

P-425**Menaquinone-4 effects on working memory impairment and anxiety behavior after transient cerebral ischemia/ reperfusion in male wistar rat****Bahram Farhadi-Moghadam¹, Masoud Fereidoni^{1, 2}**

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Background and Objective: Working memory impairment and anxiety behavior could be induced by transient global cerebral ischemia/reperfusion (TGCI) as one model of brain stroke. Menaquinone 4 (MK-4) is an antioxidant and anti-inflammation known as vitamin K2. This investigation questioned the effects of MK-4 on the mentioned cognitive impairments following TGCI.

Materials and Methods:

28 male wistar rats were randomly selected and divided in 4 groups: sham-control, TGCI, TGCI+DMSO (1% v/v), TGCI+ MK-4. Immediately and also 2 hours after reperfusion, 200mg/kg MK-4 were injected intraperitoneally. 7 days later rats were examined using Y maze and also open field apparatus to evaluate working memory sufficiency and the level of anxiety behavior, respectively.

Results: TGCI could reduce spontaneous alternation compared with the sham-control group significantly ($p < 0.01$). But MK-4 increase percentage of spontaneous alternation compare to TGCI and TGCI+ DMSO ($p < 0.05$). Rats in TGCI + DMSO and TGCI groups spent significantly less time in the center zone of open field apparatus compared to sham-control group which can be interpreted as the elevation of anxiety behavior ($p < 0.001$). But the time spent in the center zone was significantly increased in TGCI+MK-4 group compare with injured groups ($p < 0.001$).

Conclusion: Results showed that MK-4 could improve working memory (short-term memory) and also reduced anxiety behavior after TGCI. Probably, antioxidant and anti-inflammatory aspects of MK-4 decrease oxidative stress and neuro-inflammation proceeding factors in the brain which needs more investigations.

Keywords: Transient Global cerebral ischemia/ reperfusion; Menaquinone-4; Y maze, Open field.

P-426**The effect of safranal on prevention of learning and memory deficits following intracerebroventricular injection of colchicine in the rat****Farzane Fereidooni¹, Ensie Azadi Ahmadabadi¹, Shahram Jalalzadeh¹, Zahra Kiasalari², Mehrdad Roghani²**

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Background and Objective: Cognitive decline is associated with Alzheimer's disease that is considered a chronic and progressive syndrome that finally leads to irreversible loss of neurons. In this study, we assessed whether safranal has a beneficial effect on cognitive function following intracerebroventricular injection of colchicine in the rat.

Materials and Methods: 32 male rats were randomly divided into four groups as follows: Sham, lesion (receiving intracerebroventricular colchicine bilaterally at a dose of 15 microg), and two lesion groups receiving oral safranal at doses of 10 or 50 mg/kg in addition to colchicine. Finally, passive avoidance and Y-maze tests were used to assess learning and memory.

Results: The results showed that intracerebroventricular colchicine significantly reduces alternation and step-through latency in behavioral tests and treatment of lesion group with safranal at a dose of 50 mg/kg significantly improves these parameters.

Conclusion: Taken together, safranal could prevent learning and memory deficits following intracerebroventricular injection of colchicine in the rat.

Keywords: Safranal, Colchicine, Cognitive decline