CNS 2018 ANNUAL MEETING
HOUSTON, TEXAS
OCTOBER 6-10, 2018

Morphometrics Predicts Overall Survival in Patients with Glioblastoma

Hesham Mostafa Zakaria MD; Richard Rammo MD; Lara Walsh Massie MD; Brent Griffith MD; Victor W. Chang MD; Ian Yu Lee MD
[Institution]

Click To Add Logo

Introduction

Predicting survival of patients with glioblastoma would help stratify treatments between aggressive to palliation. Morphometrics has been used to predict postoperative morbidity and mortality.1 This study evaluates whether morphometrics is predictive of survival in patients with glioblastoma.

Methods

We identified patients with glioblastoma over the past two years using our internal registry. Morphometric measurements were taken of the temporalis muscle from the time of diagnosis. Overall survival and hazard ratios were calculated with multivariate cox proportional hazards regression analyses.

Results

Of the 114 patients with GBMs included in this study, 70 (61%) were male, 93 (82%) were Caucasian, 10 (8%) were African American. The mean age at diagnosis was 63.1 years (s.d.=12.8) with a range from 21 to 88. The median survival time for all patients was 15.9 months (95%CI=13.8, 17.7). No difference was detected between males and females for average temporalis. Patients in the smallest tertile (first) for temporalis size had a shorter survival (6.7mo, 95%CI=3.6–15.7) than those in the largest (third) tertile (20.5mo, 95%CI=15.9–24.3), hazard ratio 2.32 (95%CI=1.39-3.87, p<0.001).

Conclusions

In patients with glioblastoma, morphometric analysis of temporalis muscle size can be used to identify patients who are at risk for shorter survival. This information can be used to help with surgical and treatment decision making in this population.

Learning Objectives

By the conclusion of this session, participants will be able to:

1) Describe why it is important to predict outcomes in patients with spinal metastases

2) Discuss the role of morphometrics in predicting mortality in patients with lung, breast, prostate, or myeloma spine metastases

3) Apply morphometrics to stratify high risk and low risk patients for overall survival regardless of tumor histology

References

1.Hasselager R, Gogenur I. Core muscle size assessed by perioperative abdominal CT scan is related to mortality, postoperative complications, and hospitalization after major abdominal surgery: a systematic review. Langenbeck's archives of surgery / Deutsche Gesellschaft fur Chirurgie. Mar 2014;399(3):287-295.