Abstracts of
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cytokinin B and cytokinin 18 remained at the same level or increased. In MSC expression of o-smooth muscle actin, desmin, myogenin and sarcomerin actin were induced. These alteration strongly indicate onset of the differentiation process to the urothelial and myogenic lineage.

Conclusions: Our study shows that urothelium conditioned media and TGFβ1 which were used provide a convenient source of inductive signals to initiate reprogramming hair follicle stem cells and bone marrow mesenchymal stem cells to urothelial and muscle cells. It is possible that stem cells transplanted into environment of urinary bladder can transdifferentiate into urothelium and muscle layer.

C54 THE IMPLICATIONS OF LIVER CIRRHOSIS ON PERIOPERATIVE MORTALITY AND MORBIDITY OF UROLOGICAL INTERVENTIONS

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Introduction & Objectives: The prevalence of liver cirrhosis is dramatically increasing worldwide. This clinical entity is recognized as a clinically important feature that influences patient morbidity and mortality after general and cardiac surgery when compared to patients with normal liver function. The purpose of this article is to analyze the impact of preexistent liver cirrhosis on perioperative mortality and morbidity of patients undergoing urological interventions.

Material & Methods: We conducted a comparative study of patients that underwent urologic surgery during January 2006 – December 2009 in our department. Study group: 113 patients with pre-diagnosed liver cirrhosis by liver biopsy divided in 3 groups: 1. Cirrhosis without portal hypertension55/60%, 2. Cirrhosis with portal hypertension50%/45% endoscopic. The groups were homogeneous and well balanced according to the age, sex, type of urological procedure. Demographic, clinical, laboratory features (blood work, liver enzymes, serum albumine and serum creatinine), Child-Turcotte-Pugh and MELD score were assessed by multivariate analysis. Chi² and t tests were used to examine the differences in baseline characteristics of the 2 groups. Poor outcome were considered death within 30 days postoperatively, hospitalization >21 days and ICU admittance >14 days.

Results: In total, the perioperative mortality was 13% in patients with liver cirrhosis group (1.2% endoscopic / 4.8% portal hypertension / 7% transperitoneal) compared to 4.5% (0.73% endoscopic / 1.25% portal hypertension / 2.52% transperitoneal) in the control group (p = 0.003). Major complications that increased ICU admittance or hospitalization time (bile leak, postoperative hemolysis, severe sepsis, bronchopneumonia) occurred in 20% of cases, respectively 5% (p = 0.002). The most important factors involved in the development of early postoperative complications were the presence of ascites and sepsis preoperatively, rapid development of postoperative hepatorenal syndrome which required hemodialysis. Hemoglobin <8.1 g/dL and MELD score are independent negative prognostic factors. MELD score >14 and a Child score C are considered major risk factors in open surgery (retro/transperitoneal). Endoscopic interventions appear to have the smallest impact on impairing the liver function in patients with cirrhosis Child A or MELD score <10.

Conclusions: The presence of liver cirrhosis is not a major contraindication in urologic surgery. MELD score and plasma hemoglobin levels lower than 8 g/dL were found to be independent predictors of poor outcome. A MELD score of 10 or more is an indicator of a Child C patient were considered high risk predictors for major complications after open surgery. Careful patient selection is critical in order to improve surgical outcome in patients with cirrhosis.

C55 LECTIN-MEDIATED DRUG DELIVERY FOR INTRAVESICAL TREATMENT OF BLADDER CANCER

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Introduction & Objectives: Urothelial bladder cancer is among the most common malignancies worldwide, with a significantly higher incidence rate in industrial countries. Up to 75% present as superficial tumors initially and are easily accessible to surgical treatment. Bladder cancer shows a high rate of recurrence up to 78 % and a risk of progression up to 45 % at 5 years, depending on risk tables. The aim of this study is to evaluate the potential of lectin uptake for bladder cancer cell lines in a drug delivery system. The incidence of bladder cancer is increasing, especially in industrialized countries. The development of new treatment options is therefore necessary. The use of lectin-based drug delivery systems shows potential in the treatment of bladder cancer.

