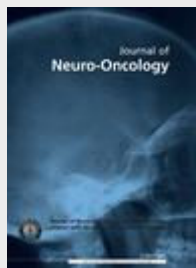



Journal Article



Systemic high-dose intravenous methotrexate for central nervous system metastases

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Summary

Background Treatment options for patients with recurrent central nervous system (CNS) metastases are limited. Rapid infusion of high-dose intravenous methotrexate (HD IV MTX) penetrates the blood-brain barrier (BBB) and has reported activity in leptomeningeal metastases.

Methods Medical records were reviewed for all patients treated with HD IV MTX (3.5 g/m²) for CNS parenchymal or leptomeningeal metastases. Radiographic response rate, survival, and toxicity were determined.

Results Thirty-one women and one man with a median age of 52 years (range 33–76) were treated with a total of 141 cycles (median 4, range 1–13). Twenty-nine patients had breast cancer, and one each had cancer of unknown primary (CUP), squamous cell carcinoma of the head and neck, and non-small cell lung cancer (NSCLC). An objective radiographic response and stable disease were each observed in nine patients (28%), and 13 (44%) patients progressed. Prior treatment with low-dose MTX for systemic disease did not affect response ($P = 0.8$). The median overall survival ($n = 32$) was 19.9 weeks (range 2.9–135.4+) with one patient alive at 135.4 weeks.

Myelosuppression and elevated serum hepatic transaminases were the most common

acute toxicities (21% and 9% of HD IV MTX cycles, respectively).

Conclusions HD IV MTX is effective in the treatment of CNS metastases with disease control (response or stable) as a best response in 56% of assessable patients. Further study is warranted.

Keywords brain - central nervous system - chemotherapy - leptomeninges - metastases - methotrexate

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