

High grade glioma surgery – clinical aspects and prognosis

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Introduction

Despite constant development of neuro-oncology and microsurgical techniques, the 5-year survival rate in patients with high grade gliomas (HGG) remains less than 10% and the median survival is still less than 2 years. The purpose of this study is to estimate the overall survival for patients operated with HGG in our clinic and compare with the literature data.

Materials and methods

One hundred twenty-one cranial operations for HGG were reviewed (2014-2019 period). Summary characteristics of the various parameters were presented in respect to the radical nature of the operative intervention using Kaplan-Meier analysis and chi square tests. All patients were followed up at regular check-ups.

Results

HGGs are 103 or 85.12% of all gliomas operated for the 2014-2019 period. The most common cases are in the 51-60 age group. The cases in men are twice as common. The most common localization of the neoplasm is in the temporal region - 36,36% and the most rare in the occipital region - 3,30%. It is estimated 12,23 months overall survival for our operated patients with HGG.

Resection type of HGG	GTR (radical)	STR (subtotal)	P value
No (%)	45 (43.68)	58 (56.32)	
OS	14.5 months	10.4 months	p < 0,05
Median	12,2 months		
FTS	10,8 months	5,7 months	p < 0,05
Median	7.9 months		
NND(permanent)	20 (19.45)	5 (4,85)	p < 0,05

Table 1. Summary results median survival (OS), free tumor survival (FTS) and new neurological deficit (NND) in correlation with type of resection - GTR or STR.

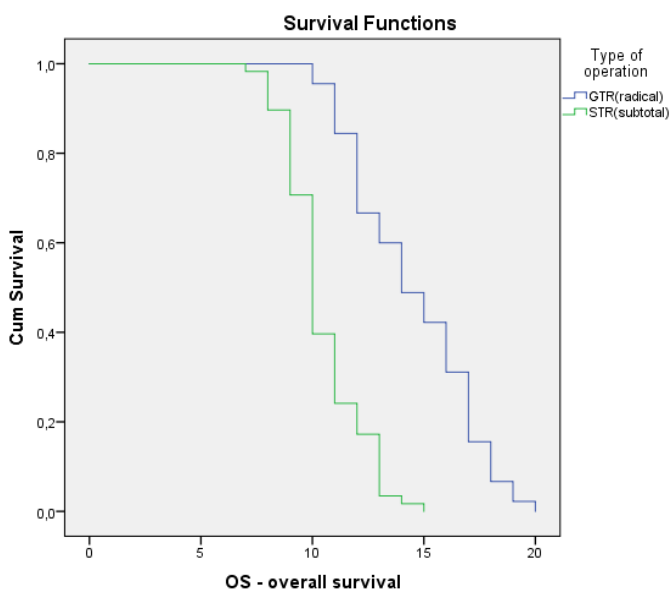


Fig. 1 Kaplan-Meier analysis for overall survival.

Gross total resected (GTR) patients have median survival (OS) of 14,53 months, while subtotal resected patients (STR) have median survival (OS) of 10,44 months. It is estimated 7,97 months free tumor survival period (FTS - time to relaps) for our operated patients with HGG. Gross total resected patients have median FTS of 10,88 months, while subtotal resected patients have median FTS of 5,70 months. We noticed permanent new neurological deficit (NND) in 20 patients (19.45%) operated with GTR, and in 5 patients (4,85%) operated with STR. Median OS, FTS and NND are statistically significant (p<0,05) with extent of resection – GTR or STR in our study.

Conclusions

Maximal safe radical (total) or supratotal resection is preferred in treating HGG. In our study the extent of the tumor resection is statistically significant advantage that influence of median OS, FTS and NND. After 30 years of researching the prognosis for HGG patients is still disappointing. New and original approaches originating from scientific laboratories are needed. It seems reasonable to start with a proposal for all patients to be included in clinical trials.