

Comprehensive Analysis of Blood Transfusion in Paediatrics Patients admitted at Dhiraj Hospital

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Abstract

Back Ground:- Audit of transfusion practices in pediatric patients was performed to study indications , clinical profile and whether transfusions were in accordance to guidelines.

Objective:- to perform audit of transfusion practices , in order to study appropriate and inappropriate usage of different blood components in pediatric population.

Results:- In present study it was observed that out of 62 packed red cells transfusions 35(56.45%) transfusions were found to be inappropriate. Among FFP transfusions out of 55 transfusions 11(20%) transfusions were observed as inappropriate . Most of inappropriate transfusions had bleeds but normal coagulogram.

Among Platelet transfusions , three (16.6%) platelet transfusions, out of 18 transfusions were inappropriate and transfused mainly to raise the platelet count.

Conclusion:-Most frequently transfused blood components are red cells in pediatrics . Inappropriate transfusion of blood components hinders the utility of this valuable resource , Thus it becomes necessary to conduct regular audit of blood component transfusion for optimum utilization.

Key words:- *Red cell concentrate, Fresh Frozen Plasma.*

Introduction

Blood Components are life saving health resources . There is no substitute which has all the properties of human blood .However , the decision to transfuse blood components is also important as there are significant dangers associated with it.¹ The alarm regarding rate of inappropriate transfusion being carried out especially as against the spectrum of adverse effect of transfusions. ² With easy availability of Blood Products and increased risks of transfusion transmitted diseases proper monitoring of transfusion practices is necessary. Periodic review of blood components usage is very important to assess the blood utilization Pattern in hospital.³ It acts as management tool for the appraisal and justification of appropriateness and efficacy of transfusion therapy.⁴ Since very few studies have been done on analysis of blood transfusion practices in paediatric patients so the present study was conducted

to know the utilization pattern of Blood components in Paediatric Patients of tertiary care based hospital.

Material and Methods:

The Present study was a prospective study conducted by the Department of Transfusion Medicine . All transfusions request from the Paediatric ward, Paediatric ICU, NICU, of a tertiary care centre were included in the study. The institutional ethics committee approval was taken before start of study. The study was carried out over a period of 12 months and all transfusions occurring during that time in children below 17 years were analysed.

Information was recorded on prestructured proforma which included age of patient, sex, diagnosis, and indication of transfusion. Each transfusion was analysed for its appropriateness as per WHO guidelines

and British committee for standards in Haematology guidelines for transfusion of Packed Red Blood cells , Platelets , fresh frozen plasma in neonates and older children.

Appropriate transfusions were considered those which adhered to the guidelines of transfusion practices. Those which did not match the guidelines of transfusion practices were deemed inappropriate and the results were analysed.

Results

In present study a total of 54 Patients were given a total of 62 Packed Red cells transfusions. Amongst these 27 transfusions were observed to be appropriate transfusions given as per WHO and BCSH guidelines and 35 transfusions were observed to be inappropriate . Out of this 2 patients had enteric fever, 2 with diagnosis of Pneumonia and 1 with sepsis, empyema and seizures. All these patients had pretransfusion haemoglobin more than 7g/dl.

Inappropriate transfusion was seen in four patients with haemoglobin 10g/dl and with diagnosis of Acute gastroenteritis, sepsis, Acute meningoencephalitis and

Pneumonia.

