

129 (3.0%) and 1 of 134 (0.4%) patients in groups 1 and 2, respectively ( $p = 0.02$ ).

**Conclusion:** The addition of intramuscular 80 mg of gentamycin was beneficial in improving the efficacy of fluoroquinolone and reducing the post TRUS biopsy infection rate. Gentamycin is relatively inexpensive and readily available in daily practice and has good compliance for patient use.

#### PD10-5:

#### EFFECTIVENESS OF GENTAMICIN AND QUINOLONE ON PREVENTION OF INFECTION COMPLICATIONS AFTER PROSTATE BIOPSY – A RETROSPECTIVE STUDY OF 246 PATIENTS

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**Purpose:** This study was done to compare infectious complications between patients with and without a set protocol for prostate biopsy.

**Materials and Methods:** Patients whom underwent prostate biopsy at our hospital from 2001 to 2012 were first identified. Two different groups of patients were then selected from two different years. The cut-off year was 2007, which we started to implement a standardized protocol for prostate biopsy. Patient group without set protocol was collected from January 2001 to December 2001. Patient group with set protocol was collected from January 2012 to December 2012.

**Results:** A total of 246 patients were selected from 2 years. Ninety-two patients were collected from January to December 2001 (without set protocol). One hundred fifty-four patients were collected from January to December 2012 (with set protocol). In the first group, the infectious complication rate was 10.75% (10 out of 93). While in the second group, the infection rate was 1.3% (2 out of 154). All the minor complications (such as hematuria, hematospermia, dysuria, etc) were self-resolving within 1 month. Most infectious complications were all managed during OPD hours with oral antibiotics. Only 1 patient required hospitalization (from 2001). All the positive culture results did not reveal any resistant strain species.

**Conclusion:** The minor complications were similar in both group and were all self-resolving. Infectious complications were more prevalent in the group without set protocol. Adequate peri-op preparation and post-op antibiotics regimens appears to be helpful in prevention of infectious complications.

#### PD10-6:

#### ALTERNATIVE TREATMENT MODALITY OF PERIURETHRAL ABSCESS – TRANSURETHRAL APPROACH METHOD

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**Purpose:** Periurethral abscess is a life-threatening infection of the male urethra and periurethral tissues. The standard treatment consists of immediate suprapubic urinary drainage and wide debridement. Owing to the further improvement of antibiotics and surgical technique, alternative treatment method might be considered.

**Materials and Methods:** This report is to present a rare case with periurethral abscess. A 62 year-old male suffered from fever, chillness, dysuria, scrotum uncomfortable, frequency, and urgency for weeks. The following CT showed the lesion of periurethral abscess.

**Results:** The suprapubic tube cystostomy combined with transurethral endoscopic incision were done smoothly. After 7 days of antibiotics treatment, he discharged from our hospital and there was no recurrent for more than two years.

**Conclusion:** We present a case of periurethral abscess, which was treated with transurethral endoscopic incision successfully. In a review of the published literatures, antibiotics using was necessary and open debridement was suggested to prevent this life-threatening infection. Debridement need more time and cost to treat it and always made patient uncomfortable. By using transurethral endoscopic drainage, treatment of

periurethral abscess is much easier and made patient more satisfactory about the result.

#### Podium-11

#### Oncology

#### PD11-1:

#### PREDICTIVE FACTORS FOR DISEASE RECURRENCE IN PATIENTS WITH LOCALLY ADVANCED RENAL CELL CARCINOMA TREATED WITH CURATIVE SURGERY

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**Purpose:** Radical nephrectomy with or without thrombectomy, and partial nephrectomy for highly selected cases, could be a curative treatment for patients with locally advanced renal cell carcinoma (RCC). However, few prognostic factors have been proposed in such patient group. In the present study, we investigated the possible predictive factors for recurrence after curative surgery for locally advanced RCC

**Materials and Methods:** Patients with RCC staged T3 or higher without distal metastasis receiving partial or radical nephrectomy with or without thrombectomy in our institute from April 1st 2005 to October 31st 2013 were retrospectively reviewed. Preoperative data including risk groups based on MSKCC and Heng models, as well as surgical and pathologic characteristics were correlated to local-recurrence-free, metastasis-free, and disease-free survival respectively. Kaplan-Meier survival curve and forward stepwise analysis test were used for statistical analysis.

**Results:** A total of 159 patients (110 were males) were included. Mean age at surgery was  $62.2 \pm 15.3$  years. Other demographic data were shown in the Table. Mean duration of follow-up was  $37.9 \pm 27.9$  months. Local recurrence was noticed in 17 (10.7%), and distal metastases developed in 37 (23.3%). 119 (74.8%) remained disease free. Muscular branch but no renal vein involvement by RCC was noticed in 21 patients undergoing partial nephrectomy, and only one developed local recurrence.

