

عنوان مقاله:

Effects of Ziziphus Jujuba extract on learning and memory in propylthiouracil induced hypothyroidism in neonatal and juvenile rats: protection against acetylcholinesterase activity and neuronal oxidat

محل انتشار:

هشتمین کنگره علوم اعصاب و پایه و بالینی (سال: 1398)

تعداد صفحات اصل مقاله: 2

نویسندگان:

Zahra Niazi Mashhadi - *Student Research Committee, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran*

Zahra Baradaran - *Student Research Committee, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran*

Farimah Beheshti - *Departments of Physiology, School of Paramedical Sciences, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran. Neuroscience Research Center, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran*

Hassan Azhdari-Zarmehri - *Neuroscience Research Center, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran. Departments of Physiology, School of Paramedical Sciences, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran*

Masoumeh Gholami - *Neuroscience Research Center, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran. Departments of Physiology, School of Paramedical Sciences, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran*

Mahmoud Hosseini - *Division of Neurocognitive Sciences, Psychiatry and Behavioral Sciences Research Center, Mashhad University of Medical Sciences, Mashhad, Iran. Neurogenic Inflammation Research Center, Mashhad University of Medical Sciences, Mashhad, Iran*

خلاصه مقاله:

Background and Aim : It has been shown that hypothyroidism-induced oxidative damage in brain tissue is involved in its adverse effects on learning and memory. Ziziphus Jujuba (ZJ) has been suggested to have antioxidant and neuroprotective effects. In present study, we investigate the effects of hydroalcoholic extract of ZJ on hypothyroidism-associated learning and memory impairment in neonatal and juvenile rats. Thirty pregnant rats were kept in separate cages. **Methods :** After delivery, the mothers and their offspring were randomly divided into five groups including: (1)control, (2)PTU(propylthiouracil), (3)PTU-ZJ100mg, (4)PTU-ZJ150mg and (5)PTU-ZJ200mg (PTU plus ZJ extract 100, 150 and 200 mg/kg respectively). All dams except the control group received 0.005% PTU in their drinking water during lactation. After lactation period, pups continued to receive same experimental treatment for the first 8 weeks of their life. Then, 10 male offspring of each group were randomly selected and assessed for the learning and memory abilities in Morris water maze (MWM) and passive avoidance (PA) test and biochemical assessments. **Results :** PTU increased latency, traveled distance in 5 days and reduced time spent in target quadrant in probe day in MWM and

decreased latency for entering to the dark compartment in PA. PTU reduced serum T4 and thiol groups, superoxide dismutase (SOD) and catalase activities in brain and increased malondialdehyde (MDA) and AChE activity. ZJ extract reversed these effects. Conclusion : The findings of this study imply that treatment with ZJ may improve deleterious effects of hypothyroidism on learning and memory during neonatal and juvenile growth. Protection against brain tissues oxidative damage was as a possible mechanism of ZJ. Also, ZJ attenuates AChE activity in brain tissues of hypothyroid rats.

کلمات کلیدی:

Ziziphus Jujuba; Hypothyroidism; Memory; Oxidative stress; Acetylcholinesterase activity

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