acinar proliferation as well as prostatic intraepithelial neoplasia. 14 (36.8%) patients in ASAP group were later diagnosed as prostate cancer; 6 (23.1%) patients in PIN group were later diagnosed as prostate cancer, and 100% patients in ASAP+PIN group were later diagnosed as prostate cancer.

**Conclusion:** Patients with a diagnosis of ASAP or extensive high grade PIN during prostate biopsy had a higher chance of developing prostate cancer, especially for patients with a simultaneous diagnosis of ASAP + PIN in the same biopsy. These patients should receive second time biopsy during follow up. Most cancer of the cancer in these patients could be detected within twice re-biopsy.

**IPD08:**

**NEW CIRCULATING TUMOR CELLS (CTCS) EVALUATION METHOD IN PROSTATE CANCER**

Takehiko Nakasato 1, Michio Naoe 1, Kazuko Tujimura 1, Yuki Matsui 1, Kazuhiro Oshinomi 2, Jun Morita 1, Kohzo Fuji 1, Yoshio Ogawa M.D. 1, Masayuki Ishige 1, Koosuke Osawa 2, Masaharu Matuzaki 2. 1 Department of Urology, Showa University School of Medicine, Tokyo, Japan; 2 On-chip Biotechnologies Co., Ltd., Japan

**Purpose:** AR-V7 is one of a splicing variant of the Androgen receptor (AR). It cause castration resistant prostate cancer (CRPC). In contrast, CTCS is expected as a predictive factor for patient’s prognosis and as a biomarker of the disease.

**CellSearch** is the only FDA approval method as an evaluation of CTCS ensuring the quantitative evaluation. This methodology is depending on the expression of EpCAM and CK. However, the decrease expression of EpCAM and CK caused by epithelial-Mesenchymal Transition (EMT) can be an obstacle to CTC detection.

In recent years, AdnaTest is used for the evaluation of CRPC. It captures CTC depending on EpCAM and Her2 expression on cancer cells, then assess the presence of AR-V7 mRNA. But, this method is semi-quantitative and also depending on expression of EpCAM.

We consider it is important to know the number of AR-V7 positive cells accurately. Because, CTCS of each prostate cancer patients are heterogeneous. The aim of our study is to establish a new method of improved detection rate of EpCAM and CK-negative cells (i.e EMT cells), ensure the quantitative evaluation and assess the number of AR-V7-positive cells.

**Materials and Methods:** LNCap was used as hormone sensitive prostate cancer (HSPC) model, and Vcap, PC3 and Du145 were used as CRPC model. Peripheral blood mononuclear cell (PBMC) and VMRC-RCW (Renal cell carcinoma cell) were used as negative control.

CK and EpCAM antibodies were used as CTC-specific antibodies. PSA, PSMA and AR-FL antibody were used as prostate-specific antibodies, cells which show positivities for those antibodies within peripheral blood were considered as CTCS. In addition, vimentin antibody was used for the purpose of evaluating the EMT cells.

AR-V7 antibody was used as a biomarker for prostate cancer. On-chip sort was used for quantitative assessment of CTCS.

**Conclusion:** Negativity of CK-Ab for LNCap and EpCam-Ab for PC3 may indicate that EMT occurs in LNCap and PC3. Positivity of PSMA-Ab, PSA-Ab and AR-FL-Ab for LNCap indicates the possibility of improving the detection rate of CTC. Positivity of AR-V7-Ab for Vcap and low positivity for LNCap were likely to be the evaluation of new biomarkers in CTC studies.

