Importance of autonomic balance in Men with Lower Urinary Tract Symptom

1 Jong Bo Choi, 2 Jun Chul Kim, 3 Ju Tae Seo, 4 Hyun Woo Kim, 5 Hyung Gon Kim, 6 Yong Suk Lee, 6 Suk Joong Yoon, 4 Hyung Ji Kim
Department of Urology, 1 Ajou University College of Medicine, 2 Catholic University College of Medicine, 3 Kwandong University College of Medicine, 4 Konkuk University College of Medicine, 5 Chungbuk University College of Medicine, 6 Dankook University College of Medicine, Korea

ABSTRACT

Objective

Lower urinary tract symptoms (LUTS) different from female LUTS. Many studies concerning lower urinary tract symptom whose mechanism and etiology remain unclear. This condition can be bothersome, leading to anxiety and even morbidity. Also the involvement of the prostate makes male LUTS different from female LUTS. 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. The ratios of LF/HF in each group were merged to near normal value after treatment of LUTS in this study. This finding presents imbalance of sympathetic and parasympathetic activity may be a factor to bring about LUTS and affect the efficacy of treatment.

Keywords: autonomic nervous system, Heart rate variability, Lower urinary tract symptoms

RESULTS

<table>
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<tr>
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<th>Group A: LF/HF &lt; 1.6 (N=54)</th>
<th>Group B: LF/HF ≥ 1.6 (N=41)</th>
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<tr>
<td></td>
<td>Baseline</td>
<td>3 Months</td>
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<tr>
<td>LF/HF</td>
<td>0.89±0.41</td>
<td>1.80±1.80</td>
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<tr>
<td>IPSS Total</td>
<td>15.78±5.68</td>
<td>10.11±6.15</td>
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<tr>
<td>IPSS Voiding subscore</td>
<td>9.07±4.49</td>
<td>6.02±4.35</td>
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<tr>
<td>IPSS Storage subscore</td>
<td>5.90±2.90</td>
<td>4.09±2.56</td>
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Variables are presented as mean ± standard deviation. 
P = 0.05 with paired t-test

CONCLUSIONS

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. The ratios of LF/HF in each group were merged to near normal value after treatment of LUTS in this study. This finding presents imbalance of sympathetic and parasympathetic activity may be a factor to bring about LUTS and affect the efficacy of treatment.

MATERIAL 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.

REFERENCES