

* P 'serotonin' cf. 'noradrenaline' induction 'smooth-muscle' contraction modification by 'LSD' 'antiserotonin' typ 'indole' indocarb 'imipramine' 'psychosedative' 'butyrophenone' droperidol 'hypotensive' 'quat, amine' bretylium pot. role alpha-sympathetic cf. serotoninergic 'receptor' vas-deferens in-vitro rat /IX/ /XXVI/ /XXXII/

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Pharmacological Analysis of Some Adrenomimetic Effects of Serotonin. (Russ.).

The mechanism of spasmogenic effect of serotonin was studied in rat vas deferens.

Methods

Vas deferens was isolated from decapitated rats and equilibrated with aerated Krebs solution, the reaction to serotonin and noradrenaline was determined. Then the organ was washed out and the effects of serotonin antagonists (LSD-25, typindole, indocarb), imipramine, bretylium and droperidol were investigated.

Results

Contraction of isolated vas deferens from rats was caused by noradrenaline at $0.5 - 1 \times 10^{-6}M$, and by serotonin at $1 - 2 \times 10^{-4}M$. Contraction occurred after 1 - 2 sec with noradrenaline and after 2 - 3 min with serotonin. LSD-25 at $1 \times 10^{-4}M$ strengthened the reaction of vas deferens to serotonin, when it would normally be expected to block it. Analogous results occurred with noradrenaline. Indocarb and typindole in concentrations normally expected to block the effects of serotonin did not diminish the reaction of vas deferens to serotonin. The results indicate that antagonists of serotonin do not influence the onset of contraction of vas deferens. Droperidol ($1 \times 10^{-7}M$) inhibited the reaction of vas deferens to serotonin and noradrenaline, indicating participation of α -adrenoreactive structures in the onset of this reaction.

Bretylium ($1 \times 10^{-4}M$) did not alter the reaction of the vas deferens to noradrenaline but totally inhibited contraction produced by serotonin. Imipramine ($3.2 \times 10^{-7}M$) reduced serotonin induced contraction of the vas deferens by 66%, while the reaction to noradrenaline increased by 50%. The inhibition of the reaction to serotonin is connected with the capacity of imipramine to prevent penetration of serotonin into the nerve wave.

2 Fig. 10 Ref.

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(LSD)