

The Effect of Central Amygdala Nitric Oxide in Expression Of Drug Seeking Behaviors

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Abstract

Introduction: Previous studies shows L-arginin (nitric oxide precursor) increases conditioned place preference and drug seeking behaviors whereas L^G-nitro-arginine methyl ester (L-NAME) as nitric oxide synthase inhibitor decreases this process. In this project, effects of intra-central amygdale bilateral injection of nitric oxide agents on drug-seeking behaviors including rearing, sniffing and compartment entrance were investigated. **Method:** animals were wistar male rats (200-250 g) which allowed to be recovered after they're being suffered from a surgery by stereotaxis apparatus to be cannulated in coordination of central amygdale nucleus (CeA). CPP was conducted using a five-day schedule of unbiased procedure. **Findings:** morphine (2.5-10 mg/kg s.c) induced significant drug-seeking behaviors. Naloxone (0.1-0.4 mg/kg i.p) injection pretesting (after conditioning by morphine 7.5 mg/kg) decreased the expression of behaviors. When L-arginine (0.3-3 µgr/rat) injected intra-CeA prior to naloxone (0.4 mg/kg), increased behaviors but L-NAME (0.3-3 µgr/rat) intra-CeA injections prior to L-arginine (0.3 µgr/rat) pretesting, caused significant decrease of L-arginine response. **Conclusion:** NO in the CeA may play an important role in the drug seeking behaviors induced of morphine.

Key word: morphine, nitric oxide, central amygdale, L-arginine, L-NAME, drug seeking behavior

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