عنوان مقاله:

Dose-Dependent Protective Effects of Diazepam on Ischemic Hypoxic Rats Brain

محل انتشار:

سومین همایش بین المللی التهاب سیستم عصبی و سومین فستیوال دانشجویی علوم اعصاب (سال: 1398)

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خلاصه مقاله:

Normal neuronal function depends on the integration between a high and low level of membrane potential and firing thresholds witch integrated by excitatory and inhibitory neurotransmitters. GABA receptors play inhibitory roles in the central nervous system by ligand-gated chloride channels. Diazepam is a medication which acts on GABA receptors allosterically and can lower excitability of neurons viaaltering chloride channel gating phases. One of the potential Targets for Neuroprotection is GABA receptor activators, thus we investigate the comparative effects of increasing doses of Diazepam in the present study. Materials and Methods: Wistar male Rats weighing about 250-350g and were kept in standard condition, are chosen for the current study. The animals were divided into 5 groups of 8 including Group 1, Sham-operated without induction of ischemia. Group 2, Negative control with application brain global ischemia and 1mg normal saline injected intraperitoneal. Group 3, 4, and 5 were injected Diazepam intraperitoneal 2, 5 and 10 mg/ kg respectively. Brain global ischemia was done using Four Vessel Occluding (4VO) method expatiated by Pulsinelli with some modification. Tissue prepared After 72 hours by removing brains and fixed in formaldehyde 10%. Slices (2-4 Microns) of tissues stained for H&E. Results: Damaged neuronal cells were seen in thevarious area of brain tissues. Necrosis cells were seen in the cerebellum, basal ganglia, and cortex. In normal saline injection, ischemia and necrosis of hippocampal area CA1-4 occurred. In Diazepam injected groups, significant decreasing neuronal damages according to pathologic criteria such as degrees of ischemic markers are seen in light microscopic fields, but the results were not dose-related. Conclusion: Our results demonstrated that administration of Diazepam can improve the survival of ischemic cells in brain tissues. Further investigationsespecially in tissue and .molecular level needed to survey possible dose-dependent changes

کلمات کلیدی: