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Case Report

A Local, Ablative and Aggressive Treatment Option in Patients with Oligometastatic Prostate Cancer with Isolated Bone Metastasis: Stereotactic Body Radiotherapy

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Abstract

Although, there is consensus on local, locally advanced and metastatic prostate cancer therapy, there is no consensus on oligometastatic (≤ 3 metastasis) prostate cancer treatment. Active follow-up is an effective treatment option in asymptomatic cases. It has been reported in various retrospective studies that regional treatment may be effective even though there is a systemic spread in the presence of isolated bone metastasis. It has been shown that biochemical and clinical relapse free survival is better with local treatment in patients with oligometastatic prostate cancer. The treatment decision for patients with asymptomatic, oligometastatic prostate cancer with isolated bone metastasis should be taken patient-based. In this report, we aimed to present a case supporting the recent data about the use of aggressive local treatment in patients with oligometastatic prostate cancer.

Keywords: Prostate cancer; Oligometastasis; Stereotactic body radiotherapy

Introduction

Although there is consensus on the treatment of local, locally advanced and metastatic prostate cancer, there is no consensus on the treatment of oligometastatic (≤ 3 metastasis) prostate cancer [1]. In asymptomatic cases, active follow-up may be an effective treatment option [2]. In various retrospective studies it has been reported that although there is a systemic spread in patients with isolated bone metastases, regional therapies may be effective [3]. It has been shown that biochemical and clinical relapse-free survival is better with local treatments, especially in patients with prostate cancer who have lymph node and bone oligometastasis [4]. Treatment success of these patients is directly related to the imaging method used. The Ga-68 Prostate Specific Membrane Antigen (PSMA) PET/CT scan has high specificity and sensitivity in detecting metastases, even at low blood levels of 0.2 ng/ml of PSA [5]. However, there is no prospective data on Ga-68 PSMA PET/CT for staging and treatment selection in oligometastatic disease [6]. The treatment decision for patients with asymptomatic, oligometastatic prostate cancer with isolated bone metastasis should be taken patient-based. In this report, we aimed to present a case supporting the recent data about the use of aggressive local therapies in patients with oligometastatic prostate cancer.

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Case Presentation

A 61-year-old male patient who was admitted to hospital with urological complaints had a PSA result of 8.31 ng/ml. A prostate biopsy was performed. The pathology result was reported as prostatic adenocarcinoma. Gleason score was 3+3=6, and tumor percentage was 10%. Then, radical prostatectomy + pelvic lymph node dissection was performed and the pathology result revealed 0.7 cm diameter prostatic adenocarcinoma with GS 3+3=6 in the right posterior quadrant. Lymphovascular and perineural invasion, extraprostatic extension and vesicular seminalis invasion was not observed. There was no involvement in dissected 33 pelvic lymph nodes. At the end of the 1st month post operatively PSA level was 0.018. In this period, Ga-68 PSMA PET/CT was performed for right hip pain and it showed increased activity on left 4th rib (1.5 cm) and right iliac bone corpus (3 cm) (Figure 1). Because the patient did not accept the biopsy from these lesions, local ablative Stereotactic Body Radiotherapy (SBRT) was planned to perform radiosurgery. SBRT treatment was applied to both lesions as double half-arc with Varian Trilogy device. SBRT dose was 37.5 Gy in 5 fractions. Radiation induced acute or chronic toxicity was not observed. Ga-68 PSMA PET/CT did not show any increased involvement at the end of the 3 months after the treatment (Figure 1). The patient is still followed up in the third year without disease and any biochemical relapse.

Discussion and Conclusion

Patients with oligometastatic prostate cancer form the subgroup with longer overall survival times. Androgen deprivation therapy and related side effects can be effectively prevented by the use of local

ablative therapies in these patients. In studies, 100% local control with SBRT and 12 months biochemical recurrence-free survival has been reported. If the decrease in PSA level is more than 10-fold, this period increases to 24 months while it falls to 6 months if the decrease in PSA level does not reach half-levels [7]. However, it should be kept in mind that these data are derived from studies involving very few patients. In addition to local control, both biochemical and clinical control are very important for survival in patients with oligometastatic prostate cancer. In the prospective single-arm Swedish-Spanish study, the benefits of adding androgen deprivation therapy to local ablative therapy were investigated, but the ideal duration of use was not standardized. Jones et al. [8] reported a 10-year overall survival benefit of 4% with the addition of androgen deprivation therapy to the SBRT (4 months). Widmark et al. [9] reported that co-administration of SBRT with androgen deprivation therapy provided better overall survival than androgen deprivation therapy alone.

In conclusion, SBRT treatment is an effective treatment option in patients with isolated bone metastasis who are diagnosed with oligometastatic prostate cancer. In these patients the decision of treatment should be given on a patient-based basis, taking into account the quality of life, expectation of patients and their relatives, treatment efficacy, possible side effects and similar factors.

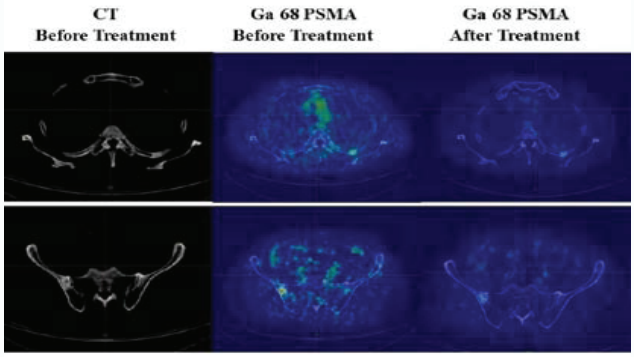

Figure 1: PET-CT images before and after treatment.

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