

Direct vasodilation

Vasodilators are **drugs causing blood vessels dilatation**.

Classification of vasodilators

1. Myotropic

- **coronary** – nitrates, nitrites, molsidomine;
- **others** – Ca^{2+} Channel blockers, hydralazines, nitroprusside , minoxidil, diazoxide, purines, nicotine derivatives, others.

2. Neurotropic – α_1 -lytic

- **non-selective** – phentolamine, phenoxybenzamine;
- **selective** – prazosin, doxazosin, metazosin.

3. ACEI

It is advisable to divide the individual drugs according to the site of action

- mainly for **arterioles** – hydralazines, Ca^{2+} antagonists , phentolamine, purines, nicotinic acid derivatives, others;
- mainly for **veins** – nitrates, molsidomine (at higher doses also arterioles);
- for **arterioles and veins** – selective α_1 -lytic, ACEI, nitroprusside.

Direct vasodilation

They **reduce** blood pressure by dilating the effect on vascular smooth muscle - thereby **reducing peripheral vascular resistance** while maintaining compensatory mechanisms mediated by baroreceptors, sympathetic nerves and the renin-angiotensin-aldosterone system (RAAS). This fact has its advantages and disadvantages.

- **The advantage** is that the vasodilators are not hypotensive , they dilate the renal arterioles, so they do not restrict renal flow . They do not affect sexual function . They can be given during pregnancy.
- **The disadvantages** are fluid retention by RAAS activation and the subsequent possible expansion of extracellular volume, undesired reflex tachycardia, and a decrease in the antihypertensive effect due to compensatory effects. The mentioned disadvantages can be balanced by combination with β -lytics (in case of contraindication β -lytics they can be combined with methyldopa , clonidine). The risk of fluid retention can be avoided by concomitant administration of diuretics .

Representatives

- **Dihydralazine**
- **Endralazine**
- **Minoxidil**
- **Sodium nitroprusside**

Links

Related articles

- Treatment of ischemic heart disease
- Antihypertensives
- Renin-Angiotensin-Aldosterone system
- Angiotensin II receptor blockers
- Hypertension
- Hypertensive crisis

Source

- MARTÍNKOVÁ, Jiřina – MIČUDA, Stanislav – CERMANOVÁ, Jolana. *Vybrané kapitoly z klinické farmakologie pro bakalářské studium : Kardiovaskulární systém* [online]. ©2000. [cit. 2010-07-01]. <<https://www.lfhk.cuni.cz/farmakol/predn/bak/kapitoly/prednasky/kardio-bak.ppt/>>.

