

it to cancer stage and grade would be a useful adjunct for study of disease behavior.

Material and Methods: Retrospective pilot study on formalin fixed paraffin embedded needle biopsy tissue samples from prostate cancer patients was performed. Patient age was 59 – 86 years, median 72, Gleason score 6 – 9, median 7. Apoptotic markers studied were p53 and fragmented DNA (TUNEL), expressed as apoptotic index. Proliferative markers studied were Bcl-2, Ki-67, AgNOR. Immunohistological staining results of cancerous tissue were determined. Individual markers and models which considered opposing nature of apoptosis and proliferation were consecutively correlated to patient and disease characteristics. Parametric or non-parametric correlations were calculated according to variables distributions.

Results: Among individual markers, p53 staining inversely correlated with age of patients ($p=0.022$) and Bcl-2 staining correlated with disease stage ($r=0.65$, $p=0.004$). Model which incorporated coded staining intensity of Bcl-2 and AgNOR on proliferative side and p53 on apoptotic side was significantly related to Gleason score ($r=0.57$, $p=0.018$) and disease stage ($r=0.54$, $p=0.026$).

Conclusions: Individual histological markers, studied here, were previously related to prostate cancer with mixed results. We believe their incorporation into models which account for opposing roles of biological processes involved (apoptosis and proliferation), should provide better insight and finally better disease behavior prediction and control.

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Active surveillance in prostate cancer – save option when knowing postoperative staging and grading? Single institution experience from 2003–2009

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Introduction and Objectives: Active surveillance (AS) is a very promising approach to prostate cancer treatment which is based on understanding to biologic behaviour of prostate cancer. Criteria for AS are very well known – staging $\leq T2$, Gleason score $\leq 3+3a$ PSA ≤ 10 ng/ml. Aim of our study was to reveal the risk of presence of aggressive prostate cancer on the strength of available data from bioptic and postprostatectomy staging and grading when indicating active surveillance.

Material and Methods: During January 2003 to June 2009 we gathered clinical data from 560 consecutive patients who underwent radical prostatectomy. We evaluated preoperative PSA, bioptic and postoperative Gleason score and clinical and pathological staging. All the specimens were assessed by experienced pathologist from our Teaching Hospital to minimize interindividual variability of evaluating.

Results: Preoperative conditions for enrolling the patients to active surveillance, i.e. staging $\leq T2$, Gleason score $\leq 3+3a$ PSA ≤ 10 ng/ml fulfilled 83 patients. Comparing the postoperative grading and staging worsening of one or both parameters occurred in total in 59% of patients – upgrading in 42 patients (50.6%), upstaging in 1 patient (1.2%) and both parameters worsened in 6 patients (7.2%). On the other hand 41% of patients according to final pathological report would still fulfill conditions for active surveillance.

Conclusions: At the time of detecting more and more insignificant prostate carcinomas active surveillance belongs to options how to prevent the patients or postpone potential serious adverse events resulting from the treatment with curative intent. Preoperatively in 59% of patients we supposed the patients were in low risk group. When knowing the

histology after radical prostatectomy these patients were put in intermediate or high risk group. Despite these results we apprehend active surveillance as a very promising options for carefully selected group of patients with regard to PSA kinetics, Gleason sum in prostate rebiopsy and clinical course of the disease. Both the patient and the urologist must understand that choosing active surveillance does not necessarily mean avoiding active radical therapy in the future.

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Hormone naive patients with advanced prostate cancer have lower initial BMD than healthy controls

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Introduction and Objectives: Androgen deprivation therapy (ADT) for advanced prostate cancer is considered the standard therapy over the last half of century. ADT is known to decrease bone mass density (BMD) which may lead into skeletal morbidity. Little is known about BMD of hormone naive patients with prostate cancer who are subjects of subsequent ADT. The aim of the study was to measure initial BMD of patients with prostate cancer prior to ADT and to compare their initial BMD to healthy control.

Material and Methods: Femoral neck and lumbar spine (L1–L4) were determined by dual-x-ray absorciometry (DXA) in 97 men (mean age 75.4 yrs) prior to ADT. These measurements were also made on control group of 89 patients (mean age 73.6 yrs).

Results: Patients with prostate cancer had significantly lower initial total BMD ($p=0.022$) than healthy control. This should be taken into consideration before the start of ADT which leads into further loss of BMD

Conclusions: DXA should be advised to all patients before the initiation of ADT and thereafter every 12 months to detect patients at high-risk of skeletal morbidity. This enables early diagnosis of osteoporosis, its treatment and may reduce skeletal morbidity.

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Influence of the operative technique on the incidence of incidental prostatic carcinoma

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Introduction and Objectives: The aim of this study was to compare the incidence of incidental prostatic carcinoma in two hospitals in Croatia according to the procedure of choice, together with incidence and its clinical characteristics.

Material and Methods: The hospital medical records of all patients who have undergone prostatectomy for BPH in two hospitals, namely University Hospital Osijek and General Hospital Varazdin, in the period between January 2002 and December 2006 were reviewed. In 202 cases retropubic prostatectomy was performed and in 842 transurethral resection was done.

Results: The histopathology reports obtained from 1044 patients who presented with BPH were available. Incidental carcinoma was found in 71 specimens (representing 6.80% of all patients). The mean age was 70.6 years (44 to 90). Gleason score ranged between 3 and 6 with a mean value of 4.1. In 43 cases (60.56%) postoperative PSA values were stable and ranged between 0.0 to 0.5 ng/ml. In 28 cases after the postoperative rise in the PSA levels patients underwent bilateral orchiectomy and in 13 of those patients after the further rise in the PSA levels we decided to include flutamid in the therapy. Five of those

patients (7.04%) died because of concomitant diseases. Two patients (2.81%) developed osseous metastases of the prostatic carcinoma.