Material & Methods: Human urothelial cell lines, representing healthy and tumor tissue, were characterized in regard to their binding capacity for various plant lectins. Furthermore we determined internalization and binding specificity for the respective lectins, and were able to pinpoint distinctive differences in glycosylation pattern between healthy and cancerous urothelial cells. The amount of lectin binding was assessed via FACS (flow cytometry). After incubating the cells at 4 °C with different concentrations of fluorescein-labelled lectins, the relative cell associated fluorescence intensity (RFI) was determined. To verify specific binding of the lectin molecules, dilution series of complementary carbohydrates were added prior to the binding assay and RFI was determined. A quantitative evaluation of cell internalization was possible by assessing the acridic quench of the fluorescein signal after uptake in endosomal/lysosomal compartments.

Results: Activation of all cell lines, highest binding capacities were observed for Wheat germ agglutinin (WGA), with a slightly more pronounced binding to cancerous cells. For Peanut agglutinin (PNA), a characteristic binding behaviour showing the clearest distinction between tumor and healthy tissue was found. Competitive inhibition with the verified specific binding for all lectins used. Upon incubation at 37 °C, WGA and PNA bound to cell surface, were internalized into acidic compartments in a time dependent manner, which was evidenced by monensin treatment and microscopic observation.

Conclusions: The results suggest that lectin-mediated drug delivery is a promising approach for improved intravesical treatment of urothelial bladder cancer, whereby WGA may be used as a general promoter of bioadhesiveness and PNA as a selective discriminator for specific targeting of cancerous tissue, respectively. This biometric approach may thus provide valuable novel stimuli for the future development of targeted intravesical therapy concepts for superficial urothelial bladder cancer.

C56 URINE TUMOUR ASSOCIATED TRYPsin INHIBITOR (TATI) IN THE DIAGNOSIS AND PROGNOSIS OF TRANSITIONAL CELL CARCINOMA OF THE BLADDER

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Introduction & Objectives: Aim: To assess performance of TATI level in urine for noninvasive detection and evaluation of progression of bladder carcinoma.

Methods & Materials: In total: There were 63 patients enrolled in this study (38 men, 25 women), mean age 66.2 years, mean follow-up was 38 months. Patients were divided into different groups according to tumour grade, stage, multiplicity and size. There were 36 screenings with benign urological diseases.

Results: The mean TATI level in the G1 group was 15.76 µg/l, 86.3 µg/l in G2 and 33.3 µg/l in G3. The mean TATI level of patients with TaT1 tumour was 73.3 µg/l, whereas 40.51 µg/l in patients with invasive carcinoma. The TATI level in solitary tumours was 60.26 µg/l and 94.42 µg/l in multiple tumours, 263.5 µg/l in tumours up to 3 cm and 100.02 µg/l in larger tumours. The median TATI level in the group of tumours was 68.65 µg/l, whereas in the control group it was 20.38 µg/l. The mean TATI level in the group of patients who recurred during follow-up was 60.3 µg/l and 75.0 µg/l without recurrence, 12.0 µg/l in patients who progressed and 55.7 µg/l who did not progress.

Conclusions: Our results demonstrate that high level of TATI in urine can correlate with the risk of bladder tumour as well as with the tumour size. The study was supported by grant VZ MSM 0021620808.

C57 RESEARCH ON INDIVIDUAL RISK OF BLADDER CANCER INCIDENCE

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Introduction & Objectives: Urinary bladder cancer is the sixth leading cause of mortality due to malignant neoplasms in Polish men in Lodz region. There is a need to find markers, which will be useful as a predictors and prognostications of the disease. The aim of our work was the creation of the individual risk calculator of bladder cancer incidence and progression using the available clinical data and the results of the long-term genetic research.

Material & Methods: In order to create the individual risk calculator the following materials were used. These were the data from the clinical interview including common risk factors and the results of the long-term genetic research on 104 patients with bladder cancer of different stages diagnosed clinically and histopathologically. The genetic research included LOH detection, mutation and expression of TP53, CDKN2A and RB genes, mutation of the multi-oncogene predisposition genes CHEK2, CPY1B1, chromosomal aberrations and HPV infections. The histopathological tests were carried out by the three certified histopathologists. The risk calculator was created using the artificial neural network.

