

Intratumoral doxorubicin in patients with malignant brain gliomas.

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Source

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Abstract

The objective of the study was to evaluate the safety and therapeutic efficacy of intralesional administration of doxorubicin in brain gliomas. Ten patients with recurrent grade III or IV glioma were enrolled in the study, after the second operation. All patients had not responded to radiation therapy. Chemotherapy was administered directly in the tumor through an Ommaya pump placed in the site of disease at the time of craniotomy. Doxorubicin 0.5 mg was administered in the Ommaya reservoir every 24 hours on days 1 to 10. Patients were evaluated at 6- to 8-week intervals until tumor progression and death. All patients were evaluated for response. Six of 10 patients had clinical improvement lasting from 12 to 73 weeks. Objective radiologic response was observed in 5 of 10 (50%) patients. One patient achieved complete response with time to disease progression of 119 weeks, and 4 patients had a partial response (duration 14-39 weeks) with 25% or more reduction of tumor volume on computed tomography scan compared with pretreatment measurements. Time to disease progression in patients who responded after the intratumoral chemotherapy was 39.83 +/- 40.5 weeks. One additional patient had stable disease for a duration of 12 weeks. The median survival of the patients with response was 55.17 +/- 54.22 weeks (range: 21-164 weeks), whereas survival of those who did not respond was 17.0 +/- 12.36 weeks (range: 8-35) (Mann Whitney U test: $z = -2.13$, $p = 0.033$). The median survival of all 10 patients was 39.9 +/- 45.52 weeks (range: 8-73 weeks). Bifrontal headache was reported in 4 of 10 patients immediately after the administration of doxorubicin. There were no other clinically significant adverse reactions either in the brain or systemically. Intralesional administration of doxorubicin appears to be a safe and effective treatment and should be further explored in the management of brain gliomas resistant to conventional forms of treatment.