RELIEF OF PARKINSON DISEASE BY OLFACTORY EPITHELIAL STEM CELLS

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Introduction: Parkinson's disease (PD) is a disorder in basal ganglia that is a slow progressive disease and is characterized by the loss of dopaminergic neurons in the pars compacta of the substantia nigra (NG). There is a strong evidence the oxidative stress participates in the etiology of PD.

Materials and methods: 30 male rats from vistar spring were divided into 3 groups (10 animals in each group) control, sham and injection. Stem cells divided from olfactory epithelium of a young mail rat. Cells cultured for a week in DMEM/F12 including 10\%FBS. After a week Immunocytochemistry were done for detection of nestin positive cells. Then cells differentiated with FGF 20µm. After 2 weeks all cells detached from the flasks and counted with Trypan blue then 10000 to 20000 cells injected in compact part of substantia nigra. 4 weeks after injection Immunocytochemistry were done again for detection of alive cells and behavioral test were done for all groups. All data analyze by SPSS.

Results: Some cells after 7 days culture were nestin positive. After 2 weeks culture and 20µm FGF some cells express tyrosine hydroxyls precursor of dopamine. 4 week after injection some injected cells were alive and express Brdu. But behavioral test were not significant in all groups.

Conclusion: There are stem cells in olfactory epithelium that express nestin. These cells differentiate by FGF into dopaminergic neuron.