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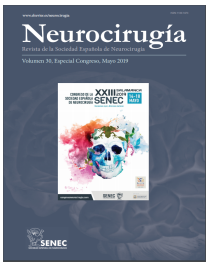

C0084 - DETECTION OF IDH1 MUTATIONS WITHIN CIRCULATING EVS FROM GBM PATIENTS

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Resumen

Objectives: The identification and validation of biomarkers for prognostic and respond to therapy value, using minimally invasive approaches, along the course of the disease, will significally improve the management of these tumors. Glioma cell extracellular vesicles (EVs) containing mRNA, gDNA or proteins, can cross the Blood Brain Barrier reaching the peripheral blood, from where they can be isolated and their cargo analysed. Somatic mutations at codon 132 of the isocitrate dehydrogenase 1 gene (IDH1) have been identified in approximately 12% of glioblastomas. This subgroup of patients display better prognostic, with improved overall survival.

Methods: Human GBM cells were xenografted into athymic mice brain. After tumor growth, peripheral blood was extracted and EVs isolated. gDNA sequences within EVs were amplified with IDH1-human primers and compared to gDNA from their corresponding GBM cells.

Results: We have studied IDH1 sequence on 25 samples of paraffin embedded tissue and their respective peripheral blood samples from patients diagnosed with different degree of gliomas. We found IDH1 sequences in gDNA-EVs from all patients samples studied. Moreover, gDNA within EVs correlates with their corresponding gDNA tissue.

Conclusions: IDH1 gDNA sequence from brain tumor cells can be found in EVs isolated from peripheral blood of GBM patients. Therefore, EVs cargo could be used as a biomarker via a minimally invasive technique.