

Poster presentation

Influence of morphine-induced sensitization on histamine-induced anxiety like behaviors in the elevated plus-maze test

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Background

It has been suggested that histamine have modulatory influence on anxiety-related behaviors both in animals and humans. On the other hand, ventral hippocampus (VHC) may be an important brain site in the modulation of fear or anxiety. In the present study, the effects of bilateral intra-VHC injections of histamine on anxiety-related behavior have been investigated in morphine-sensitized and naive rats using a plus-maze model.

Materials and methods

Rats, weighing 200-250 gr at the time of surgery, were bilaterally cannulated in the VHC by a stereotaxic instrument, and were allowed to recover 5 days before sensitization. Sensitization was obtained by subcutaneous injections of morphine (7.5 mg/kg) once daily for 3 consecutive days and then 5 days free of the opioid before test. On the test day, eight rats in each group received bilateral intra-VHC injection of histamine at doses 2.5, 5 and 7.5µg/rat five minutes before undergoing an elevated plus-maze test.

Results

A two-way analysis of variances (ANOVA) test between the response of bilateral intra-VHC injection of histamine (2.5, 5 and 7.5µg/rat) in naive and morphine-sensitized rats using post hoc analysis showed that morphine sensitization increased %OAT (Open Arm Times) and %OAE

(Open Arm Entries) indicating an anxiolytic response by morphine sensitization in the presence of histamine.

Conclusions

Our results indicated that while histamine in naive rats induces anxiogenic response, this behavior was attenuated in morphine sensitized rats.

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