Conclusions: The programme of the current research is an attempt of a wide

approach to the analysis of the cell interaction network changed by the risk factor and the stage of the disease. The attempt to individualize the risk and prognosis may prove to be effective in the oncoming era of personalized medicine. Hence, attempts to find algorithms for estimating individual risk seem to be justified. This work was supported by the State Committee for Scientific Research, Poland (KBN grant No 2P05C 076 30).

**C58**

**PROGNOSTIC VALUE OF GENES HSP60 AND CASP3 EXPRESSION IN THE TA, T1 UROTHELIAL URINARY BLADDER CARCINOMA**

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**Introduction & Objectives:** The aim of the study was to assess HSP60 and CASP3 genes expression level in Ta, T1 urothelial urinary bladder carcinoma and to find out its prognostic value.

**Material & Methods:** 46 patients with Ta, T1 urothelial urinary bladder carcinoma have been enrolled into the prospective study so far. The genes expression was evaluated quantitatively by real-time PCR method using ABI PRISM 7000. As a reference gene the GAPDH gene was used, mRNA and cDNA were isolated by Oligotex kit (Qiagen) and High Capacity cDNA Archive Kit (Applied Biosystems). All the patients were followed afterwards and treated following common schemes, the follow up time was 3.96 years (0.3 - 9.5 years).

**Results:** Tumor recurrence was detected in 17 (38.3 %) patients. The relationship between the level of HSP60 and the risk of recurrence was not found. In a group of 12 patients with CASP3 positivity higher than 0.8 (CASP3 > 0.8, CASP3 positive group) the tumor recurrence was detected in 8 (66.6 %) patients. In the other group of 34 patients with CASP3 expression lower than 0.8 (CASP3 < 0.8, CASP3 negative group) the tumor recurrence was detected in only 9 patients (26.5 %).

**Conclusions:** We have confirmed the prognostic significance of CASP3 gene expression when predicting the Ta, T1 urinary bladder carcinoma recurrence risk. This prediction was independent of clinical prognostic factors used in everyday practice. The study was supported by VZ MSM 0216620806 grant.

**C59**

**MONTELUKAST, A LEUKOTRIENE D-4 RECEPTOR ANTAGONIST, MAY PREVENT RAT TESTES AGAINST ISCHEMIA-REPERFUSION INJURY**

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**Introduction & Objectives:** Neutrophils and reactive oxygen species (ROS) are critical components involved in the pathophysiological mechanism of ischemia-reperfusion (IR) injury. Therefore, we aimed to elucidate the possible protective effect of montelukast, a selective antagonist of cysteinyl leukotriene receptor 1 (CysLT1), on testicular IR injury.

**Material & Methods:** 51 adult male Wistar-Albino rats were randomly assigned into 6 groups: sham + saline (S), sham + montelukast (M), IR + S, IR + S 30’, IR + M and IR + M 30’. Saline or montelukast (10 mg/kg) was intraperitoneally administered 30 minutes prior to (S; M 30’) and during detention (IR + S, IR + M) in the IR groups. The IR groups underwent 2 hour ischemia followed by 4-hour (early-term) reperfusion in unilateral testes. Moreover, half of the rats underwent 24-hour (late-term) reperfusion for further analyses. Testicular tissue samples were examined for biochemical and histopathological parameters. Germ cell apoptosis was assessed using apoptosis activating factor 1 (Apaf-1). Inducible nitric oxide synthase (iNOS) and Caspase-3 expression was also assessed in all early-term and late-term repeated groups. Spermaticogenic functions were assessed for each tests based on the Johnsen criteria. All variables were analyzed by using Mann-Whitney U, Dunn and Kruskal-Wallis tests.

