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Editorial

Extent of resection for low-grade gliomas – Prognostic or therapeutic?

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Steps or centimeters towards evidence-based practice?

The NCCN endorses maximal safe resection for LGGs based on level 3 evidence [5]. While data to support the prognostic effect of EOR is robust, proving a therapeutic effect remains elusive, since there will likely never be a randomized clinical trial (RCT) [4], [8], [9]. Selection bias limits interpretation of retrospective data. Lesser EOR may be associated with certain tumor features, such as larger size, diffuse or aggressive histology, multifocality or bihemispheric involvement, infiltration …

GTR+ for "diffuse gliomas" – Back to the future?

Lower grade gliomas were historically termed "diffuse gliomas" due to their diffusely infiltrative nature and were, therefore, not considered to be surgically curable because it was believed there would always be tumor cells beyond the resection margins [11]. Studies conducted early in the MRI era recognized that isolated tumor cells could be found in the most distant biopsy samples taken outside of imaging abnormalities [14]. Authors of the RTOG 9802 study noted that this observation "has…

Chasing tumor or chasing definitions of tumor – WHO are we trying to keep up with, anyway?

LGGs were historically diagnosed based on morphological features alone, and thus represented heterogenous groups of patients by current WHO standards. Histological diagnosis was hindered by high intraobserver and interobserver variability and did not adequately predict patient outcomes [15], [16]. In 2016, the WHO introduced molecular diagnosis, defined principally by IDH(1/2) single nucleotide variations and 1p/19q-chromosomal codeletion, genomic alterations which reflect early/truncal…

Gross-total resection (says who?): objective measures of EOR

Analysis of RTOG 9802 found that GTR, as defined by the treating neurosurgeon, was often discordant with post-operative MRI-based volumetric EOR. For example, 41% of patients with neurosurgeon-determined GTR had T2-FLAIR signal greater than 1 cm beyond the resection cavity margin. Volumetric EOR based on post-operative T2-FLAIR signal correlated well with PFS and OS, suggesting that neurosurgeons are "unable to accurately predict" whether a GTR has been accomplished intra-operatively. Although...

Where do we (INDI)GO next?

Fifteen years after the seminal discovery of the IDH mutation as an early driver of gliomagenesis, the success of the INDIGO trial represents the first-ever targeted therapy for the upfront management of adult gliomas [1], [39]. Patients with residual or recurrent/progressive IDH-mutant LGGs were randomized to vorasidenib, a dual IDH(1/2)-mutant inhibitor, versus placebo. Patients were eligible if they underwent surgery 1–5 years prior to enrollment, had measurable non-enhancing tumor, and were ...

Summary

EOR remains an important prognostic factor in the molecular era of glioma diagnosis. Although there is some compelling evidence of a therapeutic effect of EOR in LGG, it remains difficult to prove given the lack of randomized data. Therefore, a reasonable approach is "maximal safe resection", as endorsed by the NCCN. Careful decisions regarding the theoretical benefits of EOR on PFS, malignant transformation, and OS must be weighed against the risk of perioperative complications and...

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CRediT authorship contribution statement

Kinslow Connor: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Visualization, Writing – original draft, Writing – review & editing. **Garton Andrew:** Conceptualization, Data curation, Investigation, Validation, Writing – original draft. **Rae Ali:** Conceptualization, Formal analysis, Investigation, Methodology, Validation, Writing – original draft. **Bruce Jeffrey:** Methodology, Project administration, Resources, Supervision, Validation, Writing – review & editing. **Wang**...

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