**IPD09:**

**THE IMPACT OF TUMOR LOCATIONS ON LOCAL RECURRENCES IN PROSTATE CANCER PATIENTS RECEIVING CRYOABLATION**

Shih-Chun Hung, Chung-Hsin Chen, Yeong-Shiau Pu. Department of Urology, National Taiwan University Hospital, National Taiwan University College of Medicine, Taipei, Taiwan

**Purpose:** To evaluate the impact of tumor locations on local recurrences in prostate cancer patient who received cryoablation

**Materials and Methods:** A total 255 patients with prostate cancer who received primary cryoablation in National Taiwan University Hospital between January 2008 and December 2012 were enrolled. During follow-up, biochemical failure (Phoenix criteria) would trigger prostate biopsies. Local recurrence refers to pathologically proven prostate cancer in prostate and seminal vesicles. The prostate was defined into eight areas: left lateral (LL), left medial (LM), left apex (LA), right lateral (RL), right medial (RM), right apex (RA), anterior and midline posterior (PM). The seminal vesicles also defined as one area each: left seminal vesicle (LSV), right seminal vesicle (RVS), We analyzed the prostate cancer recurrence rate of each area after primary cryoablation.

**Results:** A total of 46 (18.0%) patients had local recurrences during a median follow-up duration of 5 years. In the primary tumor areas, local recurrence rates were 7.1% (RM), 3.4% (RA), 2.4% (RVS), 2.6% (LSV), 1.1% (LM), 2.1% (LL), and 0 (RL, anterior, PM, LA). For the areas with negative results for malignancy in pre-operative prostate biopsies, local recurrence rates were 2.4% (RVS), 1.1% (RL) and 0 (other areas). For patients whose anterior and PM areas were not routinely examined in pre-operative prostate biopsy, local recurrence rates were 3.3% (anterior) and 1.7% (PM). Multi-variant analysis revealed higher tumor stages, and tumor locations at RM, and anterior areas were associated with higher risk of local recurrence. Those patients with previously proved cancer distribution at the right medial had highest recurrence rate at this area.

**Conclusion:** Limited to the nature of cryoablation and preservation of vital organs nearby, tumor locations in prostate would interfere with the successful rate of prostate cryoablation. To improve oncological outcomes, detailed and accurate tumor locations is essential for prostate patients who plan to receive cryoablation.

**IPD10:**

**THE ONCOLOGICAL OUTCOMES AND SURVEILLANCE POLICY OF TESTICULAR CANCER: 6-YEAR SINGLE CENTER EXPERIENCE IN TAIWAN**

Yung-Ting Cheng, Kuo-How Huang, Yeong-Shiau Pu. Department of Urology, National Taiwan University Hospital, Taiwan

**Purpose:** We investigated the treatment outcome of testicular cancer in Taiwan, given globally rise in incidence in recent decades.

**Materials and Methods:** From February 2010 to October 2015, we retrospectively collected patients with the confirmed diagnosis of testicular cancer. Clinical data, pathological details and treatment outcomes were analyzed by reviewing medical records.

**Results:** A total of 81 patients with testicular cancer were enrolled; 40 (49.4%) had seminoma and 41(50.6%) had non-seminoma germ cell cancer. The median age was 51 years old in seminoma and 30 years old in non-seminoma group. The staging in seminoma group showed 36 (90%) stage I, 2 (5.2%) stage IS, 2 (5%) stage II and 1 (2.5%) stage III. The staging in non-seminoma group was 29 (70%) stage I, 4 (10%) stage IS, 3 (7%) stage II and 5 (12%) stage III. Approximately 97% of patients (35/36) with stage I seminoma and 90% (26/29) of patients with stage I non-seminoma accepted active surveillance. The overall recurrence rates were 12.5 % in seminoma and 31.7% in non-seminoma group. Only two patients in Non-seminoma group died of cancer. The 5-year recurrence free survival was 94.2% in seminoma and 84.2% in non-seminoma group. Five year overall survival yielded favorable results: 100% in seminoma and 94.2% in non-seminoma group.

**Conclusion:** Our study provided the latest evidence on oncological outcomes of testicular cancer. Active Surveillance in stage I testicular cancer yielded good prognosis and served as a treatment option.

**ISTUA Podium-3**

**Functional and female urology**

**IPD11:**

**KETAMINE ABUSE AND LOWER URINARY TRACT SYMPTOMS: A SURVEY FROM DRUG REHABILITATION CENTERS IN TAIWAN**

Ching-Heng Yen, Sheng-Tang Wu, Tai-Lung Cha, En Meng. Divisions of Urology, Department of Surgery, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan

**Purpose:** Ketamine is the most commonly abused psychotropic substance among youngsters in Taiwan. Long-term ketamine use can cause chronic...
cystitis and severe lower urinary tract symptoms (LUTS). We conducted an in-depth epidemiological study to better understand the correlation between ketamine abuse and LUTS.

