

High-dose radiotherapy with intensity-modulated radiation therapy for advanced hepatocellular carcinoma

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ABSTRACT

Aims and background. We report the results of intensity-modulated radiotherapy for patients with advanced hepatocellular carcinoma who were not candidate for local ablative therapies, transarterial chemoembolization or hepatic arterial infusion chemotherapy.

Methods and study design. Between 2003 and 2008, 27 patients were treated with high-dose radiotherapy (median dose, 50.4 Gy). The equivalent sphere size of tumors was 11.4 ± 2.6 cm. Nineteen and 8 patients were Child-Pugh class A and B, respectively. Eighteen patients had thromboses in large veins. Six patients were treated with radiotherapy as the initial treatment modality, and 21 patients received other treatments before radiotherapy.

Results. The overall response rate was 44.4% (1 pathologic complete response and 11 partial responses). The primary failure pattern was intrahepatic disease progression. Until the last follow-up, the primary liver masses and vein thromboses did not progress in 63.6% and 60.0% of the patients, respectively. The median progression-free survival and overall survival after radiotherapy rate were 3 and 5 months, respectively. Based on univariate analyses, response, Child-Pugh classification, and vein thrombosis were significant factors for overall survival, and tumor response, tumor size, vein thrombosis, and multiplicity were significant factors for progression-free survival. Tumor response was the only significant prognostic factor for overall survival and progression-free survival based on multivariate analyses.

Conclusions. Radiotherapy with intensity-modulated radiotherapy achieved a good response rate in patients with advanced hepatocellular carcinoma, and patients who had a good response lived longer than patients who did not have a good response.

Key words: hepatocellular carcinoma, intensity-modulated radiotherapy, radiotherapy.

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