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Abstract

Stereotactic Body Radiotherapy (SBRT) for Metastasic Abdomino-Pelvic LYMPH Nodes

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Abstract

Objective(s): Stereotactic body radiation therapy (SBRT) is a therapeutic option in patients with oligometastatic lymph node disease. The aim of our study is to assess the technique and results in terms of local control, survival and toxicity of SBRT for abdominopelvic lymph node oligometastases (OMD, Oligo Metastasic Disease) from miscellaneous primary tumors.

Methods: Retrospective review of consecutive patients treated with SBRT at our institution between January 2008 and December 2018 with diagnosis of oligometastatic abdomino-pelvic lymph node metastases. OMD state was defined as 5 o less treatable disease sites. SBRT was indicated if the primary tumor was controlled and patients were not salvage surgery candidates. At the time of SBRT, all cases had Karnofsky Performance Status > 80%. Prior treatments included: surgery (30%), conventionally fractionated radiotherapy to same area lymph nodes (12%), chemotherapy (32%), hormonal treatment (42%) and other systemic treatments (2%) SBRT involved: Computed tomography (CT) slow-scan simulation with immobilization devices, contouring the target volume in 3 sets of CT, fusion of the volumes in the planning system to represent the internal target volume (ITV), dose calculation using heterogeneity correction and assuring very conformal dose distribution and a steep fall-off of the radiation dose outside treatment volume and radiation delivery with multiple static non-coplanar beams and arc therapy. Daily CT images were used to ensure reproducible positioning SBRT treatment was delivered with multiple static non-coplanar beams or arc therapy. Prescribed dose was either 36-45 Gy in 3 fractions, in less than 10 days. Dose constraints were set for adjacent organs at risk. Toxicity and radiologic response were assessed in follow-up using RTOG-EORTC scores and radiologist reviewed reports (RECIST criteria). Survival rates and toxicities were estimated using Kaplan-Meier method. Local control and survival rates were calculated and compared between subsets of patients. We investigated factors associated with outcomes.

Results: There were 56 patients (14 women, 32 men) treated with SBRT for 62 metachronous abdomino-pelvic lymph node M1 from various origins: prostate (47%), urotelial (29%), colon (13%), gynecologic (8%) pancreas (1%), others (2%). Median age was 63 years (48-79). Median tumor volume was 4.9 cm^3 (3-16.2). Median follow-up was 17 months (3-62). Overall survival is 92% and 80% at 1 and 2 years. Local control is 85% at 18 months. OS was most influenced by: local control, histology, pretreatment performance status, number of M1 and chemotherapy. Tumor volume and non prostatic primary origin predicted impaired local control. Acute toxicities grade 1 or 2 occurred in 10 % and included mainly mild digestive symptoms. No

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chronic toxicities have been recorded.

Conclusion(s): For lymph node metastases of different histology, the results of this retrospective analysis on the use of SBRT suggest safety and efficacy of SBRT: generating high local control with low toxicities. Since local control might be related with improved overall survival and local treatments could delay the need of systemic treatments, more investigation is needed to identify the patients who would benefit most from ablative local therapy such as SBRT.