

**Background:** The role of neoadjuvant therapy (NT) in the treatment of prostate cancer (Pca) is not fully understood. Nowadays high risk Pca is a potentially fatal disease requiring an active multimodal approach including the preoperative course of chemohormonal therapy with taxanes.

**Methods:** The nonrandomized control study was initiated in Petrov Research Oncology Institute from 2014 to 2018, approved by the LEC.46 patients were enrolled in study of 3-weekly docetaxel (75 mg/m<sup>2</sup> for up to 6 cycles) with concomitant degarelix (6 monthly injections) prior to prostatectomy. The primary end point was disease-free survival (DFS). Relapse was defined as increasing prostate-specific antigen (PSA) >0.2 ng/ml.

**Results:** NT was started in 39 patients and completed in full dose and planned regimen in 34 (87.2%) patients. Hematological toxicity grade 3–4 was revealed in 8 (20.5%) patients, non-hematological toxicity grade 1–2 in 17 (43.6%) cases. Statistically significant reduction of PSA > 50% post NT was observed in all 39 cases:  $\Delta$ PSA before NT 31.02 ± 30.05 (95CI: 24.49–40.97) ng/ml,  $\Delta$ PSA after NT 1.02 ± 1.01 (95CI: 0.8–1.39) ng/ml  $p < 0.0005$ . The volume of the prostate gland during treatment decreased by 1.5 times: from 49.44 ± 39.1 (95CI: 31.08–50.79) cm<sup>3</sup> to 30.99 ± 21.15 (95CI: 17.06–27.84) cm<sup>3</sup>  $p = 0.017$ . Median of disease-free survival amounted to 17.56 ± 11.42 months, overall survival rate 32.4 ± 15.6 months. Spectrophotometry miRNA concentration analysis was  $\Delta C = 4.35 \pm 1.065$  mkg/mkl in biopsy material,  $\Delta C = 6.28 \pm 1.24$  mkg/mkl after NT. PCR in Real-Time with SYBR BLUE amplification revealed hyperexpression of 375-miRNA in some cases, corrected disease-free survival demonstrated 30% improvement survival rates in case of hyperexpression of 375-miRNA. In addition, 2 cases of lengthening number of amplification cycles detected miRNA in the hypoexpression group and were associated with cases of early relapse.

**Conclusion:** In this study we did not revealed a complete pathologic response after NT and not led to a decline of the intraoperative complication. Early oncological outcomes suggest the effectiveness of the NT. The prospect of study is to build a model using miRNA 375 to predict the response of DFS and form a targeted population for the docetaxel regimen 75 mg/m<sup>2</sup>.

hematuria, urinary catheters were removed on the 1st postoperative day's morning (<24 hours) with an active followup (daily voiding assessment, pelvic ultrasound and postvoided residual volume assessment) on Day 1. All patients were available for a 3-month follow-up.

**Results:** The average patient's age was 63 years (52–71 years). The median preoperative PSA level was 7.6 ng/ml. The intraoperative technique was unremarkable. Related to the early catheter removal complications included 1 (3.6%) patient with urinary leakage (resolved by repeated prolonged urinary catheter insertion) and 4 (14.3%) with urinary obstruction – resolved by single catheterization ( $n = 2$ ), percutaneous suprapubic cystostomy ( $n = 2$ ). No major complications were noticed during the follow-up. Totally, 22 (78.6%) patients were discharged on the next day after the catheter removal – on the 2nd postoperative day. All discharged patients did not need readmission during the follow-up. Remained 6 (21.4%) patients stayed at the hospital for 5–18 days. All patients had the PSA level of <0.2 ng/ml 30–90 days after surgery. Postoperative assessment showed improvement in urinary function and erectile function sparing in selected patients, with no compromising functional results due to the early catheter removal.

**Conclusion:** Despite the common widespread of minimally invasive RP, there is no consensus on the terms of a urinary catheter removal. According to our data, we suggested it might be of some benefit to remove a urinary catheter early in selected and well-informed patients. A thorough vesicourethral anastomosis pursuance, nerve-sparing, bladder neck sparing and Retzius sparing procedure, intra- and postoperative assessment is necessary in all cases.

#### GUA-10

#### An alternative method for prostate cancer diagnosis

Besarian Partsvania<sup>1</sup>, Alexandre Khuskivadze<sup>2</sup>, Sopio Abazadze<sup>2</sup>, Tamaz Sulaberidze<sup>1</sup>, Ketevan Chubinidze<sup>2</sup>

<sup>1</sup>Georgian Technical University, Institute of Cybernetics, Tbilisi, Georgia; <sup>2</sup>Tbilisi Medical State University, Tbilisi, Georgia

#### GUA-09

#### Early removal of urethral catheter after endoscopic extraperitoneal prostatectomy

A.K. Nosov<sup>1</sup>, S.A. Reva<sup>2</sup>, M.V. Berkut<sup>1</sup>, S.B. Petrov<sup>1,2</sup>

<sup>1</sup>N.N. Petrov National Medical Research Center of Oncology, Saint Petersburg, Russia; <sup>2</sup>Urology Clinic, I.M. Pavlov First Saint Petersburg State Medical University, Saint Petersburg, Russia

**Background:** Extraperitoneal radical prostatectomy (RP) in patients with prostate cancer is useful when there are no oncological indications to lymph node dissection. However, even minimally invasive approach does not avoid such factors as a urinary catheter that may disturb patients. We assessed the possibility to remove the urinary catheter as early as possible.