Stage higher than pT3a, papillary cell type, higher Fuhrman grade, and poorer Heng's risk group were associated with shorter local-recurrence-free, metastasis-free, and disease-free intervals on univariate analysis. Poorer MSKCC risk group and thrombocytosis were related to shorter metastasis-free ( $p = 0.0001$  and  $p = 0.006$  respectively) and disease-free ( $p = 0.0001$  and  $p = 0.002$  respectively) but not local-recurrence-free intervals. Excess serum alkaline phosphatase was associated with shorter local-recurrence-free interval ( $p = 0.032$ ) only. Other factors including body mass index, blood type, neutrophil-to-lymphocyte ratio, blood transfusion, surgical methods, or positive surgical margin were failed to show any association.

On multivariate analysis, only Heng's risk group and Fuhrman grade had significant association with local-recurrence-free ( $p = 0.001$ , 95% CI 3.9 – 146.8;  $p = 0.021$ , 95% CI 1.5 – 88.6, respectively), metastasis-free ( $p = 0.0001$ , 95% CI 8.8 – 120.5;  $p = 0.001$ , 95% CI 1.8 – 11.4, respectively), and disease-free survival ( $p = 0.0001$ , 95% CI 12.8 – 210.3;  $p = 0.001$ , 95% CI 1.9 – 11.8, respectively).

**Conclusion:** In patients with locally advanced RCC, Fuhrman grade and Heng's risk group could predict local or distal recurrence after curative surgery. For those undergoing partial nephrectomy, muscular branch involvement could not be a predictive factor.

#### PD11-2:

#### COMPARISON OF RADIOFREQUENCY ABLATION VERSUS LAPAROSCOPIC ADRENALECTOMY FOR BENIGN ALDOSTERONE-PRODUCING ADENOMA

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**Purpose:** Evaluate the safety and efficacy of radiofrequency ablation (RFA) in treating aldosteronism producing adenoma (APA) of adrenal gland.

**Materials and Methods:** We retrospective evaluated a patient cohort with computed tomography (CT) - guided percutaneous RFA performed on APA of size 2.5 cm or less. Treatment success was defined as complete tumor ablation on follow-up CT scan plus normalization of serum aldosterone-to-renin ratio. We also made comparison of "normalization ability" with previous conventional LA for APA. The normalization ability was defined as reduction amount of blood pressure, number of hypertensive medicine use, aldosterone level, and increased in potassium level.

**Results:** Between September 2009 till September 2013, 25 patients were included with the diagnosis of unilateral APA, 7 underwent RFA and 18 underwent LA. The tumor sizes ranged from 8-25 mm. There was one intra-procedure HTN crisis during RFA. Both groups presented no complications which need further management. During a 3 to 6 months followed up, total response rate reached 100% in RFA group versus 94.4% in LA group. Normalization ability was statistical equivalent between RFA and LA group.

**Conclusion:** CT- guided percutaneous RFA is efficacious and safe in treating APA. It is a justifiable alternative for patients who are reluctant or unfit for surgery.

#### PD11-3:

#### HYDROSTATIC PRESSURE ENHANCES MITOMYCIN C INDUCED APOPTOSIS IN UROTHELIAL CARCINOMA CELLS

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**Purpose:** Urothelial carcinoma (UC) of the bladder is the second most common cancer of the genitourinary system. Clinical UC treatment usually involves transurethral resection of the bladder tumor (TURBT) followed by adjuvant intravesical immunotherapy or chemotherapy to prevent recurrence. Intravesical chemotherapy induces fewer side effects than immunotherapy but is less effective at preventing tumor recurrence. Improvement to intravesical chemotherapy is, therefore, needed.

**Materials and Methods:** The cellular effects of mitomycin C (MMC) and hydrostatic pressure on UC BFTC905 cells were assessed. Viability of the UC cells was determined using cellular proliferation assay. Changes in apoptotic function were evaluated by caspase 3/7 activities, expression of FasL, and loss of mitochondrial membrane potential.

**Results:** Reduced cell viability was associated with increasing hydrostatic pressure. Caspase 3/7 activities were increased following treatment of the UC cells with MMC or hydrostatic pressure. In combination with 10 kPa hydrostatic pressure, MMC treatment induced increasing FasL expression. The mitochondria of UC cells displayed increasingly impaired membrane potentials following combined treatment with 10 µg/mL MMC and 10 kPa hydrostatic pressure.

**Conclusion:** Both MMC and hydrostatic pressure can induce apoptosis in UC cells through an extrinsic pathway. Hydrostatic pressure specifically increases MMC-induced apoptosis and might minimize the side effects of the chemotherapy by reducing the concentration of the chemical agent. This study provides a new and alternative approach for treatment of UC patients following TURBT.

