

Effects of microinjection of angiotensin II and captopril to VTA on morphine self-administration in rats.

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Abstract

The dopaminergic mesolimbic system is considered to be crucial in rewarding actions of opiates. Recent studies have suggested probable interaction between the renin-angiotensin and mesolimbic dopaminergic systems. The present study was undertaken to investigate the effects of Ang II and captopril injection into VTA on morphine self-administration. Male Wistar rats were initially trained to receive small pellets of food by pressing the active lever in self-administration apparatus. The animals were divided into 4 groups (saline, morphine, captopril and Ang II) and were placed in self-administration apparatus and allowed to self-administer morphine (1.0 mg per infusion all test groups) or saline (saline group) during consecutive days, for 7 h/sessions. Captopril (30 mg) and Ang II (0.20 nmol) were injected into the VTA in the corresponding groups before each session. The numbers of active and passive levers pressed in each group have been recorded. The number of active lever pressing of morphine group was significantly higher than saline group ($p < 0.001$). In Ang II group, the number of active lever pressing was significantly lower than morphine group ($p < 0.01$). This study suggests the probable interaction between Ang II and opioid system in the VTA.

Reaxys Database Information

Indexed Keywords

EMTREE drug terms: angiotensin II; captopril; morphine; narcotic analgesic agent

EMTREE medical terms: animal; animal behavior; article; drug effect; drug self administration; injection; male; rat; reward; ventral tegmentum; Wistar rat

MeSH: Analgesics, Opioid; Angiotensin II; Animals; Behavior, Animal; Captopril; Injections; Male; Morphine; Rats; Rats, Wistar; Reward; Self Administration; Ventral Tegmental Area

Medline is the source for the MeSH terms of this document.

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