

Hypofractionated Stereotactic Body Radiotherapy for the Definitive Treatment of Sarcoma

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Abstract

Objectives: The aim of this study is to evaluate efficacy and toxicity of definitive hypofractionated SBRT in patients with sarcoma.

Methods: A total of 37 patients with sarcoma were treated between September 2007 and June 2015 were retrospectively evaluated. Among them, most common site of tumor location was head and neck (n=18) and the most common histopathological diagnoses were osteosarcoma (n=10) and leiomyosarcoma (n=7). SBRT were definitive primary treatment in 22 (59.5 %) patients and re-irradiation in 15 patients (37.3%). The median age was 40 years (range, 11-68 years). There were 22 (57 %) male and 15 (43%) female patients. All patients patients were treated with Cyberknife®. The median total dose was 32.5 Gy (range, 20-50 Gy) delivered with median 5 fractions (1-5 fractions).

Results: At 32 months (range, 2-92 months) of median follow-up, 2 and 5 year overall survival (OS) rates were 62.1 % and 39.7 % respectively. Two and 5 year progression-free survival rates was 56 % and 29.5 % respectively. Two and 5-year local progression-free survival rates were 56 % and 30.8 %. The univariate and multivariate analyses for overall survival showed patient age (p:0.017) performance status (p:0.001), sex (p:0.02) and tumor size (p:0.04) were important prognostic factors. The univariate analysis for local progression-free survival showed patient performance status (p:0.014), sex (p:0.004) and tumor size (p:0.002), were important prognostic factors. In multivariate analyses, patient's age, sex, tumor size, radiation dose and re-irradiation were important prognostic factors. Grade 3-4 acute and late toxicity were recorded in only one patient as trismus.

Conclusions: Hypofractionated SBRT is well tolerated and resulted in relatively good local control and survival in patients with sarcomas. SBRT also looks safe and effective treatment for re-irradiation of recurrent sarcoma.

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Abstract
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