Polysomnography findings of patients with overlap syndrome according to severity of lower airway obstruction

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Abstract

Background: The concurrence of chronic obstructive pulmonary disease (COPD) and obstructive sleep apnea (OSA) is known as
overlap syndrome (OS). The obstruction of the upper airway leads to OSA and the obstruction of the lower airway leads to COPD. The
aim of this study was to compare polysomnographic findings of patients with OS according to severity of lower airway obstruction.
Materials and Methods: Seventy‑two patients were included in this cross‑sectional study. Patients with COPD referred to a sleep
clinic with suspicion of OSA were evaluated by polysomnography (PSG). PSG findings were interpreted based on the American
Academy of Sleep Association criteria (2012). COPD severity was categorized into four groups based on GOLD criteria using forced
expiratory volume in the first second (FEV1). PSG findings also were compared between patients regarding severity of lower airway
obstruction (FEV1 ≥50% and FEV1 <50%). **Results:** Sixty‑eight of the patients had OS. Twenty‑nine (42.6%) were male. The mean
age was 62.3 پ} 6.88 years. Thirty‑two (54.4%) of the patients were in GOLD 2. The mean apnea/hypopnea index was 57.41 پ} 36.16.
Seventy‑two percent of patients had severe OSA. Severe OSA was more prevalent in patients of GOLD 2 and 3 groups compared
to the other groups. Among PSG findings, only N2 sleep stage was significantly longer in patients with FEV1 < 50% than in patients
with FEV1 ≥50% (61.5 پ} 11.2, 55.3 پ} 13.4, P = 0.039). **Conclusion:** Polysomnographic findings (except N2 stage) are not different in
patients with OS with respect to severity of lower airway obstruction.
Key words: Chronic obstructive pulmonary disease, overlap syndrome, polysomnography, sleep apnea