#64 Poster

NEUROPROTECTIVE EFFECTS OF INSULIN-LIKE GROWTH FACTOR II IN A MOUSE MODEL OF PARKINSON'S DISEASE

Ageing and dementia

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Objetivos / Objectives
Progressive degeneration of the nigrostriatal dopaminergic pathway is a core, currently irreversible pathological hallmark of Parkinson’s disease (PD) that leads to a variety of motor and non-motor symptoms. Here, we aimed to study the potential neuroprotective effects of insulin-like growth factor II (IGF-II) in a PD mouse model based on the chronic administration of 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine and probenecid (MPTP/p), which induces loss of dopaminergic neurons in the Substantia Nigra pars compacta (SNc)

Metodología / Methodology
Male C57BL6/J mice (N=36) received a 5-week treatment with MPTP/p (or vehicle) and were co-treated with chronic IGF-II (or saline) from either the beginning of the procedure (plus an additional week, days 1-44) or once the MPTP/p insult was already triggered (days 21-44). Baseline and post-treatment measurements for motor performance in the Rotarod and self-grooming in an Open Field were taken. Likewise, dopaminergic (TH, DAT) and neuroinflammatory-related (GFAP) markers in the SNc and the dorsal striatum were studied by immunohistochemistry.

Resultados y Conclusiones / Results & Conclusions
Our results revealed that both early and delayed IGF-II co-treatment were successful in preventing motor and behavioral impairment in the MPTP/p model. Moreover, chronic IGF-II protected against MPTP/p-induced loss of dopaminergic neurons in the SNc and promoted a significant recovery of dopaminergic activity in the terminals located in the dorsal striatum, further reducing reactive astrocytosis in these brain regions. Thus, we demonstrated the neuroprotective role of IGF-II in a mouse model of PD, highlighting its potential as a promising therapeutical target for treating this disease.
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