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Long-term survivors of glioblastoma: clinical features and molecular analysis.

[Sonoda Y](#), [Kumabe T](#), [Watanabe M](#), [Nakazato Y](#), [Inoue T](#), [Kanamori M](#), [Tominaga T](#).

Department of Neurosurgery, Tohoku University Graduate School of Medicine, 1-1 Seiryomachi, Aoba-Ku, Sendai, Miyagi, 980-8574, Japan, sono@nsg.med.tohoku.ac.jp.

BACKGROUND: Glioblastoma is a highly lethal neoplasm with a median survival of 12-14 months; only 2-5% of patients survive >3 years. **METHODS:** At our institute, patients with glioblastoma are initially treated with maximum tumor resection followed by radiation and the intravenous injection of nimustine hydrochloride (ACNU). **RESULTS:** Using this strategy, 18 of 123 (14.6%) patients treated at our hospital survived >3 years; 7 manifested no recurrence, and the other 11 had early recurrence and received additional therapies. To identify factors associated with prolonged survival, we compared these patients with 21 short-term (<1.5 years) glioblastoma survivors. In the long-term survivors, the MGMT promoter methylation was significantly more frequent. The rate of p53 mutation was lower, and the rate of PTEN mutations and the proliferation index were slightly higher in short-term survivors. **CONCLUSION:** By multivariate analysis, we found that a younger age and MGMT promoter methylation were significant favorable factors in patients with glioblastoma.

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