**Learning unit: Local anaesthetics**

**Impact of the learning unit**

Local anaesthetics are essential substances in the treatment of pain as they block transmission of pain signals. The knowledge of the individual substances, their pharmacodynamics and pharmacokinetic properties, typical adverse effects, indications and contraindications, is considered to be the basic knowledge of each student of medicine.

**Important terms**

techniques of local anaesthesia

topical (surface) anaesthesia

EMLA

infiltration anesthesia

conduction anaesthesia

peripheral nerve block

regional anaesthesia

central conduction anaesthesia

subarachnoideal (spinal) anaesthesia

epidural anaesthesia

local anaesthetics (LA)

mechanism of action

pharmacokinetics

factors influencing LA effects

pH

nerve fibre properties (thickness, myelinization)

adverse effects of LA

CNS, cardiovascular, anaphylaxis, methemoglobinemia

ester local anaesthetics

co**caine**

pro**caine**

tetra**caine**

benzo**caine**

oxybupro**caine**

amide local anaesthetics

trime**caine**

lido**caine**

bupiva**caine**

ropiva**caine**

prilo**caine**

arti**caine**

mepiva**caine**

cincho**caine**

vasoconstrictory agents used in LA

**Learning outcomes**

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

Student knows different techniques of local anaesthesia and their characteristics.

Student summarizes basic differences between amide and ester local anaesthetic agents.

Student gives examples of vasoconstrictor agents used in combination with local anaesthetics.

**Study materials**

Rang & Dale's Pharmacology, 8th edition, 2016, chapter 43, pp. 530-533 ( Local anaesthetics and other drugs affecting sodium channels)

Study materials for courses aVLFA0721p and aVLFA0721c.

**Exam questions**

*Special pharmacology*: 17. Local anesthetics

*Essential drugs*: 49. procaine/lidocaine, 51. prilocaine