



VITAMIN D REVERSES DEPRESSIVE-LIKE BEHAVIOR INDUCED BY CHRONIC UNPREDICTABLE STRESS IN MICE

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INTRODUCTION

Vitamin D has been shown to exert antidepressant-like properties in several preclinical studies. In addition, there is some evidence that vitamin D supplementation may be useful for the management of depression. Therefore, the present study investigated the effects of repeated administration with vitamin D on the depressive-like behavior induced by chronic unpredictable stress in mice, comparing its effects with those elicited by fluoxetine.

MATERIAL AND METHODS

The experiments were performed after approval of the protocol by the Ethics Committee of the Institution (protocol 6672220419, CEUA/UFSC). Adult female Swiss mice were submitted to chronic unpredictable stress for 21 days. In the 15th day, mice received an oral administration of vitamin D (2.5 µg/kg) or fluoxetine (positive control, 20 mg/kg) once a day for 7 days until 21st day. The behavioral tests (tail suspension test, open-field test and splash test) were carried out 24 h after treatments. Results were analyzed by two-way ANOVA followed by Duncan's test, when appropriate (significant when $p < 0.05$).

RESULTS

Chronic unpredictable stress induced an increase in the immobility time in the tail suspension test, an effect reversed by repeated administration of vitamin D or fluoxetine. None of the drugs, alone or in combination, produced significant effects in the locomotor activity of mice in the open-field test or anhedonic behavior in the splash test.

CONCLUSIONS

Altogether our results reinforce the hypothesis that vitamin D may be useful for the treatment of depression.

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