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Palliative Reirradiation for Progressive Diffuse Intrinsic Pontine Glioma.

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Abstract

OBJECTIVE: Diffuse intrinsic pontine gliomas (DIPGs) are highly aggressive tumors and have a poor prognosis. Nearly all patients experience disease progression after definitive treatment, accompanied by severe neurologic deficits and morbidity. Here, we report a series of patients treated with reirradiation for palliation of symptoms.

METHODS: Six patients received reirradiation for progressive DIPG at MD Anderson Cancer Center from 2007 to 2009. Progression after initial chemoradiation and salvage chemotherapy had been confirmed clinically and by magnetic resonance imaging. Each case was discussed at a multidisciplinary conference before reirradiation.

RESULTS: Interval between the initial radiation therapy and reirradiation was 8 to 28 months. The initial radiation therapy dose was 54 to 55.8 Gy. Time to initial progression was 4 to 18 months. All of the patients had further progression on salvage chemotherapy. Reirradiation was given with concurrent chemotherapy to a dose of 20 Gy (n=4) or 18 Gy (n=1); 1 patient withdrew care after a single 2-Gy fraction. Four patients had substantial clinical improvement in symptoms, with improvement in speech (n=3), ataxia (n=3), and swallowing (n=2). Three patients showed renewed ability to ambulate after reirradiation. Four patients had decreased tumor size on posttreatment magnetic resonance imaging. The median clinical progression-free survival time was 5 months. Acute radiation-related toxicities were fatigue (n=2), alopecia (n=2), and decreased appetite (n=1). No grade 3 or 4 toxicities were reported.

CONCLUSIONS: Reirradiation with chemotherapy may be feasible to improve symptoms and delay progression with minimal toxicity. Patients who are most likely to benefit may be those with prolonged response to initial therapy and a long interval since initial radiation.

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