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**Selection of candidates for focal therapy of prostate cancer in unscreened population**

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**Introduction & Objectives:** Epidemiology of prostate cancer (PCa) and clinical stage distribution in Russia differ from that in many Western countries: e.g. PCa incidence has increased +120.5% during the last 10 years, although >50% of new PCa cases are still T3 and T4 at diagnosis. The aim of our study was to evaluate the process of patients' selection for focal therapy of prostate cancer in generally unscreened population.

**Materials & Methods:** From January 2012 through December 2012 56 patients were considered possible candidates for focal therapy of PCa. All men had cT1cN0M0 adenocarcinoma of the prostate with Gleason 6=3+3 in 1 or 2 cores (from at least 10 cores biopsy) in one lobe, total PSA  $\geq 2.5$  and  $\leq 10$  ng/ml and life expectancy >10 years. All the occasionally performed bone scans in 18 out of 56 patients (32.1%) were negative, and all the performed MRI or CT scans (n=21/56, 37.5%) showed no signs of extracapsular tumor extension or lymphadenopathy. The diagnosis was established at the Department of Urology of MSMSU (n=34, 60.7%) or patients were referred to our clinic (n=22, 39.3%). After IRB approval 45 patients have given the consent to proceed with further investigations for final decision-making.

**Results:** Mean patient's age was 60.6 (52-68) years, PSA 5.2 (2.6-9.8) ng/ml and prostate volume 46.5 (22-84) cc. All men underwent transperineal saturation biopsy under spinal anesthesia with the average number of 44 (24-80) cores taken – approximately 1 core per 1 cc of prostate volume. The cores were divided in 4 zones (quadrants): right and left lobes anterior and posterior parts of the prostate. No serious intra- or post-biopsy complications were observed. The PCa was found in 42/45 (93.3%) cases (with unilobar disease - in 9/42 (21.4%) and bilobar - in 33/42 (78.6%) patients). The Gleason scores of 6 (3+3), 7 (3+4), 7 (4+3) and 8 (4+4) were detected in 26 (61.9%), 9 (21.4%), 5 (11.9%) and 2 (4.8%) men respectively. The average number of positive cores in 42 men with PCa was 8.2 (1-32), the number of quadrants with cancer – 2.6 (1-4).

In total, 7/45 (15.6%) patients remained candidates for focal therapy after template biopsy. Finally, 3 men with no cancer detected were offered active surveillance. From 7 possible candidates to focal treatment 2 have chosen active surveillance, 1 – robot-assisted radical prostatectomy and 4 proceeded with focal cryoablation of the prostate.

**Conclusion:** The patient's selection for focal treatment of prostate cancer in unscreened population is difficult: few patients with PCa (15.6%) have been considered candidates for focal therapy after transperineal template biopsy. Keeping in mind that the prostate cancer screening is not prevalent in Russia and many tumors are locally advanced and metastatic at first diagnosis, the results of landmark studies (ERSPC, PLCO, PIVOT etc.) may be not easily extrapolated to Russian population.