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POLY TRANSFUSED THALASSAEMIA PATIENTS;
PREVALENCE OF VIRAL MARKERS AND MALARIAL PARASITE.

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ABSTRACT... chandikapoor@yahoo,com Objective: To find out prevalence of Malarial Parasite, human immunodeficiency virus, hepatitis B and C virus in polytransfused thalassaemia patients and in apparently healthy blood donors, Design; Prospective Study. Setting: Thalassaemia Care Centre, Bolan Medical Complex Hospital, Quetta, Period: From Jan 2006 to April 2006, Material & Method: A total of 150 multitransfused patients of p, thalassaemia major and 150 normal blood donors were included in this study, Results; Thirty percent thalassaemia patients were positive for anti HCV, 14% for HBsAg and 0,7% for anti HIV antibodies, There was a significant trend in the increase in prevalence of viral markers along with the increase in the number of transfusions, Eight percent positivity for HBsAg, 0% for anti HIV and 2% for anti HCV antibodies were found among blood donors, No Malarial parasite was found on smear in both patient and donors group, Conclusion: The results of this study raise an alarm to existence of a significant risk of transfusion transmitted diseases in our setup,

Key words: Thalassaemia, multitransfusion, viral markers, malaria, blood transmissible agents

INTRODUCTION

Almost all patients with thalassaemia major require blood transfusion within the first two to three years of life to prevent severe anaemia and its physical consequences[1], Standard transfusion regimens maintaining haemoglobin level above 10 g/dl expose major thalassaemia patient to receive monthly packed red cells obtained from an average of 4,5 donors per donation[2], Blood donors may carry a variety of pathogens in their blood despite their apparent healthy status[3], Infectious Complications have been, and will continue to be a problem in recipient of blood transfusion[4]. Infection with human immunodeficiency virus[5]. Viral hepatitis[6] and malaria[7] are major public concern in developing countries, Thus these infectious agents have emerged as a major cause of mortality in these patients[8].

MATERIAL AND METHODS

A total of 150 children with confirmed diagnosis of B, thalassaemia attending the thalassaemia care

centre,

Bolan Medical Complex Hospital Quetta for transfusion constituted the study population. Only those patients were included in study who had got[3] 5 transfusions.

A detailed history with emphasis on age at diagnosis, age at first transfusion, frequency of transfusion was taken so as to ascertain the numbers of transfusions. This was followed by examination of facial features, pallor, icterus, lymphadenopathy and organomegaly to confirm our diagnosis.

150 apparently healthy non paid blood donors were also included. They were selected randomly, from the same blood bank, as being the source of these infections in thalassaemia patients.

Collection of Blood Samples

After wearing the disposable gloves and cleaning the puncture site with 70% alcohal, 5ml of venous blood was collected. By putting one drop of fresh blood on two separate slides, thick and thin smears were made for detection of Malarial parasite. Remaining blood was allowed to clot in a sterile tube, to yield serum for screening of virological markers.

Study of Viral Markers

Serum obtained was utilized for serological detection of HBsAg (clone system), anti HCV (Randox Laboratories Ltd UK) and anti HIV antibodies (organon Teknik BV, Holland) by Enzyme immuno-assay (EIA).

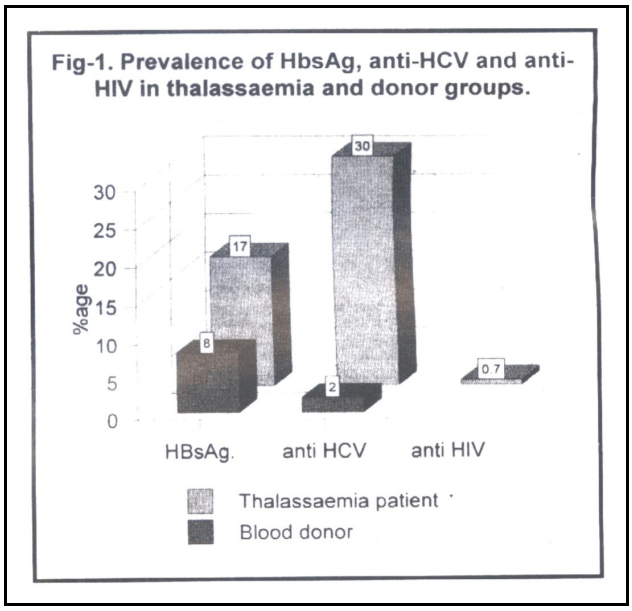
Statistical evaluation

Prevalence of various markers in relation to number of transfusion were compared by chi-square test.

