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[J Neurosurg.](#) 2010 Oct 1. [Epub ahead of print]

Stereotactic radiosurgery as primary and salvage treatment for brain metastases from breast cancer.

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Abstract

Object To evaluate the role of stereotactic radiosurgery (SRS) in the management of brain metastases from breast cancer, the authors assessed clinical outcomes and prognostic factors for survival. **Methods** The records from 350 consecutive female patients who underwent SRS for 1535 brain metastases from breast cancer were reviewed. The median patient age was 54 years (range 19-84 years), and the median number of tumors per patient was 2 (range 1-18 lesions). One hundred seventeen patients (33%) had a single metastasis to the brain, and 233 patients (67%) had multiple brain metastases. The median tumor volume was 0.7 cm³ (range 0.01-48.9 cm³), and the median total tumor volume for each patient was 4.9 cm³ (range 0.09-74.1 cm³). **Results** Overall survival after SRS was 69%, 49%, and 26% at 6, 12, and 24 months, respectively, with a median survival of 11.2 months. Factors associated with a longer survival included controlled extracranial disease, a lower recursive partitioning analysis (RPA) class, a higher Karnofsky Performance Scale score, a smaller number of brain metastases, a smaller total tumor volume per patient, the presence of deep cerebral or brainstem metastases, and HER2/neu overexpression. Sustained local tumor control was achieved in 90% of the patients. Factors associated with longer progression-free survival included a better RPA class, fewer brain metastases, a smaller total tumor volume per patient, and a higher tumor margin dose. Symptomatic adverse radiation effects occurred in 6% of patients. Overall, the condition of 82% of patients improved or remained neurologically stable. **Conclusions** Stereotactic radiosurgery was safe and effective in patients with brain metastases from breast cancer and should be considered for initial treatment.

PMID: 20887087 [PubMed - as supplied by publisher]

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