

Evaluation the protective effect of nano emulsions containing rosemary on CA1 hippocampus neurons ischemic/ reperfusion injury

Background: Stroke is an important cause of mortality and morbidity worldwide but effective therapeutic strategy for the prevention of brain injury in patients with cerebral ischemia is lacking. Regard to know the mechanism of injury, the use of plant medicine can help, rosemary is a plant that is accessible and unexpansive that have strong antioxidant and anti-inflammatory effects, that may be helpful.

Material and Method: This study had two main parts: in vivo and in vitro. In in vivo part, we divided wistar rats into 8 groups (control, ischemia/reperfusion, 3 dose of alcoholic extracts of rosemary and 3 dose of aqueous extracts of rosemary), after 21 days of rosemary administration the ischemia and reperfusion was done, finally apoptosis gene and neurons death were assayed in hippocampus and in in vitro part we cultured hippocampus neurons (in 7 groups: control, 3 dose of aqueous extracts of rosemary and 3 dose of alcoholic aqueous extracts of rosemary) and then cell viability was assayed.

Results: We demonstrated that 200 mg/kg aqueous extracts of rosemary decrease the apoptosis gene expression and increase the anti-apoptosis gene expression in compare to ischemia ($p < 0.05$) and decrease the neuron death in CA1 region in hippocampus ($p < 0.05$). The neurons viability in culture group with 200 mg/ml alcoholic aqueous extracts of rosemary had no significant difference with control.

Conclusion: Present study demonstrated that cerebral ischemic tolerance induced by rosemary extracts pretreatment, the alcoholic aqueous extracts of rosemary in 200 mg/kg dose was more effective to protect of hippocampus.

Key world: Rosemary, Hippocampus, Ischemia /Reperfusion

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Biography

Nazanin Ghareh Khani have mainly worked on the the efficiency of nano emulsions and Neuroscience. Indeed, I have tried to present an research related to the Preparation of nano emulsions containing hydro and alcoholic rosemary and sage examination of its effects on nerve cells. There also exist other projects that I have been collaborating in them. In one of them an stroke was given to male rats and the impacts of nano emulsions was examined with checking the number of healthy neurons by Nissl , PCR,... staining method. And I was able to identify the stroke prevention drug. And another, I do case is working on the effect of drugs on the rats brain and research Drugs are therapeutic. My article in this regard is in publishing process and I can do all kinds of animal models including (Epilepsy, Seizures, MS, Parkinson's, Alzheimer's, Wide range of Cancers, Diabetes, Heart Reperfusion, Kidney Reperfusion, Brain Reperfusion, Burns, Wounds, Sutures).