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SNORING HAS AN IMPACT ON NOCTURIA IN MEN WITH INFRAVESICAL OBSTRUCTION

Aims of the study

Obstructive sleep apnoea (OSA) is known to be correlated to an increased risk of hypertension and possibly also to cardiovascular disease. It is known that snoring with episodes of OSA increases urine production nightly. Nocturia is also a common problem for elderly men as a part of LUTS. The aim of this study was to find out how common snoring is in patients scheduled for transurethral prostatic resection (TUR-P). We also wanted to examine possible differences in night diuresis according to micturition charts and analyse plasma levels of cortisol, vasopressin and atrienatriuretic peptides in snoring and non-snoring men with infravesical obstruction.

Methods

140 men consecutively coming to one of our wards from sept 2000- to dec 2001 for a preoperative examination one week before TUR-P were presented an inquiry form about snoring habits. Fifteen of them (mean age 69.2 years) who admitted regular snoring were given a portable pulsoximeter which measured pulse rate and capillary oxygen saturation in the finger tip during one night at home. Venous blood samples were taken at 9 o´clock a.m. for analysis of cortisol, arginine vasopressin (AVP) and atrienatriuretic peptide (ANP). The same analyses were performed in eleven men (mean age 70.8 years) planned for TUR-P on the same day as a snorer. All men were weighed and reported their length.
Both snorers and controls kept micturitions charts for 48 hours including times for micturitions and voided volumes. For evaluation of respiratory dysfunction caused by snoring we used the apnoea-hypoxia-index (AHI) counting the periods exceeding ten seconds per hour with an oxygen saturation lower than 90%.
The patients returned to hospital in the late afternoon the day preceeding the operation. They had a standardized meal consisting of two sandwiches, 200 ml water and 150 ml coffee at 8 o´clock p.m. At 2 o´clock p.m. a venous blood sample was taken from a cannula inserted in advance.

Results

Body mass index was significantly higher in the snoring group. There was a also a significantly higher urine production at night in snoring than in non-snoring patients, when volumes voided after 11 o´clock p.m were added to the first voided volume in the morning.
Snoring patients also had a higher number of micturitions at night (Table I).
Analysis of the computerized curves from the pulsoximeter showed that the snorers had a s a mean an AHI 14.5, a mean lowest oxygen saturation of 78.4% and a large variation of pulse rates. Five men who said they did not snore had pulsoximeters for control and only one of them had two snoring episodes per hour with 89% as the lowest oxygen saturation.
Cortisol levels were lower at night than in the morning, but the values did not differ between snorers and non snorers at night. There was no difference in ANP-levels between snorers and non snorers nightly. The AVP values were higher at night than in the morning in the controls but did not increase at all in snorers, the differenc was, however, not significant.

Table I. Body mass index and nocturia

	Snorers	Controls	
Body mass kg/m^2	30.7	24.1	p<0.001
Micturitions at night	2.3	1.1	p<0.001
Diuresis 11 p.m.--8 a.m.	7.9	4.6	p<0.005
% of 48 hours diuresis	35	21	p<0.005

Table II. Hormone levels in the morning and at 2 o´clock in the night

	Snorers	Controls	
Cortisol nmol / l night	133	148	<0.05
AVP pmol / l night	< 1.5	2.7	<0.05
ANP pmol / l night	5.6	8.3	<0.05

Conclusion. Nocturia and high diuresis at , possibly partly caused by snoring, was found in 10.7 % of men with prostatic obstruction. In this study we could not find any differences in vasopressin or atrienatriuretic hormone levels in snorers and non snorers, which has earlier been suggested as etiologic factors (1). It seems important to ask men about snoring habits when evaluating LUTS-symptoms before deciding prostatic surgery. Continuous positive pressure ventilation or uvuloplastic surgery may in some men be a more adequate treatment.
than TUR-P.

Reference: 1. Kita H, Ohi M, Chin K, Noguchi T, Otsuka N, Tsuboi T, Itoh H, Nakao K, Kuno K: The nocturnal secretion of cardiac natriuretic peptides during obstructive sleep apnoea and its response to therapy with nasal continuous positive airway pressure. J Sleep Res 1998;7(3):199-207.