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# The Prognostic Impact of Radiotherapy in Conjunction with Temozolomide in Diffuse Intrinsic Pontine Glioma: A Systematic Review and Meta-Analysis

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## Abstract

**Objective:** Diffuse intrinsic pontine glioma (DIPG) is a rare and devastating brainstem glioma that occurs predominately in children. To date, the prognostic impact of radiotherapy (RT) in conjunction with temozolomide (TMZ) in DIPG has not been thoroughly analyzed. The aim of this meta-analysis was to analyze the effectiveness of RT quantitatively and precisely in conjunction with TMZ in improving the prognosis of DIPG.

**Methods:** A systematic search of 8 electronic databases was conducted. Articles mainly discussing the prognostic impact of RT in conjunction with TMZ in DIPG were selected. The pooled 1- and 2-year overall survival (OS) and progression-free survival (PFS) were calculated.

**Results:** A total of 14 studies fulfilled our inclusion criteria, involving 283 cases of patients with DIPG who were treated with RT in conjunction with TMZ. The pooled 1- and 2-year OS of this treatment was 43% and 11%, respectively. The pooled 1- and 2-year PFS was 20% and 2%, respectively. Subgroup analysis revealed that the heterogeneity remained almost the same in all stratum. Egger's test demonstrated that the possibility of publication bias was low.

**Conclusions:** Requirements of up-to-date evidence on evaluating the prognostic impact of this therapy are urgent.

**Keywords:** Diffuse intrinsic pontine glioma; Overall survival; Progression-free survival; Radiotherapy; Temozolomide.

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