

HDR Brachytherapy of prostate cancer – 2 years of treatment in Greater Poland Cancer Center

Kanikowski Marek

Greater Poland Cancer Center, Poznań, Poland

Purpose: External beam radiotherapy (EBRT) in prostate cancer treatment seems to be nowadays as effective as surgery procedure. Low dose rate brachytherapy (LDR-BT) can be applied as a single modality treatment in patients from low risk group with localized tumors. High dose rate brachytherapy (HDR-BT) is very useful in increasing prostate dose after EBRT (boost) which shortens whole radiation treatment. There is no clear recommendations about doses and schemes of combined radiation treatment (EBRT-BT). The aim of this work was to analyze the results and complications of three schemes in treatment of patients with initially localized prostate cancer and at least 2 years observation time.

Material and methods: Sixty-three patients were enrolled to the study and divided to groups according to radiation schemes (I – EBRT 50/BRT 15, II – EBRT 46 Gy/BRT 2 × 10 Gy, III – BRT 3 × 15 Gy) Group I, II,

III consisted of 46 (73.02%), 14 (22.22%), 3 (4.76%) patients respectively. HDR-BT was performed with a remote afterloading microSelectron unit (192Ir source) after planning procedure (SWIFT and Oncentra System). Mean age of men undergoing observation was 80.3 years (ranged from 59 to 80). The low, intermediate and high risk groups consisted of 22 (35%), 18 (28%) and 22 (35%) men, respectively. The mean level of initial PSA (iPSA) was settled on 23.13 ng/ml ranged from 0.12 till 132 ng/ml. Maximum androgen blockade had 29 of them (46.03%) and 20 patients (31.75%) received LHRH analogs or antiandrogen treatment only. In 7 of men (11.11%) has been treated by brachytherapy after transrectal resection procedure (TURP). Number of needles used during HDR-BT treatment in all patients was 14.036 in mean value (ranged 7-18). Tolerance of the treatment and acute complications in two groups were discussed.

Results: Median observation time was 24 months. None of patients enrolled to our study died during this time. Complete remission was observed in 44 patients (69, 84.3%) from whole group. Mean nadir value observed during follow up time was 0.094 ng/ml (range 0.00-0.69). Locoregional progression was noted in 2 patients (3.17%), 4 patients (6.35%) from our group developed distant metastases. Urologic and gastrointestinal side effects were noted in most of patients from both groups. Dysuria - 40%, incontinance - 7.94%, frequency - 50%, acute urinary retention - 4.76%, rectal bleeding - 15.87%, diarrhea - 7.94%.

Conclusions:

1. HDR brachytherapy of prostate cancer can be used as a boost after or before external beam radiation therapy or as a sole modality treatment in different schemes.
2. HDR brachytherapy is a safe method of large dose delivering to prostate gland with sparing health tissue and good local control rate
3. To confirm superiority of each kind of modality treatment a comparative investigation in larger groups is needed.