

## Research Article:



# Prognosis and Survival Study in Patients with Glioblastoma Multiform and Its Relationship with EGFR Expression

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Citation: Amirpour Z, Bahari A, Nafisi B, Rahmani K, Taghipour Zahir Sh, Prognosis and Survival Study in Patients with Glioblastoma Multiform and Its Relationship with EGFR Expression. Iran J Neurosurg. 2020; 6(3)

## ABSTRACT

**Background and Aim:** Glioblastoma multiforme (GBM) is the most common malignant and invasive tumor of the brain. The relation between prognosis and survival of GBM patients with Epidermal Growth Factor Receptor (EGFR) expression is challenging. Thus, we aimed to evaluate the prognosis and survival of patients with GBM and its relationship with EGFR expression.

**Materials and Methods:** This single-arm cohort study was conducted on 70 patients with GBM during 2012-2018 in Shahid Rahneemoon and Mortaz hospitals. The immunohistochemistry technique was applied to paraffin blocks of brain tumors for examining EGFR expression. Other data were extracted from medical records. To determine the survival rate, the Kaplan–Meier curves were used. A chi-square test was used for the analysis of data. Statistically, p-value <0.05 was assumed significant.

**Results:** The mean survival of patients with GBM was  $22.3 \pm 2.5$  months (95% CI=17.41 - 27.10). In addition, 1, 2- and 5-year survival rates were 90%, 30% and 5%, respectively. The mean survival of patients with negative and positive EGFR was  $27.4 \pm 7.3$  and  $20.6 \pm 2.4$  months, respectively. Besides, 11.1% and 14.3% of patients in negative and positive EGFR groups were alive. There was no significant difference in patient's survival in terms of EGFR expression ( $p=0.36$ ). No significant difference was seen between the two groups (EGFR positive and negative groups), regarding the frequency of age, sex, tumor's anatomical location, and place of living ( $p>0.05$ ).

**Conclusion:** Based on our study, it seems that the GBM tumor was associated with poor prognosis and a low survival rate. It was also found that the expression of the EGFR gene did not affect the survival rate of patients with GBM. Therefore, its use as a predictor factor for survival and prognosis is questionable.

### Article info:

Received: XX  
Accepted: XX  
Available Online: XX

Keywords:  
Epidermal growth factor receptor,  
Glioblastoma multiform,  
Prognosis

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