

P15: EFFECT OF CARBAMAZEPINE ON LOCOMOTOR ACTIVITY IN STRESS RATS

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ABSTRACT

Stress during the early stage of life such as social isolation from weaning has been shown to change a variety of behaviors of the adult animals and the responsitivity to psychoactive drugs.

Objectives: The purposes of the present experiments were to investigate the effects of psychological stress (social isolation rearing) from weaning on the open field behavior, and to compare the effect of carbamazepine on locomotor activity in isolation and socially reared rats.

Methods: Male Wistar rats were reared from weaning either singly (isolation rearing) or in groups of five or six rats/cage (social rearing). Six weeks later, these rats were tested for their sensitivity to carbamazepine using the open field test.

Results: The results showed that drug-free isolation reared rats exhibited hyperlocomotion (as indicated by higher total zone transitions) accompanied by a significant increase in exploration (more the number of rear) compare with drug-free socially reared rats ($P < 0.05$). Pretreatment with carbamazepine (10, 20 and 40 mg/kg i.p.) had no marked effects on locomotor activity in both socially and isolation reared rats. This drug did not significantly change the total zone transitions and the number of rear compare with the vehicle controls. The social isolation rearing induced locomotion hyperactivity was not abolished by carbamazepine.

Conclusion: The present results indicate that early life stress (social isolation rearing from weaning) induces locomotion and exploration hyperactivity in the mature rats. This hyperactivity is not attenuated by carbamazepine.

Key words: Carbamazepine, locomotor activity, stress rats