

**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

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#### GUA-09

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

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**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