

ABSTRACT

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Combination Olaparib and Temozolomide for the Treatment of Glioma: A Retrospective Case Series.

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OBJECTIVES: To report on the tolerability and efficacy of olaparib with temozolomide (TMZ) for glioma **METHODS:** Single-center retrospective series of glioma patients treated with olaparib/TMZ September 2018-December 2021

RESULTS:

Twenty patients (median age: 42, median Karnofsky Performance Status: 90) received olaparib/TMZ for diagnoses of IDH-mutant oligodendroglioma (n=5), IDH-mutant astrocytoma grade 2-3 (n=4), IDH-mutant astrocytoma grade 4 (n=7), or IDH-wildtype glioma (n=4). One patient was treated upfront and 19 at recurrence (median=3). Olaparib 150mg was administered three times/week concurrent with TMZ 50-75mg/m² daily. Fatigue, gastrointestinal symptoms, and hematologic toxicity were common. 6/20 patients required dose reduction (n=4) or discontinuation (n=2) due to toxicity. Radiographic response was evaluable in 16 and observed (complete + partial) in 4/8 with IDH-mutant grade 2-3 glioma. No responses were seen in patients with grade 4 IDH-mutant astrocytomas (0/5) or IDH-wildtype gliomas (0/3). Progression-free survival was 7.8, 1.3, and 2.0 months, respectively.

DISCUSSION: Olaparib/TMZ resulted in objective radiographic response in 50% of evaluable patients with recurrent IDH-mutant grade 2-3 gliomas with encouraging PFS and manageable toxicity. This supports a prospective trial of olaparib/TMZ for this population.

CLASSIFICATION OF EVIDENCE: This case series provides Class IV evidence that treatment with olaparib/TMZ may result in radiographic response in patients with glioma.

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