

ABSTRACT

EFFECT OF ELECTRIC SHOCK ON VCAM AND MCP INCREASE IN THE ENDOTHELIUM OF MICE BLOOD VESSEL

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Stroke is a nervous disorder resulting from several factors, such as infection in body organs, cell regeneration process, genetic problems, and abnormal blood circulation, causing atherosclerosis, which is started with endothelial dysfunction. From those factors, the most predominant is the biological stress. So far, the mechanism of endothelial dysfunction in distress in modern life has not been elaborated.

This study was performed to experimental animals, comprising 27 samples, which were divided into 3 groups, in the effort to prove the increase of VCAM and MCP in distress mice due to treatment with stressor of electric shock for 15 days.

This study used experimental approach by giving severe stress, presenting as electric shock, for 15 days. After the treatment ended, the animals were sacrificed and the heart was taken and subjected to immunohistochemical training for VCAM and MCP, and hematoxylin eosin for foam cell.

Result of ANOVA test revealed that VCAM, subjected to comparative test between posttest and pretest group, had significant difference ($p < 0.05$). MCP subjected to comparative test between posttest and pretest group revealed significant difference ($p < 0.05$). T-test in foam cell in posttest group also showed significant difference ($p < 0.05$). This study has proved that electric shock stressor increased VCAM, MCP in endothelial cells and foam cell in blood vessel in the heart mice.

In conclusion, electric shock has effect on endothelial dysfunction in VCAM and MCP in blood vessel endothelium and the formation of foam cell in cardiac arterial blood vessel in Balb/c mice.

Keywords: electric shock, endothelial dysfunction, VCAM, MCP, foam cell