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THE CURARE-LIKE ACTION OF SUCCINYLCHOLINE

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Comment: The following is taken from a paper presented 6 March 1952 at the 457th Meeting of the Leningrad Society of Physiologists, Biochemists, and Pharmacologists imeni I. M. Sechenov, Section of Pharmacology.

The dicholine ester of succinic acid (diacetylcholine), synthesized in the laboratory of Prof A. L. Mndzhoyan at Yerevan, was investigated in regard to its pharmacological activity. This drug was found to exert a strong action of the curare type on warm-blooded animals. Intravenous administration of 0.12 mg/kg in rabbits brings about inclination of the head. In a narcotized cat, a minimal curare effect is produced by 0.03-0.04 mg/kg, while complete curarization of the gastrocnemius is produced by a dose of 0.1-0.15 mg/kg. When artificial respiration is applied, cats tolerate doses which exceed 2,000 times the minimal curarizing doses. In other words, cats then tolerate doses amounting to 60 mg/kg.

Succinylcholine does not have any depressing effect. It is destroyed rapidly by cholinesterase. This makes it possible to produce an easily controllable curarization by means of an uninterrupted intravenous administration of succinylcholine (i. e., succinylcholine is applied by the drip method). Depending on the dose, one may achieve even with a single injection complete paralysis of all muscles for periods ranging from several minutes to several hours. No undesirable collateral effects arise.

Proserine reinforces the action of succinylcholine by protecting it from the hydrolytic effect of cholinesterase. Clinical data indicate the possibility of using succinylcholine for clinical applications.

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