Distribution and periodicity of leg movements during sleep in children with restless legs syndrome

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Introduction

In patients with restless legs syndrome (RLS), polysomnography (PSG) reveals excessive (periodic or random) leg movements (LMs). In adult patients, studies have shown characteristic values in parameters of limb movements during sleep. These measures are the periodicity index (PI), the duration of the inter limb movement intervals and the time distribution over the night. The aim of this study is to describe the same parameters in children with RLS and to compare the results to those in adults.

Methods

N= 11 patients (3 females; median age: 8 years, range 2-16) were included if they showed limb movements with an index of at least 5/hour of sleep. Limb movements were measured and assessed according to the AASM rules (2007); recording and scoring of the accompanying video PSG was made using the same rules. For the PI, the duration of the inter limb movement intervals and the time distribution of LMs we used the methods described by Ferri et al. and ourselves.[1,2]

Results

In contrast to the mean interval duration of 24.3 s, which we found previously in adults, no clear peak value was detected in children. The distribution of these intervals is mainly in the range of 10-20 seconds. During the night periodic limb movements in sleep (PLMS) have their highest prevalence at the beginning of the night with a peak in the 2nd hour of NonREM sleep (fig 1). Isolated limb movements in sleep (LMS) are more evenly spread over the whole night, with a small peak during NonREM sleep in the 7th hour of sleep (fig 2). The PI had a value of 0.64 in REM sleep and of 0.69 when REM and NonREM sleep were taken together. The distribution over time and the PI values are approximately similar to those found in adults.

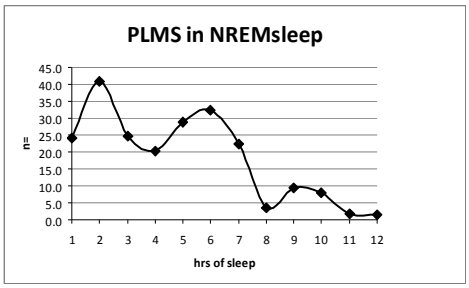

Fig 1.

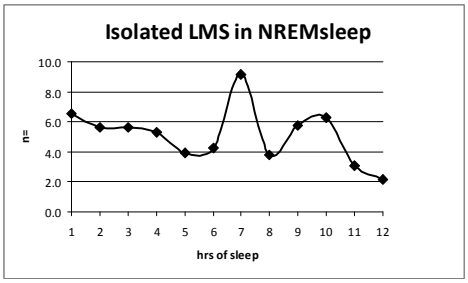

Fig 2.

Conclusion

In a small group of patients with childhood RLS we only partly found the characteristics in limb movements during sleep that are seen in adult patients with RLS.

References

1. Ferri et al, J Clinical Neurophysiology 2009; 120: 257-263

2. Arends et al, J SLEEP Research 2010: supp 1:283

Presented at the poster session of the 21st Meeting of the European Sleep Research Society Paris, France, 04-08 September 2012