ABSTRACTS OF THE
EAU 8th Central European Meeting
24-25 October 2008, Warsaw, Poland
Expression of P53 gene in bladder cancer in relation to mutation status and clinical parameters

Borkowska E.1, Jedrzejczyk A.2, Constantinou M.1, Marks P.1, Kranas S.1, Błaszkiewicz W.2, Kaczmarek A.2, Pawlowicz R.1, Banaszkiewicz M.1, Michal M.1, Kaluzewski B.1

1Medical University of Lodz, Dept. of Genetics, Lodz, Poland, 2Medical University of Lodz, 2nd Clinic of Urology, Lodz, Poland

Introduction & objectives: The tumour suppressor gene P53 controls numerous signalling pathways and is frequently mutated in bladder cancers. The P53 mutation status may be an independent marker for bladder cancer progression. In this study we have analyzed mRNA expression of the P53 gene in 64 tumour samples from bladder cancer in relation to clinical parameters and molecular subgroups.

Material & methods: 40 lessions were determined to be superficial papillary tumours (pTa), whereas 24 tumours invaded the lamina propria (pT1). Tumour grade was noted low (grades 1) in 36 cases and high (grades 2-3) in 28 cases. We confirmed the expression using real-time reverse transcriptase polymerase chain reaction (RT-PCR) technique. Tumour samples were evaluated for the presence of P53 gene mutations in exon 5-8 using multitemperature single-strand conformational polymorphism (MSSCP) method as a screening followed by sequencing.

Results: The level of P53 expression was associated with a grade and molecular subtypes. In tumours with missence mutations the mRNA expression levels were significantly increased, and in tumours with nonsense or frame shift mutation the mRNA levels were significantly reduced compared to those for expressing wild-type P53.

Conclusions: The study of mechanism of the P53 inactivation in cancers of not very advanced stage is particular importance. There are two ways of the urinary bladder cancer molecular development in which these mutations play a significant role. Our tests are an attempt to establish correlations between the presence of mutations or its lack, the expression level and clinical parameters of cancer.
The value of the UroVysion assay for predicting tumour recurrence in patients from central Poland

Borkowska E.¹, Jedrzejczyk A.¹, Banaszkiewicz M.¹, Marks P.¹, Kranas S.², Blaszkiewicz W.³, Kaczmarek A.³, Pawlowicz R.³, Pietrusinski M.¹, Constantinou M.¹, Kaluzewski B.¹

¹Medical University of Lodz, Dept. of Genetics, Lodz, Poland, ²Medical University of Lodz, 2nd Clinic of Urology, Lodz, Poland, ³Regional John Paul IInd Hospital, Dept. of Urology, Belchatow, Poland

Introduction & objectives: Bladder cancer is among the five most common malignancies in Poland. Patients with bladder cancer are closely followed with periodic cystoscopies and urine cytology analyses due to the significant risk of tumour recurrence.

Material & methods: UroVysion (Abbott Molecular Inc.) is a multi-target fluorescent in situ hybridization (FISH) assay that detects aneuploidy of chromosomes 3, 7, and 17, and loss of the 9p21 locus in exfoliated cells in urine. In this study, we evaluated if UroVysion can predict tumour recurrence.

Results: A total of 66 patients (58 males) were enrolled in the study. The mean patient age was 64. The initial highest tumour stage was Ta in 31 patients (47%), T1 in 14 patients (21%), T2-T4 in 9 patients (13,6%) and papillary urothelial neoplasm of low malignant potential (PUNLMP) in 12 patient (18,2%). Abnormal UroVysion results were observed in 48 patient (72,7%): 21/31 Ta (67,7%), 12/14 T1 (85,7%), 9/9 T2-T4 (100%) and 6/12 PUNLMP (50%). After a median follow-up of 15,5 months, 21 patients (31,8%) developed tumour recurrence. An abnormal UroVysion result preceded the diagnosis of tumour recurrence in 19/21 cases (90,5%): in 6Ta cases, in 3T1 cases, in 9T2-T4 cases and in 1 PUNLMP. In two cases (both PUNLMP) in which there was also recurrence, the UroVysion test was negative.

Conclusions: These data suggest that UroVysion may be a useful tool for predicting tumour recurrence. The assay was unnecessary in patients with obvious tumours on cystoscopy but it was beneficial in patients with tumours in Ta and PUNLMP stadium.