The presence of stem cell marker-expressing cells is not prognostically significant in glioblastomas.

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Abstract
Glioblastoma is one of the most frequent primary brain tumors and is characterized by aggressive clinical behavior and biologic heterogeneity. To evaluate the prognostic implication of cancer stem cell markers in glioblastoma, the expression of these markers was investigated in a large series of glioblastoma patients in relation to the survival rate. This series includes 88 cases of glioblastoma that were diagnosed at the Chonnam University Hwasun Hospital from 2004 to 2009. The expression of newly established stem cell markers (nestin, CD133 and CD15) was detected using immunohistochemical analysis. The presence of immunopositive tumor cells was evaluated and interpreted in comparison with the patients' survival data. The expression of nestin was high in 60 cases (68.2%). CD133 and CD15 were positive in 52 cases (59.1%) and 40 cases (45.5%), respectively. No statistically significant difference in patient survival according to stem cell marker expression was observed ($P > 0.05$). However, gross total resection or combined radiation therapy and chemotherapy significantly prolonged survival ($P = 0.04$ and $P = 0.04$). Cox's proportional hazards model showed that the gross total resection and combined radiation therapy and chemotherapy were independent prognostic factors. Although the correlation of stem cell marker expression with clinical outcome in glioma is of considerable interest, the data do not support their prognostic value in glioblastoma. Identification of the key cells in the glioblastoma population in the context of clinical outcomes will provide insight into the mechanism of brain tumorigenesis and will be of paramount importance in determining therapeutically appropriate targets.


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