OBJECTIVE: Glioblastoma is a rare central nervous system neoplasm in the pediatric patients. Few studies focused exclusively on this disease in this population. Available literature suggests that this disease behaves differently between pediatric and adult patients. We set out to study patients younger than 18 years of age, carrying the diagnosis of non-brainstem glioblastoma, their clinical characteristics and clinical factors associated with clinical outcome.

METHODS: Thirty-seven pediatric patients with the diagnosis of non-brainstem glioblastoma, who were treated in our institution from 1982 to 2011, were identified and studied retrospectively.

RESULTS: All patients underwent surgical intervention. Seventeen patients (45.9%) had gross-total resection (GTR). Thirteen (35.1%) had subtotal resection (STR) and seven (18.9%) had biopsy. After surgery, 35 patients received radiation therapy (94.6%) and 34 patients (91.9%) received chemotherapy (various agents depending on the institutional protocols established at the time of treatment and family choice). Median follow-up time was 17.5 months, ranging from 0.5 month to 186 months. The median overall survival (OS) is 18.7 months (95% Confidence Interval (CI) 15.7-21.8 months). The survival rate at 1, 2 and 5 years is 63.9%, 44.5% and 17.6%, respectively. The median OS for patients with GTR is 45.1 months (95% CI 27.5-62.8 months), 8.7 or 11.5 months for patients with STR or BX, respectively. GTR was accomplished only in patients with superficially located tumors. Yang 3.

CONCLUSION: Gross-total resection significantly associates with long-term survival in our population of pediatric patients with non-brainstem glioblastoma.

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