

OBSTRUCTIVE SLEEP APNEA AND THE RISK OF LOWER URINARY TRACT SYMPTOMS: A POPULATION-BASED, PROPENSITY SCORE-MATCHED, LONGITUDINAL FOLLOW-UP STUDY.

Hypothesis / aims of study

Obstructive sleep apnea (OSA) is characterized by repetitive episodes of apnea/hypopnea and hypoxia in tissues and is associated with systemic inflammation, which might cause lower urinary tract symptoms (LUTS). This longitudinal follow-up study investigated the risk of LUTS in patients with OSA.

Study design, materials and methods

A random sample of 1 million individuals from Taiwan's National Health Insurance database (2000-2008) was analyzed. LUTS was defined according to ICS 2002 definition and collected by ICD-9 coding. A total of 14966 patients in OSA cohort were recruited and compared with a matched cohort without OSA. All patients were tracked until LUTS diagnosis, death, or the end of 2011. Age, gender and other parameters associating with LUTS were matched by propensity scoring.

Results

During the mean 6-year follow-up period, a total of 1659 patients developed LUTS in OSA cohort. The incidence rate ratio of LUTS in OSA patients were 1.53 fold compared with non OSA group ($p < 0.001$). After adjustment for age, gender and underlying diseases, patients with OSA were 1.55 times more likely to have LUTS, especially storage problems. There was no statistical significance in voiding symptoms.

Table . Risk of LUTS in OSA Patients and Controls

Storage + Voiding=LUTS								
Group	Total(N)	LUTS Case (n)	Unadjusted (95%CI)	HR	P-value	adjusted (95%CI)	HR	P-value
OSA	14966	1659	1.53(1.42-1.65)		<0.0001*	1.55(1.44-1.67)		<0.0001
Non OSA	14966	1116	ref.			ref.		
Storage								
Group	Total(N)	Storage Case(n)	Unadjusted (95%CI)	HR	P-value	adjusted (95%CI)	HR	P-value
OSA	14966	1331	1.69(1.55-1.84)		<0.0001*	1.70(1.56-1.86)		<0.0001
Non OSA	14966	810	ref.					
Voiding								
Group	Total(N)	Voiding Case(n)	Unadjusted (95%CI)	HR	P-value	adjusted (95%CI)	HR	P-value
OSA	14966	328	1.08(0.93-1.26)		0.3227	1.10(0.95-1.29)		0.2134
Non OSA	14966	306	ref.					

Interpretation of results

OSA is associated with increasing risk of LUTS, especially storage symptoms (urgency, frequency and nocturia) but not voiding symptoms.

Concluding message

OSA is associated with increasing risk of LUTS, mainly storage problems, including frequency , urgency and nocturia.

Disclosures

Funding: none **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Chang Gung IRB **Helsinki:** Yes **Informed Consent:** No