ABSTRACT

Meta-analysis of overall survival and postoperative neurologic deficits after resection or biopsy of butterfly glioblastoma.

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Butterfly glioblastoma (bGBM) is a grade 4 glioma with a poor prognosis. Surgical treatment of these cancers has been reviewed in the literature with some recent studies supporting resection as a safe and effective treatment instead of biopsy and adjuvant therapy. This meta-analysis was designed to determine whether there are significant differences in overall survival (OS) and postoperative neurologic deficits (motor, speech, and cranial nerve) following intervention in patients who underwent tumor resection as part of their treatment, compared to patients who underwent biopsy without surgical resection. A literature search was conducted using PubMed (National Library of Medicine) and Embase (Elsevier) to identify articles from each database's earliest records to May 25, 2021, that directly compared the outcomes of biopsy and resection in bGBM patients and met predetermined inclusion criteria. A meta-analysis was conducted to compare the effects of the two management strategies on OS and postoperative neurologic deficits. Six articles met our study inclusion

criteria. OS was found to be significantly longer for the resection group at 6 months (odds ratio [OR] 2.94, 95% confidence interval [CI] 1.23-7.05) and 12 months (OR 3.75, 95% CI 1.10-12.76) than for the biopsy group. No statistically significant differences were found in OS at 18 and 24 months. Resection was associated with an increased rate of postoperative neurologic deficit (OR 2.05, 95% CI 1.02-4.09). Resection offers greater OS up to 1 year postintervention than biopsy alone; however, this comes at the cost of higher rates of postoperative neurologic deficits.