A Study of Severity of Depression in Thalassemia Patients

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ABSTRACT

**Background:** Beta Thalassemia major is most common monogenic disorder in the world. Transfusion dependent thalassemia major patients are at risk of iron overload and hence its associated complications. Thalassemia is a major sanitary 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. **Objectives:** To determine prevalence and severity of depression in transfusion dependent Beta thalassemia major patients attending a tertiary care hospital. **Materials and Methods:** The study was done in a tertiary care hospital. Thalassemia major patients who received blood transfusions for 2 to 4 weeks interval in the hospital were included in this study. Clinical assessment of each child was done and psychiatric illness was diagnosed using ICD-10 DCR. Hamilton Depression rating scale (HAM-D) were used. **Result:** Males (80%) outnumbered females (20%) with male to female ratio of 4:1. Nearly half of the study population was aged between 10 to 12 years. Majority of the patients had one blood transfusion per month (91.43%). Out of 31 patients, 25 were males and 6 were females. Age range was 10 -18 years with mean age of 12.45 ± 2.41 years. The prevalence of depression was 41.94 % with majority showing mild depression. **Conclusion:** This study helps to know the severity of the depression in β thalassemia patients who are chronically ill and have prolonged treatment. Early assessment and treatment by psychiatrist will surely help to have good psychological condition.

**Keywords:** β Thalassemia; Depression

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Beta (β) thalassemia syndromes are a group of hereditary blood disorders characterized by reduced or absent β 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. Three clinical and hematological conditions of increasing severity are recognized, i.e., β thalassemia carrier state, thalassemia intermedia, and thalassemia major. Every year approximately 1,00,000 are born with thalassemia in India. These patients with BTM 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.

Beta 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 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 Beta thalassemia major patients in India.

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. Nevertheless, there has been little discussion on social-mental aspects of Thalassemia major.

In children mood disorders mainly consist of depressive disorder. MDD (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. 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.

Often 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 headache, 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.
A Study of Severity of Depression in Thalassemia Patients

This data may help to understand the underlying 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 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 31 β 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 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-D) were used to assess the severity of depression among all the study participants. 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, median and range.

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 31 patients registered under Blood Bank with thalassemia major were included in the study. The commonest age group was 10 to 12 years comprised of 58.06 % of the patients followed by 13-15 years age group (29.03 %). Majority (80%) of the patients were males and the male to female ratio was 4:1. HAM-D scores revealed No depression in 18 patients (58.06%), mild depression in 10 patients (32.6%) was seen, followed by 3 patients (9.68 %) who had moderate depression. None of the patients had severe depression as shown in Table 3.

DISCUSSION

β thalassemia major is a homozygous state which causes hemolytic anemia demanding regular blood transfusions. 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. Some studies demonstrate that 80% of thalassemia
A Study of Severity of Depression in Thalassemia Patients

major patients at least suffer from one psychiatry disorder. HAM-D rating scale included the following parameters- Depressed mood, guilt feelings, suicide, Insomnia , work and activities, retardation, agitation, anxiety –psychological, anxiety–somatic, somatic complaints –GI, general, Sexual disturbance, hypochondrias, weight loss by history and insight. 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) as shown in Table 2. Children more frequently develop social withdrawal, complain of psychosomatic symptoms, such as headache, abdominal pain or show irritability, poor school performance, social isolation and inability to handle frustration.

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.

CONCLUSION
The patients with transfusion dependent β 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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A Study of Severity of Depression in Thalassemia Patients

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**Tables**

**Table 1 Demographic data.**

| Characteristics   | Sub-groups | Total No. | %    |
|-------------------|------------|-----------|------|
| Age group (Years)| 10 to 12   | 18        | 58.06|
|                   | 13 to 15   | 09        | 29.03|
|                   | 16 to 18   | 04        | 12.91|
|                   | Total      | 31        | 100.00|

| Sex    | Total | %    |
|--------|-------|------|
| Male   | 26    | 80.00|
| Female | 05    | 20.00|
| Total  | 31    | 100.00|

**Table 2 Grading of severity of depression on HAMD scores.**

| Total HAM-D Score | Rating |
|-------------------|--------|
| 0-7               | Normal |
| 8-13              | Mild   |
| 14-18             | Moderate |
| 19-22             | Severe |

**Table 3 Severity of depression among study participants.**

| Depression      | Frequency | Percentage |
|-----------------|-----------|------------|
| No depression   | 18        | 58.06 %    |
| Mild            | 10        | 32.26 %    |
| Moderate        | 3         | 9.68 %     |
| Severe          | 0         | 0.00 %     |

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