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Leptomeningeal metastases in the MRI era.

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Abstract

BACKGROUND: Diagnosis of leptomeningeal metastasis (LM) has become increasingly frequent. The diagnostic gold standard has been CSF cytology, but MRI is now used routinely for diagnosis. Diagnosis and prognosis of LM has not been studied in the MRI era.

METHODS: Patients with LM from 2002 through 2004 were identified through a neurology database, as well as by reviewing all abnormal CSF cytologies from a pathology database. Diagnosis was made by malignant cytology or imaging; suspicious cases treated as LM were also included.

RESULTS: A total of 187 patients with LM were analyzed in this retrospective review. Of these, 150 had solid and 37 had hematopoietic malignancies. Median age was 56.4 years, and median Karnofsky performance status (KPS) was 70. The most common types of solid tumor were breast (65 patients), lung (47), gastrointestinal (11), and melanoma (9). Of the hematopoietic tumors, 21 were lymphoma and 15 were leukemia. Fifty-three percent of patients were diagnosed by imaging, 23% by cytology, and 24% by both. Treatment included radiation therapy in 55%, intrathecal chemotherapy in 29%, and systemic chemotherapy in 18%; 21% received supportive care alone. Median overall survival was 2.4 (95% confidence interval 1.9-3.1) months. Median survival for patients with hematopoietic tumors was 4.7 months and for solid tumors was 2.3 months ($p = 0.0006$). In multivariate analysis, initial KPS and tumor type (solid vs hematopoietic) were significant predictors of survival.

CONCLUSIONS: Despite enhanced diagnosis with MRI, prognosis remains poor in leptomeningeal metastasis. Those with hematopoietic tumors continue to fare better than those with solid tumors.

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