INHIBITION OF FOOD INTAKE IN THE RAT

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The effects of single oral administrations of tricyclic antidepressants (imipramine and desipramine), an atypical antidepressant (nomifensine), known anorexics, haloperidol, and diazepam on food intake were compared in Sprague-Dawley rats over a 4-day test period. The tricyclic antidepressants produced decreases in food intake during the total 4-day test period following their administration. In contrast, the anorexics (d-amphetamine, cocaine, mazindol, fenfluramine and quipazine), nomifensine, and haloperidol produced decreases in food intake only on the day of their administration. Diazepam produced an increase in food intake only on the day of its administration. In addition to revealing that high doses of antidepressants can decrease food intake, this model appears to show some specificity for tricyclic antidepressants.

INTRODUCTION

Many animal models exist for testing antidepressant action. Models based mainly on the catecholamine hypothesis of affective disorders include: antagonism of reserpine- or tetraabenazine-induced hypothermia, ptosis or sedation in rats or mice (27, 42, 52), potentiation of L-DOPA-induced salivation, piloererection, or increased motor activity in mice pretreated with a monoamine oxidase inhibitor (MAOI) (14); disruption of responding in operant behavioral tasks such as electrical self-stimulation of brain or continuous avoidance in rats (27, 44), potentiation of yohimbine-induced toxicity in dogs or mice (36). Other models which do not depend on drug-drug interactions have also been employed: e.g., mouse-killing by rats (26, 46, 53), separation-induced depression-like syndromes (28, 48), or the "behavioral despair" test (2, 39). Since all of these models can provide...
Food intake, g

0 0.5 1 2 3 4

Time, hr

- - Day 1
- - Day 2
- - Day 3
- - Day 4
- - Day 5
Control

d-Amphetamine-SO$_4$
5 mg/kg

0 0.5 1 2 3 4

Time, hr

Cocaine-HCI
50 mg/kg

0 0.5 1 2 3 4

Time, hr

Fenfluramine-HCl
10 mg/kg

0 0.5 1 2 3 4

Time, hr

Quipazine-maleate
50 mg/kg

0 0.5 1 2 3 4

Time, hr

Mazindol
30 mg/kg