

P-427**The effect of nobiletin on inflammatory response, oxidative stress, cholinesterase, and apoptosis in amyloid beta-induced model of Alzheimer's disease in the rat****Reihane Ghasemi Tarei¹, Zahra Kiasalari², Marzieh Fakour¹, Maryam Khorasani¹, Sedigheh Keshtkar¹, Mehrdad Roghani²**

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Background and Objective: Alzheimer's disease (AD) is the most common cause of dementia. Nobiletin as a natural compound from citrus peels possesses anti-dementia activity. In addition, nobiletin could ameliorate oxidative stress and inflammation. Therefore, this study was conducted to assess the effect of nobiletin on hippocampal inflammatory response, oxidative stress, cholinesterase, and apoptosis in amyloid beta-induced model of AD in the rat.

Materials and Methods: In this study, 32 male Wistar rats were randomly divided into four groups, including: 1. sham, 2. sham+nobiletin, 3. amyloid beta, 4. amyloid beta+ nobiletin. Rats were injected bilaterally with amyloid beta into the CA1 region of the hippocampus through stereotaxic surgery. Nobiletin was administered at a dose of 10 mg/kg daily one hour after surgery for one week via gavage. Then, oxidative stress markers (MDA, ROS, GSH, SOD, Nrf2, catalase), inflammatory factors (NF- κ B, TNF, TLR4), apoptosis parameter (DNA fragmentation) and AChE activity were measured in hippocampal homogenate.

Results: Treatment of nobiletin significantly reduced MDA, ROS and increased SOD with no significant change of GSH, catalase and Nrf2. Another beneficial effect of nobiletin was reduction of inflammatory factors. Besides, nobiletin did not significantly change AChE activity and DNA fragmentation.

Conclusion: According to the findings of this study, we can say that treatment with nobiletin reduces inflammation and oxidative stress. However anti-AChE and anti-apoptotic effects of this agent need to be evaluated more.

Keywords: Alzheimer's disease, Nobiletin, Oxidative stress, Inflammation, Cholinesterase, Apoptosis

P-428**The effect of Thymus vulgaris on rotarod motor performance in the pentylenetetrazol kindled rat****Zahra Qods, Vahid Azizi, Farzin Allahyari, Abdolkarim Hosseini**

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Background and Objective: Epilepsy is a common chronic neurodegenerative disorder disease, it can also, affect motor balance. In this study, the medicinal plant Thymus vulgaris, was used to evaluate its effect on motor deficit caused by pentylenetetrazol (PTZ) in the rat.

Materials and Methods: Twenty-four rats were randomly allocated to 4 groups: control negative under treatment with PTZ (sub-threshold dose 35 mg/kg for one month), control positive under treatment with Phenobarbital (PB-30 mg/kg), and two PTZ groups under treatment with T. vulgaris extract (TVE-50, and -100 mg/kg). Standard rotarod test was used to evaluate motor coordination. Data were analyzed using SPSS.

Results: Motor-skill tasks in rotarod test in PTZ group receiving TVE at a dose of 50 and 100 mg/kg was greater than PTZ group. In addition, PB 30 mg/kg significantly attenuates the motor impairments in treated animals.

Conclusion: Our results showed that TVE could prevent epilepsy and elevate motor coordination in the PTZ-kindled rats.

Keywords: Thymus vulgaris, Epilepsy, Rotarod, Motor coordination, Pentylenetetrazol