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Differential antinociceptive effects of yohimbine in the rat formalin test

Mohammad Javad Khodayar, Mohammad-Reza Zarrindast, Nima Naderi, Bijan Shafaghi

Abstract:

Although many pharmacological studies indicate that yohimbine antagonize the antinociceptive effects of α_2 -adrenoceptor agonists, there are evidences that yohimbine by itself produces antinociceptive effects in the formalin test. However, its site of action on nociceptive processing is not fully understood. In this investigation, a series of experiments were designed to study the antinociceptive effects of intraperitoneal (i.p.), intraplantar (i.pl.) and intrathecal (i.t.) administration of yohimbine in the nociceptive processing. Yohimbine (2 and 4 mg/kg, i.p.) induced antinociception in the early phase (0-5 min) as well as in the late phase (10-60 min) of formalin test. While i.pl. yohimbine (5-100 μ g) decreased the response in the early phase, i.t. yohimbine (30 μ g) decreased pain behavior in the late phase of formalin test in rats. In conclusion, our findings show that yohimbine induces antinociception in both phases of formalin test and its effects are produced at least in part through actions at the peripheral terminal of primary afferents or at the spinal level.

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