

THE CHARACTERISTICS OF AUTONOMIC ACTIVITY IN MEN WITH LUTS AND SLEEP APNEA

Hypothesis / aims of study

Heart rate variability (HRV) is a tool to measure autonomic nervous function (ANS), however there is no evidence that it is able to define sympathetic hyperactivity in men with LUTS. Also sleep is affected by autonomic nervous system activity according to several studies. We suppose that men with LUTS and sleep apnea have different ANS activity from sleep apnea patients without LUTS. Therefore we measured their HRV, divided subjects into two groups, sleep apnea with LUTS group and sleep apnea without LUTS group according to their IPSS.

Study design, materials and methods

A total of 60 patients who diagnosed sleep apnea by specialist were enrolled. All subjects had no disease can affect autonomic nervous system, such as diabetes, hypertension and so on. Electrocardiographic signals were obtained from each subject in sleep laboratory and calculated the HRV indices with spectral analyses. We divided subjects into two groups by IPSS over 8 and the parameters of HRV were compared by independent sample t-test using SPSS version 12.

Results

There was no difference in age between groups. The comparative results of parameters of HRV between groups (mean \pm SE) are in the table 1.

Table 1. The Results of Each HRV Parameters in Group A, B and Control (mean \pm SE)

	AHI	RDI	ODI	IIEF	VLF (msec ²)	LF (msec ²)	*HF (msec ²)	LF/HF
Group A (N=32)	27.9 \pm 4.8	33.5 \pm 4.5	26.2 \pm 4.6	52.6 \pm 3.3	10767.6 \pm 2408.9	8760.0 \pm 1835.2	2911.3 \pm 334.5	2.92 \pm 0.37
Group B (N=28)	20.6 \pm 3.6	31.9 \pm 4.6	18.5 \pm 3.5	44.8 \pm 3.4	11830.6 \pm 1519.5	11103.3 \pm 1941.0	4148.3 \pm 504.2	3.80 \pm 0.71

(Group A: patients with sleep apnea and IPSS below or same as 7, Group B: patients with sleep apnea and IPSS over 8, *; p<0.05, compared with control group, AHI: hypopnea index, RDI: respiratory distress index, ODI: oxygen desaturation index)

Interpretation of results

Patients with sleep apnea and LUTS have high LF ratio which reflect increased activity of parasympathetic activity.

Concluding message

We suggest that the imbalance of the autonomic nervous system activity may be a factor that evokes varieties of symptoms in men with LUTS.

References

1. The correlation between the treatment efficacy and the sympathetic activity in men with LUTS, Int Neurourol J 2014;18:145-9
2. The difference of lower urinary tract symptoms between sympathetic hyperactive and hypoactive men. Int Neurourol J 2013;17:30-3
3. Characteristics of autonomic nervous system activity in men with LUTS:analysis of hear rate variability in men with LUTS. Urology 2010;75:138-42

Disclosures

Funding: None **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics not Req'd:** This is a kind of observational study with normative testing for sleep apnea. **Helsinki:** Yes **Informed Consent:** No