

ORIGINAL RESEARCH

Prevalence of HIV seropositivity among thalassemic patients in a tertiary care centre

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ABSTRACT

Background: *Thalassemia also known as “Cooley’s anemia” is an inherited disease of the red blood cells classified as a hemoglobinopathy. The present study was conducted to assess prevalence of HIV seropositivity among thalassemic patients in a tertiary care teaching centre.*

Materials & Methods: *80 thalassemic patients of both genders were included. All the samples for detection of anti- HIV antibodies was done as per the guidelines of National AIDS Control Organisation (NACO).*

Results: *Out of 80 patients, males were 45 and females were 35. Age group 0-5 years had 10, 5-10 years had 25, 10-20 years had 40 and >20 years had 5 patients. Seroprevalence of HIV were 1 case in age group 0-5 years, 3 in age group 5-10 years and 2 in age group 10-20 years of age.*

Conclusion: *Authors found lower seroprevalence of HIV among thalassemia patients.*

Key words: *thalassemia, seroprevalence, HIV*

INTRODUCTION

Thalassemia also known as “Cooley’s anemia” is an inherited disease of the red blood cells classified as a hemoglobinopathy. The genetic defect results in synthesis of an abnormal hemoglobin molecule.¹Thethalassemas are a group of congenital anemia that is characterized by deficient synthesis of one or more globin subunits of the hemoglobin. According to the chain whose synthesis is impaired, the thalassemia are designated as α , β , γ , δ , $\delta\beta$, or $\epsilon\gamma\delta\beta$ thalassemia.² The β thalassemia is probably the most common inherited hemoglobin disorder in the Indian subcontinent, with an uneven distribution among the different endogenous populations.³ The basic defect in β thalassemia is a reduced or absent production of β globin chains with relative excess of α chains. The designations commonly used to describe the β thalassemia syndrome are based on clinical severity. Beta (β)-thalassemia major is the most severe form. This is also called “Cooley’s anemia” or Mediterranean anemia.⁴

Among all the transfusion transmitted infections, the most dreaded is transmission of HIV infection. The first reported case of transfusion associated AIDS was an infant from San Francisco, who died at age of 20 months. This child had received multiple transfusions for anaemia at birth.⁵ One of the original blood donors in this case was a gay, who was healthy at the time of donation. Later on that donor also died of AIDS. Thalassemia with HIV is a dreadful amalgamation of hereditary and acquired ailment.⁶The present study was conducted

to assess prevalence of HIV seropositivity among thalassaemic patients in a tertiary care teaching centre.

MATERIALS & METHODS

The present study was carried out at Thalassaemia ward and Department of Microbiology, Deben Mahata Government Medical College and Hospital, Purulia, West Bengal. Samples were collected from 80 thalassaemia patients of both genders during period of six months from 1st March 2021 to 31st August 2021. All were informed regarding the study and their written consent was obtained for HIV testing. Data such as name, age, gender etc. was recorded. All the samples for detection of anti-HIV antibodies was done as per the guidelines of National AIDS Control Organisation (NACO). Sample reactive with first test were further confirmed with two other HIV kit test. Sample was considered negative for HIV if the first test was non reactive. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 80		
Gender	Male	Female
Number	45	35

Table I shows that out of 80 patients, males were 45 and females were 35.

Table II Age wise distribution of patients

Age group (Years)	Number	P value
0-5	10	0.05
5-10	25	
10-20	40	
>20	5	

Table II, graph I shows that age group 0-5 years had 10, 5-10 years had 25, 10-20 years had 40 and >20 years had 5 patients. The difference was significant ($P < 0.05$).