RESULTS

Thirty percent thalassaemia patients were positive for anti HCV, 0.7% for anti HIV antibodies and 14% for HBsAg while Eight percent positivity for HBsAg, 0% for anti HIV and 2% for anti HCV antibodies were found among blood donors. (Figure 1).

In multitransfused thalassaemia patients there was an increase in the overall prevalence of viral marker with the increasing number of transfusions.(Table I).



By examining carefully thick & thin smears and spending about 30 minutes on screening, none was positive for malarial parasite in both patient and blood donor groups. Age & sex wise distribution of patients is shown in Table

DISCUSSION

In the present study high prevalence of HbsAg and anti HCV among multitransfused thalassaemia patients were recorded. The prevalence of HbsAg was 17% (26/150). In male patient, prevalence of this marker was 21% (20/96) while in female 9% (5/54). Other studies from different parts of the world have shown variable rate of prevalence ranging from 0.75% to 45%[9'10'1112]. The results of this study are comparable with reports from India (15.5%)[13] and Bangladesh (14.3%)[14]

Thirty percent (45/150) patients were reactive to anti HCV. Prevalence was higher in males (32%) as compared to females (26%). The findings of Khan[15] from Lahore, Cunningham et. al[16] from North America and de Montalembert et al[17] from France are close to our study. Contrary to this, two different studies, one from Turkey[9] and other from India[18] have shown prevalence of anti HCV among thalassaemia patients 4.5% and 54.4% respectively. This difference may reflect inadequate blood screening practices or selection bias,

Table-1. Number of transfusions and seropositivity of viral markers

No. Of transfusion	No. Of patients			%	HIV	HBV	HCV	Seropositivity (%)
	Male	Female	Total					
<20	4	3	7	5	-	-	-	0.0
21-50	8	9	17	11	-	1	3	24.0*
51-100	28	9	37	25	-	7	9	43.0"
101-250	28	24	52	34	-	10	18	54.0"
>250	28	9	37	25	1	8	15	65.0**
	96	54	150	100	1	26	45	

* = Non-significant (P<0. 5) ** = Significant (P<0. 05)

Table-ll. Age and sex wise distribution of thalassaemic patients

Age (years)	Sex		Number	
	Male	Female	Total	%age
0-4	10	6	16	11.0
5-9	39	20	59	39.0
10-14	39	24	63	42.0
>15	8	4	12	8.0
Total	96*	54*	150	100.0

*P< 0.001

In our study 6% (9/150) patients were reactive to both HbsAg and anti HCV. Coinfection in Cuban patients was 31%[19]

In present study only 1(0.7%) patient, age 10 year who had received about 380 units of blood, was repeatedly seropositive for anti HIV antibodies. Although existence of only one case in this study

forbids comparison with other studies. However, one may speculate the hidden risk of HIV in our society.

The prevalence of serological markers was related to the number of blood units transfused, being 4 of 17(24%) in those who had received < 50 transfusions, 16 of 37 (43%) in those with 51 -100 transfusions, 28 of 52 (54%) in those with 101 - 250 transfusions and 24 of 37(65%) in those > 250 transfusions (Table I).

Eight percent seropositivity for HbsAg, 0% for anti HIV and 2% for anti HCV among blood donors compares well with the findings of other workers [20] [21 & 22] indicating a hidden risk towards transmission of these infections to

CONCLUSION

The risk of transmitting an infectious disease is associated with every transfusion. While it is true that appropriate testing reduces the risk, no transmissible disease is always detectable and there are probably some that have not yet been recognized. The results of 'this study raise an alarm to existence of a significant risk " of transfusion transmitted diseases in our society.

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