#### PD11-4:

#### ARSENIC EXPOSURE AND TEMPORAL TREND OF INCIDENCE IN UPPER URINARY TRACT UROTHELIAL CARCINOMA, 1979-2010: A NATIONWIDE POPULATION-BASED STUDY IN TAIWAN

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**Purpose:** To investigate the newly diagnosed incidence of arsenic (AS)-related upper urinary tract urothelial carcinoma (UTUC) in Taiwan

**Materials and Methods:** From 1979 through 2010, patients with UTUC were extracted from Taiwan Cancer Registry Database. According to birth residency, the patients were further divided into 4 areas, including the zone 0 (Z0) (a well water AS level of less than 350 ng/ml and no blackfoot disease), zone 1 (Z1) (a well water AS level of 350 ng/ml or greater and no blackfoot

disease), zone 2 (Z2) (a well water arsenic level of less than 350 ng/ml with sporadic blackfoot or AS-related skin diseases) and the zone 3 (Z3) (a well water AS level of 350 or greater and the blackfoot disease endemic area). The temporal trends for newly diagnosed rate were analyzed by linear regression. The incidences between groups were compared using Friedman's ANOVA. A p value of < 0.05 was considered statistically significant.

**Results:** A total of 19,226 patients with newly diagnosed UTUC were identified, including 10,404 (54.1%) women and 8822 (45.9%) men. In 2010, the overall newly diagnosed rates of UTUC stratified by sex were 4.53%, 6.55%, 9.23% and 8.57% (female) as well as 4.35%, 4.95%, 5.75% and 9.28% (male) in Z0, Z1, Z2 and Z3, respectively. The trends of annual newly diagnosed incidences in the 4 areas increase from 1979 to 2010. People in Z3 area have significantly annual raising rate of incidence than those in Z0, Z1 and Z2 (female: 0.31% vs. 0.17%, 0.23% and 0.24%, p< 0.001; male: 0.25% vs 0.13%, 0.17% and 0.14%).

**Conclusion:** The overall incidence of UTUC in Taiwan is increasing from 1979 to 2010. People who lived in the high arsenic endemic area (Z3) had higher incidence of UTUC than people lived in other areas of Taiwan.

#### PD11-5:

#### GLYCOLYSIS PROMOTING CANCER STEM CELL PHENOTYPE AND INDUCING EPITHELIAL-MESENCHYMAL TRANSITION

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**Purpose:** Cancer stem cells were considered to be the genesis of cancer and account for cancer initiation, progression, and recurrence. Hexokinase 2 (HK2) catalyzed the first irreversible step of glycolysis and was associated with poor outcomes in cancer patients. Studies have highlighted a role for HK2 in facilitating tumor growth and lactate production, which is downstream product of HK2 reaction in cancer cells. Tumor cells can extrude and shuttle lactate to neighboring cancer cells, adjacent stromal cells, and vascular endothelial cells to induce signaling molecular change. However, in tumor microenvironment, the molecular mechanisms underlying this association of tumor lactate shuttle, HK2 activity and cancer metastases were not well established. In this study, we assessed the contribution of HK2 expression in human bladder cancer samples and the association of survival data, and explored the role of lactate shuttle induced by HK2 in cancer stem cell formation and epithelial-mesenchymal transition (EMT) between bladder cancer cells in vitro and in vivo.

**Materials and Methods:** We examined HK2 expression by immunohistochemistry in tumors (n = 151) and normal specimens (n = 20) from bladder cancer patients. The association of HK2 with survival and pathological characteristics was assessed using Kaplan-Meier survival curves and two-sided chi-square test. Endogenous HK2 in human bladder cancer (TCCSUP, J82 and TSGH8301) and normal (SVHUC) cells was examined by immunoblot and immunofluorescence. Effects of HK2 overexpression on cell proliferation, morphologic change and cancer stem cell phenotype were analyzed in human bladder cancer TSGH8301 and TCCSUP cells. Stable HK2-overexpression clones were also examined for their effects on EMT, NF-κB phosphorylation and CD133 activity in vitro and mouse models. The animal survival and lung metastasis were assessed in a mouse subcutaneous model using TSGH8301 cells with HK2-overexpression clones. All statistical tests were two-sided.

**Results:** The HK2 expression was significantly higher in bladder cancers compared with normal tissues. In human bladder cancer samples, 54.1% and 45.9% showed positive and negative HK2 expression, respectively. The urine lactate detection was higher in human bladder cancers than in non-cancer subjects (204.9 vs 54.79 µM; P < 0.001). Stable HK2 overexpression induced cell proliferation, and showed morphologic changes with gain of cancer stem cell markers. HK2 Knockdown also reduced lactate extrusion in vitro. In response to lactate exposure, nuclear translocation of NF-κB phosphorylation and Twist1 as well as mesenchymal markers was promoted in human bladder cancer cells. In addition, lactate exposure enhanced CD133 activity in vitro. In mice bearing subcutaneous tumors, increased tumor growth and lung metastasis were observed in stable HK2-