

OPI2

The prognostic utility of temporalis thickness measured on MRI scans in patients with intra-axial malignant brain tumours: a systematic review and meta-analysis

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Abstract

Sarcopenia is associated with worsened outcomes in solid cancers [1]. Temporalis muscle thickness (TMT) has emerged as a measure of sarcopenia [2]. Hence, this study aims to evaluate the relationship between TMT and outcome measures in patients with malignant intra-axial neoplasms. We searched Medline, Embase, Scopus, and Cochrane databases for relevant studies. Event ratios with 95% confidence intervals (CI) were analysed using the RevMan 5.4 software. Where meta-analysis was impossible, vote

counting was used to determine the effect of TMT on outcomes. The GRADE framework was used to determine the certainty of the evidence.

Four outcomes were reported for three conditions across 17 studies involving 4430 patients. Glioblastoma: thicker TMT was protective for overall survival (OS) (HR 0.59; 95% CI 0.46–0.76) (GRADE low), progression free survival (PFS) (HR 0.40; 95% CI 0.26–0.62) (GRADE high), and early discontinuation of treatment (OR 0.408; 95% CI 0.168–0.989) (GRADE high); there was no association with complications (HR 0.82; 95% CI 0.60–1.10) (GRADE low). Brain Metastases: thicker TMT was protective for OS (HR 0.73; 95% CI 0.67–0.78) (GRADE moderate); there was no association with PFS (GRADE low). Primary CNS lymphoma: TMT was protective for overall survival (HR 0.34; 95% CI 0.19–0.60) (GRADE moderate) and progression free survival (HR 0.23; 95% CI 0.09–0.56) (GRADE high).

Across various intracranial intra-axial malignancies, patients with thicker TMT have better survival outcomes and are less prone to discontinuing treatment secondary to drug toxicity. TMT has the potential to be a valuable prognostic tool for risk-benefit considerations in the management of these patients.

Keywords: *temporalis thickness; MRI scan; brain tumours; systematic review; malignant; neurosurgery*

References

1. Shachar SS, Williams GR, Muss HB, Nishijima TF. Prognostic value of sarcopenia in adults with solid tumours: a meta-analysis and systematic review. *Eur J Cancer* 2016; 57: 58–67. doi: 10.1016/j.ejca.2015.12.030
2. Ranganathan K, Terjimanian M, Lisiecki J, Rinkinen J, Mukkamala A, Brownley C, et al. Temporalis muscle morphomics: the PSOAS of the craniofacial skeleton. *J Surg Res* 2014; 186: 246–52. doi: 10.1016/j.jss.2013.07.059