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THE EFFECTS OF BACLOFEN ON THE ESCALATION OF COCAINE-SEEKING BEHAVIOR IN RATS SELECTIVELY BRED FOR HIGH AND LOW SACCHARIN PREFERENCE

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Introduction: Previous research has indicated that rats selectively bred for high and low saccharin preference exhibit differential drug-taking behavior within multiple phases of the animal model of human drug abuse. Namely, rats bred for high saccharin preference (HiS) show heightened vulnerability to addiction compared to rats bred for low saccharin preference (LoS). Prior research has also shown phenotypes that confer vulnerability to be more responsive to pharmacological interventions. For example, the GABA(B) agonist baclofen is more effective at blocking cocaine acquisition in female rats, who are typically more vulnerable to addiction, compared to males.

Objectives: To examine the differential effects of baclofen on the escalation of cocaine-seeking behavior in female rats bred for high and low saccharin preference.

Methods: HiS and LoS female rats were trained to administer cocaine (0.4 mg/kg/infusion, i.v.) within daily 2-hr sessions under a fixed ratio (FR1) schedule until criteria for stability were met. Next, the escalation phase began in which daily session length was extended to 6-hrs for 21 days. Thirty minutes prior to session during this phase, one HiS and one LoS group of rats received baclofen injections (1.25 mg/kg) while one HiS and one LoS group received saline injections.

Results: Baclofen potentiated escalation of cocaine infusions in HiS rats compared to HiS rats treated with saline. Conversely, baclofen attenuated escalation in LoS rats.

Conclusions: While these results do not support the original hypothesis of the present study, they underscore the importance of considering vulnerability factors while treating human drug addiction.

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