

EFFECT OF STRESS DURING BRAIN DEVELOPMENT ON THE BEHAVIORAL DESPAIR IN LITHIUM TREATED RATS

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Psychological stress during the early stage of life has been shown to alter the behaviors and the neurochemical properties of the adult animals and modify the responsivity to various psychoactive agents (1-3).

Objective: The aim of the present experiment was to determine whether stress during brain development (social isolation from weaning) alters the behavioral response produced by lithium in the rat forced swimming test.

Methods: Male Wistar rats were raised from weaning either alone (isolation rearing) or in groups of five rats/cage (social rearing). Five weeks later, these rats were tested for their sensitivity to lithium chloride by using the forced swimming test (4).

Results: The results demonstrated that the saline treated isolation reared rats exhibited significantly less immobility and more struggling ($P < 0.05$) than socially reared rats. Subchronic treatment with lithium chloride (50, 100 and 150 mg/kg i.p.) 24, 5 and 1 h before a 5 min forced swimming test produced a dose-related reduce behavioral despair (decrease immobility time) and increase struggling in socially reared rats. However, this effect was not observed in isolation reared rats.

Conclusion: The present results indicate that stress during brain development (rearing rats in social isolation from the early stage of life) alters the behavioral despair in lithium treated rats.

Keywords: Stress, lithium, behavioral despair, rats

References:

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