

Three-fraction stereotactic body radiation therapy for isolated liver recurrence from colorectal cancer

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ABSTRACT

Aims. To determine the feasibility and efficacy of 3-fraction stereotactic body radiation therapy for isolated colorectal cancer liver metastases.

Materials and methods. Ten patients with isolated inoperable liver metastasis from colorectal cancer with progression after salvage chemotherapy underwent stereotactic body radiation therapy. Follow-up was 7-49 months (median, 12). Six patients had a solitary lesion and 4 patients had 2 lesions. Internal target volumes of metastatic liver tumors ranged from 3.4 to 271 ml. Stereotactic body radiation therapy doses ranged from 36 to 51 Gy and were administered in three fractions. All patients demonstrated disease progression despite chemotherapy prior to stereotactic body radiation therapy.

Results. Three-year overall survival and local control rates were 40% and 60%, respectively. Tumors with an internal target volume <100 ml showed better local control rate than larger tumors. No severe complication was attributed to the therapy.

Conclusion. Our study suggests the potential feasibility of stereotactic body radiation therapy for selected patients with colorectal cancer liver metastasis and no treatment option. The study showed that excellent local control was achieved in patients with a total tumor volume of <100 ml but failed to clarify the role of stereotactic body radiation therapy for larger tumors. Further large scale studies are needed to define the indications of such therapy.

Key words: colorectal cancer, CyberKnife, liver metastasis, stereotactic body radiation therapy.

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