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Chronic cannabidiol attenuates cognitive deficits induced by Methamphetamine-addicted rats

Yasaman Razavi

Iran University of Medical Sciences, Iran

Methamphetamine is a highly addictive drug of abuse, addiction to which has increased to epidemic proportions worldwide. It has been suggested that chronic use of meth causes long-term cognitive deficits. Furthermore, Cannabidiol (CBD) has a large-spectrum therapeutic potential to treat many neuropsychiatric disorders, such as addiction. Several studies have indicated that learning and memory and particularly contextual memories, play a critical role in establishing conditioned responses in addiction. The aim of the present study was to investigate the effects of CBD treatment after addicted meth on two hippocampus-dependent memory tasks: Novel Object Recognition as a non-spatial memory task and Y maze as a spatial memory task. Male rats were addicted with meth (twice, 2.0 mg/kg, s.c.) for 10 days, Then, we evaluated the effect of CBD (50 µg/5 µl; ICV) on spatial working memory, by using Y maze test and recognition memory by using Novel Object Recognition Test (NORT), on extinction period (10 days). We found meth-induced impairment in memory performance whereas CBD could improve the effect of meth destruction also chronic meth had deficit effect on spontaneous behavior and recognition memory impairment obviously seen in meth group compared to control group in Novel Objective Test, moreover CBD administration could reverse long term memory, in conclusion CBD can be considered an agent that reinforce learning and memory system however, this requires more investigation.

Biography

Yasaman Razavi is pursuing her PhD in Neuroscience, presently working on her thesis. She is working in Neuroscience Research Center of Shahid Beheshti University, Iran. She has published 10 articles.

razavi.yasaman@gmail.com

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