

Angiotensin II Receptor Blockers (ARB)

What are Angiotensin II Receptor Blockers?

[Angiotensin II Receptor Blockers \(ARBs\)](#) are a class of drugs used to treat [hypertension](#). Examples of common ARBs include candesartan, losartan and telmisartan. ARBs are believed to reduce blood pressure to the same extent as other antihypertensive drug classes such as, [β-blockers](#) and angiotensin converting [enzyme](#) inhibitors (ACEi).

How do Angiotensin II Receptor Blockers work?

Angiotensin II receptor blockers bind to the Angiotensin I Receptor (AT1) and prevent the effects of angiotensin II being mediated. AT1 mediate most of the effects of angiotensin II and those that are mediated by angiotensin receptor II are not yet established. ARBs bind specifically to the AT1 receptor to reduce hypertension. They have a highly specific affinity for AT1. The biological effects of angiotensin II are contraction of [blood vessels](#), aldosterone release, sympathetic nerve stimulation and cell growth. These effects are inhibited by ARBs.

What are Angiotensin II Receptor Blockers used for?

ARBs are used to treat hypertension and are especially used by those who cannot tolerate ACEi. They are also used to slow the worsening of renal disease in [type II diabetics](#). The maximum antihypertensive effect usually occurs around 4-6 weeks after treatment has been started.

Possible side effects

Common side effects include:

[Headaches](#)

[Hyperkalaemia](#)

[Dizziness](#)

Infrequent side effects include:

[Orthostatic hypotension](#) upon the first dose

[Diarrhoea](#)

[Rash](#)

[Muscle cramps](#)

[Myalgia](#)

[Back pain](#)

[Insomnia](#)

[Dyspepsia](#)

Reduced [kidney](#) function

Rare side effects include:

Cough

[Migraine](#)

[Angioedema](#)

Precautions

Several pre-existing conditions may restrict the use of ARBs. If not noted they could lead to serious damage or lead to the development of other conditions.

Excessive hypotension

[Hypotension](#) is when you have a lower [blood pressure](#) than normal. There is an increased risk of low blood pressure when taking ARBs and if you have a reduced volume or sodium level or have either [aortic stenosis](#) or [mitral valve stenosis](#).

Hyperkalaemia

Hyperkalaemia is when there is an excess of potassium in the blood. This can lead to potentially fatal [arrhythmias](#) of the heart. When taking ARBs there is an increased risk of hyperkalaemia if you are also taking drugs that increase potassium concentrations (eg cyclosporin). It is advised that if taking drugs which increase potassium concentrations to either prevent use by switching to another drug or to monitor potassium levels carefully.

Problems with [kidneys](#) can also lead to increased risk of hyperkalaemia. As a result, it is advised that a lower starting dose should be used and monitoring of potassium levels should also occur.

Primary hyperaldosteronism

Primary hyperaldosteronism or Conn's Syndrome is the excessive production of aldosterone occurring independently of the renin angiotensin system. If the you have this condition then it can reduce the antihypertensive effect of the drug.

Pregnancy

ARBs should be avoided if [pregnant](#) as it may adversely effect the developing baby. It is recommended that an alternative antihypertensive should be used instead. ARBs are part of the ADEC [category D](#).

Breastfeeding

Guidelines regarding [breastfeeding](#) and ARBs use have not been produced as yet.

Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)

[NSAIDs](#) like cyclooxygenase-2 inhibitors can reduce the antihypertensive effect.

Reference

1. Chapter 6 - Cardiovascular Drugs, 6.4 Antihypertensives, 6.4.5 Angiotensin II antagonists In: Australian Medicines Handbook. Australia: Australian Medicines Handbook Pty. Ltd.; 2007
2. Costa FV, Telmisartan Standing Out in a Crowded Contest? High Blood Press Cardiovasc Prev 2006 13 (3): 85-94
3. Fitchett D, Clinical trial update: focus on the ONTARGET study. Vascular Health and Risk Management 2007 3(6) 1-8
4. Weber MA Chapter C137-Angiotensin Receptor Blockers In: Izzo JL, Sica DA, Black HR editors. Hypertension Primer: the Essentials of High Blood Pressure: Basic Science, Population Science, and Clinical Management: Lippincott Williams & Wilkins; 2008
5. Cozaar In: Donohoo E editor MIMS Online.[online] MIMS Australia Pty Ltd 2003. Available from: URL: <http://www.mims.com.au>

6. Part of Chapter 5.2- Adrenal imaging, Primary hyperaldosteronism (Conn's syndrome) In: Wass JAH, Shalet SM, Gale E et al. editors. Oxford Textbook of Endocrinology and Diabetes: Oxford University Press; 2002
7. Chapter 9 Endocrinology, The adrenal gland: Hyperaldosteronism In: Longmore M, Wilkinson IB, Rajagopalan SR editors. Oxford Handbook of Clinical Medicine: Oxford University Press; 2004
8. Prescribing medicines in pregnancy [online]. 2007 [cited 2008 Apr 6]. Available from: URL: <http://www.tga.gov.au/docs/html/medpreg.htm>

Drugs used in this treatment:

[Micardis](#) (Telmisartan)

[Micardis Plus](#) (Telmisartan, Hydrochlorothiazide)

[Atacand](#) (Candesartan cilexetil)

[Avapro](#) (Irbesartan)

[Cozaar](#) (Losartan potassium)

[Karvea](#) (Ibesartan)

[Karvezide](#) (Hydrochlorothiazide, Irbesartan)

[Teveten](#) (Eprosartan mesylate)

[Olmotec](#) (Olmesartan)

This treatment is used for the following diseases:

[Heart Failure](#)

[Coronary heart disease \(CHD\)](#)

[Hypertension \(High blood pressure\)](#)

[Heart Attack \(Myocardial Infarction\)](#)