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Stereotactic radiosurgery in the management of brain metastases from primary thyroid cancers.

Bernad DM, Sperduto PW, Souhami L, Jensen AW, Roberge D.

Department of Radiation Oncology, McGill University Health Centre/Montreal General Hospital, 1650 Cedar Avenue, Montreal, QC, H3G 1A4, Canada, daniel.bernad@mail.mcgill.ca.

Abstract

Patients with metastatic well-differentiated thyroid cancer have a generally favorable long-term outcome although multi-organ involvement is a known marker of poor prognosis. Brain metastases are rare, occurring in less than 1% of patients with thyroid cancer. Few patients have been managed with stereotactic radiosurgery (SRS). A retrospective database of 5,067 patients treated for brain metastases between 1985 and 2007 was generated from 11 institutions. Thyroid cancer patients were identified in this database and, when possible, additional information was obtained from further chart review. Patients were excluded if they had incomplete treatment or follow-up information. Two validated prognostic indices, Graded prognostic Assessment (GPA) and Recursive Partitioning Analysis (RPA), were calculated for each patient. The overall survival times were calculated by the Kaplan-Meier method. Twenty-three thyroid cancer patients were identified (51% male, 48% female). Median age was 63 years (range 20-81). Pathology of the primary thyroid disease was available for twelve patients; the majority were diagnosed with differentiated thyroid cancer (n = 9 papillary, n = 2 Hürthle cell; 92%) and one had medullary subtype (8%). Median time from diagnosis of primary disease to brain metastasis was 41.8 months (range 0-516). Fifteen (65%) patients underwent SRS as part of their initial treatment with a median number of lesions treated of 1.5 (range 1-9). The median follow-up time for living patients was 35.2 months. Overall median survival time was 20.8 months (40% alive at last follow-up) and 37.4 months for SRS-treated patients (P = NS). A poor Karnofsky performance status was predictive of worse outcome (P = 0.001). GPA and RPA did not provide additional prognostic information. In conclusion, patients treated with SRS for brain metastases from primary thyroid cancer have a favorable prognosis with an expected median survival greater than 3 years. It is unclear as to whether current prognostic indices are relevant to this patient population.

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