in the intraoperative period, whereas as 36 units were transfused in the postoperative period. There is an efficient usage of blood for patients undergoing surgery for meningiomas, posterior fossa tumors, spinal dysraphism, and craniovertebral junctional anomalies.¹¹ Sonam Kumari evaluated the pattern of blood transfusion requests and utilization with the aim of determining transfusion practice. Blood request forms and cross-match worksheets at the blood bank were analyzed over a 6-month period. Numbers of requisitions, blood units cross-matched, issued out, transfused, and nontransfused were calculated. Nonusage probability (NUP) and the cross-match to transfusion ratio (CTR) for each clinical unit were computed. Two thousand two hundred and sixty-eight units of blood were cross-matched for 1487 patient's transfusion requests, out of which only 1455 (64.2%) were transfused giving a total CTR of 1.6 for the hospital. The CTR for the various clinical units were: Obstetrics and gynecology (O and G) 2.7, surgery 2.1, orthopedics 1.9, medicine 1.1, pediatrics 1, and oncology 1. The overall CTR (1.6) of the hospital was within the optimal range except for the O and G and surgery department which were having very high NUP and CTR indicating their suboptimal transfusion practices.¹²

CONCLUSION

Although blood transfusion is a life-saving measure for many patients, it should be restricted to patients who are in real need for transfusion.

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