

COMPARISON OF TNF- α , IL-10, NGF AND NSE LEVELS POST ADIPOSE DERIVED NEURAL PROGENITOR STEM CELL INTRACEREBRAL TRANSPLANTATION IN BRAIN ISKEMIA

ABSTRACT

Backgorund : Hypoxia-ischemic (HI) brain injury is a bad condition that can affect individuals of all ages and as a major cause of death and disability. Stem cell therapy has the potential to correct neurological damage caused by hypoxic ischemic brain injury.

Objective: to prove differences in levels of TNF- α , IL-10, NGF and NSE after administration of intracerebral Adipose derived neural progenitor stem (ANPSC) in brain ischemia

Method: This study used an experimental post-test only study. The experimental unit used a 6-month-old male Rattus norvegicus strain of Rattus norvegicus which was divided into 2 groups randomly. In the control group, communis carotid artery ligation (AKK) was carried out, whereas in the treatment group AKK ligation and intracerebral ANPSC were administered at 2×10^5 doses. Arterial ligation is opened after 1 hour later. After 2×24 hours the animals were killed and blood was collected through the rats' hearts for TNF, IL-10, NGF and NSE examination using the ELISA technique. Statistics using the T-test for independent samples.

Results: A total of 16 rats completed the study completely. There was no statistically significant difference in TNF- α levels in the treatment group compared to the control group ($P = 0.418$). There was a statistically significant difference in IL-10, NGF and NSE levels in the treatment group compared to the control group ($P = 0.023$; 0.027 ; 0.037 respectively). The average level of IL-10 and NGF in the treatment group was higher than the control. The average NSE level is lower than the control.

Conclusion: There was no difference in TNF- α levels in the blood after the APNSC intracerebral transplant in brain ischemia. There were differences in IL-10, NGF and NSE levels in the blood in the form of higher IL-10, NGF levels and lower NSE levels in APNSC intracerebral transplantation treatment than controls in brain ischemia.

Keywords: adipose neural progenitor stem cell, intracerebral, brain ischemia