

STUDY OF ACUTE BLOOD TRANSFUSION REACTIONS IN PATIENTS OF BETA THALASSEMIA

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ABSTRACT

Background: The thalassemys are the most common genetic disorder on a worldwide basis.^[2] Early and regular blood transfusion decreases the complications of severe anemia and prolongs survival. Adverse events which occur in association with the transfusion of blood products are commonly called transfusion reactions.^[1] **Material and Methods:** This cross-sectional study included 54 beta(β) thalassaemia patients whose age ranged between 1yr to 20 years. Pre transfusion hemoglobin assessment was done for all patients. Acute blood transfusion reactions were noted in details. **Results:** Most common transfusion reaction was fever. By fisher exact test, significant association was observed between pre transfusion Hemoglobin level and reaction. It is observed that % of reaction was more(22%) in patients with HB level <7.5, than in patients with HB level >7.5 (6%), which was statistically significant(P value< 0.0001). **Conclusion:** Acute Febrile non haemolytic reactions were common among patients with low pre- transfusion hemoglobin and Fever was the most common transfusion reaction noted.

KEYWORDS: β -thalassaemia, blood transfusion, transfusion reactions, pre- transfusion haemoglobin.

INTRODUCTION

The thalassemys are the most common genetic disorder on a worldwide basis.^[1] Early and regular blood transfusion decreases the complications of severe anemia and prolongs survival. The recommended treatment for beta thalassaemia major involves lifelong regular blood transfusions, usually administered every two to five weeks, to maintain the pre transfusion hemoglobin level above 9–10.5 g/dl. Yet, transfusion carries the risk of complications. Therefore knowing different adverse effects of blood transfusion represents a great issue in managing thalassaemia patients. Adverse events which occur in association with the transfusion of blood products are commonly called transfusion reactions.^[3] The aim of the present work is to study the prevalence of acute blood transfusion reactions among β -thalassaemia major patients in the Thalassaemia day care centre of Dr D Y Patil Hospital.

ACUTE BLOOD TRANSFUSION REACTIONS

Febrile	Afebrile
Acute haemolytic	Allergic reaction
Febrile non-haemolytic	Anaphylaxis
Bacterial sepsis	
TRALI	

AIM

To study acute blood transfusion reactions in patients of beta thalassaemia.

OBJECTIVES

- To know which type of transfusion reaction is common.
- To find out correlation between pre transfusion hemoglobin and acute blood transfusion reactions in beta thalassaemia patients.

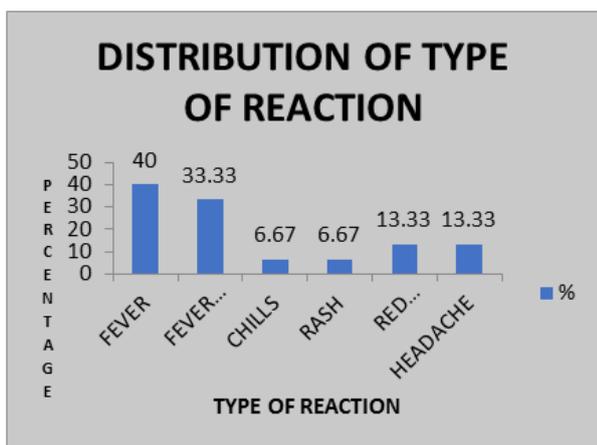
MATERIAL AND METHODS

This cross-sectional study included 54 beta(β) thalassemia patients whose age ranged between 1yr to 20 years coming for regular follow-up and blood transfusion at Thalassemia day care centre of Dr D Y Patil hospital in the last six months. After explaining the procedure to the patients and acquiring informed consent from the patients or guardians, 1ml of venous blood was withdrawn under complete aseptic conditions into EDTA vial to perform ABO and Rhesus(Rh) blood grouping and haemoglobin level before transfusion. All patients were subjected to thorough history taking with special emphasis on blood transfusions regarding rate of blood transfusion, type of received blood, and history of previous transfusion reactions. Packed red cells were transfused. Transfusion was begun within 30 minutes of removing from storage temperature (2-6 deg c) and completed within 4 hours, if ambient temperature was 22-25 deg c. In case of high ambient temperatures, shorter out of refrigerator time was used. Clinical assessment was done for each patient during the transfusion session in order to detect any transfusion reaction. Acute blood transfusion reactions were noted in detail.

RESULTS

Fever was the most common transfusion reaction noted.

Type of reaction	No	%
Fever	6	40
Fever with chills	5	33.33
Chills	1	6.66
Rash	1	6.66
Red coloured urine	2	13.33
Headache	2	13.33



Association Of Hb Level With Reaction			
HB LEVEL	Reaction		
	YES	NO	TOTAL
<7.5	12	4	16
>7.5	3	35	38
TOTAL	15	39	54

By fisher exact test, there was significant association observed between pre- transfusion hemoglobin level and reaction.

It was observed that % of reaction was more(22%) in patients with HB level <7.5, than in patients with HB level >7.5 (6%), which was statistically significant with P value (P< 0.0001).

DISCUSSION

The treatment of thalassemia major is blood transfusions to maintain the hemoglobin level.^[4] The present study was designed to explore the prevalence of acute blood transfusion reactions among 54 β - thalassemia patients who receive regular blood transfusion in the thalassemia day care centre of Dr D Y Patil hospital during a period of 6 months. Acute transfusion reactions were developed in 15 patients (28%), of which 12 patients with pre-transfusion HB > 7.5 (22%) and 3 patients with per transfusion HB < 7.5 (6%). It shows that the blood transfusion reactions were common in the patients with low pre- transfusion hemoglobin. The mean pre-transfusion hemoglobin level was 8.5 \pm 1.16 g/dl which is lower than similar studies in which median baseline hemoglobin concentration of 10.0 g/dl was observed.^[4] The low hemoglobin concentration level among the patients compared to similar studies may be related to the low availability of blood due to low rate of blood donation as this blood was given to the patients free of charge.

Allergic reactions developed in 15 patients during the period of study in which fever (40%) and fever with chills(33.33%) were more common. Other acute transfusion reactions noted were chills(6.66%), rash(6.66%), red coloured urine(13.33%) and headache(13.33%).

CONCLUSION

Fever was the most common transfusion reaction noted and acute febrile non haemolytic reactions were common among the patients with low pre- transfusion hemoglobin.

As transfusion reactions are more common in patients with pre transfusion hemoglobin less then 7.5gm/dl and hemoglobin drops by 1gm/dl per week after transfusion, we can counsel patients accordingly and can prevent reactions. As acute febrile reactions are more common, we can minimise them by giving anti pyretics and anti histaminics prior to transfusion.

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