

**S27****Peroxidation processes in mitochondria and microsome of human prostate tissues at different pathology**

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**Introduction and Objectives:** Activation of lipid peroxidation and oxidizing damages inducing by reduce of antioxidant system, plays an importance or principal role in pathogenesis. These are condition of various cancers, inflammatory process, arteriosclerosis and other diseases. Therefore, we studied the alternation of lipid peroxidation, catalase activity and amount of H<sub>2</sub>O<sub>2</sub> in mitochondrial and microsomal fractions of human prostate tissues at different pathology.

**Material and Methods:** Human post-operational fiber-muscular prostate tissues with following pathological forms: benign prostatic hyperplasia (BPH), prostate intraepithelial neoplasia (PIN) and prostate atypical adenomatous hyperplasia (AAH) were used as experimental material. The lipid peroxidation was assessed by the malondialdehyde (MDA). Catalase activity and amount of the H<sub>2</sub>O<sub>2</sub> were determined by the colorimetric method according to Aebi.

**Results:** The statistically treatment of experiments has been revealed that the amount of MDA was significantly increased in PIN tissue compared with BPH. From the other side, amount of MDA was significantly increased in subcellular fractions of AAH tissue compared with PIN. This effect is comparative much towards BPH. Catalase activity and amount of H<sub>2</sub>O<sub>2</sub> were assessed in all tested prostate tissues also. The obtained results show that it takes place the respectable reduction of catalase activity as mitochondria as microsome in PIN and prostate AAH tissues as compare with BPH. Herewith level of H<sub>2</sub>O<sub>2</sub> is increased in both – mitochondrial and microsomal fractions with complication of BPH (in PIN and AAH tissues). There is not significant change of the catalase activity and the amount of H<sub>2</sub>O<sub>2</sub> among PIN and prostate AAH tissues.

**Conclusions:** Therefore the lipid peroxidation is increased, the catalase activity is fallen down and the amount of H<sub>2</sub>O<sub>2</sub> is increased in the mitochondria and microsome with complication of prostate disease. It is clear, that intensification of peroxidation processes provokes oxidizing damages, that condition of neoplastic growth of prostate cells.

**S28****The prognostic role of PSA Density in the detection of prostate cancer in men with PSA 4–10 ng/ml and negative both digital rectal examination and transrectal ultrasound**

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**Introduction and Objectives:** Detection of prostate cancer in men with PSA 4–10ng/ml and negative Digital Rectal Examination (DRE) and Transrectal Ultrasound (TRUS) is a real challenge. This study aims to examine the prognostic role of PSA Density (PSAD) in this group of men, setting different cut-off values and estimating sensitivity and specificity in each case.

**Material and Methods:** Retrospective study. From 1/2008 to 3/2009, 173 men aged 53–82 years old with PSA 4–10ng/ml and negative both DRE and TRUS, were subject to TRUS guided needle biopsy. PSAD was measured and its sensitivity and specificity were estimated for five cut-off values, from 0.15 ng/ml/cm<sup>3</sup> to 0.2 ng/ml/cm<sup>3</sup>. The procedure was

accomplished by the same urologist and biopsy specimens were examined from the same pathologist. Biopsies obtained with 18-gauge biopsy needles.

**Results:** From 173 men, 65 were diagnosed with prostate cancer. In the rest 108, no malignancy was found after three biopsies with one month intervals approximately. Mean PSAD in men with prostate cancer was 0.199 while in men with BPH was 0.158. Sensitivity and specificity of PSAD in the detection of prostate cancer were 80% and 44.4% for a cut-off point of 0.15, 80% and 53.7 for 0.16, 76.9% and 60.18% for 0.17, 61.53% and 69.4% for 0.18, 52.3% and 73.14% for 0.19 and finally 44.6% and 76.8% for a cut-off point of 0.2. Positive prognostic value was estimated for each cut-off point.

**Conclusions:** PSAD alone is not an adequate tool in detecting prostate cancer in men with PSA 4–10 ng/ml and negative DRE and TRUS. Efforts should be undertaken in establishing a more sensitive and specific markers or combining the already existing markers.

**S29****Transrectal ultrasound-guided prostate biopsy, periprostatic local anesthesia and pain tolerance**

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**Introduction and Objectives:** We have evaluated objectively pain tolerance in transrectal ultrasound-guided prostate biopsy (TRUS) using local periprostatic anesthesia applied intrarectally, compared to the conventional method.

**Material and Methods:** From November 2008 to May 2009, 90 patients underwent transrectal ultrasound-guided prostate biopsy at Department of Urology, Clinical Center University Sarajevo. 90 patients who fulfilled the inclusion criteria were randomized into 3 groups of 30 patients each. Group 1 received periprostatic local anesthesia with 2% lidocaine, group 2 received Voltaren supp placed in rectum an hour before biopsy while group 3 received no local anesthesia. Pain scales responses were analyzed for each aspect of the biopsy procedure with a visual analog scale of 0–none to 10–maximal.

**Results:** There was no difference between the 3 groups in pain scores during digital rectal examination, intrarectal injection and probe insertion. The mean pain scores during needle insertion in group 1 receiving periprostatic nerve block and in group 2 receiving Voltaren supp. were 3.10±2.32 and 5.15±2.01. In group 3 (no local anesthesia) were 6.06±2.95, respectively, and were found to be significantly different (p<0.001), but morbidity after the biopsy was not statistically different between all 3 groups.

**Conclusions:** TRUS-guided prostate biopsy is a traumatic and painful experience, but the periprostatic blockage use is clearly associated with more tolerance and patient comfort during the exam. It is an easy, safe, acceptable and reproducible technique and should be considered for all patients undergoing TRUS biopsy regardless of age or number of biopsies.

**S30****Initial 24-core biopsy improves the detection of clinically significant prostate cancer and high grade prostatic intraepithelial neoplasia in men with PSA less than 10 ng/ml**

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**Introduction and Objectives:** There is still much debate regarding the optimal number of cores taken at the initial prostate biopsy. The aim of the study is to evaluate the incidence