

Sleep-related breathing disorders

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The airway obstruction in obstructive sleep apnea patients.

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Introduction: Obstructive sleep apnea (OSA) is a condition of breathing pathology occurring during sleep, characterized by repeated episodes of upper airway obstruction, and is usually associated with hypoxemia and arousals disturbing the architecture of sleep.

The aim: The aim of the study was to determine the occurrence of airway obstruction in smoking males with OSA in whom lung function tests had not been performed before.

Material and methods: 127 smoking males were enrolled for the research in the Sleep Laboratory. These subjects received ≥ 11 points in the Epworth Sleepiness Scale. The diagnosis of OSA was confirmed by full-night polysomnography (PSG) with the use of the Embla S4000-Remlogic polysomnograph (Somnologica Studio 5.0 software, Natus 2009). Finally, 104 subjects were chosen for a further study and assigned to one of 3 groups, depending on the severity of OSA (mild degree - 36 patients, moderate degree - 32 patients and severe degree - 36 patients). The control group consisted of 30 age-matched male smokers in whom OSA had not been confirmed in PSG. Spirometry, impulse oscillometry (IOS) and bodyplethysmography were used to assess the pulmonary function (MasterScreen Jaeger, Höchberg, Germany; device).

Results: The carried out spirometry confirmed airway obstruction in 43.3% subjects of the control group and 54.7% in the mild, 48.7% in the moderate, and 53.2 in the severe OSA patients. The percentage of obstruction diagnosed using IOS on the basis of elevated total respiratory resistance (R5) in the control group and individual OSA levels was as follows: small degree - 66.7%, moderate - 59.4%, severe degree - 80.5%, and the control group - 33.3%. There were no statistically significant differences in the incidence of bronchial obstruction between the control and the study group, and between groups with varying degrees of OSA progression. Restriction in all patients from the control and the study group was excluded.

Conclusions: Spirometry and IOS performed to smokers within the OSA diagnostics, make it possible to diagnose bronchial obstruction and plan the subsequent examinations.

The severity of obstructive sleep apnea in smokers does not correlate with the incidence of airway obstruction.