**Methods:** Twenty-eight patients with low ( $n = 22$ ) and low-intermediate ( $n = 6$ ) prostate cancer risk (according to NCCN criteria) underwent an extraperitoneal laparoscopic RP from March 2017 to November 2018. All operations were performed by the same surgeon (A. Nosov). The inclusion criteria were the following: localized prostate cancer, prostate specific antigen (PSA) <10 ng/ml, ISUP group 1–2, life expectancy of more than 10 years and preoperative patient's counseling, continence before surgery. During surgery, bladder neck sparing was performed in all cases. Vesicourethral anastomosis was performed by two V-Loc circular sutures. A urinary catheter Foley 20 Fr was inserted into the bladder after anastomosis completion. Anastomosis resistance and completeness were checked at the end of surgery by filling the bladder. Except for cases with macroscopic

**Background:** Despite advances in the diagnosis, a prostate cancer remains as a second cause of cancer death in men worldwide. The drawback of the existent imaging method is that they cannot detect prostate cancer at the early stage of development. Besides, the methods are partially invasive. This circumstance resulted in searching of simple, non-invasive method for the detection of prostate cancer. In our earlier investigations, we have shown that near infrared radiation (NIR) can be used for the visualization of cancer outgrowth in the prostate *in vitro*. On the other hand, recent investigations show that circular polarization light can persist better its polarization property during propagating through turbid media compared with the linear polarization light. Using circularly polarized light improves the quality of image recovery in dense turbid media. It is obvious, that prostate tissue represents turbid media. In present work we show that utilization of circular polarized infrared light enhances cancerous prostate IR images.

**Methods:** Experiments were carried out on the prostates derived from the radical prostatectomy. Infrared light emitting diodes (LED) (850–920 nm) were utilized for transillumination of prostates. Polarize filters for circular polarization working in NIR region was utilized for polarization. Circular polarized NIR was captured by a charge coupled device (CCD) camera after passing the prostate. Prostate infrared images were visualized by a computer, coupled with CCD camera. After NIR investigation prostates were investigated with standard histomorphological methods.

**Results:** Experiments show that the optical density of cancerous and healthy prostate tissues in circularly polarized IR light significantly differs from each other. Polarized IR light enhances transillumination

images quality-i.e. enhances contrast and depth resolution in polarization imaging using circularly polarized light. Cancerous outgrowths are seemed as the dark areas on the bright background in a NIR transillumination images. Results of infrared and histomorphological investigations, concerning the cancer location, were compared. The comparisons show the coincidence of both findings in all cases.

**Conclusions:** Method of circularly polarized IR light might be used in future for prostate cancer visualization and diagnosis *in vivo*.

#### GUA-11 Alarmins may have significant action during interstitial cystitis/bladder pain syndrome

G. Kochiashvili, D. Kochiashvili  
Tbilisi State Medical University, The First University Clinic Tbilisi, Georgia

**Objectives:** Mast cells are a major cellular target of various alarmins, including interleukin-33 (IL-33), high mobility group box 1 protein (HMGB1), advanced glycation end products, galectins and others. These molecules are important as initiators and effectors of innate immunity and may turn out to be a critical activator of mast cells during innate immune response to pathogens. However, the precise mechanism of participation of alarmins in IC/BPS pathogenesis is unknown. Taking into account that epithelial dysfunction and mast cell activation play central role in the genesis of IC/BPS, we hypothesize that IL-33, advanced glycation end products (AGE), and galectin-3 (Gal-3) can participate in pathogenesis of IC/BPS and thus, their analysis in urine of IC/BPS patients may be informative to assess the severity of the disease. The goal of present studies is to elucidate the participation of IL-33, AGE and Gal-3 in the pathogenesis of IC/BPS. To clarify this issue, we determine urine IL-33, AGE and Gal-3 in the patients with active IC/BPS.

**Methods:** Forty-three women with IC/BPS and 29 women as normal controls were enrolled in this study. Patients with IC/BPS had characteristic symptoms. All patients were investigated thoroughly and were excluded if they did not meet the criteria of the National Institute of Diabetes and Digestive and Kidney Diseases. Control subjects included those who were free any urogenital disease. Patients with previous bladder or urethral surgery, or a postvoid residual urine volume of >50 mL were excluded.

