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Poster Presentation

Cultivation of Neural Stem-Like Cells from Adult Human Amygdala

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Abstract

Several sources were introduced for cell therapy after neurotrauma. There are some evidences that quiescent stem cells are located in the various regions of the adult mammalian brain including cortex, hippocampus, amygdala and striatum. But more study is needed to identify the characteristics of these cells. In the present study we investigated the possibility of isolating neural stem cells from adult human amygdala. The amygdala specimens were obtained from five patients suffering from refractory temporal lobe epilepsy and subjected to amygdalo-hippocampectomy. After removing the pia mater and associated blood vessels, the tissue was dissociated enzymatically. Then, the single cells were cultured in neurosphere medium containing 20 ng/ml Fibroblast growth factor, 20 ng/ml epidermal growth factor, B27 supplement and N2 supplement in non-coated flasks. Growth factors were added twice a week. Additional neurosphere medium was administered once every week. To characterize the isolated cells, immunocytochemistry was done against nestin, Sox2, Oct4, GFAP and MAP2. The isolated cells highly expressed neural stem cell markers nestin, Sox2 and Oct4. But there was a few cells expressed mature neuron marker MAP2 and astrocyte marker GFAP. Here, we showed for the first time in Iran the possibility of isolating neural stem-like cells from patients with refractory epilepsy during interventional surgery.

Keywords: Amygdala, Human, Neural Stem-Like Cells, Epilepsy.

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