frequently among men subjected to prostate biopsy in whom LUTS are moderate or severe. Moreover, there is a trend to diagnose locally advanced cancer more frequently in men with severe LUTS.

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Comparison of two simple algorithms avoiding unnecessary prostate biopsy in PSA based prostate cancer detection program

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Introduction and Objectives: Lithuanian early prostate cancer detection program is targeting 50–75 years old asymptomatic men and is based on PSA cut-off value of 3 ng/ml. PSA is the main trigger for prostate biopsy (Bx). Bx is an invasive procedure and is associates with more frequent complication in elderly men. Up to 64% of patients with elevated PSA have no prostate cancer (PCa) on biopsy. Our study is looking for simple algorithm to avoid unnecessary Bx in PSA based early PCa detection program.

Material and Methods: Case histories of asymptomatic men referred to urologist in a single academic hospital due to elevated PSA in 2008 were reviewed. Data collected: patient age, PSA value, prostate volume on transabdominal ultrasound (PV), results of digital rectal examination (DRE), results of Bx. Hard or/and ruff surface of prostate on DRE were considered as suspicious for PCa. Two algorithms to avoid unnecessary Bx were checked. First: set of cut-off values suggesting avoiding Bx if all criteria are met: age ≥65 years, PSA ≤ 7 ng/ml, PV ≥ 50 ml, unsuspicious DRE. Second: age-adjusted PSA values (50–59, 60–69, 70–79 years respectively PSA <3.5, <4.5, <6.5 ng/ml) and DRE.

Results: 181 patients underwent Bx due to PSA > 3 ng/ml. 76 men had PCa on biopsy (41%). Median age 65 years, median PV 45 ml and these parameters were not significantly different in men with or without PCa. In PCa group average PV was lower (45.7 ml vs 49.7 ml) and average PSA level higher (15.2 ng/ml vs 5.7 ng/ml). Applying first algorithm to our data base 20 Bx could be avoided (11%), 2 diagnosis of PCa would be missed (2.6%). Of these 2 cases 1 is on active surveillance. Applying age-adjusted PSA and DRE 37 Bx could be avoided (20%), 5 diagnosis of PCa would be missed (6.6%). Of these 5 cases 2 are on active surveillance.

Conclusions: According to our data in PSA based PCa detection program a set of cut-off values age ≥65 years, PSA ≤7 ng/ml, PV ≥50 ml, unsuspicious DRE could be useful and more accurate than age-adjusted PSA and DRE. Set of cut-off values may prevent considerable number of biopsies while missing few PCa. This algorithm allows avoiding Bx specifically in elderly men with moderate PSA and relatively large prostates. We acknowledge bias of small sample size in a single institution and operator-dependant results of transabdominal ultrasound and DRE. This algorithm could be easily checked or improved on data available from large scale PCa screening trials.

N25

Are sextant biopsies still justified?

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Introduction and Objectives: The aim of this study was to evaluate the usefulness of sextant biopsy for prostate cancer detection at first biopsy.

Material and Methods: All patients who had undergone sextant prostate biopsy at single institution since May 2007 to Apr 2008 were included into the study. The prostate specific antigen (PSA), total prostate volume (TPV), age and pathological report were analyzed. All patients were divided into several groups according to TPV (<30 vs. 30–40 vs. 40–50 vs. 50–60 vs. 60–70 vs. >70 mL), PSA (≤4 vs. 4–7 vs. 7–10 vs. 10–15 vs. 15–20 vs. >20 ng/mL) and age (<50 vs. 50–60 vs. 60–70 vs. >70 years). Logistic regression, Shi square test and descriptive statistic were used for the analysis of prospectively collected data using SPSS 13.0 statistical analysis software for Windows.

Results: For 855 of 899 study patients sextant biopsy was performed. Median patient age was 67 (range 32–87) years, median PSA was 6.63 (range 0.43–590) ng/mL, median TPV was 42.3 (range 14.30–240) mL. Prostate cancer was detected in 311 cases and overall detection rate was 36.37%. Logistic regression analysis shows that TPV (Exp(B) 0.624 95.0% CI 0.563–0.691) and PSA (Exp(B) 1.572; 95.0% CI 1.4–1.76) are the most powerful parameters for prediction of PCa (p = 0.0001) at sextant biopsy. Using the formula of logistic regression, the table of probabilities for detection of the PCa at different values of TPV and PSA was composed (Table 1).

PSA/TPV	<30	30–40	40–50	50–60	60–70	>70
≤4.0	37.2	27.0	18.7	12.6	8.2	5.3
4.0–7.0	48.2	36.7	26.6	18.4	12.3	8.1
7.0–10.0	59.4	47.7	36.2	26.2	18.1	12.1
10.0–15.0	69.7	58.9	47.2	35.8	25.8	17.8
15.0–20.0	78.3	69.2	58.4	46.7	35.3	25.4
>20.0	85.0	78.0	68.8	57.9	46.2	34.9

Prostate cancer detection probability using six cores biopsy varies from 26.0 to 85.0% in small and middle volume prostates (up to 50 mL). Logistic regression analysis was performed in different age groups of patients. Only for the youngest patients (up to 50 years) no significant parameter for PCa detection at first sextant biopsy was found. In other age groups PSA and TPV strongly influence such detection.

Conclusions: Our study data shows that sextant biopsy can not be recommended if prostate volume is more than 60mL and PSA concentration less than 10 ng/mL. In such cases prostate cancer detection rate has not reached acceptable level. The sextant biopsy is still justified independently of PSA level or age in prostates up to 50 mL.

N26

Repeat prostate biopsies – when and for whom?

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Introduction and Objectives: The aim of this study was to identify parameters for better prediction of prostate cancer at repeat biopsies and estimate the optimal time for such sets of biopsies.

Material and Methods: All patients who had undergone prostate biopsies at single institution since May 2007 to Apr 2008 were involved into study. If previous biopsies for these patients were performed, the pathologist's data base was used. Age, prostate specific antigen (PSA), high grade prostate intraepithelial neoplasia (HG PIN), low grade prostate intraepithelial neoplasia (LG PIN), time between biopsy sets and prostate volume were chosen for evaluation of influence of these parameters on prostate cancer detection rate at repeat biopsies. Descriptive statist, Chi-square test and logistic regression were used for analysis of our data using SPSS 13.0 statistical analysis software for Windows.

Results: 899 were involved into this study. Overall prostate cancer (PCa) detection rate was 49.27% (443 cases of 899). The PCa detection rate at 1st biopsy was 36.15% (325 of 899), at 2nd – 26.7% (81 of 303), 3rd – 21.7% (25 of 115), 4th – 24.4% (10 of 41),