

Outcome of newly diagnosed glioblastoma patients treated by radiotherapy plus concomitant and adjuvant temozolomide: a long-term analysis

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ABSTRACT

Aims and background. Glioblastoma is the most common primary brain tumor in adults. The standard treatment is surgery and radiotherapy. In this study, the results of radiotherapy plus concomitant and adjuvant temozolomide are reported. In addition, the efficiency of adjuvant temozolomide is evaluated.

Methods and study design. Forty-one patients were analyzed. All patients received radiotherapy (2 Gy daily fractionation dose, median 60 Gy total doses) and concomitant temozolomide (at a daily dose of 75 mg/m²/day, 7 days per week) after surgery. Thirty-one patients received an average of 6 cycles (range, 1-8 cycles) of adjuvant temozolomide after radiotherapy, every 28 days for 5 days at a dose of 200 mg/m²/day. The primary end point was overall survival.

Results. The median overall survival was 16.7 months. The overall survival significantly increased in the adjuvant temozolomide group compared to the group with no adjuvant therapy (18.9 *vs* 9.8 months). The difference in overall survival between adjuvant temozolomide cycles of \leq and >3 was significant (8.7 *vs* 20 months). On multivariate analyses, the important prognostic factors were type of surgery and application of adjuvant temozolomide for at least 4 cycles. Grade III/IV toxicity was seen in 4% and 6.5% of patients during concomitant and adjuvant therapy, respectively.

Conclusions. The study confirmed the effectiveness of radiotherapy plus temozolomide in newly diagnosed glioblastoma. It was established that the application of adjuvant temozolomide for at least 4 cycles is required to obtain a benefit from adjuvant therapy. However, further studies are needed to confirm these data.

Key words: adjuvant, concomitant, glioblastoma, radiotherapy, temozolomide.

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