Graph I Age wise distribution of patients

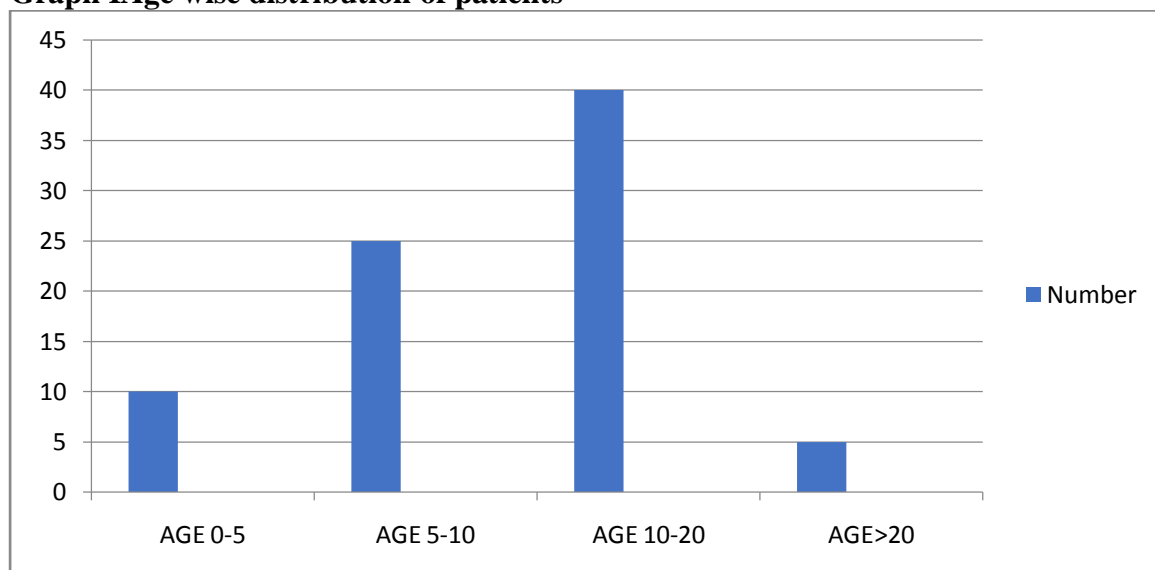


Table III Seroprevalence of HIV among thalassaemic patients

Age group (Years)	Number	P value
0-5	1	0.02
5-10	3	
10-20	2	
>20	0	

Table III shows that seroprevalence of HIV were 1 case in age group 0-5 years, 3 in age group 5-10 years and 2 in age group 10-20 years of age. The difference was significant ($P < 0.05$).

DISCUSSION

Thalassemia is one of the most challenging inherited hematological disorders with no permanent cure that is prevalent in many parts of the world.^{7,8} The abnormalities are seen in alpha (α) or beta (β) chains of hemoglobin, resulting in reduction or no synthesis of any of those chains. There are approximately 60-80 million people affected by β -thalassemia trait alone.⁹ It is estimated that approximately 1,00,000 children with thalassemia major are born worldwide.^{10,11} India contributes to 10% of the annual world incidence of thalassemia with around 9,000-10,000 new cases adding each year. In India, the various thalassemia traits varies between 3% and 17% but within certain communities such as Punjabis, Sindhis, Muslims, and Bengalis, the prevalence rate varies between 8% and 15%.¹² It is a chronic disease that manifests early in life leading to a burden not only on health system but also on the patients and their families, who are vulnerable to social and psychological problems.¹³ The present study was conducted to assess prevalence of HIV seropositivity among thalassemic patients in a tertiary care teaching centre.

In present study, out of 80 patients, males were 45 and females were 35. We found that age group 0-5 years had 10, 5-10 years had 25, 10-20 years had 40 and >20 years had 5 patients. We observed that seroprevalence of HIV were 1 case in age group 0-5 years, 3 in age group 5-10 years and 2 in age group 10-20 years of age. Our study reveals a low HIV seroprevalence of 0.52% among thalassemic patients. Jain et al 2007 showed prevalence of 1.04% of HIV in thalassemic patient. Patel et al 2013 showed prevalence of 1.23% of HIV in thalassemic patient. Meena Sindhu et al showed prevalence of HIV of 0.72%. The low prevalence of HIV in our study may be due to mandatory screening of all donors, use of sensitive tests for screening of blood donors, increased awareness of people against HIV and professional donors being barred from donating blood. Still multiple transfused patients acquire HIV through blood transfusion the reason being donors being in the window period, mandatory screening guidelines are not followed at some centres. Also these patient may acquire HIV infection through other routes apart from blood transfusion.

