

a source (in around 15%) of complicated UTI. The main cause of complicated UTI remained kidney stone disease.

Conclusions: PNS is a safe and reliable procedure in everyday urological practice with low early complication rates. It can be performed under ultrasound guidance with a high rate of success and it is highly effective in restoring the kidney function, as well as in treating complicated UTI. As a late complication, the PNS itself can become a source for contamination with rare polyresistant bacterial strains, thus being a cause for complicated UTI.

Poster Session 2: BPH and prostate biopsy
Friday, 9 October 2009, 10:40-12:40
Room 2

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The influence of three different medications for benign prostatic hyperplasia on prostate parameters assessed by transabdominal ultrasound

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Introduction and Objectives: Benign prostatic hyperplasia (BPH) is the most common benign neoplasm in men and it is clinical condition closely related to aging. Clinically, BPH is manifested with lower urinary tract symptoms (LUTS), that undermine the quality of patients' life to different extent. The pharmacotherapy of BPH comprises the three groups of drugs: alpha 1-adrenergic antagonists, 5-alpha reductase inhibitors and different herbal extracts. **OBJECTIVE:** The aim of our study was to investigate the effect of three-month treatment of BPH with lipidosterolic extract of *Serenoa repens* (LESR) on prostate parameters assessed by transabdominal ultrasound and to compared attained results with standard drugs such as finasteride and doxazosin.

Material and Methods: Ninety patients with symptomatic, non-complicated BPH who accomplished inclusion criteria and endorsed the written consent were included in this prospective study. At random they were classified in three groups of thirty patients. The first group was treated with LESR (320 mg/day), the second group received finasteride (5 mg/day) and the third group was on doxazosin therapy (2 mg/day). Both at the beginning and after three-month treatment, following prostate parameters were assessed by transabdominal ultrasound: transversal diameter (TD), anteroposterior diameter (APD), the volume of prostate (VP) and the volume of residual urine (VRU). The results were analysed statistically.

Results: None treatment caused statistically significant alteration of TD, APD and VP ($p > 0.05$) assessed by transabdominal ultrasound, although all medications showed the tendency to decrease the beginning values, mostly finasteride. Analysing the results of volume of residual urine (VRU), we found that finasteride and LESR decreased basal values insignificantly ($p > 0.05$). Decrease of VRU achieved statistically significant difference in third group of patients who received alpha-adrenergic antagonist doxazosin ($p < 0.01$).

Conclusions: Our results are mostly in accordance with actual cognition related to effect of standard drugs such as finasteride and doxazosin on prostate parameters assessed by ultrasound. At the other side, our findings could be an evidence more in the elucidation of mechanism of action and clinical efficacy of LESR in patients with BPH.

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Autonomic nervous system activity in patients with lower urinary tract symptoms secondary to benign prostatic hyperplasia estimated by heart rate variability

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Introduction and Objectives: Aging induces autonomic nervous system (ANS) dysfunction with increased sympathetic drive. Benign Prostatic Hyperplasia (BPH) is responsible for lower urinary tract symptoms (LUTS). The probably cause of BPH and secondary LUTS is due to the overly active sympathetic ANS. 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 biochemical and biometrical variables, were investigated.

Material and Methods: The study was performed on 30 men with LUTS secondary to BPH. The cohort of patients was asked to complete IPSS and quality of life questionnaires. We performed biometrical measurements (waist, hip circumference and waist-to-hip circumference ratio, body mass index, body area surface), biochemical measurements (serum catecholamine levels) and urological estimations (measurements of the prostate and transition zone of gland, uroflowmetry with post void residual volume evaluation). Additionally, a serum sample was obtained for Prostate Specific Antigen - PSA (total, free, free/total ratio) and PSA derivatives (PSA density, PSA density of transition zone) analysis. ANS activity was assessed by HRV measurements in resting conditions, after simulation with deep breathing (DB test) and by the tilt up test (TUT). In the HRV recording, frequency domain analysis parameters were calculated according to fast Fourier transformation (FFT) and the correlation for ANS activity parameters vs. BPH variables were analyzed.

Results: All participants presented moderate LUTS with $Q_{ave} = 7.4$ ml/sec. and $PVR = 48 \pm 45$ ml. Normalized values of LF and HF were 60.86 ± 18.96 [%] and 39.14 ± 18.96 [%], respectively. LF/HF ratio and its normalized value were 2.97 ± 3.04 [1] and 1.57 ± 1.40 [1], respectively. In response to DB, significant increases of LF, LFnu, LF/HF, LF/HFnu and total power of HRV spectrum and a decrease of HFnu were observed. The E/I ratio was 1.12 ± 0.08 . During TUT, VLF, LFnu, LF/HF, and LF/HFnu were increased, while HFnu decreased. The 30/15 ratio was 0.98 ± 0.05 . The observed strong correlations are as follows: between

1. prostate enlargement and HFnu and LFnu power;
2. total PSA level and LFnu, HF, HFnu;
3. free/total PSA ratio and LF/HFnu;
4. PSA density of the transition zone and HF;
5. plasma noradrenalin level and HF;
6. age and LFnu, HFnu, LF/HF and LF/HFnu;
7. plasma adrenaline level and prostate enlargement: prostate length and transition zone height.

Conclusions: 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, and parasympathetic drive are important.