

عنوان مقاله:

Effect of Sulpiride on Dopaminergic Synapse of Dorsal Hippocampus of Morphine-Treated Rats

محل انتشار:

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نویسندگان:

Marziyeh-Sadat Hashemi - *Department of Biology, Faculty of Basic Sciences, Shahed University, Tehran, Iran*

Manizheh Karami - *Department of Biology, Faculty of Basic Sciences, Shahed University, Tehran, Iran*

Mahdiyeh Jafarpour Fard - *Department of Biology, Faculty of Basic Sciences, Shahed University, Tehran, Iran*

خلاصه مقاله:

Background: As previous studies show, several effects of morphine are induced by the dopaminergic system. Sulpiride is a dopamine D₂ receptor (DAD₂) antagonist widely used in clinics to treat DA-related disorders. DAD₂ receptors are abundant at hippocampal cornu ammonis (CA1). Objectives: This study aimed to investigate the possible interaction of morphine and sulpiride on DA synapses in CA1. Materials & Methods: In this study, 48 Wistar rats weighing 220 to 250 g were used. These animals were classified into eight groups (6 rats per group): saline control group (1 ml/kg), morphine group (5 mg/kg), sulpiride groups alone (1, 2, and 4 mg/kg) and sulpiride groups (1, 2, and 4 mg/kg)+morphine (5 mg/kg). Saline or substances were injected once intraperitoneally. After 48 h, the animals' brains were removed under anesthesia and placed in 10% formalin for fixation. Then, 3- to 4-μm slices were cut from these tissues, and the DA synapse was examined by histochemistry and immunohistochemistry techniques. The data were statistically analyzed by the analysis of variance. Results: The control group had DA synapses and healthy neurons. A relative increase in DA synapses compared to the control group was observed in the morphine and single sulpiride groups. However, in sulpiride+morphine groups, DA synapses were reduced compared to morphine or sulpiride alone, but neurons were not destroyed. Conclusion: The interaction effect of sulpiride and morphine in the CA1 region may decrease DA synapses.

کلمات کلیدی:

Morphine, CA1 region, Hippocampus, Sulpiride, Dopamine, Synapses

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