

## **Comparative evaluation of acute retention of urine in groups of patients with prostate cancer treated with high power and low power brachytherapy**

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**Introduction:** In Russia prostate cancer takes the 4<sup>th</sup> place in spreading after pulmonary cancer, gastric cancer and skin cancer; its percentage is 5, but its level of growing takes the second place.

**Materials and Methods:** The doctors of the Russian scientific center of radiology and nuclear medicine of Rosmedtechnologia have fulfilled microsources implantation I-125 to patients with localized and locally spread cancer of prostate since 2004. Besides we have fulfilled brachytherapy with high power source dose (Ir-192) since 2008. During this period we made 881 operations: 540 of them were I-125 in the monoregime till Total Focal Dose 140 Gr., 191 operations were I-125 in the combined regime till TFD 110 Gr and 140 operations were Ir-192 in the combined regime till Single Focal Dose 10 Gr with following teletherapy for the whole pelvis till TFD 44-46 Gr and 15 patients had the treatment in the monoregime with brachytherapy Ir-192 usage with the help of several fractions.

**Conclusions:** Brachytherapy is a modern, high technological, effective and smooth method of radiation treatment of localized and local prostate cancer. Preliminary comparative estimation of urologic complications as appearance of urine retention in the postoperative period demonstrated advantages of high power brachytherapy in combination with teletherapy compared to low power brachytherapy in patients of the moderate and high progressive risk.

**Results:** We estimated the treatment results and the recurrent prostate cancer was found in 8% of patients in the group which had brachytherapy in the monoregime, in 11% of patients which had brachytherapy in combination with teletherapy and in 5% of cases the recurrent prostate cancer was in patients which had high power brachytherapy in combination with teletherapy. It's necessary to take into account the fact that 2 last groups of patients are the patients with the intermediate and bad prognosis of the main disease (T1-3N0M0, PSA more than 10 ngr/ml, Gleason index 7-10).

The most meaningful complication after the radiation treatment is the symptom of acute retention of urine (ARU). The rate of ARU in patients after brachytherapy in the monoregime is 4,5%, after brachytherapy combined with radiation therapy I-125 it is 6,2% and the percentage of the complication is 1,6 in the patients treated with high power brachytherapy.