

Learning unit: Muscle relaxants

Impact of the learning unit

Muscle relaxants are substances decreasing the tone of skeletal muscles. The so called central muscle relaxants (acting in CNS) are used in disorders of spine cord or joints associated with spasms of skeletal muscles in the same region. Peripheral muscle relaxants, acting on the postsynaptic membrane of the neuromuscular junction, are used in anaesthesiology for the skeletal muscle relaxation to facilitate intubation prior to artificial lung ventilation. Peripheral muscle relaxants involve bacterial botulinum toxin, which causes blockade of acetylcholine release in the neuromuscular junction, and dantrolene used for therapy of malignant hyperthermia.

Important terms

skeletal muscle relaxants

central muscle relaxants

baclofen

tizanidine

guaifenesin (glyceryl guaiacolate)

tolperisone

mephenoxalone

diazepam

thiocolchicoside

orphenadrine

Cannabis sativa extract from leafs and flowers (SATIVEX) for treatment of spasticity caused by multiple sclerosis

peripheral muscle relaxants

with indirect mechanism

botulinum toxin

with direct mechanism

depolarizing peripheral muscle relaxants - suxamethonium

Non-depolarizing peripheral muscle relaxants

pipecuronium

atracurium

rocuronium

mivacurium

dantrolene

agents used for decurarization

acetylcholinesterase inhibitors

neostigmine

sugammadex

therapy of malignant hyperthermia

dantrolene

Learning outcomes

Student knows basic pharmacological profile (mode of action, unwanted effects, indications and contraindications) of muscle relaxants.

Student distinguishes the peripheral and the central muscle relaxants and gives examples.

Student knows drugs used for the termination of muscle relaxation after general anaesthesia.

Study materials

Rang & Dale's Pharmacology, 8th edition, 2016, chapter 13, pp. 167-176, Chapter 41, pp. 498-508, chapter 45, page 557

Study materials for courses aVLFA0721p and aVLFA0721c.

Exam questions

Special pharmacology: 18. Muscle relaxants

Essential drugs: 50. suxamethonium