



Prevalence of Hepatitis B and Hepatitis C in Transfusion Dependent Thalassemia Patients

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ABSTRACT

Objective: To determine the prevalence of transfusion transmitted diseases like viral hepatitis B and C in thalassaemic patients.

Study Design: Descriptive / cross section study

Place and Duration of Study: The study was carried out from Jan 2018 to Mar 2018 at the Paediatrics Department, Sheikh Khalifa Bin Zayed Teaching Hospital, Rawalakot, AJK Teaching Hospital of Poonch Medical College, Rawalakot.

Materials and Methods: There were 55 patients of thalassaemic who were screened for transfusion transmitted hepatitis B & C virus with the use of electrochemiluminescence auto analyser elecsys Cobas E 411 and where possible PCR techniques. The result i.e., infection of hepatitis B & C was stratified by age, equality and duration of transfusion.

Results: There was 30/91% prevalence of transfusion transmitted hepatitis C in the current research and it had a statistically significant association with the age and duration of blood transfusion in thalassaemic patients. None of the patient had positive Hepatitis B.

Conclusion: High prevalence of transfusion transmitted hepatitis C in thalassaemic patients notwithstanding adoption of donor blood screening protocols requires to be addressed on urgent basis for the determination of elements causing this transfusion therapy complication.

Key Words: Chelation, Cirrhosis liver, Hepatitis C, Transfusion, Thalassemia, Viral Hepatitis

INTRODUCTION

Thalassaemia, an autosomal recessive disorder, significant reason for serious anaemia in children and young adults. The thalassaemia prevalence is high specifically in geographically area spreading from South East Asia to Middle East causing effects to Burma and Sub-continent of India too. The prevalence of thalassaemia disease is very high in Pakistan and as per recent estimation, 5000 infants every year homozygous for thalassaemia are born. The patients of thalassaemia are dependent on regular transfusion of blood during whole life to survive and although the regular transfusion of blood makes good the thalassaemic patient's survival overall, they are vulnerable to significant transfusion risk connected with infection specifically bloodborne viral infection.

In case of dearth of research and data from this part and a big variation reported hepatitis C prevalence in the patients of thalassaemia from Pakistan, it has been decided for the determination of viral hepatitis B&C prevalence and the risk elements connected with the hepatitis C transmission in the patients of thalassaemia enrolled with the department. It has been considered that the outcome information may be utilised for the revision of the prevailing strategies of management in place.

MATERIALS AND METHODS

This descriptive cross-sectional study was carried out from Nov 2016 to May 2017 at the Paediatrics Department, Sheikh Khalifa Bin Zayed Teaching Hospital, Rawalakot AJK (Teaching Hospital of Poonch Medical College, Rawalakot). There were 55 patients of thalassaemic participated in the study and thereafter written consent was obtained from them. Minimum 2 years of age thalassaemia patient who have undergone the transfusion were made part of this research. The patients were receiving chelation therapy in the centre and regular transfusion of blood as well. 3 CC blood was taken from the patient's antecubital vein under tight aseptic condition and was forwarded to laboratory for HbsAg and antibody levels by electrochemiluminescence auto analyser elecsys Cobas E 411. The patient screened by device method for positive anti HCV they were again contacted and again blood was taken to assess the level of HCV viral DNA both for qualitative and quantitative polymerase chain reactions. The patients confirmed by PCR for positive HCV were referred to gastroenterologist for future management. The examiners recorded the data. SPSS Version 16 was used for analysing the data. Calculation of mean \pm SD for numerical variables whereas the calculation of percentage and frequency was for categorical variables. The result of hepatitis C infection was segregated by parity, age and transfusion duration. Chi square test was used after segregation and value of $P < 0.05$ was taken to be significant.

RESULTS

The research was comprised of 55 patients of thalassaemic with a mean \pm SD age of 9.16 ± 6.36



years and between the age of 3 to 30 years. The transfusion mean duration was 8.02 ± 5.45 years. The study group was having male were 30(54.55%) and females were 25(45.45%). Initially the positive hepatitis C frequency was 41.82% (n=23) but later it went down to 30.91% (n=17) after PCR examines. Positive HbsAg was not found in any patient. A statistically significant connection was found with the patients' age and duration of transfusion ($p < 0.05$) when the findings i.e., hepatitis C was classified by parity, age and duration of transfusion. Chronic patients of thalassaemia were prone to catch hepatitis C. Likewise, patients having long blood transfusion duration (over 9 years) were prone to risk of catching hepatitis C.

DISCUSSION

The purpose of the current study is the determination of HbsAg and anti HCV antibodies prevalence in the patients of thalassaemia from Rawalakot, AJK. In the research the main form of thalassaemia is the β -thalassaemia and it was found in 96.3% patients. The remaining patients had β -thalassaemia intermedia. Similar rate of prevalence has been found in the current region: 4% and 96% for β -thalassaemia intermedia and β -thalassaemia major respectively from Rawalpindi, 7% and 93% β -thalassaemia intermedia and β -thalassaemia major respectively from Faisalabad and 13% and 87% β -

thalassaemia intermedia and β -thalassaemia major respectively from India. The hepatitis C prevalence was found by the study as 30.91% though it is high, but it is likewise with other reports from other parts of Pakistan. Mostly patients of the current research are male (n=30; 54.55%), the affected females are twice in number than the male affected (11 V 6).

Although in Pakistan the blood transfusion screening procedure is being adopted and is in place for decades, but the hepatitis C high prevalence in the patients of multi transfused thalassaemia is upsetting scenario. The complication for transfusion therapy for the patients of thalassaemia is serious in nature and requires to be addressed on urgently basis. Planning and implementation of public health policy must focus on this issue and guideline requires to be drawn for the β -thalassaemia management in Pakistan which must also deal with the prevention in population for blood borne infection.

CONCLUSION

High prevalence of transfusion transmitted hepatitis C in thalassaemic patients notwithstanding adoption of donor blood screening protocols requires to be addressed on urgent basis for the determination of elements causing this transfusion therapy complication.

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