Restless Legs Syndrome Prevalence in Major Thalasemia; Tabriz Children Hospital

Roohangiz. Sorkhabi, Madjid Malaki, Maryam.Shoaran, Soussan.Moazeni, Shafighe. Bagheri

Tabriz Childre Hospital, Tabriz University (Medical Sciences), Tabriz, Iran.

Corresponding author: Tabriz Childre Hospital, Tabriz University (Medical Sciences), Tabriz, Iran.

(**Phone:** +98 411 5262250, **Fax:** +98 411 5262280, **E-mail:** madjidmalaki@gmail.com)

Abstract

Background: Restless legs syndrome (RLS) is an annoying sensation and an important cause of sleep disturbances in major thalassemia.

Materials and Methods: In a cross-sectional study in 58 major thalassemia patients aged 3 to 25 years in Tabriz children hospital, restless legs syndrome prevalence was evaluated.

Results: RLS is a common problem in major thalassemia with prevalence of 24%. It included the most common reason of sleep disorder in thalassemia patients (83%). Restless legs syndrome; is not related to ferritin or iron level and age. Although RLS is more common in females, it is not statistically significant.

Conclusion: RLS is a common disorder in thalassemia patients but usually unnoticed by physicians and nursing.

Keywords: Restless legs syndrome, Thalassemia major, Sleep disorders, Ferritin.

Introduction

Restless legs syndrome (RLS) is an annoying sensation with 3-15% incidence in normal population.[1] This unpleasant condition usually involves legs only at night, and is accentuated by rest and relieved by movement.[2] RLS may be associated with various diseases such as diabetes, cardiovascular disease, chronic renal failure (CRF), liver disease, and pulmonary hypertension.[3-6] Its incidence in CRF is nearly 40%, and is associated with high morbidity and mortality.[7-9] Mechanism of this disorder is unknown but some theories such as iron or ferritin hemostasis, and brain dopaminergic receptor disturbance are under investigation.[10-14] Thalassemia, as a hereditary chronic hemolytic anemia, is associated with some sleep disturbances and diseases such as fibromyalgia.[15-16] This article investigates RLS as an important cause of sleep disturbance in major thalassemia resulting in decreased quality of life.

Materials and Methods

Fifty eight patients affected with major beta thalassemia referred to hematology clinic of Tabriz children hospital to receive blood were asked about satisfaction with their sleep at night. Patients with sleep disorder were evaluated about unpleasant sensation in their limbs, its time, how it was relieved (by limb movement), and the sensation quality (scratching and burning pain). If criteria of RLS were met, they were asked about onset time of this complaint. Patients affected with other well known disorders associated with RLS such as diabetes and renal failure (GFR<80 ml/min/1.73m^2) were excluded from this study. Information of the patients including age, sex, last serum ferritin and iron level, and onset time of the unpleasant sensation were recorded.

Features of the groups (with and without RLS) were compared using t-test. The correlation between RLS and other features was assessed by chi-

square test. P-value less than 0.05 was considered significant.

Results

Of 58 patients (38 males and 20 females) included in our study, 17 (29%) patients had sleep disorder and 14 (24%) had RLS. RLS was present in 5 males (14%) and 9 females (36%), difference in prevalence between two genders was not statistically significant. Difference in mean age of two groups of patients, 14 ±6.96 years in the group without RLS and 13±5.54 years in the group with RLS, was not significant.

Mean level of ferritin in two groups with and without RLS was 3859±1846 and 4138 ±2134 microgram/lit, respectively, with no significant difference. Iron level was 184±32.9 microgram/dl in RLS group and 162±48.8microgram/dl in the group without RLS; difference was not significant.

Of 14 patients with RLS, five patients (36%) could remember and describe the related unpleasant sensation recently (2 months to 3 years ago). The quality of complaint was similar in most of the participants; 11 patients (78%) described it as a deep pain in both legs, 3 patients (21%) had a sudden burning and jerking pain in one leg; none of them had pain in upper limbs.

Discussion

Restless legs syndrome is a painful condition disturbing night sleep and described as a deep pain or burning in legs relieved by movement. Its incidence in normal population is 5 to15% in adult age. In dialysis patients, it could result in decreased survival and is diagnosed only by asking patients. Diagnosis and treatment improves quality of life dramatically.[1,2,7-9] In 90% of patients, it is diagnosed for the first time through an interview.[17]

In this study, incidence of sleep disorder and RLS was 29% and 24%, respectively. This means that a large proportion (82%) of patients with sleep disorders have also RLS. None of our patients had asked for medical help before.

Based upon some theories explaining RLS pathophysiology, dopamine receptor agonists are used as a treatment.[18] In another study RLS was relieved by iron infusion, but ferritin serum level did not change after iron infusion. These findings suggest some comments about iron involvement in RLS pathophysiology.[10-14] But in our study, serum ferritin and iron level did not differ between RLS patients and patients without RLS.

Higher incidence of RLS has been reported in females than males in normal population (8.7% vs. 6.2%).[17] Also, in another study on patients with chronic venous disease, females had significantly higher incidence of RLS (36%).[19] In pulmonary hypertension, higher incidence of RLS was seen in females.[3] In our study, incidence of RLS in females was insignificantly more than males. RLS incidence increases with aging; the first experience occurred between 11 to 25 years old only in 25% of affected patients.[20-21] In our study, age was not correlated with RLS incidence.

Conclusion

Sleep disorder is a common problem in major thalassemia patients and RLS is the most common underlying etiology for their sleep disturbances. There was not any correlation between RLS and aging, and serum ferritin and iron level. Although RLS was more common in females, the difference was not significant.

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