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FGF-2 as a new biomarker in multiple sclerosis: From the histopathology to the cerebrospinal fluid

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FGF-2 exerts a motogenic role for oligodendrocyte precursor cell (OPC) migration during development and in adulthood, which is limited by the extracellular matrix protein anosmin-1, in both cases through FGFR1. In *postmortem* samples of multiple sclerosis (MS) patients, FGF-2 is present in areas of active demyelination where the spontaneous ability of remyelination persists, whereas anosmin-1 is exclusively observed in areas where remyelination rarely occurs. Moreover, FGF-2 is present in perivascular astrocytes in the normal appearing grey matter of a subset of MS patients who present a slightly compromised blood-brain barrier. On the other hand, FGFR1 is present in a subpopulation of adult OPCs chemoattrated by the FGF-2-gradient present in the tissue. The specific expression pattern of FGF-2 in white matter lesions and the observation of its heterogeneous presence in the grey matter of MS patients suggests the possibility that this growth factor may be useful as biomarker for MS evolution. Previous to be declared relapsing-remitting MS (RRMS), MS patients suffer a first attack called clinically isolated syndrome (CIS). Since individuals who experience a CIS may or may not develop MS, it is of capital importance the search for biomarkers to predict conversion to MS. In the current work, the speaker analyzes the level of FGF-2 in the cerebro-spinal fluid (CSF) of CIS and RRMS patients of both sexes in order to evaluate whether this molecule is a reliable biomarker of the clinical course and prognosis of this disease.

Biography

Diego Clemente completed his Ph.D. from the Universidad de Salamanca (Spain) focusing on the role of glial cells in the spontaneous regeneration of fish optic nerve after a traumatic injury. He then moved to the Instituto Ramón y Cajal (Madrid, Spain) where the neuroimmunolgy analysis of MS started. In the Hospital Nacional de Parapléjicos (Toledo, Spain), he studies the role of different developmental molecular cues involved in MS phisiopathology. He has been Principal Investigator of 3 grants including one funded by the prestigious French Foundation for the Study of MS (ARSEP), published 22 papers and mentored 2 Thesis.

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