

عنوان مقاله:

Chronic buprenorphine treatment and PGC-1 α gene expression during methamphetamine addiction in male rat

محل انتشار:

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

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خلاصه مقاله:

Background and Aim : The prevalence of methamphetamine (MA) use has increased in recent years. The effects of methamphetamine (METH) on pro-oxidant processes and on the production of reactive oxygen species were examined in vivo in the rat brain. Oxidative stress plays a role in MA-induced neurotoxicity. Buprenorphine offers some potential pharmacologic advantages over methadone in the management of opioid addiction. PGC1- α is a master regulator of ROS scavenging enzymes. PGC1- α is also involved in mitochondrial biogenesis that is vital for cell survival. The primary aim of this study was therefore to investigate the alteration of PGC-1 α gene following methamphetamine addiction in male rats that were under treatment of buprenorphine. **Methods :** 49 male Wistar rats were randomly assigned into seven experimental groups (n=7): Control, Saline, Methamphetamine (10 mg/kg, i.p. for 5 days), Buprenorphine (6 and 10 mg/kg, i.p.), Methamphetamine + Buprenorphine (6 and 10 mg/kg for 14 days). Brain stem tissue was assayed for the expression of P2X4 receptor gene using RT-PCR. **Results :** amphetamine administration decreased the level of PGC-1a gene in comparison to control group but it was not significant. The expression of PGC-1a gene did not change after the buprenorphine (6 and 10 mg/kg) administration in comparison to control group. **Conclusion :** Data shows that methamphetamine activate oxidative stress. Changing the level of PGC-1a gene expression indicate the involving of mitochondria in meth toxicity.

کلمات کلیدی:

Buprenorphine, Amphetamine, PGC-1a gene

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