



Title	Stereotactic Radiosurgery for Metastases to the Brain: A Systematic Review of Effectiveness
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Aim

To evaluate the effectiveness of stereotactic radiosurgery in treating metastases to the brain.

Conclusions and results

The available data from case series suggest that stereotactic radiosurgery is a relatively safe and effective technology for definitive treatment of brain metastases in selected patients. Stereotactic radiosurgery provides greater survival benefits than traditional whole-brain radiotherapy. Stereotactic radiosurgery may be comparable to surgery plus radiation therapy in treating patients with smaller solitary metastases. Stereotactic radiosurgery can be used to treat patients whose metastases recur after traditional therapies have been tried. The patients that benefit most from stereotactic radiosurgery are highly functional patients with well-controlled systemic cancers.

Recommendations

Current evidence is insufficient to draw any definite conclusions about the effectiveness of stereotactic radiosurgery compared to standard treatment for brain metastases. No conclusions regarding optimal equipment selection, treatment parameters, or patient selection criteria can be made at this time.

Methods

Comprehensive literature searches were conducted using MEDLINE, PREMEDLINE, Health Planning and Administration, HealthSTAR, EMBASE, and Current Contents from 1991 through 1997. Search strategies used the following terms: radiosurgery or stereotactic radiosurgery combined with brain neoplasm, controlled clinical trials, meta-analysis, multicenter studies, or practice guidelines. The searches yielded 748 references of which 90 were deemed to be relevant, and their full text was reviewed. Thirteen case series met the inclusion criteria and were included in this report.

Further research/reviews required

Additional research is needed to determine the true effectiveness of using stereotactic radiosurgery in patients with metastatic brain cancer. Randomized clinical trials are currently under way.