Results of proton therapy for castration resistant prostate cancer

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Background & Purpose

- Castration-resistant prostate cancer (CRPC) is a progression of disease despite medical or surgical castration. 1, 2
- Among CRPC patients, some will develop only PSA relapse without metastasis. Radiotherapy may be considered a treatment option with curative intent for clinically localized CRPC. 3-4
- Presently no study shows the results of proton therapy (PT) for patients with localized CRPC. This is the first retrospective study to assess the outcomes of patients with localized CRPC that were treated with PT at a single institution.

Patient characteristics

- Disease control
  - PSA relapse
  - Time to PSA relapse
  - Clinical recurrence
  - Local control
  - Time to clinical recurrence

Survival

- Follow up
- Cause of death

Late toxicities

- Grade

Prognostic factor analyses

Discussion

- Can proton therapy be a treatment option for localized CRPC?
  - In this study, the results of PT for localized CRPC were favorable. Local controls were obtained in more than 90% of patients.
  - CRPC is considered radioresistant, and some studies using X-ray therapy reported improvements in local control using high dose radiation. 3-7
  - PT of 74.0 GyE was a safe treatment as the results of this study showed excellent results and low rates of late toxicities. PT could be a treatment option for localized CRPC.

- Should we reconsider ADT monotherapy for hormone sensitive prostate cancer?
  - Current guidelines do not recommend ADT monotherapy for localized prostate cancer. However, 14% patients in USA and 28-31% patients in Japan with localized hormone sensitive prostate cancer received ADT monotherapy. 6-10
  - CRPC tends to be resistant not only to ADT but also to radiotherapy compared to hormone-sensitive prostate cancer. 11
  - The treatment policy using ADT monotherapy for prostate patients with localized hormone sensitive prostate cancer should be reconsidered.

Materials & Methods

- Patient enrollment
  - 43 patients
  - April 2003 to May 2014
- Inclusion criteria
  - Castration-resistant prostate cancer
  - No lymph node or distant metastasis
  - Duration of follow-up ≥ 24 months for survivors
- Proton therapy
  - CTV= Prostate + SV
  - Initial PT dose (GyE)
- Cause specific survival (CSS)
- Overall survival (OS)
- Local control (LC)
- Rates of Late GI and GU toxicities

Results

- Disease control
  - Follow up
  - Cause of death

References

2. Chandrasekar VP, Translational andrology and urology. 4:365-380.