

Prognostic Significance of SERPINB1 Expression in Gliomas

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Glioblastoma (GB) is the most prevalent and aggressive brain tumor with high morbidity. Determination of tumor initiative and prognostic factors are ultimately needed for therapy options. The effects of Serine Protease Inhibitor (SERPIN) B1 on tumor progression have been reported in several cancer types including breast and lung cancers. However, the relation between SERPINB1 expression levels and glioma progression is still to be elucidated.

In this study, we aimed to determine the SERPINB1 expression levels in glioma patients and investigate its prognostic effect on patient survival. We first examined the expression of SERPINB1 in glioma and glioblastoma tissue samples (low grade (I,II); n=6, high grade (III,IV) n= 4 and glioblastoma (grade IV) n=4) by western blotting and immunohistochemistry. Expression of SERPINB1 in tissue lysates was significantly higher in glioblastoma samples than in low grade glioma (p=0,0056). Additionally, SERPINB1 overexpression was associated with high glioma grades in the overall pattern. Survival analysis by using TCGA (French) Glioma cohort data (303 patients) showed that the mRNA expression of SERPINB1 correlates with decreased survivals in both GBM and non-GBM patient groups (p< 0.0001).

Our results showed that the SERPINB1 expression is significantly high in glioblastoma patients correlated with poor prognosis. Here, we suggest that SERPINB1 may be a prognostic biomarker for glioma and may offer application in clinics. Further investigations will provide more insights about its function and mechanism of action.

Keywords Glioma, glioblastoma, SERPINB1, tumor progression, biomarker