

So many meds:

Making sense of blood

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pressure drugs



The variety of blood pressure medications is enough to make you dizzy—more than 60 different drugs in at least 11 separate categories. Why are there so many, and how does your doctor choose the one (or combination) that's right for you?

"All the different classes of medications work on different parts of the body," says cardiologist Suzanne Steinbaum, D.O., Director of Women and Heart Disease at Lenox Hill Hospital in New York City. "Some are focused on the heart, some are focused on dilating [widening] the arteries and others work on the kidneys." Doctors take into account the possible causes of a person's high blood pressure, and any other medical conditions that individuals might have, to come up with a prescription that's best for that patient. Some people respond well to a single drug, while others require a combination of drugs to keep their blood pressure down. "We've learned that if patients take lower doses of two or three medications, they get smoother and better blood pressure control, and fewer side effects," says Martha Hill, Ph.D., R.N., dean of the Johns Hopkins School of Nursing, and a former president of the American Heart Association.

"It depends on what other conditions a person might have," says Peter Libby, M.D., professor of medicine at Harvard Medical School in Boston, Mass. "I might take a different approach to someone with chest pain from coronary artery disease than to someone without those symptoms. People who already are showing signs of strain from heart or kidney disease, which may be related, at least in part, to high blood pressure, might be started on stronger drugs or multiple medications. If you're diabetic, we might reach for a different medication than someone who has chest pain."

Here is a rundown of the major blood pressure drug categories, how they work and their possible side effects. (For a list of some of the common drugs in each category, see *Common blood pressure medications* below.) Some of these drugs can cross the uterus and affect the developing fetus, so if you are pregnant or planning a pregnancy, ask your doctor which drugs are safe for you to take.

DIURETICS

According to Libby, these drugs, which help rid the body of excess water and salt, often are the first line of treatment for high blood pressure due to their low cost and long track record of safety and effectiveness. They are often prescribed in combination with other blood pressure drugs. Diuretics also may promote excessive loss of potassium, an essential mineral, leading to symptoms such as weakness, fatigue and leg cramps. Potassium levels can be maintained by eating high-potassium foods such as bananas, cantaloupe, grapefruit, oranges, honeydew melons, prunes and potatoes. Your doctor

may recommend taking potassium supplements along with this type of medication. Less common side effects include attacks of gout, which is a type of arthritis that can harm your joints, muscles and other tissues, increased blood sugar in people with diabetes and, in very rare cases, erectile dysfunction.

BETA BLOCKERS

Beta blockers have a beneficial effect on blood pressure by slowing the heartbeat, lowering the heart's workload and reducing its output of blood. Possible side effects include insomnia or fatigue, cold hands or feet, depression and a change in the response to insulin among patients with diabetes.

ACE INHIBITORS

ACE stands for angiotensin-converting enzyme, which helps the body produce angiotensin II, a compound that raises blood pressure by narrowing the blood vessels and forcing the heart to pump harder. By blocking the action of ACE, these drugs relax the blood vessels and prevent blood pressure from getting

Common blood pressure medications

Here's a list of some common blood pressure drugs that your doctor may prescribe. The generic and brand names are listed for each drug. If your prescription medication isn't on this list, remember that your doctor and pharmacist are your best sources of information. It's important to discuss all of the drugs you take with your doctor and understand their desired effects and possible side effects. Never stop taking a medication and never change your dose or frequency without first consulting your doctor. For a more comprehensive list, visit bit.ly/W1NX5h.

Diuretics

- bumetanide (Bumex)
- furosemide (Delone, Furocot, Lasix, Lo-Aqua)
- hydrochlorothiazide (Aquazide H, Carozide, Diaqua, Esidrix, Ezide, Hydro Par, Hydrocot, HydroDIURIL, Microzide, Oretic)
- spironolactone (Aldactone)

Beta blockers

- acebutolol (Sectral)
- atenolol (Senormin, Tenormin)
- metoprolol (Lopressor, Toprol XL)
- nadolol (Corgard)

ACE inhibitors

- benazepril (Lotensin)
- captopril (Capoten)
- enalapril (Vasotec)
- lisinopril (Prinivil, Zestril)

Angiotensin II receptor blockers (ARBs)

