

The International Low Grade Glioma Registry: Patient-Reported Quality of Life

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Objective

The overarching goal of the International Low Grade Glioma (LGG) Registry is to allow for focused study of LGG (defined as adult grade II astrocytoma, mixed glioma, or oligodendroglioma), including quality of life (QOL).

Introduction

Many standardized questionnaires and scales are developed to describe varying domains of QOL in cancer patients including patients with a LGG. Most studies, however, have used small samples, contain a mix of histological diagnoses or tumor grades, or do not compare with healthy controls or patients with other types of brain tumors. In the current study, the Medical Outcomes Study Short-Form 36 Health Survey (SF-36) is used to describe symptoms and QOL for an institutional series of patients with LGG who were treated with surgical intervention. QOL data from LGG patients are compared to existing QOL data from healthy controls and meningioma patients [1].

Study Demographics

To date, enrollment is completed for 234 patients from 21 states and nine countries (US, France, United Kingdom, Canada, Australia, Hong Kong, New Zealand, Belarus and Spain). Pilot data on QOL are available for 112 LGG patients for whom we have confirmed treatment via medical record review. Enrolled LGG patients were predominantly White (91.2%), female (56.3%), generally otherwise healthy with only 5% reporting a co-morbid condition) and had a mean age of 36.9 years. A wide range of symptoms were reported by patients: 23.4% reported being unable to drive, 32.4% reported trouble thinking, and 35.1% reported difficulty with getting words out.

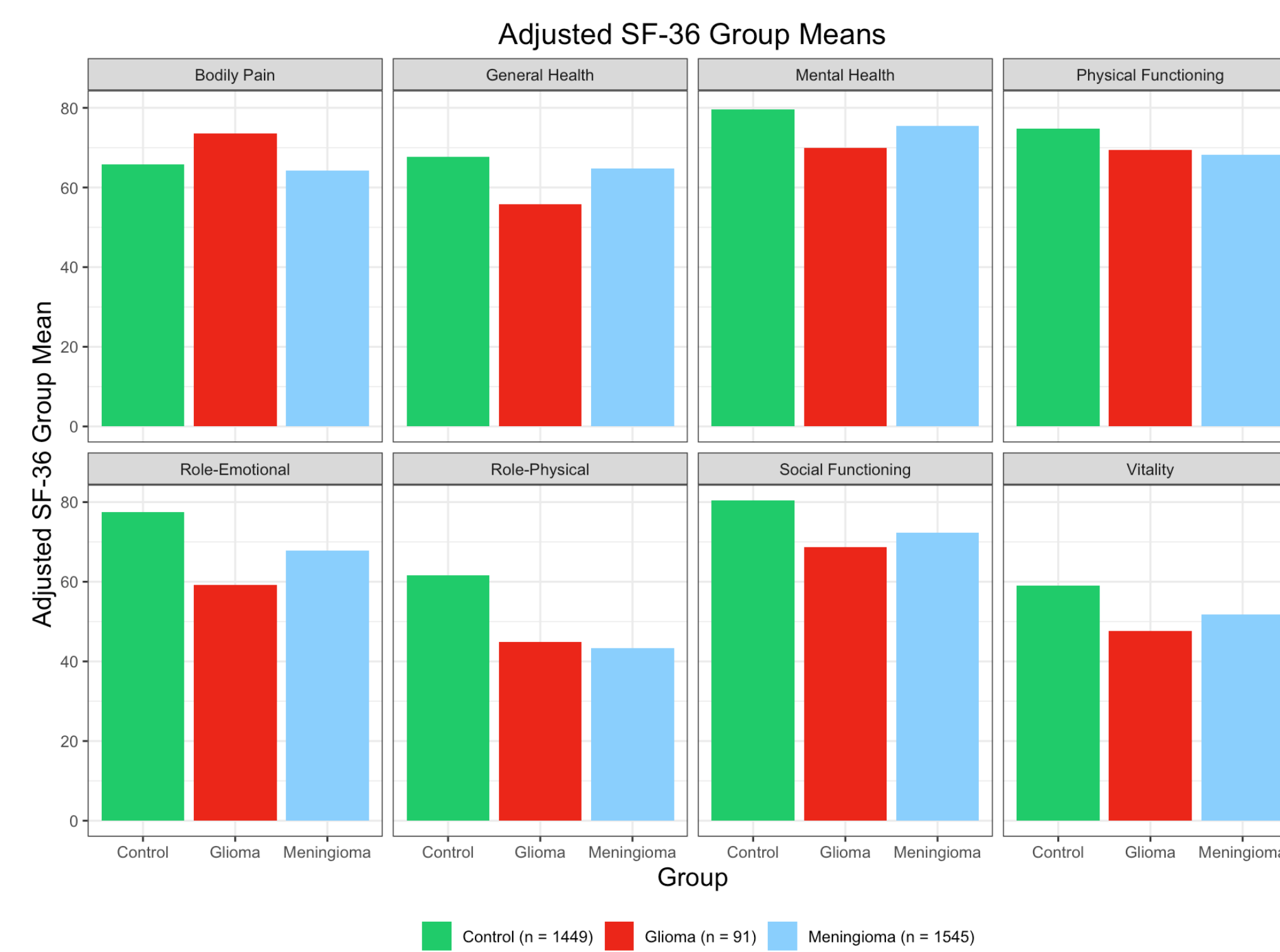


Figure 1: Group means for each of the eight SF-36 domains. Significant ($P < 0.001$) differences exist between group means in each of the eight scales

Radiation

To date, fifty-two percent of patients have received radiation (XRT): patients not treated with XRT at diagnosis report significantly better physical functioning than do those who received XRT, with persons receiving XRT at time of diagnosis reporting the lowest scores ($p = 0.003$). Interestingly, patients not treated with XRT reported lower emotional and mental health scores than did those receiving XRT ($p = 0.02$). Interpretation of these findings is limited at this point given the small sample and possible selection bias; possibilities include that the no XRT group may be more depressed/anxious for unrelated reasons, or, the absence of treatment may leave them feeling uneasy. Means in each of the 8 health domains are not adjusted for covariates as was done in with the Glioma, Meningioma, and Control group means due to small sample size.

