**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

 pipe**curonium**

 atra**curium**

 ro**curonium**

 miva**curium**

 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