

The inconsistent terminology for the extent of resection in glioblastoma: A systematic review on 6 decades of neuro-oncological studies

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Extract

In patients with newly diagnosed glioblastoma, more extensive resection translates into prolonged survival.^{1,2} Terminology to describe the extent of resection (EOR) has been inconsistently applied across clinical studies which may introduce prognostic imbalances when comparing studies from different institutions.³ To systematically characterize the current terminology for glioblastoma resection, we screened neuro-oncological studies published between 01/1966 and 01/2024 in the PubMed database (MeSH term: *glioblastoma*; non-MeSH terms: *EOR, resection, survival*). The studies ultimately included data from 1979 to 2023. For studies on adult patients with supratentorial glioblastoma reporting EOR, a standardized set of semantic and clinical variables was extracted to delineate the terminology for EOR.

A total of 1862 neuro-oncological studies were identified, and 173 studies (prospective: 74, retrospective: 99) reported on EOR in newly diagnosed glioblastoma. A broad range of 18 different semantic terms was applied to describe varying amounts of residual tumor (Figure 1A). Here, 6 studies reported on resection beyond the contrast-enhancing tumor margins which was most predominantly referred to as “*supramaximal*” ($n = 2$; 33.3%) or “*supramarginal*” resection ($n = 2$; 33.3%). In total, 162 studies discussed maximal resection of the contrast-enhancing tumor portion, mainly described as “*gross-total*” ($n = 97$; 59.9%) or “*complete*” resection ($n = 33$; 20.4%). A majority of 168 studies referred to incomplete resections as either “*subtotal*” ($n = 91$; 54.2%) or “*partial*” resection ($n = 56$; 33.3%). In line with this inconsistent terminology, only every second study ($n = 91$; 52.6%) defined thresholds required for patients to match into a specific resection category.