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Extent of resection is important across glioblastoma molecular subtypes

Glioblastoma is classified according to *IDH* mutational status, with *IDH*-wild-type disease having a substantially worse prognosis than *IDH*-mutant disease. Surgery is a mainstay treatment for both forms of glioblastoma, although the influence of extent of resection has been unclear. Now, new data provide important insights across molecular subtypes.

The new data come from a retrospective multicentre study involving 761 patients. Cox proportional hazards-regression modelling revealed that patients with *IDH*-wild-type and those with *IDH*-mutant glioblastoma both benefit from a greater percentage resection of not only contrast-enhancing (CE) tumour visible on T1-weighted MRI, but also non-contrast-enhancing (NCE) tumour visible on T2-weighted or FLAIR MRI, regardless of *MGMT* promoter-methylation status.

Among patients with *IDH*-wild-type disease treated with adjuvant temozolomide, only younger patients (<65 years old) benefitted from maximal resection of NCE in addition to CE tumour. In particular,

a subgroup with a median 100% and 92% resection of CE and NCE tumour, respectively (resulting in a residual NCE tumour burden of <5.4 ml), had a median overall survival (OS) of 31.7 months. By contrast, those with a median 98% resection of CE tumour but >5.4 ml of residual NCE tumour (median 54% NCE tumour resection) had a median OS of 17.9 months. Notably, the OS of the former subgroup was similar to that of patients with *IDH*-mutant disease over the first 2–3 years, but decreased much more rapidly after this point — the median OS was 78.4 months in the *IDH*-mutant group.

These data will enable better prognostication and provide clarification of the surgical strategy for glioblastoma. Maximal CE and NCE tumour resection is the goal in younger patients, whereas complete resection of CE tumour only might be appropriate in older patients.

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ORIGINAL ARTICLE Molinaro, A. M. et al. JAMA Oncol. https://doi.org/10.1001/jamaoncol.2019.6143 (2020)