The effect of red pepper on Alzheimer's disease in adult male rats

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Abstract:

Background and Purpose: Alzheimer's disease is a neurodegenerative disorder characterized by memory loss and cognitive function impairment. Traditional Persian medicine manuscripts have mentioned red pepper as one of the effective cures for memory impairment. The aim of this study was to determine the effect of red pepper on the level of acetylcholinesterase (AChE) and hippocampal neural density in a rat model of Alzheimer's disease.

Methods and Materials: A pilot study was done to determine the effective dose of red pepper. Twenty-one male wistar rats were divided into three groups (n=7): sham, SAD (Sporadic Alzheimer's disease) + normal diet and SAD+red pepper diet. Alzheimer's disease was induced by stereotaxic surgery and streptozotocin injection. After 3 weeks of treatment, the levels of AChE and neural density were investigated.

Results: The level of hippocampal AChE in SAD+red pepper compared with SAD+normal diet was decreased ($p<0.05$). The neural density in SAD+red pepper group compared with SAD+normal diet was increased in CA1 ($p<0.05$), CA2 ($p<0.01$) and CA3 ($p<0.01$).

Conclusion: The results showed that receiving a diet containing 10% of red pepper could improve memory impairment in the rat model of Alzheimer's disease by reducing AChE and increasing neural density.

Keywords: Alzheimer's disease, Red pepper, Neural density, Acetylcholinesterase.

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