

Adel Salari¹, Homa manaheji², Shahrabano oryan³, Mehdi sadeghi⁴, Zahra bahari⁵, Sadegh ghasemyan⁶, Laleh rezaee⁷, Shokofeh sirosi⁸, Sareh emami⁹, shima mehrabadi¹⁰

1. Shahid Beheshti University, Faculty of medicine, Department of neurophysiology, Tehran, Iran.
2. 2 Shahid Beheshti University, Faculty of medicine, Department of neurophysiology, Tehran, Iran.
3. kharazmi University, Faculty of Biological Sciences, Department of Animal Biology, , Tehran, Iran
4. Shahid Beheshti University, Faculty of medicine, Department of neurophysiology, Tehran, Iran.
5. Shahid Beheshti University, Faculty of medicine, Department of neurophysiology, Tehran, Iran.
6. Shahid Beheshti University, Faculty of medicine, Department of neurophysiology, Tehran, Iran.
7. kharazmi University, Faculty of Biological Sciences, Department of Animal Biology, , Tehran, Iran
8. Shahid Beheshti University, Faculty of medicine, Department of neurophysiology, Tehran, Iran.
9. Shahid Beheshti University, Faculty of medicine, Department of neurophysiology, Tehran, IranShahid Beheshti University, Faculty of medicine, Department of neurophysiology, Tehran, Iran
10. Shahid Beheshti University, Faculty of medicine, Department of neurophysiology, Tehran, Iran

Background and Aim: Central mechanisms of neuropathic pain are still far from clear. However, over activity of NMDA receptors and decreased analgesic effect of α_2 -adrenergic receptors have been reported. The aim of this study was to examine the possible effect of inhibition of NMDA receptor to increase the analgesic effect of α_2 -adrenergic receptor following spinal nerve ligation (SNL).

Methods: SNL model was performed for induction of neuropathic pain. Male wistar rats weighting 180-200g were anesthetized with pentobarbital. After laminectomy SNL model was induced according to the method of Kim&Chung 1992. The Von Frey test used to confirm the successful induction of neuropathy prior to electrophysiological study. Implantation of intrathecal cannula was performed according to the method described by Storkson. The neuropathic rats received intrathecal injection of MK801 and Clonidine and co-administration both of them under-effective dose from day 1 up to 6th day. Extracellular single unit recording was performed on day 7 after neuropathy. Only WDR neurons were studied. All neurons included into this study were responsive to electrical stimulation of the A δ - and C-fibers. Wind-up was calculated as the total number of action potentials evoked after all 16 stimuli at threshold three times that of C-fiber.

Results: The results showed that the threshold of A δ - and C-fibers in comparison of neuropathic rats were significantly more than sham rats. Also there was significant decrement of C and A δ -fiber mediated transmission to WDR neurons as well as post-discharges and Wind up spikes in co-administration of MK801 and Clonidine.

Conclusion: In conclusion it seems that the co-administration of Clonidine and MK801 under effective dose could be a useful strategy to alleviate neuropathic pain.

Keywords: neuropathic pain, Single unit extracellular recordings, alpha2-adrenergic, NMDA

The beneficial effects of regular exercise on long-term memory impairment in sleep deprived female rats

Subject: Learning and Memory

Maryam Salari¹, Vahid Sheibani², **Hakimeh Saadati**³, Alimohammad Pourrahimi⁴, Khadijeh Esmaeelpour⁵

1. Neuroscience Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran
2. Neuroscience Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran
3. Neuroscience Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran
4. Neuroscience Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran
5. Neuroscience Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran

Background and Aim: Previous studies showed that exercise improve long-term memory impairment in paradoxical sleep deprivation (PSD) in male rats. The aim of the present study was to investigate the effects of treadmill exercise on PSD-induced impairment in hippocampal dependent long-term memory in female rats.

Methods: Intact and ovariectomized female rats were used in the current study. Exercise protocol was 4 weeks treadmill running. Twenty four hour PSD was induced by using multiple platform apparatus after learning phase. Long-term memory of the rats were examined by using the Morris Water Maze (MWM) test.

Results: Our results indicated that paradoxical sleep deprivation impaired long term memory in the intact and ovariectomized female rats ($p < 0.05$) and treadmill exercise compensate this impairment ($p < 0.05$).

Conclusion: In conclusion the results of the current study confirmed the negative effect of PSD on cognitive functions and regular exercise seems to protect rats from these factors, however more investigations need to be done.

Keywords: Paradoxical sleep deprivation, Regular exercise, Long-term memory, Morris Water Maze, Female rats

The response of Users opioids and stimulants to neuropsychology Tests.

Subject: Addiction, reward and punishment

Zahra Salari rad¹, Sadegh Khodamoradi²

1. M.A, psychology group, science and research branch Islamic azad university of Tehran, Tehran, Iran
2. student PhD, psychology group, science and research branch Islamic azad university of Tehran, Tehran, Iran