Stem Cell Treatment Has Potential to Help Parkinson’s Disease Unexpected Brain Area

Currently symptomatic therapies for Parkinson’s Disease (PD) produce unwanted side effects and diminished effectiveness over time. A recent study published in STEM CELLS suggests that human neural stem cell (hNSC) transplantation could help to treat PD by stimulating subventricular zone (SVZ) stem cells to produce more neural cells.

Durham, NC (PRWEB) March 28, 2017 -- Currently symptomatic therapies for Parkinson’s Disease (PD) produce unwanted side effects and diminished effectiveness over time. A recent study published in STEM CELLS suggests that human neural stem cell (hNSC) transplantation could help to treat PD by stimulating subventricular zone (SVZ) stem cells to produce more neural cells.

Strategies involving transplantation of these cells into the affected brain regions hold great promise; however, the exact mechanisms behind hNSCs’ success are not fully understood.

Neural stem cells are self-renewing and can differentiate into any type of neural cell, such as neurons and glial cells. With their ability to rescue dysfunctional neural pathways, NSCs are an ideal source for grafting and the development of novel therapies.

A team led by Renzhi Wang from Peking Union Medical College Hospital and Institute of Basic Medical Sciences, Chinese Academy of Medical Sciences presented an animal model study to improve understanding of the pathogenesis of PD. They also reported that the novel mechanism of action of transplanted hNSCs may prove helpful in the development of stem cell-based therapeutics for PD and other neurodegenerative diseases.

Using a high-throughout quantitative approach, proteome profiles of PD-related brain regions were characterized in mice. These included the substantia nigra, striatum, olfactory bulb, and, significantly, the subventricular zone (SVZ). This analysis showed a profound disturbance of the SVZ proteome, confirming the involvement of the SVZ in PD.

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About the Journal: STEM CELLS, a peer reviewed journal published monthly, provides a forum for prompt publication of original investigative papers and concise reviews. The journal covers all aspects of stem cells: embryonic stem cells/induced pluripotent stem cells; tissue-specific stem cells; cancer stem cells; the stem cell niche; stem cell epigenetics, genomics and proteomics; and translational and clinical research. STEM CELLS is co-published by AlphaMed Press and Wiley-Blackwell.

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Contact Information
Chelsea Kekahuna
AlphaMed Press
+1 (919) 680-0011

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