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Poster Presentation

Reduction of Neuroinflammation in Epilepsy by Using Stem Cells Derived Astrocytes

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Abstract

Epilepsy is neurological disorders that afflict many people around the world with a higher prevalence rate in children and in low income countries. Temporal lobe epilepsy (TLE) is result from hippocampal sclerosis is a neurological disorder with difficult treatment. Stem cells can transform into any type of cells such as glial cells, consequently stem cells can use for medical treatment. Stem cell therapy in epilepsy result in prophylaxis against epilepsy and improve cognitive function after seizures. Astrocytes have many roles in the brain such as protection of neurons and endothelial cells, feeding, inhibiting over activation of microglia, modulate k changes, managing of extracellular ions, regulating density of γ -amino butyric acid, glutamate and adenosine. Excessive activation of microglia cause brain inflammation that lead to epileptic seizures. Adult cell from patient have the capability to alter to embryonic cell and become stem cell by using transcription factors. Astrocytes by secretion of glial cell derived neurotrophic factor (GDNF), controlling the proliferation, adhesion and movement of microglial cells. Also astrocytes reduce generation of lipopolysaccharide (LPS), IL1B, TNF. Astrocytes are as a source of protection mediators that decreased neuroinflammation. In this hypothesis I suggest using stem cell therapy in epilepsy to reduce neuroinflammation induced by microglia and reduce occurrence of seizures.

Keywords: Epilepsy, Stem cell therapy, Astrocytes, Treatment

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