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The effect of Antalarmin on cocaine-induced locomotion in mice

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Introduction: In our study we investigated the role of CRF1 receptor (R) transmission in the acute and chronic cocaine-evoked locomotor behavior in mice. Methods: The behavioral experiments consisted of monitoring the horizontal (ambulance distance) and vertical (rearing) locomotion in a computerized open-field box for 30 min. The activity was taken to indicate anxiety-related behavior. To assess the contribution of CRF1R mediation in cocaine-evoked locomotion, pretreatment with Antalarmin (ANT), a CRF1R antagonist (0.1μg/2μl) was given i.c.v. 30 min before cocaine (25mg/kg) injection. Furthermore we tried to elucidate the effect of ANT on behavioral sensitisation to cocaine in a 5-day chronic setting. After daily injections of cocaine we assessed the effect of a single dose of ANT on 24-hour abstinence. We also examined the possible role of early life stress in the development of behavioral sensitization to chronic cocaine administration. Results: ANT had no significant effect on the horizontal and vertical locomotion induced by the single i.p. injection of cocaine, however, ANT increased the time spent in the center of the open-field box. In our chronic experiments, ANT caused a marked decrease in the development of behavioral sensitisation to cocaine. In the 24-hour withdrawal the single administration of ANT significantly reduced the horizontal activity of the mice. Conclusion: These data suggest a role of CRF1R mediation in chronic locomotor responses to cocaine.

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