9th Yazd International Congress and Student Award on Reproductive Medicine with 4th Congress of Reproductive Genetics

Poster Presentations

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Study of differentiation potential of human amniotic fluid-mesenchymal stem cell in neural tissue regenerative

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Background: One of the applications of human amniotic fluid mesenchymal stem cell is repairing nerve tissue. New studies have been conducted on the application of these cells in neural differentiation under different conditions including different concentrations of growth factors, different concentrations of amniotic fluid and various scaffolds. The results have been satisfactory and promising. Various factors have been optimized to improve the results of differentiation into neural tissues in these studies.

Objective: The purpose of this study was investigating the potential of human amniotic fluid mesenchymal stem cell in regenerative medicine special in neural tissue regenerating.

Materials and Methods: Evaluation of various studies performed in vitro and in vivo so far suggests the high differentiation potential of amniotic fluid mesenchymal stem cells. Considering the fact that the neural differentiation of these cells has received a lot of attention recently, the present study provides a complete overview of published research on the use of these cells in neural differentiation and neural tissue regeneration.

Results: Finding of review show amniotic fluid mesenchymal stem cell can alter morphological characteristic and become neural-like cells, which stimulate the expression of neuronal markers. Amniotic fluid stem cells showed a more primitive phenotype than the potential for differentiation of other stem cell sources, which could potentially be suitable for cell-based therapy in reconstructive medicine for neurodegenerative diseases.

Conclusion: According to the high potential of these cells in differentiation nerve tissue, as well limited studies on Human amniotic fluid mesenchymal stem cell for differentiation into neural tissue have been performed by the same research team in this obtained promising result.

Key words: *Neural differentiation, Amniotic fluid, Human amniotic fluid mesenchymal stem cell (AF-MSCs).*