**Materials and Methods:** The survey was conducted in two private rehabilitation centers in Taiwan. Through self-administered questionnaires (OABSS, IPSS, ICSI, ICPI and VAS), records of inmates, such as gender, age, and details of using ketamine, including the way, amount, duration of using ketamine as well as symptoms of urinary tract were obtained. Data processing and statistical analysis were performed using statistical software SPSS v.17. We analyzed all kinds of relative factors causing ketamine cystitis and off factor, and established an occurrence and severity forecasting module.

**Results:** 106 ketamine abusers completed the questionnaires, including 11 women and 95 men. LUTS occurred after using ketamine for 24.67±26.36 (mean ± SD) months. Most of them combined snoring and smoking of the ketamine. Leading symptoms included frequency (67.3%), incomplete voiding (66.3%) and nocturia (61.2%). The scores of OABSS, IPSS, ICSI, ICPI and VAS were 5.23±4.37, 13.11±10.62, 11.47±6.78, 9.92±5.65, 2.89±3.48, respectively. 79.2% of ketamine abusers admitted a history of poly-substance abuse, although none of them had taken drugs other than ketamine regularly. Smoking of ketamine was negatively correlated with symptom scores in IPSS, ICSI and ICPI (P<0.05). OABSS significantly increased while combine using ketamine and Marijuana (P=0.0016). Combination with 3,4-methylenedioxy-methamphetamine (MDMA) usage significantly increased the ICPI score (P=0.034).

**Conclusion:** Ketamine abuse can induce severe storage symptoms depending on the duration of using ketamine. Snorting of ketamine may cause worsen LUTS than smoking. Combine using ketamine and certain substances may exacerbate LUTS. With this model as a platform, further prospective studies are warranted to investigate the appropriate choice of treatment for this new clinical entity.

**IPD12:**

EVALUATION OF TREATMENT OUTCOMES IN PELVIC FLOOR MUSCLE TRAINING WITH BIOFEEDBACK VERSUS INTRA-VAGINAL ELECTRICAL STIMULATION IN WOMEN WITH URINARY INCONTINENCE IN HONG KONG PAMELA YOUDES NETHERSOL EASTERN HOSPITAL


**Purpose:** In Hong Kong, the prevalence of Female urinary incontinence is around 35% and around 18% (~60,000 female) suffered from serve incontinence. However, due to the fact that many women have poor coordination of pelvic floor muscle it leads to unsatisfactory treatment outcomes. Few studies have compared the effectiveness of biofeedback pelvic floor muscle training against intra-vaginal electrical stimulation in treating urinary incontinence.

To evaluate the treatment outcomes and effectiveness of biofeedback pelvic floor muscle training against intra-vaginal electrical stimulation for female patients with urinary incontinence.

**Materials and Methods:** All patients who attended the female urinary incontinence clinic from January 2014 to December 2015 were recruited into the study and the outcomes were analyzed. All patients follow a standard treatment protocol for the first three months, they were taught how to perform pelvic floor muscle training, life style modification education, etiology of urinary incontinence education and initial assessment of symptom scores (UDI-6, IIQ7), no. of pad used and the time interval between each micturition were documented. For those patients with poor outcomes, patient would choose either using biofeedback pelvic floor training or intra-vaginal stimulation for further three months. Symptom scores were reassessed after therapy.

