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A Study of Emotional and Mood Disorders in Transfusion Dependent Anemia Patients

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Abstract

Context: Transfusion dependent anemia importantly includes thalassemia patients. Thalassemia major is most common monogenic disorder in the world. Thalassemia is a major problem not only for the patients and their families but also for each country's public health systems with regard to treatment expenses including regular injections, iron chelating agents, frequent hospitalizations and other medical consistencies and they are vulnerable to, social and psychological problems. *Aims:* Determination of prevalence and severity of depression in transfusion dependent thalassemia major patients attending a tertiary care hospital. *Settings and Design:* Cross-sectional study. *Methods and Material:* The study was done at a tertiary care teaching hospital. Thalassemia major patients who received blood transfusions for 2 to 4 weeks interval in the hospital were included in this study. Hamilton Anxiety rating (HAM-A) scale and Hamilton Depression rating scale (HAM-D) were used to diagnose the severity for each case. *Statistical Analysis Used:* WHO Epi Info 7 software was used. Categorical data was expressed in terms of rates, ratios and percentage. *Results:* Males (83.33%) outnumbered females (13.34%) with male to female ratio of 4:1. Nearly half of the study population was aged between 10 to 12 years. Out of 30 patients, 25 were males and 5 were females. Age range was 10 -18 years with mean age of 12.45 ± 2.41 years. The prevalence of depression was 44.34% with majority showing mild depression. The prevalence of anxiety was 36.67% with majority showing mild severity followed by mild to moderate severity. *Conclusions:* This study help to understand emotional disorders and the severity of anxiety and depression in β thalassemia patients who are chronically ill and undergo prolonged treatment. Early assessment and treatment by psychiatrist will surely help to have good psychological condition.

Keywords: Transfusion Dependent; Thalassemia; Depression; Anxiety.

Introduction

Transfusion dependent anemia includes an important group of thalassemia major patients who are chronically ill and are repeatedly admitted in the hospitals for treatment. Thalassemia syndromes are a group of hereditary blood disorders characterized by reduced or absent globin chain synthesis, resulting in reduced hemoglobin (Hb) in red blood cells (RBC), decreased RBC production and anemia. Most thalassemias are inherited as recessive traits [1]. Every year approximately 1,00,000 are born with thalassemia major of which 10000 are born in India [2].

These patients require regular blood transfusions to survive. Regular transfusion is recommended to maintain a pretransfusion hemoglobin threshold not exceeding 9.5 g/dl. The combination of regular blood transfusions along with chelation therapy has dramatically increased the life expectancy of thalassemics.

Thalassemia major has a great negative impact on the well being of the patients. Affected children face many stresses in their whole life, including frequent blood samplings for laboratory tests, multiple transfusions and frequent subcutaneous injections

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and oral therapy of iron chelator drugs, which altogether make the patient susceptible to psychiatric burden namely depression and anxiety. Moreover, restrictions in social activities, fear, pain and worries about diagnostic procedures and transfusion every 2-4 weeks, which always induce stress leads to sickness absenteeism and poor academic school performance. Different studies have shown psychological disorders is more common in major thalassemia, and about 80% of them suffer from at least one mental disorder. The reports indicated the most common disorders were imaged of self-disfigurement , anxiety and major depressive disorder .Very limited research has been conducted in the field of psychiatric illness in thalassemia major patients in India [3].

Studies showed that chronic, physically limiting diseases such as thalassemia could have undesirable effects on mental health of patients and their families and lead to mental and emotional problems among them [4].

Nevertheless, there has been little discussion on socio-mental aspects of Thalassemia major.In children mood disorders mainly consist of depressive disorder. Major Depressive Disorder may begin at any age but the average age of onset is young adulthood. Prevalence of bipolar disorder in children is low and rare [5]. Prevalence of depressive disorder in pre-pubertal children was 1-2%. It is estimated that prevalence rates for depression in children ranged from 0.4% to 2.5% for children and from 0.4% to 8.3% for adolescents [6].

Many a times depression is co-morbid with anxiety spectrum disorders and sleep problems. Children cannot express their mood and hence most of them present with somatic complaints like head ache, abdominal discomfort, body pain, back ache, weakness at limbs. High depression scores are associated with low academic achievement, high scholastic anxiety and poor peer and teacher relationships [7,8].

This data may help to understand the underling psychiatry illness among these patients and relevant treatment initiated at appropriate time. There is lack of data in this region of Karnataka which provides description of prevalence of emotional and disorders importantly anxiety and depression in these patients.

Materials and Methods

The present cross-sectional study was done at a tertiary care teaching hospital from North Karnataka from January 2014 to December 2014. Universal sampling method was used and 30 thalassemia major patients who received blood transfusions were selected during the study period. Prior to the commencement, ethical clearance for the study was obtained from the ethics committee. Inclusion Criteria were all known diagnosed cases of thalassemia major who are aged 10 - 18 years and have received blood transfusions and admitted in hospital for two to four weeks intervals. Exclusion Criteria were patients who are known cases of other types of anemias not requiring repeated blood transfusions or hospital admissions. Clinical assessment of each child was done and psychiatric illness was diagnosed using ICD-10 DCR.

Hamilton Anxiety rating scale (HAM-A) were used to assess the severity of anxiety among all the study participants. HAMA scores include the following for scoring the severity : anxious mood, tension, fears , insomnia , intellectual, depressed mood, somatic (muscular), somatic (sensory) symptoms, cardiovascular symptoms, respiratory symptoms, gastrointestinal symptoms, autonomic symptoms. The scale is from 0 to 4 for each parameter. HAMA severity was graded based on total score as mild severe anxiety (< 17), mild to moderate anxiety (18-24) and moderate to severe anxiety (25 -30). Hamilton depression rating scale (HAM-D) were used to assess the severity of depression among all the study participants and scored as shown in table. HAM-D rating scale included various parameters. HAMD severity was graded based on total score as Normal (0-7), mild depression (8-13), moderate depression (14-18) and severe depression (19-22). The data obtained was coded and entered into Microsoft Excel Spreadsheet. Statistical analysis done by using WHO Epi Info 7 software and results tabulated. Categorical data was expressed in terms of rates, ratios and percentage. Continuous data was expressed as Mean ± standard deviation.

