SHORT COMMUNICATION

Blocking impact of clozapine on cocaine locomotor and sensitizing effects in rats.

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In the present study, we attempted to determine the effects of an atypical antipsychotic drug clozapine on the locomotor activation as well as sensitization to cocaine in male Wistar rats. When given acutely to rats, cocaine (10 mg/kg, ip) increased 4-fold the animals’ locomotor activity. Repeated administration (1–5 days) of cocaine (10 mg/kg, ip) to rats significantly enhanced on day 10 the locomotor activation induced by its challenge dose given after 5-day withdrawal (sensitization). When given in combination with acute cocaine, clozapine (10 mg/kg, but not 2.5–5 mg/kg) attenuated the locomotor effects of the psychostimulant. In animals pretreated with clozapine (5–10 mg/kg, but not 2.5 mg/kg) before each of the 5 daily cocaine injections, a significant dose-dependent reduction of the locomotor response of animals to the challenge dose of cocaine (10 mg/kg) was observed on day 10. A decrease in that response was also found in animals treated repeatedly with cocaine (days 1–5) and challenged with the psychostimulant combined with clozapine (10 mg/kg, but not 2.5–5 mg/kg) on day 10. The obtained results indicate the ability of clozapine to reduce both acute and sensitizing locomotor responses to cocaine. These findings seem to be in line with recent clinical reports showing that clozapine may be useful in the treatment of cocaine abuse, even in schizophrenic patients.

Key words: clozapine, cocaine, locomotor activation, behavioral sensitization, rats

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