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Poster Presentation

Therapeutic Potentials of Stem-Cell-Based Therapy for Parkinson's Disease; Current Status of Human Endometrium-Derived Mesenchymal Stem Cells

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Abstract

Parkinson's disease (PD) is a progressive neurodegenerative disease characterized by motor and non-motor symptoms. It is expected to impose an increasing economic and social burden on human populations. The motor symptoms of PD are well known, including age-dependent uncontrollable resting tremor, bradykinesia, rigidity, posture instability. In the non-motor symptoms, cognitive changes, dementia, behavioral or neuropsychiatric changes, pain and fatigue, autonomic dysfunction, psychosis and hallucinations, sleep disorder, depression, mood disturbances and anxiety occur. Currently, available therapeutic approaches are mainly aiming to relief PD motor symptoms including L-DOPA replacement therapy, administration of DA agonist, and deep brain stimulation, in subthalamic nucleus and globus pallidus via surgically implanted electrodes. All of these therapeutic approaches are palliative and they are incapable for contrary to progression of PD. In recent years, neurons and glia have been generated successfully from stem cells. By the progress of stem cell therapy, expand of using stem cell promise the revolution of medical therapy for neurological disorders like PD. The recent upcoming research for PD treatment using human endometrium-derived stem cells (HEDSCs) has unveiled in bringing stem cell technology in the expected future in the form of disease modeling and stem cell therapy. HEDSC represent a new cell source for neurological disorders, which is abundant and can be easily isolated by a simple, safe, and painless procedure such as Pap smears. HEDSCs have ability for use as an autologous or allogenic stem cell source, so resolve concerns regarding rejection in human beings. HEDSCs are a highly inducible source of allogenic stem cells that can rescue dopamine concentrations in PD animal model. Stem cells have become attractive candidates for cell therapy in neurological disorders including PD. Stem cell therapy especially with HEDSCs shows a promising technology for PD treatment in which more advanced research should be done in creating ways to tackle the disease.

Keywords: Parkinson's Disease, Dopaminergic Neuron, Endometrial Stem Cells, Cell Therapy

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