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Stereotactic radiosurgery alone for patients with 1-4 radioresistant brain metastases.

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Abstract

Brain metastases from radioresistant histologies are perceived to be less responsive to WBRT compared to other histologies, and stereotactic radiosurgery (SRS) may provide better local control. The aim of this study was to examine the outcomes of patients with 1-4 brain metastasis from radioresistant histologies (renal cell carcinoma and melanoma) treated with SRS alone. Thirty-eight patients with 1-4 radioresistant brain metastases (66 lesions) were treated with SRS alone. The median age was 55 years. Fourteen and 24 patients had renal cell carcinoma (RCC) and melanoma brain metastases, respectively. Distribution of number of lesions was as follows: one lesion, 22 patients; 2 lesions, 8 patients; 3 lesions, 5 patients; and 4 lesions, 3 patients. Distribution of RTOG recursive partitioning analysis (RPA) classes was as follows: II, 37 patients and III, 1 patient. The median marginal dose was 20 Gy. The median follow-up was 6.1 months. The 3-, 6-, 9-, 12-, and 18-month local control (LC) rates were 87.9, 81.4, 67.9, 67.9, and 60.3%, respectively. The corresponding free-from-distant-brain failure (FFDBF) rates were 71.3, 58.1, 49.8, 40.2, and 27.6%. The corresponding progression-free survival (PFS) rates were 55.3, 41.9, 33, 23.3, and 13.3%. RCC histology was associated with better LC (P = 0.0055). Although SRS alone could yield reasonable LC in patients with 1-4 radioresistant brain metastases, the risk of distant brain failure was substantial. The approach of routine omission of WBRT outside of a trial setting should be used judiciously.

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