

Learning unit: General anaesthetics

Impact of the learning unit

General anaesthetics are ranked among basic drug groups and the understanding of them is necessary for each student of medicine: general anaesthesia, characterised by loss of consciousness and non-perception of pain in the whole body, enables doctors to carry out painful surgical or diagnostic procedures. 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

general anaesthetics

inhalational anaesthetics

MAC (minimum alveolar concentration)

volatile anaesthetic liquids

ethers (diethylether)

halogenated hydrocarbons

isoflurane

sevoflurane

desflurane

anaesthetic gases

nitrous oxide

xenon

intravenous anaesthetics

MIR (minimum infusion rate)

TIVA (total i.v. anaesthesia)

barbiturates

thiopental

nonbarbiturate anesthetics

ketamine

propofol

etomidate

opioids used in anaesthesiology

fentanyl

alfentanil

sufentanil

remifentanil

benzodiazepines used in anaesthesiology

diazepam

midazolam

balanced general anaesthesia

combined general anaesthesia

course of anaesthesia

premedication

prokinetics/antiemetics

hypnotics/anxiolytics

antihistaminics/anticholinergics

induction of general anaesthesia (GA)

maintenance of GA

termination of GA

decurarization (reversal agents for curarimimetic myorelaxants)

acetylcholinesterase inhibitors

sugammadex

naloxone

flumazenil

risks and complications of GA

malignant hyperthermia

dantrolene

Learning outcomes

Student knows basic pharmacological profile (mode of action, unwanted effects, indications and contraindications) of general anaesthetic agents.

Student defines individual stages of general anaesthesia.

Student explains classification of general anaesthetics according to route of administration (inhalational, intravenous).

Student knows drug groups used in the premedication before general anaesthesia and gives examples of agents.

Student selects appropriate premedication for a model patient based on the symptomatology.

Study materials

Rang & Dale's Pharmacology, 8th edition, 2016, chapter 41, pp. 498-508 (General anaesthetic agents)

Study materials for courses aVLFA0721p and aVLFA0721c.

Exam questions

Special pharmacology: 16. General anesthetics

Essential drugs: 46. desflurane, 47. propofol, 48. ketamine