

Analysis of Requesting, Delivering and Returning of Red Blood Cell

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Abstract

Background: Red blood cells concentrates (RCs) must have compatibility test. Its lead to work load and quality of lab management for deliver and return RCs. Also, the waste of unit cost will be discuss.

Aims: To analysis rate of requesting, delivering and returning of RCs, at Blood Transfusion Centre, Faculty of Medicine, Khon Kaen University, Thailand.

Methods: The data of patients who request RCs; were collected and manual record into Excel.

Results: N of analysis is 941 patients, divide into blood group A, B, O and AB is 194, 320, 337 and 90 cases, respectively. The RCs in request are 389, 444, 460 and 144 units, respectively per blood group. And total number requested of RCs are 1,437 units, delivered to wards are 1,437 units and returned back to blood bank were 617 units.

Summary/conclusion: The data was show requesting was too much. The excess request is over 1,028 (request 1,437/return 617) units. The compatibility test done 1,437 units and delivered, but the return was 617 units. Therefore the C/T ratio was 1.8 this analysis present to waste or excess of RCs supply about 80%. Then we should discuss and plan for decrease work load and excess RCs with the medical team.

Keywords: Red Blood Cells Concentrates (RCs); Blood Groups

Background and objectives

Today the treatment of patients in various hospitals at Thailand is not only the elective surgery patients who use the blood for treatments and are likely to increase significantly. But there are still patients, symptoms, or other diseases that still need to be treated with blood and blood component transfusion. Therefore in addition to other hospitals that are modern and quality medical supplies, good blood supply is needed. And a sufficient amount to treat such patients sufficiently with the needs of the growing patient. In addition to having sufficient estimates of blood, not the only answer to the plaintiff's use of blood effectively. Because in preparing the blood for each patient.

Each unit has a total cost. Even though we got blood from donations. But we still have the cost, whether the blood donation processing fee, the blood components preparation, the blood group ABO and Rh(D) infection screening, checking compatibility test between the donor and the receiver. And other tests to believe that the blood that is brought to the patient is safe blood. Because blood preparation and blood components allow patients to have a blood compatibility test. We need to prevent unwanted reactions after receiving blood components (transfusion reactions) consisting of ABO blood test by both cell and serum grouping, Rh (D) typing, antibody screening in serum or plasma (antibody screening test) of patients every time. There is blood including cross-match blood

donation and patient blood selection by selecting the donor blood with the corresponding ABO and Rh (D) blood group first as the first choice. Or compatible with patients in the case of antibody screening in patients giving a positive result. An antibody identification and a donor blood that does not have an antigen matching the antibodies detected in the patient for cross-match testing must be provided with compatible blood for the patient only. To the patient which may take approximately 45 - 60 minutes for testing, so the blood bank lab will use the test by complete cross match for all patients. And because the number of patients with the need for blood and blood components increases every year, exceeding the amount of reserve blood that the blood bank has reserved. But at the same time, it was found that some blood and some blood components were returned to the central blood warehouse without being used for patients. Sometimes resulting in the inability to prepare enough blood and blood components for needs. The part of the problem is due to the ratio of blood reservations and improper use of blood. But still no clear information. The objective of this study is to study the used of blood and determine suitable blood preparation and blood components for patients using blood in Srinagar Hospital. Faculty of Medicine Konkan University. Therefore, in this study we want to analyze the rate of blood requests blood and blood components delivery to the patient in hospital. And the return of unused blood and blood components that we are interested in this research, therefore, should develop appropriate blood usage guidelines By using 3 indicators: crossmatch-to-transfusion (C: T ratio), transfusion probability (% T) and transfusion index (Ti) [1-4].

Results

The study found that.

Blood Gr.	Pt.Volume	Volume of order	Returns bloods units	Used blood units
A	194	389	104	285
B	320	444	250	194
O	337	460	243	217
AB	90	144	20	124
Sum	941	1437	617	820

Table 1

Conclusion

Data showing too many requests. More than 1,028 requests (1,437 requests / return 617). Compatibility tests were performed on 1,437 units and delivered to patients. But the return was 617 units and only 820 were used for patients. Therefore, the C / T ratio is 1.8. This analysis presents the rate of wasted or excess blood that is procured each year. And for each bag of blood donation, it costs more than 850 baht to prepare 660 baht. In another test Therefore, if preparing for that patient and not actually applied to the patient And there is a return Although those blood can be prepared for other patients. Returning to the prepared blood causes the quality of the blood to deteriorate. And in addition, a small amount of blood has been prepared for the patient but not for use with the patient. That is, the blood remaining in the blood itself. After the deadline is not applied, the reservation will be canceled and prepared for other patients. In which these things are the cause of the waste of blood And increase the total cost We therefore study this matter in order to discuss it and make plans to reduce the workload and Excess blood requests with the medical team and related parties which will be useful and can help save the hospital budget as well.

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