

Sympatholytics

Sympatholytics are drugs that suppress the activity of the sympathetic nervous system. They block adrenergic reactions by direct and indirect action. We divide them into alpha and beta sympatholytics according to which receptors they block.

Directly acting sympatholytics

Alpha-sympatholytics

We have been using ergot alkaloids for the longest time. Indications are most often peripheral blood circulation disorder, hypertension, pulmonary edema and as a premedication before anesthesia.

Non-selective alpha-sympatholytics

- They block both alpha-1 and alpha-2 receptors
- synthetic alpha-sympatholytics are **tolazoline**, **phentolamine**, **phenoxybenzamine**
- ergot alkaloids were formerly used for migraines, **dihydroergocristine**
- synthetic: HCl stimulation, for pheochromocytoma, treatment of urinary retention

Alpha-1-sympatholytic

- they lower blood pressure
- they are used for hypertension and heart failure, urinary tract obstruction, prostate hyperplasia
- substances used are **prazosin**, **terazosin**, **metazosin**, **urapidil**, **indoramin**, **alfuzosin**

Alpha-2-sympatholytics

- the substance used is **yohimbine**
- increases the release of noradrenaline, has vasodilating effects in the pelvic area
- used for erectile dysfunction (psychotic shock)

Beta-sympatholytics

See the β -blockers page for more detailed information.

The mechanism of action of sympatholytics is in limiting the influence of the sympathetic system on the heart (reduction in strength and frequency, reduction in conductivity, thus reducing oxygen consumption by the myocardium). Furthermore, they also antagonize the adverse effect of the sympathetic system on lipolysis and glycogenolysis.

Indication

- [[hypertension – they improve the prognosis in the long term due to the regression of left ventricular hypertrophy
- arrhythmia
- angina pectoris
- glaucoma, pheochromocytoma, migraine prevention...

Adverse effects

There are changes in plasma lipid levels, bronchoconstriction, allergies, arrhythmias. A so-called rebound phenomenon (rapid increase in blood pressure) may occur upon sudden withdrawal.

Division

If the medicine does not have a picture of a pill, the medicine is not currently registered on the Czech market.

Beta-sympatholytics are divided into selective and non-selective. We further divide them according to the presence of internal sympathomimetic activity (VSA).

Non-selective beta-sympatholytics without VSA

We include propranolol, **sotalol** and metipranol.

Non-selective beta-sympatholytics with VSA

We include pindolol and bopindolol here.

Selective beta-1-sympatholytics

They are very important especially for use in angina pectoris and hypertension. They have fewer side effects. We include substances without VSA (**atenolol** , **metoprolol** , **betaxolol** , **esmolol**) and substances with VSA (**acebutol** , celipropol).

Selective beta-2-sympatholytics

These drugs are rather only experimental.

This includes bisoxamine.

Alpha/Beta – combined sympatholytics

These include labetalol , carvedilol , delevadol

Indirectly acting sympatholytics

We include three groups of substances:

- false precursors – alpha-methyldopa
- substances leading to the depletion of catecholamines - reserpine
- substances that block the release of catecholamines from nerve endings - guanethidine, guanadrel and bretylium

Links

Related Articles

- Sympathomimetics
- Parasympathomimetics
- Direct parasympathomimetics
- Indirect parasympathomimetics

External links

- Sympatholytics (English Wikipedia)

References

- HYNIA, Sixtus. *Pharmacology in a nutshell*. 2nd edition. Prague: Triton, 2001. 520 pp. ISBN 80-7254-181-1 .
- <https://www.sukl.cz/namelove-alkaloidy-omezeni-pouziti> ?