were divided into 2 groups: men without leukocytes and with moderate WBC count in EPS ($<1\times10^6$ WBC/mL, group 1) and men with significant ($>1\times10^6$ WBC/mL, group 2) counts of white blood cells in EPS.
Results: The prevalence of asymptomatic inflammatory prostatitis according to WHO guidelines (greater than 1×10^6 WBC/mL) was 29.5% (n = 39). When we used a lower threshold (greater than 0.2×10^6 WBC/mL) the prevalence was 61.4% (n = 81). There was statistically significant difference in PSA level ($p = 0.004$) and I-PSS irritative subscore ($p = 0.048$) for investigated groups. The WBC in EPS showed a positive correlation with PSA in serum ($r = 0.331$, $p \le 0.001$) and I-PSS irritative subscore ($r = 0.215$, $p = 0.014$) for all investigated men.
Conclusions: Our preliminary results suggest that NIH category IV prostatitis is quite prevalent in ageing male with LUTS and may be a risk factor for prostate pathologies.

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Prognostic clinical markers for asymptomatic prostatitis in ageing male with lower urinary tract symptoms

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Introduction and Objectives: Asymptomatic inflammation as new category of prostatitis could be a predictive factor for lower urinary tract symptoms (LUTS). The aim of this study was to investigate the relationships between asymptomatic prostatitis and clinical markers used to diagnose LUTS in ageing male.
Material and Methods: A total of 132 men (mean age 58.9 ± 6.7 years) undergoing prostate health screening were investigated for prostate-specific symptoms, white blood cells (WBC) in expressed prostatic secretion (EPS), total prostate volume, urinary flow rate and for certain organ-specific, hormonal and biochemical markers. Men with clinical symptoms of inflammation were excluded. Subjects were divided into 3 groups: men without leukocytes in EPS ($<0.2\times10^6$ WBC/mL, group 1), men with moderate ($0.2–1\times10^6$ WBC/mL, group 2) and significant ($>1\times10^6$ WBC/mL, group 3) counts of white blood cells in EPS.
Results: We found statistical difference in PSA level ($p \le 0.001$) and Quality of Life subscore ($p = 0.048$) for all investigated groups. The PSA showed a positive correlation with us-CRV in serum ($r = 0.6$, $p \le 0.001$), WBC count in EPS ($r = 0.331$, $p \le 0.001$) and post-prostatic massage urine ($r = 0.235$, $p = 0.007$) and a negative correlation with maximum flow rate ($r = -0.231$, $p = 0.009$) for all investigated men. I-PSS irritative subscore showed a positive correlation with WBC count in EPS ($r = 0.215$, $p = 0.014$) and negative correlation with maximum flow rate ($r = -0.199$, $p = 0.023$).
Conclusions: Our preliminary results suggest that PSA may be one of the clinical markers which could be used for diagnosis of asymptomatic prostatitis in ageing male. However, the future research should directly define the critical level of PSA to diagnose asymptomatic prostatitis as well as examine the treatment effect of NIH IV category prostatitis for LUTS and PSA level in ageing male.

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The role of hyperosmolarity in micturition: Physiological model of overactive bladder

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Introduction and Objectives: Different types of animal overactive bladder (OAB) models were described. The cyclophosphamide (CYP)-induced OAB is still the most frequent used model. Therefore CYP-induced morphological changes can trammel the induction of the most similar animal OAB to humans. Hypertonic solutions activate the local efferent activity of bladder capsaicin-sensitive C neurons and as a consequence induce neurogenic inflammation leading to functional impairment of urinary bladder and LUTS (Lower Urinary Tract Symptoms). It suggests that this event may have some relevance in pathogenesis of OAB in which hypertonic urine may diffuse to submucosal layers and activate afferent C-fibres endings. A non-invasive hyperosmolar OAB model was established that is more physiological compared with CYP-induced OAB. In the study the intravesical impact of the hypertonic saline on bladder motor activity was assessed.
Material and Methods: Experiments were performed on 30 female Wistar rats. Cystometry was done after a 1 h recovery period from the surgical procedure under urethane anaesthesia. All animals were randomly divided into four groups: I: control – 308 mOsm/l, II: hypertonic – 1553 mOsm/l, III: hypertonic – 2080 mOsm/l, IV: hypertonic – 3222 mOsm/l. The measurements represent the average of five bladder micturition cycles. The following cystometric parameters were analyzed: basal (BP), threshold (TP), micturition voiding pressure (MVP); intercontraction interval (ICI); compliance; functional bladder capacity (fBC); motility index (MI); detrusor overactivity index (DOI). The Kulick's experiment obtained that 16 h of water deprivation proved sufficient to determine urine concentrating ability of kidneys. Therefore, water deprivation for >16 h was not necessary to perform a meaningful urine concentration test. The concerning urine concentration tests in female rats revealed that mean urine osmolarity was 2080 mOsm/l. Also the lowest and highest value observed for urine osmolarity were 1553 mOsm/l and 3222 mOsm/l, respectively.
Results: Intravesical infusion of hypertonic saline induces OAB. The severity of OAB depends on the concentration of saline. All hypertonic infused rats did not exhibit macroscopical signs of bladder inflammation. 1553 mOsm/l saline infusion leads to increase of DOI. During 2080 mOsm/l saline infusion we observed decrease of ICI and fBC. Also increase of BP, DOI and MI. Infusion of 3222 mOsm/l saline induced utmost OAB.
Conclusions: Our results obtained, that hypertonic NaCl solutions within physiological osmolarity range induce concentrated-dependent OAB. The 2080 mOsm/l animal hyperosmolar OAB model closely resembles the physiological micturition reflex and pathophysiology of OAB compared with CYP – induced OAB. This OAB model seems to be the less invasive, what is important for evaluating novel therapeutics to treat the OAB disorder.