**Results:** During the study period, 1896 patients were recruited into the study. Their ages were between 41–83 (mean 58.8). The average duration of urinary incontinence (UI) was 4.5 years. Forty percent has mixed urinary incontinence, 48% had stress incontinence and 12% had urge incontinence. 107 patients (5.6%) failed to show any significant improvement despite three months of initial treatment, of which 62 patients (57.9%) were then proceeded to the intra-vaginal electrical stimulation group and 45 patients (42.1%) to the biofeedback pelvic floor muscle-training group. After a further 12 weeks of treatments, the intra-vaginal stimulation group, had decreased UDI-6 of 1.4 (P<0.05) and IIQ7 decreased of 1.2 (P<0.05). The biofeedback pelvic floor muscle training group had decreased UDI-6 of 2.2 (P<0.05) and IIQ7 of 2.3 (P<0.05). The no. of pad used per day reduced from 2.4 to 1.2 (P<0.05) in intra-vaginal stimulation group; 2.3 to 2.1 (P=0.05) for the biofeedback pelvic floor muscle training group. The time interval between each micturition increased from 1.4 hour to 2.8 hours (P<0.05) for both groups.

**Conclusion:** The results of this study showed that the intra-vaginal stimulation and biofeedback were both equally effective for poor responding patients. For the biofeedback group, the symptom scores and quality of life scores showed better improvement comparing to the intra-vaginal group. This may be because biofeedback is comparatively more comfortable than intra-vaginal stimulation, not all patients accept intra-vaginal probe insertion and for some patients with atrophic vagina, introduction of probe may be painful. For the actual no. of pad used, the intra-vaginal stimulation group showed a much more significant improvement. This may be accounted by the fact that direct stimulation of pelvic floor muscle is useful for patients with poor active movement. The drawback of this study is that the treatment options were patient driven and not randomized but the advantage of patient driven treatment is that patients are very compliance to time consuming rehabililation program.

**IPD13:**

A CLINICAL NOMOGRAM FOR PREDICTING BLADDER OUTLET OBSTRUCTION IN NON-NEUROGENIC MALE PATIENTS WITH OVERACTIVE BLADDER

Wei-Jen Chen,1 Yu-Hua Fan1,2,3, Alex T.L. Lin1,2,4, Kuang-Kuo Chen1,2,5, 1Department of Urology, Taipei Veterans General Hospital, Taipei, Taiwan; 2Department of Urology, School of Medicine, Taipei, Taiwan; 3Shu-Tien Urological Science Research Center, National Yang-Ming University, Taipei, Taiwan.

**Purpose:** Bladder outlet obstruction (BOO) is a common cause of over-active bladder (OAB) symptoms in men, but not all men with OAB symptoms have BOO. The strategies for treatment of OAB symptoms are different in men with BOO and those without BOO. Pressure-flow studies are considered the reference standard to diagnose BOO. However, the procedure is invasive, expensive and time-consuming. A non-invasive diagnostic method for BOO in men with OAB symptoms is warranted. The nomogram creates a simple graphical representation of a statistically predictive model which generates a numerical probability of a clinical event. In this study, we want to develop a nomogram for detection of BOO in male patients with OAB symptoms.

**Materials and Methods:** We prospectively recruited male patients presenting with OAB symptoms from our urology outpatient clinic between August 2008 and July 2015. Patients with overt neurological disorders were excluded. All patients received the prostate specific antigen (PSA) test and transabdominal ultrasound which provided the information of intravesical prostate protrusion (IPP), prostate volume (PV) and detrusor wall thickness (DWT). Symptom severity was evaluated with International Prostate Symptoms Score (IPSS), Overactive Bladder Symptom Score (OABSS). All patients underwent catheter-free uroflowmetry, post-void residual urine measurement and urodynamic pressure-flow studies. BOO was defined based on a provisional ICS method for the definition of obstruction, which defined BOO as (PdetQmax−2Qmax) > 40. Multivariable regression analysis was performed to assist in choosing candidate predictors to build up a nomogram. Internal validation of the nomogram was performed.

**Results:** A total of 211 patients were enrolled. The mean age of the patients was 73.6 years (range 52–91). BOO was diagnosed in 118 patients. Among univariate analysis, patients with BOO had a higher prevalence of PSA>2 (p=0.001), PV>30 (p=0.003), longer IPP (p<0.001), and larger Qmax (p<0.001). Qmax (p<0.001) on uroflowmetry. Among multivariate analysis, only IPP (p=0.014) is statistically important, with odds ratio 3.119 (95% CI: 1.259–7.722). A nomogram, demonstrating a predictive accuracy of 70%, was constructed from PSA, IPP and catheter-free Qmax.