Contribution ID: **9** Type: **Proffered Papers**

Modern possibilities of nuclear medicine in the treatment of patients with recurrence prostate cancer after radical prostatectomy

Tuesday 16 February 2021 11:07 (7 minutes)

Purpose or Objective
The aim of our study is to analyze the long-term results of salvage radiation therapy (SRT) for patients with recurrence of prostate cancer (PCa) after radical prostatectomy (RP) using modern diagnostic capabilities of nuclear medicine.
Material and Methods
Biochemical recurrence after radical prostatectomy –subsequent detectable PSA level after radical prostatectomy that increases on 2 or more subsequent laboratory determination. Clinical recurrence –is a type of biochemical recurrence in which a substrate of a locoregional recurrence tumor is detected by modern high-tech diagnostic capabilities, including multiparametric MRI (mp-MRI) and positron emission tomography/computed tomography (PET/CT) with 68Ga-PSMA. Using this diagnostic approach, among all this group of patients, locoregional recurrence tumor was visualized in 261 (63.5%) patients: 53% - in prostate bed, 10.5% - in regional pelvic lymph nodes.
In 2009 we developed and implemented in clinical practice variant of SRT in classical fractionation, which consists in irradiating the regional pelvic lymph nodes to 44 Gy, the fossa of prostate gland to 66 Gy and the area of recurrence to 72 Gy. In 2013 we created and patented the technique of hypofractionation SRT. Radiotherapy have been prescribed to the pelvic lymphatic nodes to 46.8 Gy of 1.8 Gy per fraction, to the prostate bed - 61.1 Gy of 2.35 Gy per fraction and clinical recurrence - 65 Gy of 2.5 Gy each, in 26 fractions using simultaneous integrated boost. Some patients receive combination SRT and hormonal therapy (HT) (6-8 months (agonists LHRH).
Results
411 patients were treated from March 2009 to December 2018. Median of follow up –48 (18-131) months. 42 (10.2%) of 411 patients were treated by classic fractionation SRT, 369 (89.8%) - by hypofractionation SRT. Survival rates were 3-year and 5-year disease free survival (DFS) - 81.3% and 77.6%, respectively. Locoregional control - 100%. The results of our study indicate two main negative factors in the prognosis of the efficacy of SRT –the period of prostate specific antigen (PSA) doubling time less than 6 months ($p = 0.035$) after RP and a higher PSA level, especially more than 0.5 ng/ml before SRT ($p = 0.037$). In our study, 247 (60.1%) of 411 patients were treated by combination SRT and HT. It was found that 5-year DFS among patients who received a combination of SRT and HT, is higher rates - 81%, compared with patients who were treated by monotherapy SRT - 73.5% ($p = 0.5$). However, retrospectively analyzing, we noted that patients who were treated by combination SRT and HT had more unfavorable prognosis factors: pT3a-b, pN1, Pn1, PSA level > 1 ng/ml at time the beginning of treatment, the period of PSA doubling time less than 6 months, the presence of regional relapses after RP, the size of the recurrent tumor more than 10 mm. We also have found that pN1 is a reliable adverse prognosis factor effectiveness of SRT. So, a 5-year DFS is significantly ($p=0.012$) lower in patients with pN1 than with pN0, it is 52% and 83%, respectively.
Conclusion
Excellent survival rates and locoregional controls of disease is the result of combination nuclear medicine advanced diagnostic approaches and high-precision radiation therapy in the treatment of patients with prostate cancer recurrence after radical prostatectomy

Country or Int. Organization

Russian Federation

Affiliation

Federal State Budgetary Institution «N.N. Blokhin National Medical Research Center of Oncology» of the Ministry of Health of the Russian Federation

Authors: BULYCHKIN, Petr; TKACHEV, Sergey; MATVEEV, Vsevolod; DOLGUSHIN, Boris

Presenter: BULYCHKIN, Petr

Session Classification: Paper Session 1:Clinical Research