

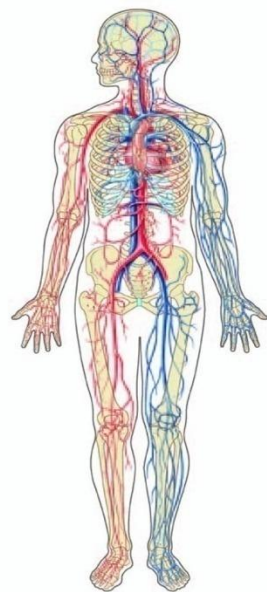
# KPP *Klinical Update*

February 28<sup>th</sup>, 2012

## ARBs (Angiotensin Receptor Blockers)

An Effective Blood Pressure Lowering Drug Class

The network of arteries, veins, and capillaries in the human body is called the circulatory system. Essential to delivering nutrients to all living cells of the body, the 10 pints of blood (approximation) flows through the 60,000 miles of blood vessels many times each day. The human circulatory system is closed which means blood stays within the walls of the blood vessels while the nutrients are allowed to pass through. Via the pumping action of the heart, pressure changes cause the blood to circulate throughout the body allowing it to be oxygenated, transported to



Blue indicates arteries  
Red indicates veins

all parts of the body, cleaned, and returned to the heart where the process starts over again. Two distinct actions cause a rise and fall of the pressure on the walls of blood vessels. The beating of the heart causes a spike in pressure called systolic blood pressure. Conversely the relaxation of the heart causes a drop in pressure called diastolic blood pressure. Several factors influence how high and low these pressures go. Most importantly is the amount of fluid that is pumping around in the system. Also, the elasticity or stretchiness of the blood vessels and how constricted or dilated they are both play a part. When blood pressure is too low, the body has a hard time forcing blood into all parts of the body. Symptoms of this are light headedness especially upon standing up from a seated or prone position. High blood pressure, a much more common occurrence, causes the heart to work too hard and places strain on other organ systems like the eyes and kidneys. Studies have shown that maintaining a well controlled blood pressure is vital for the body to remain healthy and disease free.

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Systolic and diastolic blood pressure guidelines as published by the American Heart Association



Category	Systolic (mm Hg)		Diastolic (mm Hg)
Normal	less than 120	and	less than 80
Prehypertension	120–139	or	80–89
<b>Hypertension</b>			
Stage 1	140–159	or	90–99
Stage 2	160 or higher	or	100 or higher

\*Your physician may set a goal higher or lower than these guidelines

# The Pharmacological Solution to High Blood Pressure (Hypertension)

An automobile's computer processes electrical impulses generated by sensors located throughout the engine to make it run efficiently. Likewise, the human brain manages the body by collecting information from organ systems through detecting minute chemical substances produced in various parts of the body. One way medicines alter a body process is by either mimicking these chemical messengers or by blocking the receptors that detect their presence. As the drug class name implies, angiotensin receptor blockers fit into the angiotensin receptor thereby blocking the message angiotensin usually transmits, the need to increase water retention and vascular constriction which, in turn, increases blood pressure. In 1995, losartan (Cozaar), the first oral ARB, was approved by the American Food and Drug Administration. Since then a total of six additional ARBs have been approved.

## Did You Know?

A common misconception is that the heart is responsible for elevated blood pressure. The pumping action of the heart causes the rise and fall of blood pressure but is not responsible for most cases of hypertension. Instead, the kidneys, which regulate sodium retention and produce a powerful chemical that causes vasoconstriction are mostly to blame.

Proprietary Name	Brand Name	Average Monthly Cost
<b>Candesartan</b>	<b>Atacand</b>	<b>\$102</b>
<b>Olmesartan</b>	<b>Benicar</b>	<b>\$108</b>
<i>Losartan</i>	<i>Cozaar</i>	<i>\$80</i>
<b>Valsartan</b>	<b>Diovan</b>	<b>\$131</b>
<b>Telmisartan</b>	<b>Micardis</b>	<b>\$148</b>
<i>Irbesartan</i>	<i>Avalide/Avapro</i>	<i>\$112</i>
<i>Eprosartan</i>	<i>Teveten</i>	<i>\$49</i>

- Formulary medications are in **bold**
- Generically available medications in *italics*
- Pricing accurate as of 2/28/2012 @ a Kroger pharmacy in the Cincinnati division

## Side Effects, Precautions, and Recommendations

- ARBs have an excellent side effect profile. In clinical studies, the amount of side effects reported were similar to those reported from a placebo.
- Lightheadedness is common when initiating any blood pressure lowering medication. Be careful when standing up from a seated or prone position.
- Home blood pressure testing is easy and affordable. Ask your Kroger pharmacist about purchasing a blood pressure monitor.
- When testing your blood pressure it is important to be seated, motionless, and relaxed.

## Which ARB is Right For Me?

Only your doctor is qualified to choose the right ARB for you. However, as with all medical decisions, Kroger Prescription Plans recommends you have a discussion with your physician regarding the desired outcome, interactions, any supplements you might be taking, and the monthly price of the medication. Here are several things to keep in mind:

- Each ARB has slightly different properties which might make one be more effective than another based on concurrent disease states.
- Often it is necessary for an individual to be on more than one anti-hypertensive medication to get the desired blood pressure control.
- Losartan and eprosartan are generics available in the ARB drug class. Ask your physician if either would be an effective alternative to lower your blood pressure.
- If your doctor prescribed an ARB before trying an ACE inhibitor, ask if an ACE inhibitor might be just as effective.
- ACE inhibitors work in a closely related way and might

be just as effective. Four different ACE inhibitors are on the Kroger \$4/\$10 list making the drug class very affordable.

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