Conclusions: Considering the operative technique there were 9 cases (4.45%) of incidental prostatic carcinoma following open prostatectomy and 62 cases (7.36%) following TURP ($p=0.05$). The reason for such discrepancies in the results could be that during the open procedures only the adenomatous tissue of transitional zone is removed, while during transurethral procedure there is presence of the tissue that is resected from the peripheral zone which is more prone for development of prostatic carcinoma.

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Prostate brachytherapy with permanent iodine (^{125}I) seed implant (LDR) – intermediate biochemical results and complications

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Introduction and Objectives: To analyze retrospectively the intermediate biochemical results and complications, after 147 cases of localized prostate cancer, treated with prostate brachytherapy using permanent ^{125}I implantation (Low Dose Rate – LDR).

Material and Methods: Between October 2006 and May 2009, 147 patients, age 49–82 years old, were treated with permanent ^{125}I implantation brachytherapy. This technique was applied as monotherapy (145 Gy) for 110 patients, who had favorable prognostic, according with ABS recommendations (stage T1b–T2a, Gleason score ≤ 6 , PSA ≤ 10 ng/ml). For 37 patients with unfavorable prognostic (stage T2b–T2c, Gleason score 7–10, PSA > 10), brachytherapy iodine implantation followed by external beam radiation therapy (EBRT – 45 Gy), at 6 weeks postimplant, was performed, to avoid biochemical relapse. The prostate volume was smaller than 60 g (mean volume 40 g), IPSS < 8 , Qmax > 12 ml/s and TURP was not performed within the past 6 months. In 35 cases we used short-term neoadjuvant hormone therapy (1–3 months). In order to accomplish the implantation planning, we followed the ESTRO/EAU recommendations for the definition of target volumes of risk organs and dosimetric parameters. The mean values were: D90 (indicator of implant quality and of probability of biochemical control) – 189 Gy, V100 – 98%, V150 – 75.9% and V200 – 43.4%. We monitored PSA value every 3 months during the first year and every 6 months thereafter.

Results: The evolution of the PSA levels, as indicated by our intermediate data, was the following: PSA mean value at implantation – 8.6 ng/ml, decreased with 71% at 3 months, 88% at 6 months, 90% at 9 months and 94% at 1 year. The PSA values at 18 months decreased with only 85%, probably due to PSA bounce. We registered 8 young patients, age 49–62 years old, with PSA bounce, starting at 12 months postimplant. We also had two patients with two consecutive elevations of the PSA levels, who are closely monitored (biochemical relapse?). Regarding the complications, immediately postoperative 40 patients had irritative voiding symptoms (urinary morbidity grade I and II according to RTOG scale) and two of them presented transitory complete urinary retention (urinary morbidity grade III). Another 7 patients developed rectal toxicity grade I and 2 cases mild radiation proctitis (rectal toxicity

grade III), at 9 months postimplant. Twelve patients presented brachytherapy-induced erectile dysfunction.

Conclusions: Prostate brachytherapy using permanent ^{125}I seed implantation is a viable alternative to radical prostatectomy or external beam radiation therapy, for the curative treatment of localized prostate cancer. It determined an acceptable grade of urinary morbidity, minimum rectal toxicity and high probability to preserve erectile function.

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The advantages of using the transrectal biplane transducer with 3D reconstruction for prostate explorations

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Introduction and Objectives: We want evaluate the advantages of using the new transrectal transducer with 10 Mhz frequency, 3D reconstruction, biplane simultaneously and with option for end fire puncture in exploration of the prostate.

Material and Methods: Between December 2008 and May 2009, 201 patients diagnosed with BPH (benign prostatic hyperplasia) or with suspicion of prostate cancer (PC) [based of PSA levels and/or abnormal digital rectal examination (DRE)] were investigated using transrectal ultrasound examination, using a biplane transducer with 3D reconstruction, type B&K 8818. At patients with PC suspicion, we performed 6–10 prostate punctures

Results: We examined 113 patients with BPH and 88 patients with suspicion of PC (which was confirmed in 21 cases). The 3D reconstruction (along with the PSA values) allowed the decrease of the number of patients who needed prostate biopsy, (there weren't "suspect images" for PC at these patients). The prostate images have a very good quality, in both plans (sagittal and transversal), the scanning under an angle of 180 with a high frequency, allowing a very good exposure of the peripheral zone.

Conclusions: This type of transducer has many advantages: very clear images, which corroborated with the PSA exam can decrease the number of patients with "inutile" punctures; Doppler mode for all the plans and 3D reconstruction; simultaneous images at prostate explorations (transversal and sagittal plans).

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The role of adipocytokines in prostate cancer

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Introduction and Objectives: Few studies have investigated the role of insulin or insulin resistance in prostate cancer. Several mechanisms could explain the association of obesity and metabolic syndrome with prostate cancer risk, including insulin and IGF signaling, and inflammation pathways

Material and Methods: We selected 153 patients who are divided in 2 groups: group A, 107 patients with metabolic syndrome without prostate cancer (MS-PC), and group B, 46 patients with metabolic syndrome and prostate cancer (MS+PC). IR (insulin resistance) was determined used Homeostasis model assessment (HOMA-IR). The diagnosis for MS was made according to International Diabetes Federation. Body weight, waist circumference, hip circumference, blood pressure were determined. Body mass index (BMI) was calculated. Biochemical analyses including fasting plasma glucose, HbA1c, total cholesterol, triglycerides, high-density lipoprotein (HDL-C), fasting plasma insulin, adiponectin, leptin, TNF alpha, IL-6 and prostate-specific antigen (PSA) were performed. The prostate