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Poster Presentation

Application of Induced Pluripotent Stem Cells in Spinal Cord Injury Treatment

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Abstract

Stem cell therapy can be useful for spinal cord injury (SCI). Induced pluripotent stem cells (iPSCs) are generated by reprogramming mature, fully differentiated cells into a pluripotent state. The ability to generate pluripotent cells from adult somatic cells without the need for an embryo was a major development in stem cell biology. iPSCs were established from mouse fibroblasts and demonstrated therapeutic potential for treating SCI in animal models. It has been reported that the human iPSCs differentiated into neurons, astrocytes, and oligodendrocytes in the injured spinal cord and promoted motor functional recovery. It is hypothesized that the transplantation of human iPSCs could result in a wide range of positive effects, including angiogenesis, axonal regeneration, and local-circuitry reconstruction. Recent study has demonstrated that iPSCs cells possess properties of embryonic stem cells generated from Patients with amyotrophic lateral sclerosis can be differentiated into motor neurons. Our hypothesis suggests that human iPSCs represent a promising cell source for transplantation into the injured spinal cord.

Keywords: Induced Pluripotent Stem Cells, Spinal Cord Injury, Transplantation, Axonal Regeneration.

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