

MARIJUANA SMOKING INCREASES PLASMA COCAINE LEVELS AND SUBJECTIVE REPORTS OF EUPHORIA IN MALE VOLUNTEERS

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The combined use of smoked marijuana followed by intranasal cocaine is a popular combination among drug abusers. The reason why individuals use this particular combination is not entirely clear, however, it has been speculated that marijuana potentiates cocaine's subjective effects. Five healthy adult male recreational drug users provided informed consent and volunteered to participate in this study. Subjects were prepared with an i.v. catheter for continuous blood withdrawal and sat in an isolated chamber. On three different occasions, separated by at least one week, each subject smoked a marijuana cigarette containing either 0.004% (placebo), 1.24% or 2.64% Δ^9 -THC. Thirty minutes after smoking, they received an intranasal dose of cocaine (0.9 mg/kg). Subjects continuously reported changes in their mood state via an instrumental joystick device and on visual analog scales. Peak plasma cocaine levels were 138.2 ± 18.9 ng/ml after placebo marijuana, but pretreatment with the high-dose marijuana resulted in a significant increase in peak cocaine levels to 242.5 ± 22.1 ng/ml. The duration of all marijuana- and cocaine-related subjective effects was unchanged after both drugs, but marijuana pretreatment reduced the mean latency to detection of cocaine effects from 1.9 to 0.75 minutes and caused a moderate increase in the number of euphoric events from 14.5 ± 6.5 to 43.1 ± 18.7 . Since marijuana smoking does not appear to alter plasma cocaine levels after the i.v. route, these data suggest that the effects observed in the present study may be due to an increase in cocaine absorption secondary to marijuana-induced vasodilation of the capillaries in the nasal mucosa. Thus, concomitant use of cocaine and marijuana may be based on significant pharmacodynamic interactions between the two drugs.

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