Correlation of microRNA-375 downregulation with unfavorable clinical outcome of patients with glioma.

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Abstract

BACKGROUND AND AIM: MicroRNA-375 (miR-375) is frequently demonstrated to be frequently dysregulated and functions as a tumor suppressor or an oncogene in different cancer types. However, its roles in human gliomas have not been reported. The aim of this study was to investigate the expression pattern and clinical significance of miR-375 in patients with gliomas.

METHODS: Real-time quantitative RT-PCR assay was performed to detect miR-375 expression in human gliomas and non-neoplastic brain tissues. Then, the association of miR-375 expression with clinicopathological factors and prognosis of glioma patients was also statistically analyzed.

RESULTS: miR-375 expression was significantly decreased on average in glioma tissues relative to non-neoplastic brain tissues (P<0.0001) with ascending pathological grade. Then, the low miR-375 expression in glioma tissues was significantly associated with advanced pathological grade (P=0.003) and low Karnofsky performance score (KPS, P=0.01). Moreover, both univariate and multivariate Cox regression analyses determined that loss of miR-375 expression effectively predicted the decreased overall survival in patients with gliomas.

CONCLUSIONS: These findings offer the first convinced evidence that the downregulation of miR-375 expression in human gliomas may play an inhibitory role during the tumor development. This miRNA might function as a candidate unfavorable prognostic marker for human gliomas.

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