- candesartan (Atacand)
- eprosartan (Teveten)
- olmesartan (Benicar)
- valsartan (Diovan)

Calcium channel blockers

- amlodipine (Norvasc)
- diltiazem (Cardizem, Dilacor, Tiazac)
- verapamil (Calan, Covera, Isoptin, Verelan)
- nifedipine (Adalat, Afeditab CR, Nifediac, Nifedical, Procardia)

Alpha-2 receptor agonists

- methyldopa (Aldomet)

Central agonists

- clonidine (Catapres, Kapvay, Nexiclon)
- guanabenz (Wytensin)
- guanfacine (Intuniv, Tenex)

too high. ACE inhibitors may cause certain tissues to swell, including tissues in the throat, which may block breathing and can be life-threatening. Fortunately, this is rare. More common side effects include a dry cough, too much potassium in the blood, fatigue, rash, dizziness and headache.

ANGIOTENSIN II RECEPTOR BLOCKERS (ARBs)

These drugs may be prescribed for patients who cannot tolerate ACE inhibitors. ARBs block the tightening action of angiotensin II at the blood vessels. Occasional dizziness is the most common side effect. According to Libby, these drugs and ACE inhibitors often are good choices for people with diabetes.

CALCIUM CHANNEL BLOCKERS

When calcium enters the cells of the heart, the result is a stronger heartbeat. Calcium channel blockers prevent the passage of calcium into the heart and blood vessels so the heart contracts less forcefully and the blood vessels relax. Possible side effects include heart palpitations, swollen ankles, constipation, headache and dizziness.

ALPHA-2 RECEPTOR AGONISTS

Another way the body regulates blood pressure is through the action of the sympathetic nervous system, which releases adrenaline (epinephrine), the fight-or-flight hormone that also raises blood pressure. Alpha-2 receptor agonists decrease sympathetic activity, so less adrenaline is released and blood pressure is controlled. Common side effects include drowsiness or dizziness. These drugs are considered relatively safe for use by pregnant women.

CENTRAL AGONISTS

"Central" refers to the fact that these drugs work on the brain. They prevent it from telling the heart to pump harder and your blood vessels to narrow. Side effects may include weakness or dizziness, dry mouth, constipation, fever, anemia and erectile dysfunction.

Take your medicine!

It's tempting to think, once you are feeling better and you've gotten your blood pressure to a healthy level, that you no longer need your medication. Don't fall into that trap. "There is no cure for high blood pressure," Jones says, "only lifelong management."

"Our goal is to give enough daily medication to bring the blood pressure into a safe and desirable range, keep it in that range and avoid lots of peaks and valleys," says Hill. "Most of these medications only last 24 to 36 hours, so taking them every day is important." Without these drugs, your blood pressure might eventually start to climb, along with your risk of illnesses such as heart or kidney disease. Ask your doctor what to do if you do forget a dose.

Hill recommends advance planning to avoid running out of medicine. Sometimes insurance companies limit prescriptions to one month at a time, but it's worth asking if you can get a three-month supply and save yourself a few trips to the drugstore. If budget is a problem, consider a generic medication. "[Most] of these drugs are equally effective and have similar side effect profiles to brand-name drugs," Hill says, "and the savings could amount to hundreds of dollars a year." If you're planning a trip, get approval from your doctor or insurance company several weeks in advance for a prescription "override" so you can get an early refill to take with you.

Take your medicine at the same time every day, preferably in association with other daily habits such as brushing your teeth, to ensure you don't forget. "Keep your medication with your toothbrush and toothpaste," Hill says, "or, if you take it with meals, keep it in the kitchen, as long as there are no small children in the house." She's also a big fan of pillboxes labeled with the days of the week. "You can look in the slot labeled Wednesday, let's say, and know immediately if you've remembered to take your pills or not."

WHATEVER WORKS

"The bottom line is, whether you do it through drugs, lifestyle changes such as exercise and smoking cessation or a combination of those, lowering blood pressure by even five points will lower your risk of stroke, heart attack and/or deteriorating kidney function," says Libby.

In other words, proper management "makes the difference between life and death for people with elevated blood pressure," adds Dan Jones, M.D., chancellor of the University of Mississippi and former president of the AHA. "Good evidence shows that controlling hypertension can prevent many of the serious illnesses associated with this condition." ■