

**Correlation between the Expression of Epidermal Growth Factor Receptor
and MR Features in Glioma**

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Purpose: The aim of this study was to correlate MR features with epidermal growth factor receptor (EGFR) expression in glioma.

Materials and Methods: MR features regarding degree of edema, marginal appearances, necrosis, hemorrhage, and contrast enhancement patterns were analysed in 41 brain gliomas (8 low grade astrocytoma, 12 anaplastic astrocytoma, 21 glioblastoma multiforme). Immunohistochemical study of EGFR was performed for the same cases, and their expressions were graded by stain distribution and intensity. Correlation analysis between MR features and EGFR expressions was obtained.

Results: The results was as follows: Twenty-four out of 41 (58.5 %) gliomas were EGFR positive. Expression of the EGFR was more frequent in the malignant glioma. Distribution of EGFR expression was significantly correlated with peritumoral edema on MRI ($r=0.7128$, $p=0.000$). Staining intensity of EGFR was significantly correlated with peritumoral edema on MRI ($r=0.6926$, $p=0.00$).

Conclusions: EGFR expression is common in glioma, and correlated well with peritumoral edema on MR. MRI would be useful to predict histopathologic type, malignant degree, and EGFR expression.