Voided urine was placed on ice immediately and transferred to the laboratory for preparation for IL-33, Gal-3 and AGE measurement. The urine samples were centrifuged at 3000 g for 10 min at 4°C. The supernatant was separated into aliquots in 1.5 mL tubes and preserved in a freezer at -80°C.

All samples were run in triplicate, and urinary IL-33 and Gal-3 levels without a consistent value in three measures were repeated and the values were averaged. The criterion for defining consistent values was that the coefficient of variation (SD/mean) of the three absorbance values was <0.10. The total urinary alarmin levels were further normalized by the concentration of urinary creatinine (mg/dL), and the ratio of alarmin/Cr was used as a normalized urinary IL-33 and Gal-3 levels. Urinary IL-33/Cr and Gal-3/Cr levels were compared among control and patients with IC/BPS subgroups using one-way ANOVA test. The correlation between biomarkers was calculated using Pearson's correlation coefficient; in all tests  $P < 0.05$  was considered to indicate statistical significance.

**Results:** We have found that urine fluorescence was higher in IC/BPS patients than in control by approximately 140%. These findings indicate that complex changes in the levels of urine alarmins (IL-33, galectin-3, AGE) are associated with IC/BPS.

**Conclusions:** Current evidence from clinical and laboratory studies confirms that mast cells play a central role in the pathogenesis and pathophysiology of IC/BPS, alarmins are secreted in the urine during IC/BPS and may have either pro-inflammatory or reparative actions.

#### GUA-12 IL-33 and Gal-3 significantly increases in IC/BPS

G. Kochiashvili, D. Kochiashvili  
Tbilisi State Medical University, The First University Clinic Tbilisi, Georgia

**Introduction and objective:** Interstitial cystitis/bladder pain syndrome (IC/BPS) is an enigmatic chronic disorder characterized by vague bladder pain of variable severity accompanied by urinary symptoms. The pathogenesis and etiology of IC/BPS remain incompletely defined. However, there is an emerging consensus about the central role of epithelial dysfunction, bladder sensory nerve up-regulation, and mast cell activation in the genesis of IC/BPS. Accumulating evidences have suggested that tissue damage is recognized at the cell level via receptor-mediated detection of intracellular proteins released by the dead cells. Among these proteins IL-33, galectin-3 (Gal-3) may have an important role because they can be participated as cellular components that stimulate the immune system. When they leave their usual intracellular location during either cell activation or cell death.

**Materials and methods:** We measured IL-33, Gal-3, and AGE in 24-hour urine specimens from patients with IC/BPS and healthy subjects. Study participants included 24 female patients with IC and 18 age-matched female volunteers. ELISAs were used to determine levels of IL-33 and galectin-3.

Women with IC/BPS and 29 female volunteers. Urinary IL-33, EGF and Gal-3 levels were measured using an enzyme-linked immunosorbent assay, whereas the content of AGE was quantified by natural AGE-specific fluorescence (Ex. 370 nm, Em. 440 nm). Urinary IL-33, and Gal-3 levels were normalized by urinary creatinine (Cr) levels and compared among subgroups.

**Results:** We have found that the levels of IL-33 and Gal-3 were significantly increased in IC/BPS. The level of the IL-33 in the urine of healthy women was equal to  $5.083 \pm 0.041$  pg/ml, while the level of IL-33 in IC/BPS patients increases up to  $7.21 \pm 0.063$  pg/ml ( $p < 0.05$ ). Further, the amounts of urine Gal-3 were also elevated in IC/BPS compared to healthy subjects ( $20.8 \pm 3.4$  ng/ml- healthy subjects;  $30.24 \pm 3.4$  ng/ml patients with IC).

**Conclusions:** These data suggest on the participation of IL-33, Gal-3 and AGE in the pathogenesis of IC/BPS.

#### GUA-13 Comparative analysis of corpoplasty with buccal mucosa graft and tunica vaginalis in Peyronie's disease

Keulimzhayev Nurbol, Ainayev Ernur, Zhanbyrbekuly Ulanbek  
Department of Urology and Andrology, Astana Medical University, First Astana City Hospital, Kazakhstan

**Objective:** Extensive evaluation of long-term results and patient satisfaction was performed after application of buccal mucosa graft and tunica vaginalis for replacement of fibrotically affected tunica albuginea of the penis during progressive course of Peyronie's disease.

**Materials and methods:** The investigation involves analysis of results of corpoplasty performed on 17 patients. As an autograft, tunica vaginalis was used for 10 (58.8%) patients and 7 (41.2%) patients were given buccal mucosa graft. The average age of patients was  $44.25 \pm 11.88$  years. All patients underwent surgery promptly, there were no intraoperative complications. The nearest postoperative period proceeded smoothly. The results were evaluated in a period of 3 months, 6 months and 12 months later.

**Results:** As a result, a comparative analysis of the obtained results and the use of different types of autologous materials for corpoplasty revealed the advantage of the buccal graft. In terms of the parameters, the angles of curvature of the penis after 12 months of observation