

Should You Be Taking a Diuretic?

Water pills are recommended for most people with high blood pressure, but doctors don't always prescribe them. Here's why they should.

Current treatment guidelines state that thiazide diuretics should be used as initial therapy for most patients with hypertension. But in many cases, doctors instead prescribe such drugs as ACE inhibitors, angiotensin II receptor blockers, beta-blockers, or calcium channel blockers. What is the reason for this disparity, and how do you know whether you're getting the best drug to lower your blood pressure?

What the Guidelines Say

The treatment guidelines, issued by the seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) in 2003, recommend using diuretics—either alone or in combination with other drugs—as first-line therapy in all people with high blood pressure who are otherwise healthy. But in people with other health conditions,

a diuretic may not be the first choice. For example, beta-blockers or ACE inhibitors may be the preferred therapy for those with coronary heart disease or kidney disease, respectively, although diuretics may also be used. In addition, diuretics are not appropriate in people who are allergic to them or have experienced serious side effects from them. But most other people with hypertension should receive a diuretic.

The JNC 7 guidelines were based on many studies, including the Anti-hypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT)—the largest blood pressure drug study ever conducted. As reported in 2002 in the *Journal of the American Medical Association (JAMA)*, the trial compared the traditional recommended therapy, thiazide diuretics, with two newer—but considerably more expensive—

medications: a calcium channel blocker and an ACE inhibitor.

Patients in all three groups fared equally well with regard to the occurrence of nonfatal heart attacks or death from coronary heart disease. The thiazide diuretic, however, was superior to the other two drugs in lowering blood pressure and reducing the risk of cardiovascular complications such as stroke and heart failure.

Differing Results

A 2003 study published in *The New England Journal of Medicine* reached a different conclusion. In it, Australian researchers concluded that initiating therapy with ACE inhibitors instead of diuretics led to fewer cardiovascular complications and deaths from any cause, despite similar reductions in blood pressure.

But there are important differences between this study—the Second

Low doses of thiazide diuretics are well tolerated. However, side effects can occur, including weakness; fatigue; malaise; sexual dysfunction; increased blood levels of glucose, triglycerides, calcium, and uric acid; and reduced blood sodium and HDL cholesterol levels. Thiazide and loop diuretics can also cause loss of potassium, which can lead to serious cardiac risks.

Beta-blockers. These drugs block the actions of epinephrine and lower blood pressure by slowing heart rate and reducing cardiac output (the amount of blood pumped by the heart). They offer the additional benefit of reducing the heart's consumption of oxygen, which can help control angina.

Potential side effects of beta-blockers include the following: wheezing in people who are sensitive to various allergens and irritants or who have preexisting lung disease; fatigue; drowsiness; malaise; depression; erectile dysfunction or decreased libido; increased blood triglyceride levels; and decreased HDL cholesterol levels. Because beta-blockers blunt the response to epinephrine, these drugs may cause problems if hypoglycemia (low blood sugar)

Annual Australian National Blood Pressure Study (ANBP2)—and the ALLHAT study. For example, ALLHAT was much larger, with about 24,000 people; ANBP2 had only 6,000 participants. ALLHAT was also better designed in that both subjects and researchers were blinded as to what drugs were being used. In addition, the results of ANBP2 were less consistent: The beneficial effect of ACE inhibitors was present in men but not in women.

Furthermore, a comprehensive meta-analysis of 42 trials recently confirmed the ALLHAT results. The meta-analysis, which was published in *JAMA* in 2003, combined data on nearly 200,000 people randomized to 7 major treatment strategies, including a placebo. It concluded that low-dose diuretics are the most effective first-line treatment for preventing cardiovascular deaths and illnesses.

The Cost Factor

In addition to being the most effective first-line treatment, diuretics are also

the least expensive. The average cost of a prescription for a thiazide diuretic is less than \$6, while ACE inhibitors and calcium channel blockers cost five to six times as much.

Despite these findings, many doctors continue to prescribe newer, more expensive drugs in place of diuretics. In fact, in an article published in *JAMA* in 2004, researchers found that 40% of doctors' prescriptions fell outside of the JNC 7 recommendations. The researchers theorize that doctors may choose these newer agents based on aggressive marketing campaigns, or on the basis of studies such as ANBP2 that found ACE inhibitors to be more effective than diuretics. But nationwide compliance with the JNC 7 guidelines in prescribing drugs to elderly patients with hypertension would save about \$1.2 billion annually.

The Bottom Line

If you're being treated for high blood pressure and aren't taking a thiazide diuretic, ask your doctor if you should

be. It may be that your doctor has selected a different drug as first-line therapy because you have a condition such as coronary heart disease, diabetes, or kidney disease, or you have had a stroke. But most people need a second drug to control blood pressure adequately. For people who aren't already taking one, that drug should usually be a thiazide diuretic.

Coexisting health conditions aren't the only factors that play a part in deciding which drug to prescribe. For example, ALLHAT found that blacks didn't respond as well as whites to ACE inhibitors. This difference may not be as significant as is commonly believed: A study published in *Hypertension* in 2004 concluded that whites and blacks respond similarly to common antihypertensive drugs about 90% of the time (see the sidebar on page 23). The potential for intolerable side effects is also a factor. So you and your doctor may need to experiment with several drugs in order to find the regimen that works best for you.

develops in people taking insulin or certain oral drugs to control their diabetes. (Epinephrine release during hypoglycemia triggers symptoms that alert people that their blood sugar is too low and that they need to take actions to increase their blood sugar.)

Beta-blockers may become less effective over time. This happens when the body compensates for the drop in blood pressure by increasing the retention of water and sodium, which causes blood pressure to rise again. Combining a beta-blocker with a diuretic may reduce this effect.

Calcium channel blockers. These drugs lower blood pressure by dilating arteries and, depending on the type of calcium channel blocker, by decreasing cardiac output as well. Like beta-blockers, calcium channel blockers help alleviate symptoms of angina. Potential side effects include headache, dizziness, flushing, leg swelling, constipation, and slow or rapid heart rate with palpitations.

Past research suggested that calcium channel blockers might increase the risk of nonfatal heart attacks and deaths due to coronary heart disease, particularly in people treated with short-acting