P-711

The effect of methanolic extract of fenugreek on learning and memory in an experimental model of Alzheimer's disease in the rat

Leila Nasiri1, Hoora Zardooz2, Zahra Kiasalari3, Mehrdad Roghani3

1. Department of Biology, Faculty of Science, Shahed University, Tehran, Iran.
2. School of Medicine, Shahed University, Tehran, Iran.
3. Neurophysiology Research Center, Shahed University, Tehran, Iran.

Background and Objective: Alzheimer’s disease (AD) is regarded as the most prevalent phenotype of dementia with debilitating disability in learning and memory. With respect to anti-oxidative and neuroprotective potential of Trigonella foenum-graecum (TFG; fenugreek), this study was conducted to evaluate the effect of its alcoholic seed extract on learning and spatial memory in an experimental model of AD induced by amyloid beta 25-35 in rats.

Materials and Methods: In this experimental study, 32 male Wistar rats were divided into 4 groups, i.e. sham, extract-treated sham, AD, and AD group treated with TFG extract. For induction of AD, β-amyloid 25-35 (at a dose of 10 μg/2 μl) was bilaterally microinjected into CA1 area of the hippocampus. The treatment groups received alcoholic extract of TFG (i.p.) at a dose of 200 mg/kg for 1 week till 1 h before the surgery. At 4th week post-surgery, learning and memory was assessed using passive avoidance test and spatial memory was evaluated in Y maze.

Results: Treatment of AD group with the extract significantly prevented the reduction of step-through latency and extract treatment had no significant effect on spatial memory. In addition, extract treatment did not have a significant effect in the sham group.

Conclusion: TFG extract pretreatment of Alzheimeric rats could improve the ability of information consolidation and retrieval in passive avoidance test, however it could not affect recognitive spatial memory.

Key words: Alzheimer's disease, Trigonella foenum-graecum, Amyloid beta, Learning and memory

P-712

The Therapeutic Potential of Losartan in Colorectal Cancer

Nazari, E.1, Hashemzehi, M.2, Asghrzadeh, F.3, Khazaei, M.4

1. Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.
2. Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.
3. Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.
4. Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.

Background: Colorectal Cancer (CRC) is a disease with high incidence rates and mortality. The Renin-angiotensin system (RAS) is a hormone system that is upregulated in CRC. In current study, we evaluated the therapeutic potential of Losartan as a known angiotensin receptor antagonist in CRC model.

Methods: We used animal model of CRC by injection of 2*10^6 CT-26 cells in the left flank to investigate anti-tumor effects of Losartan, 5-Flourouracil (5-FU) and losartan+5-FU (combination). After 14 days, tumor samples were used for the evaluation of oxidative stress-balance and angiogenesis using immunohistochemistry.

Results: Combination of Losartan and 5-FU significantly inhibited tumor growth and histological staining of tumor tissues showed more necrosis and reduction of fibrosis compare to control. Our results also indicated a significantly reduction of tumor vasculature and capillary density following treatment with Losartan and combination of losartan and 5-FU. In tumor tissue, Malondialdehyde (MDA) level was increased and total thiol and catalase activity were decreased in treated group which were more significant in combination group.

Conclusion: These data showed anti-cancer potential of Losartan in combination with a standard chemotherapy agent can be mediated by reduction of fibrosis and tumor angiogenesis, modulating of oxidant/anti-oxidant status, supporting further studies on this therapeutic approach for colon cancer.

Keywords: Losartan, Renin-angiotensin system, Colorectal Cancer