

## Short-term radiotherapy followed by adjuvant chemotherapy in poor-prognosis patients with glioblastoma

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### ABSTRACT

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**Objectives.** The optimal treatment for patients with glioblastoma with unfavorable prognostic factors, such as old age and low performance status, remains controversial. We conducted a prospective study to assess the effect of temozolomide and short-course radiation *versus* short-course radiation alone in the treatment of poor-prognosis patients with newly diagnosed glioblastoma.

**Patients and methods.** Forty-five patients with a newly diagnosed glioblastoma, older than 70 years or aged 50-70 years and with a Karnofsky performance score  $\leq 70$  were enrolled in this prospective study. Twenty-three patients were treated with an abbreviated course of radiotherapy (30 Gy in 6 fractions over 2 weeks) and 22 patients with the same radiotherapy schedule plus adjuvant temozolomide at the dose of 150-200 mg/m<sup>2</sup> for 5 days every 28-day cycle. The primary end point was overall survival. Secondary end points included progression-free survival and toxicity.

**Results.** Median overall survival was 7.3 months in the radiotherapy group and 9.4 months in the radiotherapy plus temozolomide group ( $P = 0.003$ ), with respective 6-month overall survivals of 78% and 95%, respectively. Median progression-free survival was 4.4 months in the radiotherapy group and 5.5 months in the radiotherapy plus temozolomide group ( $P = 0.01$ ), and respective 6-month progression-free survival rates were 22% and 45%. In multivariate analysis, Karnofsky performance score was the only significant independent predictive factor of survival ( $P = 0.03$ ). Adverse effects of radiotherapy were mainly represented by neurotoxicity (24%), which resolved in most cases with the use of steroids. Grade 3-4 hematologic toxicity occurred in 36% of patients treated with temozolomide.

**Conclusions.** The addition of temozolomide to short-term radiotherapy resulted in a statistically significant survival benefit with minimal additional toxicity in poor-prognosis patients with newly diagnosed glioblastoma. Future studies need to define the best combined regimens of radiotherapy and temozolomide on survival and quality of life in this subgroup of patients. **Free full text available at [www.tumorionline.it](http://www.tumorionline.it)**

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**Key words:** chemotherapy, elderly, glioblastoma, prognostic factors, radiotherapy, temozolomide.

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