

A46

Changes in stereotyped behaviour following acute or repeated methylenedioxy-methamphetamine (MDMA) treatment

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Objective: In our previous experiments a decrease of the MDMA-induced 5-HT syndrome (HTS) was observed following repeated administration of the dextrorotatory (d) enantiomer of MDMA. The aim of the present study was to examine how the dopamine agonist-induced stereotyped behaviour (SB) alters following single or repeated d-MDMA treatment.

Methods: Wistar male rats were treated with single or repeated (4 times with 2 hours intervals) doses (10 mg/kg) of d-MDMA. Three, 7 and 14 days later the intensity of d-MDMA-induced HTS and SB was examined. The SB-inducing effect of d-amphetamine (AM) and apomorphine (APO) was also checked.

Results: (1) Following repeated administration of d-MDMA the intensity of MDMA-induced HTS decreased while that of SB increased. (2) Single dose pretreatment with d-MDMA did not influence the d-MDMA-induced HTS but enhanced the SB. (3) The d-AM-induced SB also increased while the APO-induced SB did not change.

Conclusion: A single dose of d-MDMA, which, in contrast to the repeated treatment, did not alter the 5-HT-related behaviour, may already result in development of DA sensitization.

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