

IMPORTANCE OF AUTONOMIC BALANCE IN MEN WITH LOWER URINARY TRACT SYMPTOMS

Hypothesis / aims of study

Lower urinary tract symptoms (LUTS) would have association with autonomic nervous function.(1) LUTS may be appeared differently between hyperactive and hypoactive sympathetic patients and treatment outcome for LUTS may also be different between these two groups. The purpose of this study is to evaluate the change of autonomic function with treatment.

Study design, materials and methods

We selected 108 healthy volunteers who had similar clinical characteristic (age, volume of prostate) with 162 LUTS patients who had over 8 IPSS, and under 15 ml/sec of maximal urine flow. No subjects had disease, which can affect autonomic nervous system, such as diabetes, hypertension and so on. Electrocardiographic signals were obtained from subjects in resting state and calculated their HRV indices with spectral analyses. We divided LUTS patients into two groups by low frequency/high frequency (LF/HF) ratio 1.6 which was median value of healthy volunteer's LF/HF ratio. After treating with Alfuzosin XL 10mg for 3 months, they were re-evaluated HRV and compared change of their autonomic functions between two groups.

Results

Total 95 LUTS patients who completed this study were enrolled, they were divided two groups according to their LF/HF ratios such as 54 patients with LF/HF ratio under or equal 1.6, Group A and 41 patients with LF/HF ratio over 1.6, Group B. There were no statistical differences in serum PSA, volume of prostate, maximal urine flow rate between two groups. There was no statistical difference in improvement of peak urine flow rate, IPSS after treatment with alfuzosin XL for 3 months. The average LF/HF ratio of Group A was increased from 0.89 ± 0.40 to 1.79 ± 1.80 , however it was decreased from 3.93 ± 5.47 to 10.79 ± 1.15 in Group B.

	Group A (n=54)	Group B (n=41)	P-value
Age	65.5 ± 9.92	62.0 ± 6.09	0.018*
Diff. IPSS total.	5.7 ± 6.51	3.6 ± 7.08	0.392
Diff. Qmax	5.4 ± 5.56	4.7 ± 7.45	0.353
Diff. LF/HF ratio	0.9 ± 1.91	-2.1 ± 5.74	0.013*

(Group A: LH/FH below or same 1.6, Group B: LH/FH over 1.6)

Interpretation of results

The ratios of LF/HF in each group were merged to near normal value after treatment of LUTS in this study.

Concluding message

Most investigators believe that LF reflects sympathetic activity and HF, parasympathetic activity. Therefore we can estimate their autonomic function, the ratio of LF/HF could be considered as the balance of sympathetic and parasympathetic activity. This finding presents imbalance of sympathetic and parasympathetic activity may be a factor to bring about LUTS and affect the efficacy of treatment.

References

1. Choi JB et al. Characteristics of autonomic nervous system activity in men with lower urinary tract symptoms (LUTS): analysis of heart rate variability in men with LUTS. *Urology* 2010;75:138-42

Disclosures

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