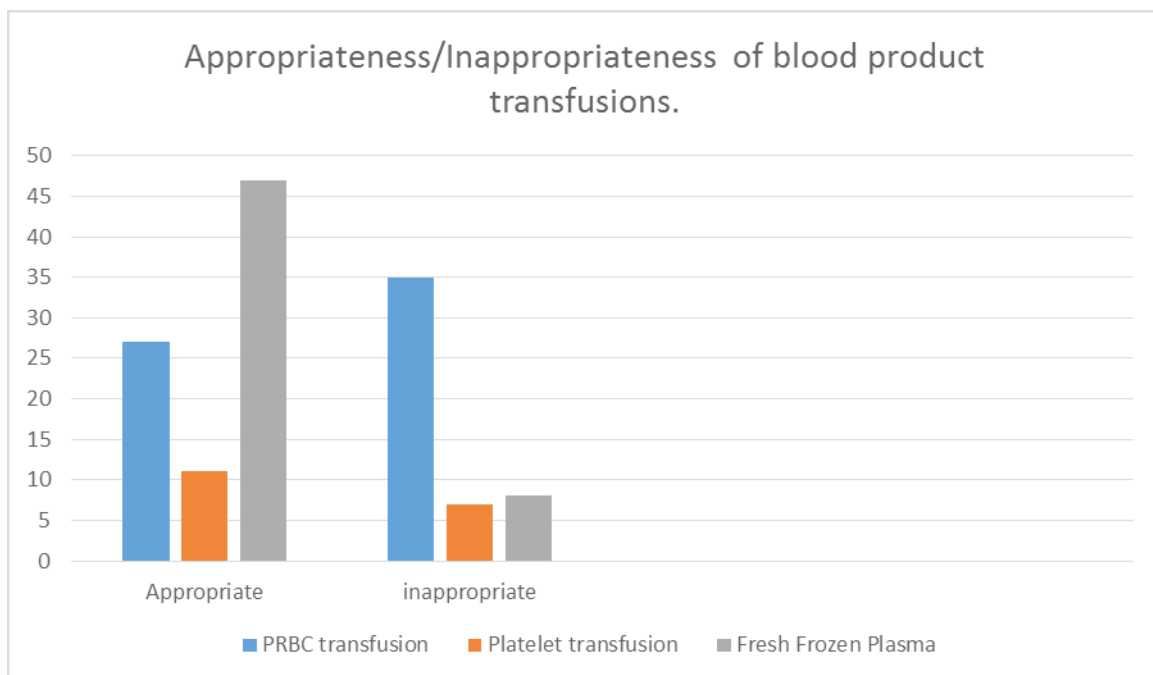
FFP Transfusions:

There was a total of 55 FFP transfusions and a total of 36 patients. 11 episodes of FFP transfusions were noted in deranged coagulogram without bleeding and thus were marked as inappropriate transfusions. Four episodes of inappropriate transfusion had bleeds but normal coagulogram. Three patients with total of eight FFP transfusions were given as appropriate transfusions as they had bleeding with deranged coagulogram.

Platelet Transfusions:-

A total of 15 patients were given platelet transfusions and total of 18 platelet transfusions were given.

Out of these 18 platelet transfusion three patients were given platelets for low platelet count and just to raise the counts. One platelet was given to preterm baby. Three units were given to Respiratory distress syndrome. 5 units were given to Congenital Heart disease Patient. Rest of platelet transfusions were given to patients with either < 10,000 platelet count or showing low platelet count with bleeding manifestations.



Discussion

The human blood cannot be substituted with any other fluid. Appropriate use of blood and its components is very essential.

As inappropriate transfusion of blood and blood components exposes the patient to transfusion risks and also waste precious community resources.

In Present study red cell transfusion were most frequently transfused followed by fresh frozen plasma and platelets.

Similar findings were found in the study by Bahadur et.al.⁵

The blood component therapy in accordance with BCSH guidelines and WHO guidelines only 27 transfusions out of 62 (43.54 %) red cell transfusions were appropriate. In similar study Bahadur et.al found appropriate use of blood components in 59.65%.

This high percentage of inappropriate Packed RBC transfusions in sick patients can be explained by the fact that intensivists usually follow a liberal approach and keep higher threshold for transfusion for aggressive management of patients.

The inappropriate transfusion were given in cases like dengue and prior to surgery even when the hemoglobin was at higher level than recommended.

There were 18 episodes of platelet transfusions. Out of this 16.6% were inappropriate. Majority of inappropriate transfusions were given to patients with platelet count less than 50,000/cumm and without bleeding manifestations. Next inappropriate transfusions were given in patients diagnosed with Dengue with platelet count 20,000 and no bleeding.

In present study 20% of transfusions were inappropriate. Majority of FFP transfusions was given to patients with minor abnormal coagulation profile. Most transfusions were given in ICU settings in septic patients. Similar study done by Shingare et.al and Kulkarni et.al showed inappropriate use of FFP as 39% and 52% respectively.^{6,7}

Ethical Clearance :- Taken from ethical committee of Sumandeep Vidyapeeth university.

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Conflict of Interest: Nil.

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