Statistical Methods

The SF-36 includes 8 individual scales for Physical Functioning, Role-Physical, Bodily Pain, Social Functioning, Mental Health, Role-Emotional, Vitality, and General Health perceptions. Each scale is scored from 0 to 100, with 100 representing the best score. The effect of multiple comparisons was controlled for using a Bonferroni correction to make pairwise comparisons across the three study groups. Estimates of SF-36 group means were adjusted for age (continuous), race (white vs.non-white), sex, use of radiation, use of chemotherapy, and other comorbid conditions (myocardial infarction and other cancers).

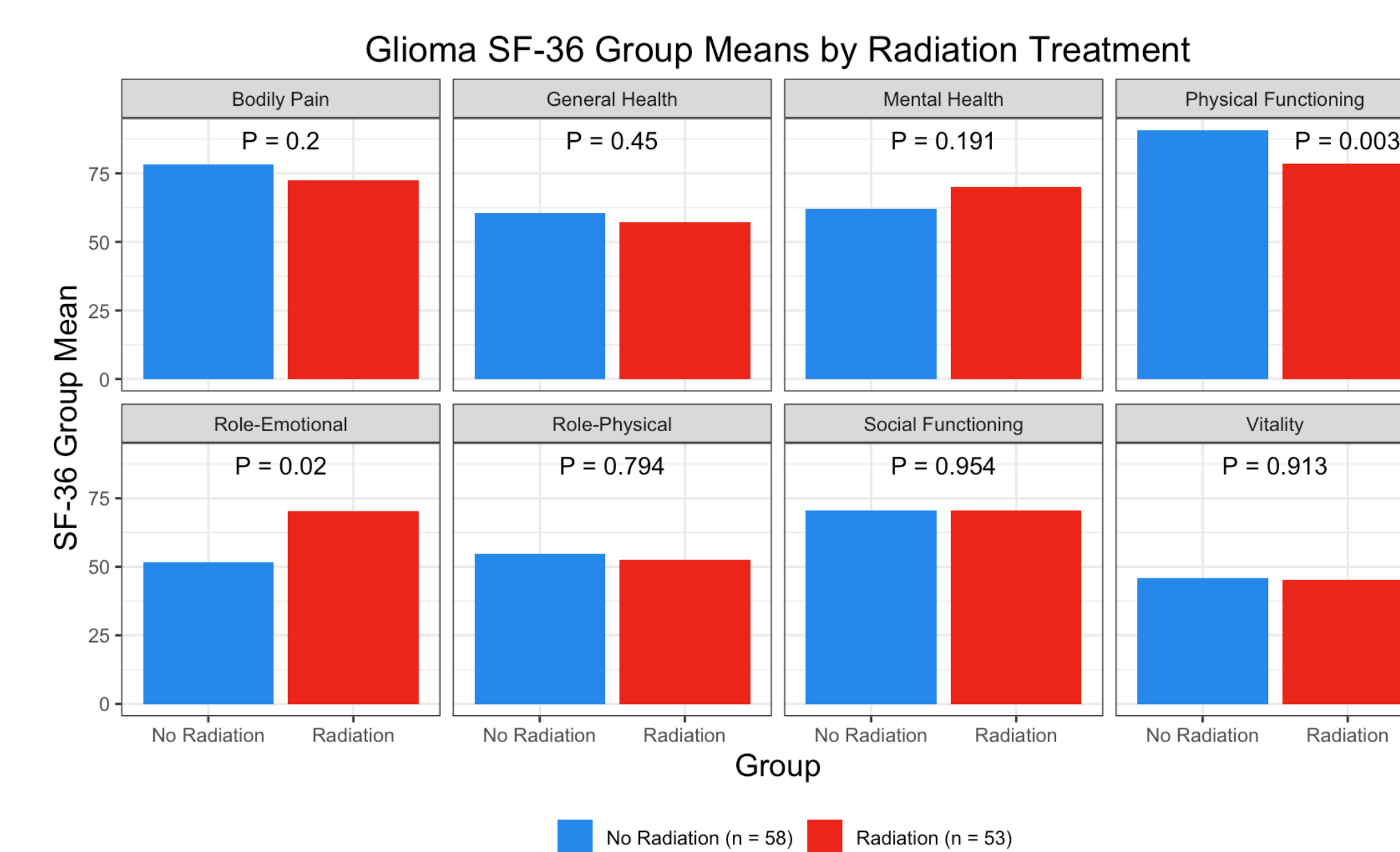


Figure 2: Means for each of the eight SF-36 health domains for LGG patients receiving radiation therapy vs. LGG patients not receiving any form of radiation therapy. Patients receiving radiation therapy showed significantly lower scores in the Physical Functioning and Role-Emotional Health domains.

Conclusion

When compared to study subjects from our prior meningioma case/control study of QOL, these results suggest significant reduction in QOL for LGG patients and possible variation by XRT treatment and thus the need to better understand these differences. Future work will seek to build on the findings of the current study and seeks to understand factors that impact QOL and tailor psychosocial support to the needs of the individual patient.

References

- [1] LS Benz et al. Quality of life after surgery for intracranial meningioma. *Cancer*, 124(1):161–166, January 2018.

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