

## EFFECTS OF OBSTRUCTIVE SLEEP APNEA ON OVERACTIVE BLADDER SYMPTOM

### Hypothesis / aims of study

Although a close relationship between nocturia and sleep disturbance has been reported, the relationship between overactive bladder (OAB) symptoms and obstructive sleep apnea (OSA), has not been fully evaluated. The aim of this study was to determine the effect of obstructive sleep apnea on overactive bladder symptom.

### Study design, materials and methods

A total of 85 patients (mean age 41), who underwent full-night in-laboratory polysomnography were included in the present study. All patients completed and overactive bladder symptom score (OABSS) questionnaires for evaluation of OAB symptom. Severity of OSA was evaluated according to the apnea-hypopnea-index (AHI) from polysomnography and patients were also divided into mild OSA group (AHI<15) and severe OSA group. OAB was defined as at least one point or more in the domain of urgency and frequency in OABSS. The correlation between the OABSS and AHI was evaluated. OABSS and prevalence of OAB were compared between the mild OSA and severe OSA groups.

### Results

Mean AHI score was 32.3 and mean OABSS was 2.49. Correlation analysis showed that AHI was associated with total OABSS ( $p=0.01$ ,  $r=0.27$ ). Also, OABSS score had significant difference between mild OSA group and severe OSA groups ( $1.8\pm 1.9$  vs.  $2.9\pm 2.5$ ,  $p=0.03$ ). Of the 4 subscores of OABSS, including frequency, nocturia, urgency, and urgency incontinence, multivariate analysis showed that only the subscore of nocturia was independent influencing factors on AHI ( $p=0.04$ ). Of the 4 subscores of OABSS, only nocturia episode was different between mild and severe OSA groups. OAB prevalence was not different between two groups.

	Mild OSA groups (n=31)	Severe OSA group (n=54)	P value
Total OABSS score	1.8± 1.9	2.9 ± 2.5	0.03
Mean score of frequency domain	0.2 ± 0.4	0.3 ± 0.4	0.23
Mean score of nocturia domain	0.6 ± 0.9	1.1 ± 0.9	0.02
Mean score of urgency domain	0.8 ± 1.1	1.1 ± 1.3	0.30
Mean score of urgency incontinence domain	0.1 ± 0.4	0.4 ± 0.8	0.10
OAB prevalence (%)	16	20	0.43

### Interpretation of results

Patients with more severe OSA symptom showed increased total OAB symptom score. However, this result was mainly due to increased nocturia episode not urgency according to increased OSA severity. Nocturia was the only factor that independently affected sleep or was affected by sleep quality.

### Concluding message

OAB symptom except nocturia was not affected by or did not affect OSA symptom.

### Disclosures

**Funding:** no source of funding or grant **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Konkuk University Medical Center IRB **Helsinki:** Yes **Informed Consent:** Yes