

# Angiotensin II receptor blockers

**Angiotensin receptor blockers** (ARBs), also known as **angiotensin II receptor antagonists**, are used to treat high blood pressure and heart failure. They are also used for chronic kidney disease and prescribed following a heart attack.

They work by binding to and inhibiting the angiotensin II receptor type 1 (AT<sub>1</sub>) and thereby blocking the arteriolar contraction and sodium retention effects of renin-angiotensin system.

Common ARBs include - valsartan, losartan and candesartan.

Receptor blockers for angiotensin II together with angiotensin converting enzyme inhibitors (ACEIs) are among the "" inhibitors "of the " of the renin-angiotensin-aldosterone system. (RAAS). AT<sub>1</sub> receptor blockers are among the first-line antihypertensives indicated for the treatment of heart failure. Their unprotected names (INNs) end in "-sartan", which is why they are often referred to as "sartans".

By selectively blocking AT<sub>1</sub> angiotensin II receptors, we suppress the effects of RAAS on the body much more significantly, because the production of angiotensin II in tissues is not completely dependent on renin leaching. The effect of therapy is comparable to ACEI. However, there are no side effects resulting from the accumulation of bradykinin in the tissues (cough, angioedema).

## Mechanism of action

Sartans act as competitive (or non-competitive) '*antagonists at AT<sub>1</sub> angiotensin II receptors*', their effect being broader than ACEIs, as they inhibit the effects of angiotensin II produced by a route other than angiotensin I via ACE.

## Effects

They reduce the overall peripheral resistance - '*they reduce both afterload and preload*'; lead to a '*decrease in*' systolic and diastolic '*blood pressure*' without developing reflex tachycardia. The onset of action is slow and there is usually no hypotension after the first dose.

## Indication

- **Arterial hypertension**
- '*Chronic heart failure*'
- '*Secondary prevention*' of myocardial infarction or stroke
- Preventing and slowing the progression of '*nephropathy*'

Angiotensin II receptor blockers are considered an alternative to ACEI intolerance. They are used both as monotherapy and in combination with other antihypertensives. They are often used in fixed combination with hydrochlorothiazide. The combination with ACEI, on the other hand, is inappropriate.

## Side effects

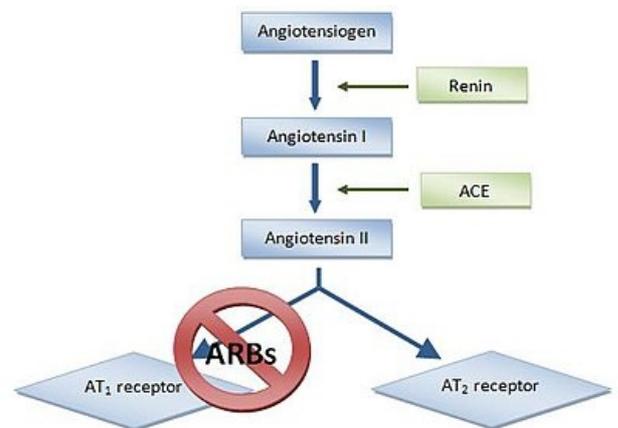
Angiotensin II receptor blockers have a very low incidence of side effects. Hypotension (with high renin activity), acute renal failure, hyperkalaemia may occur.

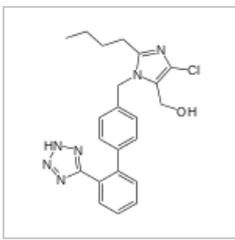
## Contraindications

- Pregnancy (contraception is required in women of childbearing potential), lactation.

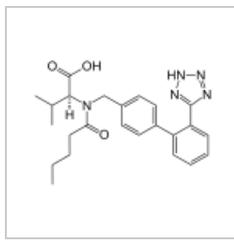
## Shortcuts

- 'Template:HVLP' - well absorbed from the GIT, converted to the active metabolite in the liver
- 'Template:HVLP' - higher affinity, better bioavailability and longer effect than losartan
- 'Template:HVLP'
- 'Template:HVLP' - the longest-acting representative of this group of antihypertensives
- 'Template:HVLP'

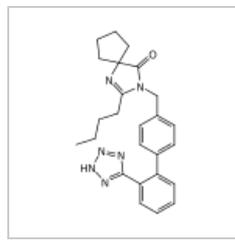




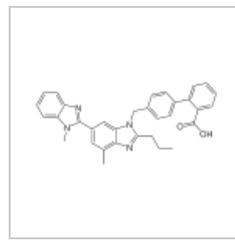
Chemical formula of losartan



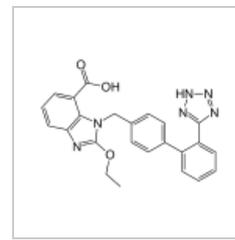
Chemical formula of valsartan



Chemical formula of irbesartan



Chemical formula of telmisartan



Chemical formula of candesartan

## Links

### Related Articles

- Renin-angiotensin-aldosterone system
- ACEI
- Treatment of coronary heart disease
- Hypertension
- Hypertensive crisis

### Source

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