Results

This one year cross-sectional study was done in the Department of Pathology and Psychiatry from January 2014 to December 2014. A total of 30 patients registered under Blood Bank with thalassemia major were included in the study. The commonest age group was 10 to 12 years comprised of 60% of the patients followed by 13-15 years age group (26.66 %). Age range was 10 -18 years with mean age of 12.45 ± 2.41 years. Majority (83.33%) of the patients was males and the male to female ratio was 4:1 as depicted in Table 1. Majority of the patients had one blood transfusion per

month (91.43%).

HAMA scores revealed absence of anxiety in 19 patients (63.33%). Mild anxiety was seen in 9 patients (30%) followed by 2 patients (6.67%) who had mild to moderate anxiety. None of the patients had severe anxiety as shown in Table 2. In a study done by Hashemi et al [3] anxiety was seen in 41.2% as compared to our study 36.67%. HAM-D scores revealed absence of depression in 17 patients (56.66%), mild depression in 10 patients (33.33%) was seen, followed by 3 patients (10.01%) who had moderate depression. None of the patients had severe depression as shown in Table 3.

Table 1: Demographic data of patients

Characteristics	Sub-groups	Total	
		No.	%
Age group (Years)	10 to 12	18	60.00
	13 to 15	08	26.66
	16 to 18	04	13.34
	Total	31	100.00
Sex	Male	25	83.33
	Female	05	16.67
	Total	31	100.00

Table 2: Severity of anxiety among the patients

Anxiety Grade	Frequency	Percent
No Anxiety	19	63.33
Mild Severity	09	30.00
Mild to Moderate severity	2	6.67
Moderate to Severe	0	0.00

Table 3: Severity of depression in patients

Depression	Frequency	Percentage
No depression	17	56.66
Mild	10	33.33
Moderate	3	10.01
Severe	0	0.00

Discussion

Thalassemia major is a homozygous state which causes hemolytic anemia demanding regular blood transfusions and important cause of transfusion dependent anemia. The availability of safe blood transfusions with adjuvant chelation therapy has facilitated and extended the survival rates of these patients. Multiple physical problems in thalassemia patients encouraged researchers to examine mental specifications of these patients. Different studies have shown psychological disorders is more common in thalassemia major. Environment and social factors, especially family, play important role in improving and decreasing depression of these patients [4]. Some studies demonstrate that 80% of thalassemia major patients at least suffer from one psychiatry disorder [9].

People with chronic illnesses may be more prone to symptoms of anxiety and depression compared to those without chronic illnesses. The day-to-day burden of managing a chronic condition and knowledge that the illness will be life-long may have an influence on the emotions of these patients. Thalassemia is a hereditary disease that requires long-term medical regimens, which may be very complicated. Disorders like, Thalassemia, can put an emotional pull on its patients and make them more vulnerable to mental illnesses like depression and anxiety. Keskek et al examined the prevalence of depression in a sample of 53 patients with beta-thalassemia minor and 53 healthy controls. Their findings showed that depressive symptoms, assessed using Hamilton Depression Rating Scale were higher among patients with thalassemia than among the healthy control subjects. In fact, 32% of patients with thalassemia reported severe to very severe depressive symptoms compared to 1.9% in the control group. This data suggests that patients with thalassemia may be at greater risk for depression than their healthy counterparts [10].

Mednick et al. determined the prevalence of depressive and anxiety symptoms among 276 adolescent and adult participants with thalassemia enrolled in the Thalassemia Longitudinal Cohort. The ages of the participants ranged from 14 to 58. Thirty-

three percent of participants reported experiencing symptoms of anxiety and 11% of participants indicated experiencing symptoms of depression. Patients who reported these anxiety or depression symptoms, were more likely to be women and older. These data suggests that at least 1 out of 10 patients with thalassemia may be experiencing depression or anxiety [11].

Anxiety is a blanket term covering several different forms of abnormal and pathological fear. Anxiety disorders are often debilitating chronic conditions, which can be present from an early age or begin suddenly after a triggering event or due to chronic/ acute stress. Here the adolescent suffering from the Thalassemia syndromes are highly vulnerable to have psychological stress.

The prevalence of anxiety among children according to following literature shows range between 2-15%. A study conducted by Mazzone L et al, in Italy showed that the average prevalence of anxiety disorder in children belonging to 3 age groups was 7.3%.The prevalence of anxiety disorder in each age group children were 2.3% in 8-10 years, 7.9% in 11-13 years and 15.3% in 14-16 years.[12]. Cognitive-behavioral therapy which can be an effective psychological approach because it contributes to treatment compliance, reduces emotional burden of disease and improves quality of life. The limitations of this study include the sample size being smaller the results cannot be generalized.

Key Messages

Emotional and mood disorders like anxiety and depression are known to occur in chronically ill transfusion dependent thalassemia patients which must be assessed and treated accordingly at the earliest.

Conclusion

The patients with transfusion dependent thalassemia major are at risk of developing psychiatric illness. Thalassaemia patients require lifelong psychological support for prevention of mental health issues. Regular screening for symptoms is essential to identify at-risk individuals so as to provide appropriate psychological support with ultimate goal to improve both emotional and physical health. Overall, the present study showed risk of depression in these group of patients using optimum scales for early detection of illness and prevent the consequences.

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