**Results:** The bilateral IR caused significant increase in serum TNF-α levels in the early-term when compared to the sham groups. Oxidative stress markers detected from the tissue samples including the malondialdehyde (MDA) levels and myeloperoxidase (MPO) activity, were found to be elevated in the IR groups and accompanied with significant decrease in the glutathion levels when compared to the sham groups. Moreover, the immunohistochemical analyses of ischemic tests provided that IR significantly increased iNOS activity and germ cell apoptosis when compared to the sham groups. Montelukast treatment significantly reversed all these parameters and achieved comparable results with the sham groups. Finally, spermatogenic indices were found similar for bilateral testes between all groups.

**Conclusions:** Montelukast exerts protective effects against testicular IR injury via inhibiting neutrophil activity, reversing the oxidative stress markers, decreasing the iNOS activity and attenuating apoptosis. Further investigations may prove montelukast as a useful therapeutic adjunct to surgical repair in cases of human testicular torsion.

**Poster session 4**

**LAPAROSCOPY AND RECONSTRUCTIVE SURGERY**

Friday, 22 October, 15.10-16.50, Poster Room 1

**C60**

**OUR EXPERIENCE WITH LAPAROSCOPIC INTERVENTIONS IN CHILDREN**

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**Introduction & Objectives:** Urolurgical laparoscopic procedures performed in adults can be managed in the childhood as well. Authors present and summarize their initial experience with laparoscopic operations, review the circumstances and results of the interventions performed in children.

**Material & Methods:** Between September, 2002 and March, 2010 authors performed 44 laparoscopic procedures in children. Youngest patient was 3.5, the oldest was 18 years old at the time of the operation. Mean age was 12.4 years of age. There were 17 interventions because of pyeloureteral junction obstruction, 12 nephrectomies, 8 renal cyst resections, also 2 retroperitoneal lymph node dissections were done. Further interventions were removal of kidney tumor, adrenal gland tumor, retroperitoneal tumor beside the kidney, suprarenal cyst resection and heminephrectomy. In 2 children endopelotomy had been performed earlier. Nephrectomies were necessary because of non-functioning kidney due to hypoplasia, chronic pyeloepithelitis, multicystic kidney or hydronephrosis. After ultrasound examination, renal function was determined by intravenous urography and renal scintigraphy. Anglo-CT examinations were applied for revealing crossing vessels. Kidney was approached retroperitoneally in 32 children, and in 5 children transperitoneally. In 11 cases Anderson-Hynes pyeloplasties were performed. During these procedures authors met aberrant crossing vessels at the level of the pyeloureteral junction in 8 children. In these situations pyeloplasty was performed by using atraumatic absorbable running suture beside a double-J stent. Retroperitoneal lymph node dissections were performed due to teratocarcinoma and embrional carcinoma.

**Results:** There were no any complications during the operations or in the postoperative period. There were no need for open surgery or transfusion. Average operating time of nephrectomies from skin incision to wound closure was 83 minutes (54-110 minutes), that was at Anderson-Hynes pyeloplasties 123 minutes (103-162 minutes). Patients walked on the day after the operations, complained hardly for pain. Patients were discharged home on the 3-6th postoperative day. In cases of pyeloplasties bladder catheter was removed after 4, double-J catheter after 6 weeks of the procedures, respectively. Control intravenous urographies or renal scintographies showed improving renal functions. In one patient - due to restructure - endopelotomy was performed after 2 months of the primary pyeloplasty.

**Conclusions:** On the base of initial experience of the authors, it can be concluded, that the above mentioned urolurgical laparoscopic interventions can be performed without any complications, but with both good functional and cosmetic results, not only in adults, but also in the pediatric population.

**C61**

**LAPAROSCOPIC ADRENALECTOMY FOR FUNCTIONING AND NONFUNCTIONING ADRENA DisORDERS**

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**Introduction & Objectives:** Laparoscopic adrenalectomy (LA) is a safe standard in the treatment of benign functioning and nonfunctioning disorders and is indicated in selected adrenal malignant tumors.

**Material & Methods:** From 10/1997 to 5/2010 there were 269 LA performed (130 right-sided, 139 left-sided) in 262 patients (99 males, 163 females) in age 21-77. The functioning disorders were 163 (Conn’s syndrome - 76, Cushing’s syndrome - 36, adrenogenital syndrome - 3, pheochromocytoma - 48), nonfunctioning were

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