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Histological, molecular, clinical and outcomes characteristics of Multiple Lesion Glioblastoma. A retrospective monocentric study and review of literature

[Article in English, Spanish]

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Abstract

Background: Multiple lesion glioblastoma (M-GBM) represent a group of GBM patients in which there exist multiple foci of tumor enhancement. The prognosis is poorer than that of single-lesion GBM patients, but this actually is a controversial data. Is unknown whether multifocality has a genetic and molecular basis. Our specific aim is to identify the molecular characteristics of M-GBM by performing a comprehensive multidimensional analysis.

Methods: The surgical, radiological and clinical outcomes of patients that underwent surgery for GBM at our institution for 2 years have been retrospectively reviewed. We compared the overall survival (OS), progression free survival and extent of resection (EOR) between M-GBM tumors (type I) and S-GBM (single contrast-enhancing lesion, type II).

Results: A total of 177 patients were included in the final cohort, 12 patients had M-GBM and 165 patients had S-GBM. Although patients with M-GBM had higher tumor volumes and midline location, the EOR was not different between both type of lesions. Higher percentage of tumors with EGFR overexpression was detected in M-GBM. PFS and OS was significantly shorter in M-GBM.

Conclusions: Considering no differences in EOR, patients with M-GBM showed shorter PFS and OS in comparison with S-GBM. Evidences about the M-GBM origin as a multifocal lesion because its molecular profile are suggested.

Keywords: GBM; Glioblastoma; Lateral ventricle; Multicentric glioblastoma; Multifocal glioblastoma; Supervivencia; Survival; Tumor; Ventrículos lateral.