

Title: High Blood Pressure and Diabetes

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Date: April 30, 2010

Key words: Hypertension, Blood Pressure, Diabetes, New onset diabetes, ACE-I, CCB, BB

Abstract: Millions of people in our country have high blood pressure. High blood pressure has been shown to be a risk factor for the development of diabetes. Other risk factors for development of Diabetes are discussed. Blood pressure medications can also increase or decrease a patient's risk of developing diabetes. Beta-blockers (BB), such as atenolol, and thiazide diuretics appear to increase risk by as much as 31% compared to treatment with an Angiotensin Converting Enzyme Inhibitor (ACE-I) and dihydropyridine class Calcium Channel Blocker (CCB). Side effect profiles of common antihypertensive medications are discussed.

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What Medication is Right for Me?

There are many different types of high blood pressure medications. They each work in different ways and have different benefits and side effects. Some common blood pressure medications can put you more at risk for developing Diabetes. Ask your doctor which drug is right for you.

Medication Class	Common Side Effects	Special uses /Comments
Beta Blockers (e.g. metoprolol, atenolol)	Tiredness, dizziness, weakness, decreased exercise tolerance, higher blood sugar	Heart attack survivor, Heart failure
Thiazide diuretic (e.g. HCTZ)	Low potassium, high LDL, high blood sugar, dizziness, postural hypotension, constipation	Heart failure
ACE Inhibitor (e.g. lisinopril)	High potassium, cough, swelling of hands or face, dizziness, headache, fatigue	Heart Failure, Protects kidneys in Diabetes
ARB (e.g. candesartan)	Back pain, dizziness, lightheadedness, high potassium	Similar to ACE-I, but no cough. More \$\$\$
Calcium Channel Blocker (e.g. amlodipine, diltiazem)	Dizziness, headache, cramps, stomach pain, weakness, fatigue, flushing, constipation	
Alpha Blocker (e.g. terazosin)	Dizziness, postural hypotension, impotence	Hypertension in men with enlarged prostate
Centrally acting (e.g. clonidine, methyl dopa)	Mood changes, depression, sexual dysfunction, withdrawal hypertension	Clonidine sometimes used to treat hot flashes
Direct renin inhibitors (e.g. aliskiren)	Diarrhea	Newer drug, long term studies not available

Controlling Hypertension

And



Preventing Diabetes

What is Hypertension?

High blood pressure (hypertension) is defined as having systolic blood pressure greater than 140 (when heart is pumping) and/or diastolic blood pressure greater than 90 (when the heart is relaxing) in both arms twice, separated by at least 1 week. Normal blood pressure is 120/80.

Severity of hypertension is classified into stages.

	Systolic	Diastolic
Stage 1	140-159	90-99
Stage 2	160-179	100-109
Stage 3	180 - 209	110-119
Stage 4	>210	>120

Why Does Hypertension Matter?

Hypertension is one of the leading causes of:

- Stroke
- Heart Attack
- Congestive Heart Failure (CHF)

Getting your blood pressure under control decreases your risk of having one of the above.

Poorly controlled blood pressure can also cause damage to your kidneys, vision, and major blood vessels of your body.

High blood pressure also puts you at risk for developing type II Diabetes Mellitus. This risk is even greater if you have a family member or relative with Diabetes.

At Risk for Diabetes?

Some common things that put you at higher risk for developing diabetes:

- **High Blood Pressure**
- Family history of Diabetes
- Age > 45
- Excess weight around the waist
- High triglycerides or low HDL
- Diabetes of Pregnancy
- Exercising fewer than 3 times weekly

If you have high blood pressure and one or more other risk factors, talk with your doctor about how you can decrease your risk.

What Can I Do?

Dietary approach to Stop Hypertension (DASH) Diet

- Low in fat and cholesterol
- High in fruits, vegetables, and low fat dairy

Exercise

- Walking or other exercise for 30 minutes 3-5 times a week

Weight Loss

- Reduces risk for developing Diabetes and can lower blood pressure

Decrease the amount of salt in your diet

Drink alcohol in moderation

- No more than 1 drink/day for women, 2 drinks/day for men

Quit smoking