

# Insular glioma surgery outcome

Insular glioma surgery remains a neurosurgical challenge due to the close proximity of functionally-important cortical, white matter tracts, and vasculature structures. More recently, the feasibility of resection has gained traction, however, there is a lack of consolidated neurological deficit metrics.

The aim of a study of Lu et al., from the Mayo Clinic Jacksonville, was to determine the incidences of neurological deficits following insular glioma resection to better guide selection algorithms and resource allocations. Searches of seven electronic databases from inception to August 2018 were conducted following Preferred Reporting Items for Systematic Reviews and MetaAnalyses (PRISMA) guidelines. Data were extracted and pooled using meta-analysis of proportions. Meta-regression was used to identify potential sources of heterogeneity. Nineteen observational studies reported the neurological outcomes of 890 insular glioma patients. The pooled incidences of new temporary and permanent motor deficits were 11% (95% CI, 6-17%) and 4% (95% CI, 2-7%) respectively, and new temporary and permanent language deficits were 11% (95% CI, 6-17%) and 2% (95% CI, 0-4%) respectively. Single-surgeon series reported significantly lower incidences of both permanent motor (2% vs 7%;  $P < 0.001$ ) and language (1% vs 3%;  $P = 0.03$ ) deficits. The incidences of motor and language neurological deficits following insular glioma resection have been quantified, and will assist in determining the suitability and appropriateness of pursuing surgical resection for insular glioma.

They note that permanent neurological deficits are lowest when reported by series describing outcomes of a single surgeon, indicating most optimal outcomes may be best achieved after intense training and/or greater experience <sup>1)</sup>.

<sup>1)</sup>

Lu VM, Goyal A, Quinones-Hinojosa A, Chaichana KL. Updated incidence of neurological deficits following insular glioma resection: A systematic review and meta-analysis. Clin Neurol Neurosurg. 2018 Dec 17;177:20-26. doi: 10.1016/j.clineuro.2018.12.013. [Epub ahead of print] Review. PubMed PMID: 30580067.

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