Cognitive Deficits In Adult Patients With Hemispheric Gliomas

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Aim: This study aims to profile the cognitive deficits in adult patients with hemispheric gliomas

Method: The study included 108 adult patients with hemispheric gliomas, from December 2014 till November 2016. Patients were assessed with Neurocognitive assessment tools of NIMHANS Neuropsychological Test Battery and the PGI Battery of Brain Dysfunction. Multivariate and univariate analyses were done to find associations between the tumor and cognitive variables.

Results: The most common cognitive deficits found were in the domains of memory (immediate and delayed), new learning ability, auditory attention span, information processing, executive functions and visuo-spatial functions.

Statistical analysis enabled prediction of the deficits associated with laterality and grade of the tumor. Thus left sided tumors predicted impairment on immediate and delayed memory of a meaningful passage, immediate memory of explicit verbal information and in the rate of learning. Further, left sided tumors predicted impairments in auditory attention span and information processing.

High grade tumors predicted impairments in delayed recall of a logical passage, immediate and delayed recall of explicit verbal content, executive functions and auditory attention span.

In this sample no association was found between tumor and language functions. Also no significant association was found between cognitive variables and the lobes affected

Conclusion: A detailed preoperative cognitive assessment can identify the extent of cognitive impairment caused by these infiltrating intra-axial lesions. This forms the baseline for planning intraoperative assessment in patients who undergo awake procedures, and for subsequent cognitive remediation and rehabilitation. Serial assessments are also a useful index for assessing disease progression.