CONCLUSION

Authors found low seroprevalence of HIV among thalassemia patients.

REFERENCES

1. Cantwell, Alan P. AIDS in children In AIDS-The Mystery and the Solution The New Epidemic of Acquired Immune Deficiency Syndrome 2nd edition Aries Rising Press Los Angeles 1986 p-69.
2. Patel A, Goswami H. A retrospective study for prevalence of transfusion-transmitted infections in multiply transfused thalassemia major paediatric patients. Int J Sci Res. 2014;3(12):283-5.
3. Soni P, Trivedi N, Shah P, Kinariwala P, Soni S, Shah PK et al. Prevalence of HIV, HBV and HCV in patients of Thalassemia. Int J Sci Res. 2014;3(9):299-301.

4. Khaled MD. Prevalence of Hepatitis B, Hepatitis C and Human Immunodeficiency Virus infection among Thalassemia patients in Ninavha Governorate/Iraq. *J Biotech Res Cen.* 2014;8(2):11-3.
5. Bhavsar H, Patel K, Vegad M, Madan M, Pandey A, Asthana A et al. Prevalence of HIV, Hepatitis B and Hepatitis C infection in Thalassemia major patients in tertiary care hospital, Gujarat. *Natl J Integr Res Med.* 2011;2(3)47-50.
6. Jain R, Perkins J, Johnson ST, Desai P, Khatri A, Chudgar U et al. A prospective study for prevalence and/or development of transfusion transmitted infections in multiply transfused thalassemia major patients. *Asian journal of transfusion science.* 2012;6(2):151-4.
7. Kumar L, Agnihotri SK, Marwaha RK, Sehgal S. HIV Infection in Multi-transfused Thalassemic children. *Indian Pediatr.*1994;3(1):1438-9.
8. Charan VD, Nanu A, Desai N, Chaudhary VP. HIV infection in multi-transfused thalassemic Children. *Indian Pediatr.* 1993;30:1232-3.
9. Arora DR, Gupta V, Arora B. Surveillance of HIV infection in Haryana. *Indian J Community Med.* 2000;25(1):1-6.
10. Talsania S, Talsania N, Nayak H. A cross sectional study of thalassemia in Ahmedabad City, Gujarat, (Hospital based). *Health Line* 2011;2(1):48-51.
11. Mallik S, Chatterjee C, Mandal PK, Sardar JC, Ghosh P, Manna N. Expenditure to treat thalassemia: An experience at a tertiary care hospital in India. *Iran J Public Health* 2010;39(1):78-84.
12. Shaligram D, Girimaji SC, Chaturvedi SK. Psychological problems and quality of life in children with thalassemia. *Indian J Pediatr* 2007;74(8):727-30.
13. Jaiswal SP, Chitnis DS, Jain AK, Inamdar S, Porwal A, Jain SC. Prevalence of hepatitis viruses among multi-transfused homogenous thalassemia patients. *Hepato Res* 2001;19(3):247-253.
14. Aggarwal R, PriyankaYadav, ShipraAgarwal, Uma Chaudhary, Vipul Kumar, RakeshJakhar. *Sch. J. App. Med. Sci.*, 2017; 5(8C):3176-3178.
15. Biswas a, sarkar k, firdaus r, saha k, gupta d, ghosh m, chowdhury p, bhattacharyya d, bhattacharyya m, sadhukhan pc. Prevalence of anti-HCV, HbSAg, HIV among multi-transfused thalassemic individuals and their socio-economic background in Eastern India. *Prevalence.* 2016;9(1).
- 16. MeenaSindhu, ReenuMeenia, IrmYasmeen, Vijay Sawhney, NeetiDutt. Prevalence of transfusion transmitted infections in multiple blood transfused thalassemic patients. A report from a tertiary care centre in North India. *Annals of Tropical Med and Public Health.* 2015; Vol 8 (5): 202-05.**