Gene *SHB* is Underexpressed in Human Prostate Cancer Tissue and Its Expression is Decreased in Locally Advanced Tumours

Introduction and Objective: *SHB* is adaptor protein which takes part in regulation system of apoptosis, angiogenesis and cell cycle. Reduced tumour growth *in vivo* and increased c-Abl activity in PC3 prostate cancer cells overexpressing *SHB* has been described in mice. We aimed to compare expression of *SHB* in human prostate cancer and benign prostatic hyperplasia and evaluation of its diagnostic and prognostic potential.
Materials and Methods: Isolation of mRNA from prostate cancer in 56 patients has been performed in the period of 2008 to 2011. As a control group, 26 patients with benign prostate hyperplasia were used. Material has been obtained perioperatively in surgical procedures (radical prostatectomy, transurethral prostatectomy) or with transrectal ultrasound guided biopsy. Identical procedure of mRNA isolation using Oligotex Direct mRNA Midi/Maxi was used in all patients. After RT-PCR, expression of specific sample was visualized by electrophoresis. For relative expression calculation, housekeeping gene *GAD* (glyceraldehyde-3-phosphate dehydrogenase) was used. Results have been evaluated statistically.
Results: Statistically significant lower relative expression of *SHB* in prostate cancer tissue was detected ($p < 0.001$). In comparison of patients distributed to localized (T2) and locally advanced (T3, T4) groups, decreased expression in locally advanced disease with statistical significance ($p < 0.0236$). In comparison of groups divided by Gleason score (GS <7 and GS ≥ 7), age and PSA, no differences have been detected.
Conclusions: *SHB* is candidate gene for prostate cancer tumorigenesis. It is underexpressed in prostate cancer tissue compared to benign prostate hyperplasia tissue and expression is decreased in locally advanced tumours. No differences were detected comparing groups divided by Gleason score, age and PSA.