

News and announcements

Consensus Statement from the German Sleep Society: indications for performing polysomnography in the diagnosis and treatment of restless legs syndrome

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1. Introduction

Restless legs syndrome (RLS) is diagnosed on the basis of the patient’s history [1]. Polysomnography with recording of the periodic leg movements during sleep (PLMS) may further support the diagnosis. Polysomnographic recordings (PSG) are usually carried out on two consecutive nights so that an adaptation effect on sleep parameters (worse sleep quality in the first night than in the second night) can be considered. PSG in RLS patients shows lower sleep efficiency and a higher number of PLMS than in normal controls. However, an elevated number of PLMS is not specific for the diagnosis of RLS and, similarly, an absence of PLMS does not rule out RLS. The prevalence of PLMS was found to increase with age in the general population [2] and may also frequently occur in other sleep disorders [3–6]. Sleep efficiency, the PLMS index (number of PLMS per hour of sleep) and the PLMS arousal index (number of PLMS associated with arousal per hour of sleep) are often used to monitor therapy and as objective measures for the severity of sleep disturbance in patients with RLS. A PLMS

index $>5/h$ as defined by Coleman [7] is generally considered significant. Experience shows that this threshold may be low, especially in the elderly. Repeated PSGs appear to improve the specificity of PLMS recordings in RLS [8].

2. Recommendations for carrying out polysomnography in patients with RLS

Physicians not dealing with sleep disorders may be unfamiliar with the value and limitations of sleep laboratory investigations, especially polysomnography, in the diagnosis of RLS. For this reason, the Working Group ‘Motor System and Sleep’ of the German Sleep Society established consensus criteria for sleep laboratory investigation including polysomnography in patients with RLS.

Polysomnography is recommended in patients with probable or definite RLS in the following situations:

1. *Based on the patient’s history and clinical symptoms, RLS is probable but symptoms may appear atypical or are affected by other disorders.*

To this group of patients belong persons with ‘atypical’ clinical symptoms (e.g. patients with nocturnal paresthesias and a desire to move the limbs but who are not relieved by motor activity, or patients without circadian fluctuation of RLS symptoms), patients with additional neurological disorders influencing symptoms of RLS, and patients with a combination of symptoms of RLS and other diseases. In these cases, polysomnography is carried out to ensure the diagnosis before beginning pharmacological treatment.

2. *Ongoing severe insomnia and/or lack of efficacy in patients with typical RLS symptoms treated with sufficient*

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dosages of dopaminergic drugs (dopamine agonists or 250 mg L-Dopa).

Polysomnography is carried out for estimating the severity of insomnia and for exclusion of other sleep-related disorders such as sleep apnea syndrome.

3. *The patient complains about daily sleepiness as leading symptom; RLS symptoms are present but the patient does not feel impaired by them.*

Polysomnography is carried out for the exclusion of other possible causes of sleepiness such as sleep related respiratory disorders, narcolepsy, periodic limb movement disorder and other forms of insomnia or hypersomnia.

4. *The patient is younger than 30 years of age, suffers from severe RLS (Severity Scale >25) and should be treated daily with dopaminergic substances or the patient suffers from severe RLS (Severity Scale >25) and an opioid medication is considered.*

Because of a presumed lifelong treatment with dopaminergic substances, the diagnosis should be supported and other sleep disorders excluded by polysomnography in these cases. Polysomnography should document the severity of insomnia, the occurrence of PLMS and exclude a preexisting sleep-related respiratory disorder which may worsen due to the intended treatment with opioids.

5. *The patient is diagnosed as having RLS and an additional sleep-related respiratory disorder and complains about continuing symptoms of RLS under pharmacotherapy.*
6. *An expert's report is needed for judicial purposes.*

In these cases, polysomnography should document the severity of insomnia. Additional investigations, such as the multiple sleep latency tests and other tests of vigilance may be necessary.

The indications listed above focus on adult patients. Clinical experience has shown that the diagnostic approach used in adults cannot be directly transferred to children. Guide-

lines are still needed for diagnostic investigations in children with probable RLS.

Recommendation to perform polysomnography should generally be made by a specialist in sleep medicine. This procedure should involve a precise formulation of diagnostic and therapeutic problems that can be answered by means of polysomnographic assessment and in some exceptional cases consider further indication for polysomnography.

In summary, polysomnography with recording of PLMS is an important method in the diagnosis and treatment of RLS. To keep down costs, it should be reserved for patients with the diagnostic and therapeutic indications listed above.

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