Short communication

Lack of effect of some dopamine and non-dopamine receptor ligands on amphetamine-induced changes in the rat brain neuropeptide Y system

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Abstract:
None of the receptor ligands studied: the dopamine D<sub>2</sub> antagonist eticlopride, D<sub>2</sub>/D<sub>3</sub> antagonist haloperidol, α<sub>1</sub>-adrenergic antagonist prazosin, N-methyl-D-aspartate antagonist MK-801, 5-HT<sub>2</sub>/D<sub>3</sub> antagonist mianserin, D<sub>2</sub>/D<sub>3</sub> agonist quinpirole and α<sub>2</sub>-adrenergic agonist clonidine co-administrated with repeated amphetamine (AMPH) injections blocked the AMPH-induced decrease in the striatal and nucleus accumbens neuropeptide Y (NPY) levels. Only the D<sub>2</sub>/D<sub>3</sub> receptor antagonist SCH 23390 insignificantly attenuated this effect what suggests that these dopamine receptor subtypes may partially mediate AMPH effect on NPY. Moreover, the results of multiple administrations of the receptor ligands to control rats indicate that the NPY systems in both structures under study are modulated in the same manner by dopaminergic activity and differentially by adrenergic, N-methyl-D-aspartate and serotonergic activity.

Key words:
D-amphetamine, neuropeptide Y-like immunoreactivity, dopaminergic and non-dopaminergic regulation of NPY system, striatum, nucleus accumbens, rat