

Health related quality of life in brain tumor patients: association with mental distress Adomas Bunevicius MD; Arimantas Tamasauskas; Sarunas Tamasauskas; Kestutis Sinkunas; Vytenis Deltuva

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### Introduction

Brain tumor is a devastating disease associated with poor prognosis (1). Traditional clinical outcome measures in brain tumor patients include overall survival and progression-free survival among others. However, in a recent decade, patient-centered outcomes indexes, such as health-related quality of life (HRQoL), depression and anxiety, are becoming increasingly used in neuro-oncology for evaluation of treatment efficacy and burden imposed by brain tumor (2).

### Aim of the study

In the current we present results of an ongoing study in neurosurgical brain tumor patients evaluating the association of HRQoL with symptoms of depression and anxiety.

### Methods

Consecutive patients within the first 2 days of admission to inpatient unit for scheduled brain tumor surgery were evaluated for:

1.Socio-demographic characteristics (age, gender and marital status);

2.Functional impairment (Barthel Index or BI; greater score indicates better functional status);

3.HRQoL (European Organization for Research and Treatment of Cancer Brain Cancer Specific Quality of Life Questionnaire or QLQ-BN20; greater total score indicates worse HRQoL);

4.Symptoms of depression and anxiety (Hospital Anxiety and Depression Scale or HADS; greater score indicates greater level of respective symptoms).

The final histological diagnosis of brain tumor was established by reviewing pathology reports.

A total of 100 patients completed the study.

## Results

Baseline socio-demographic and clinical characteristics of study patients are presented in Table 1.

Table 1. Baseline characteristics of study patients (n=100).			
Demographic characteristics			
Age, mean ± SD, median (IQR)	58±14; 59 (21)		
<b>Gender</b> , n (%)			
Men	29 (29%)		
Women	71 (71%)		
Marital status, n (%)			
Living alone	21 (21%)		
Living with partner	79 (79%)		
<b>Clinical characteristics</b>			

Tumor type, n (%)	
Meningioma	46 (46%)
High grade glioma	19 (19%)
Low grade glioma	2 (2%)
Pituitary tumor	16 (16%)
Acoustic neuroma	7 (7%)
Other	10 (10%)
Barthel Index	
Score, mean ± SD, median (IQR)	97±7; 100 (0)

Predictors of HRQoL in univariate and in multivariate regression analyses are presented in Table 2. In univariate regression analyses, greater level of depressive symptoms (greater HADS-Depression score; p < 0.001), greater level of anxiety symptoms (greater HADS-Anxiety score; p =0.02), more functional impairment (lower BI score; p <0.001) and greater age (p = 0.046) were associated with poor HRQoL (i.e., greater QLQ-BN20 score). After adjusting for significant predictors in univariate analyses, greater level of depressive symptoms (p = 0.01), more functional impairment (p < 0.001) and more advanced age (p = 0.03) were independently associated with poor HRQoL.

# Table 2. Predictors of total QLQ-BN20 score in univariate and multivariate analyses; beta (p-value).

	Univariate association	Multivariate association <sup>A</sup>	
HADS Depression score <sup>B</sup>	0.39 (< 0.001)	0.25 (0.01)	
HADS Anxiety score <sup>B</sup>	0.24 (0.02)	Not significant	
Barthel Index	0.48 (< 0.001)	0.39 (< 0.001)	
Age	0.20 (0.046)	0.19 (0.03)	
Gender	0.10 (0.31)	-	
Brain tumor type	0.01 (0.94)	-	
R²(p-value)		0.30 (< 0.001)	
HADS - Hospital Anxiety and Depression Scale.			

A – Adjusted for significant predictors in univariate analyses.

B – Greater score indicates more symptoms.

In **bold** p-value < 0.05.

### Conclusions

- Depressive symptoms are independently associated with worse HRQoL in neurosurgical brain tumor patients.
- Therefore, depressive symptoms should be timely recognised and treated in brain tumor patients.
- Screening for depression and evaluation of depressive symptom severity takes only a few minutes by using self -rating scales.

### **Learning Objectives**

By conclusion of this section, participants should be able to learn that symptoms of depression are important predictors of health related quality of life in brain tumor patients and should be addressed in routine clinical practise.

#### References

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2.Taphoorn MJ, Sizoo EM, Bottomley A. Review on quality of life issues in patients with primary brain tumors. Oncologist 2010;15:618-26.