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Vaddi S P[1], Sankar G[1], Sreedhar D[1], Vijayabhaskar G[1]
1. *Narayana Medical College Hospital*

AUTONOMIC NERVOUS SYSTEM ACTIVITY IN PATIENTS WITH LOWER URINARY TRACT SYMPTOMS SECONDARY TO BENIGN PROSTATIC HYPERPLASIA ESTIMATED BY HEART RATE VARIABILITY

Hypothesis / aims of study
Introduction:
Aging induces autonomic nervous system (ANS) dysfunction with increased sympathetic drive. Benign Prostatic Hyperplasia (BPH) is responsible for lower urinary tract symptoms (LUTS), and its pathogenesis is complex.
Objectives:
The aim of our study was to estimate the ANS activity in BPH patients with LUTS using frequency domain analysis parameters of heart rate variability (HRV). Additionally, the relationship of ANS activity to the subjective measures of LUTS, and the objective measures of BPH, as well as the biometrical variables, were investigated.

Study design, materials and methods
The study was performed on 30 men with LUTS secondary to BPH. We performed biometrical and urological estimations. ANS activity was assessed by HRV measurements in resting conditions (KUBIOS SOFTWARE) . In the HRV recording, frequency domain analysis parameters were calculated according to fast Fourier transformation and the correlation for ANS activity parameters vs BPH variables were analyzed. The following HRV parameters were taken into consideration: LFnu (LF power in normalized units), HFnu (HF power in normalized), LF/HFnu (normalized ratio of LF power to HF power), Mean RR interval, Mean heart Rate

Results
All participants (mean age 69.25 ± 6.7 years) presented Severe LUTS (Mean IPSS = 24 ±4.2). Mean BMI of the patients was 28.40 ± 2.4 (kg/m^2) Normalized values of LF and HF were 46.39 ± 19.0 [%] and 53.58 ± 18.99 [%], respectively. Normalized values of LF/HF ratio is 1.18 ± 1.011. Mean RR interval values were 822.44 ± 156 (ms). Mean HR value was 75.55± 13.3 (beats/min). Mean RMSSD values were 45.0 ± 33 (ms).We observed a higher LF/HFnu in most of the patients denoting that there is a significant sympathetic overactivity in these patients.

Interpretation of results
We observed a higher LF/HF ratio among the patients with LUTS, suggesting the heightened sympathetic activity. This could be an etiological factor for LUTS in patients with BPH.

Concluding message
These results demonstrate the sympathetic overactivity of ANS at rest in patients with BPH and LUTS. It is also suggested that in the pathophysiology of BPH, the heighten activity of the sympathetic ANS is important.

Disclosures
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