

Learning unit: Vasodilators

Impact of the learning unit:

To gain knowledge how the vascular smooth muscle can be influenced. The basic mechanisms of action and adverse effects of vasodilators will be summarized. The student knows the indications and contraindications, benefits and risks of vasodilators use.

Relevant terms

calcium channel blockers

vasoselectivity

reflex tachycardia

dihydropyridines

short half-life drugs, less vasoselective

nifedipine (SR only - slow release)

medium-long half-life drugs

felodipine

nitrendipine

lerkanidipine

long half-life drugs, highly vasoselective

amlodipine

lacidipine

non-dihydropyridines

diltiazem

verapamil

nitrates and NO donors

nitrates

rapid onset of action

glycerol trinitrate (nitroglycerin)

tachyphylaxis

isosorbide dinitrate (ISDN)

slow onset of action

isosorbide mononitrate (ISMN)

tolerance

NO donors

molsidomine

nitroprusside

PDE-5 inhibitors

sildenafil

vardenafil

tadalafil

endotelin-1 antagonists

bosentan

ambrisentan

prostacyclin synthetic analogues

epoprostenol

iloprost

treprostinil

Learning outcomes

The student knows the basic strategies how to induce vascular smooth muscle relaxation. The student knows particular drug groups classified as vasodilators (list the most important drugs in particular groups), knows their detailed mechanisms of action, indications, contraindication and adverse drug effects.

Study literature

Rang & Dale's Pharmacology E - Book, Humphrey Rang 8th edition, 2016, chapter 22 (pg. 272)

Study materials for courses aVLFA0822p and aVLFA0822c.

Exam questions

Special pharmacology: Antiangial agents

Essential drugs: isosorbid-dinitrate/nitroglycerin; amlodipin