

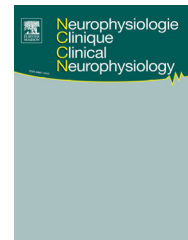


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ORIGINAL ARTICLE/ARTICLE ORIGINAL

# High incidence of obstructive sleep apnea syndrome in patients with late-onset epilepsy



*Incidence élevée du syndrome d'apnées obstructives du sommeil chez les patients avec épilepsie de survenue tardive*

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## KEYWORDS

Late-onset epilepsy;  
Leukoaraiosis;  
Obstructive sleep apnea syndrome;  
Polysomnography

## Summary

**Objectives.** – The objective of the present study was to evaluate the prevalence of obstructive sleep apnea (OSA) in patients with late-onset epilepsy (LOE) who were considered at higher risk of cardiovascular disease.

**Methods.** – Polysomnography was performed on 27 patients with LOE. Berlin questionnaires and Epworth sleepiness score were performed on all patients. We compared clinical, demographic and anthropometric characteristics, questionnaire scores on the patients with no or mild OSA (group 1) and the patients with moderate or severe OSA (group 2). Patients eligible for continuous positive airway pressure (CPAP) therapy were reviewed in consultation.

**Results.** – Twenty-four patients (88.9%) had OSA and 55.6% had moderate or severe OSA. Patients in group 2 ( $n = 15$ ) were older than patients in group 1 ( $n = 12$ ). The two groups were similar in terms of body mass index (BMI), neck circumference, nocturnal seizure frequency, vascular cardiovascular risk factors and excessive daytime sleepiness. Leukoaraiosis in MRI was highly prevalent in our patients (40.7%), especially in group 2 patients. Eighty percent of the patients who had begun CPAP therapy experienced decreased seizure frequency.

**Conclusion.** – Patients with LOE should be screened for the presence of OSA and treated accordingly.

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**MOTS CLÉS**

Épilepsie débutant à un âge tardif ;  
Leuco-araïose ;  
Polysomnographie ;  
Syndrome d'apnées obstructives du sommeil

**Résumé**

**Objectif.** – L'objectif de cette étude était d'évaluer la prévalence du syndrome d'apnées obstructives du sommeil (SAOS) chez les patients débutant une épilepsie à un âge tardif et qui sont donc considérés à haut risque cardiovasculaire.

**Méthodes.** – Une polysomnographie a été réalisée chez 27 patients ayant débuté une épilepsie à un âge tardif. Un questionnaire de Berlin et une échelle de somnolence d'Epworth ont été réalisés chez tous les patients. Nous avons comparé les caractéristiques cliniques, démographiques et anthropométriques ainsi que les questionnaires de sommeil chez les patients n'ayant pas ou ayant un léger SAOS et les patients en ayant un modéré ou sévère. Les patients éligibles à un traitement par *continuous positive airway pressure* (CPAP) ont été revus en consultation.

**Résultats.** – Vingt-quatre patients (88,9 %) avaient un SAOS et 55,6 % avaient un SAOS modéré ou sévère. Les patients du groupe 2 ( $n = 15$ ) étaient plus vieux que ceux du groupe 1 ( $n = 12$ ). Les deux groupes étaient similaires en termes d'index de masse corporelle (IMC), de circonférence cervicale, de fréquence des crises nocturnes, de facteurs de risque cardiovasculaire et de somnolence diurne excessive. La leuco-araïose sur l'IRM était fréquente chez nos patients (40,7 %), surtout chez ceux du groupe 2. Parmi les patients qui ont débuté un traitement par CPAP, 80 % ont eu une diminution de la fréquence des crises.

**Conclusion.** – Le SAOS doit être recherché chez les patients débutant une épilepsie à un âge tardif et traité s'il est présent.

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**Introduction**

Studies have shown that epilepsy affects approximately 1 to 2% of the elderly population, and increases progressively with age. Late-onset seizures are conventionally defined as epileptic seizures, which occur in subjects over 50 years. They are often attributed to underlying occult cerebrovascular disease when the main cause has not been found after usual testing [9]. Establishing the diagnosis of epilepsy in old age can be more difficult than in younger patients, due to the extensive range of differential diagnoses and a higher prevalence of concomitant disease [17]. Cardiovascular risk factors such as dyslipidemia [16] and hypertension [27] have already been reported as independent risk factors for late-onset epilepsy (LOE). Some authors suggested that patients with LOE and without clinically overt cerebrovascular disease should be considered as having an increased risk of stroke [3,5,35]. Consequently, these patients should be screened for the presence of vascular risk factors and treated accordingly.

Obstructive sleep apnea syndrome (OSA) is a common disorder associated with an increased risk of cardiovascular disease and stroke. Polysomnography (PSG) provides the opportunity to diagnose the presence and severity of sleep-disordered breathing as well as the occurrence of seizures or paroxysmal activities.

Therefore, the objective of the present study was to evaluate the prevalence of OSA. We also sought to determine the prevalence of patients with paroxysmal activity during polysomnography. We examined these patients for variables related to OSA using the common tools for recognizing the presence of sleep disturbances including sleep apnea: the Berlin questionnaire and the Epworth Sleepiness Scale (ESS).

**Methods****Patients**

The study participants were patients admitted to the department of Neurology in Tours, between 1st February 2013 and 20 March 2015; were over 50 years old, and met the study criteria.

A board-certified epileptologist diagnosed the epilepsy on the base of clinical history, scalp-recorded electroencephalography, physical findings, brain 3.0-T magnetic resonance imaging. Patients were excluded if they had provoked epileptic seizures (e.g., seizures induced by medications or metabolic abnormalities), or symptomatic seizures (e.g., seizures closely related to neurological or systemic insults). Patients were also excluded if they were unable to give informed consent for polysomnography, were medically unstable, or had a prior history of OSA.

Anthropometric measures including body mass index (BMI), waist and neck circumference as well as gender were documented for all patients.

Medical records were utilized to obtain information on the type of seizures (partial or generalised tonic clonic seizure), antiepileptic drugs used and seizure patterns (diurnal or nocturnal). Brain MRI and EEG were performed on all patients. Cardiovascular risk factors such as dyslipidemia, diabetes mellitus and hypertension were also collected. The study was approved by the hospital ethics committee.

**Sleep interview**

Participants completed a survey prior to their sleep study, which included the Berlin questionnaire and the ESS. The

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