Medical Xpress

Diagnosing and treating resistant hypertension

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Resistant hypertension affects 12 percent to15 percent of patients treated for high blood pressure according to a new scientific statement from the American Heart Association. The statement, published in the Association's journal *Hypertension*, provides a comprehensive overview of how to diagnose and treat the condition based on a review of available

scientific information.

Patients are diagnosed with resistant hypertension when they need three or more medications to treat high blood pressure but still have blood pressure that exceeds the goal for hypertension established in 2017 in the American Heart Association/American College of Cardiology guideline for hypertension. In addition, patients whose blood pressure achieves target values on four or more different types of blood pressure lowering medication are also considered to have resistant hypertension.

The 2017 guideline specifies blood pressure below 130 millimeters of mercury (mmHg) for the top number or 80 mmHg for the bottom number as the goal. Resistant hypertension is more often found among African-Americans, men, older adults and, people who are obese, or those who have diabetes, peripheral artery disease, obstructive sleep apnea or other conditions.

"Because several conditions can mimic resistant hypertension, a correct diagnosis is essential so as not to over medicate. Asking a patient who has previously been prescribed blood pressure lowering drugs whether they take them correctly is a good place to start, because not taking medications properly will result in poorly controlled blood pressure that could appear to be resistant hypertension," said Robert M. Carey, M.D., chair of the statement writing group and professor of medicine at the University of Virginia Health Sciences Center.

The statement notes that 50 percent to 80 percent of people who should be taking blood pressure lowering medications don't take them correctly because the regimen may be expensive and have unwanted side effects, which can result it poorly controlled blood pressure.

In addition, over-the-counter non-steroidal anti-inflammatory drugs (NSAIDs), including ibuprofen, aspirin, naproxen and some prescription

medications, such as oral contraceptives may also raise blood pressure, so healthcare providers should ask patients if they are using these medications.

Another condition that can mimic resistant hypertension is the "white coat effect," when blood pressure is higher in the doctor's office than at home because the patient is anxious. To rule out the "white coat effect," patients should measure their blood pressure at home using a portable monitor or by wearing a device that can measure blood pressure at specific intervals over the course of a day.

Once the physician has confirmed a diagnosis of resistant hypertension, healthcare providers should work with their patients to help them improve their lifestyle. Eating a DASH-style diet, that emphasizes eating fruit, vegetables, whole-grains, low-fat dairy products, poultry and fish while limiting red meat and foods high in added sugars and salt has been clinically proven to lower blood pressure. Patients should also aim for a healthy body weight and get enough physical activity to help lower blood pressure.

"Some people with resistant hypertension may be extremely sensitive to salt in their diet," said Carey. "In one of the studies we reviewed, when salt intake was significantly lowered in people with resistant hypertension, blood pressure promptly went down."

Drinking too much alcohol and tobacco use are also lifestyle factors that affect blood pressure.

Once a clear diagnosis of resistant hypertension is made, healthcare providers have a variety of medication regimens to help their patients. By definition, the patient will already be taking three different classes of antihypertensive drugs, including a long-acting calcium channel blocker (CCB), an angiotensin converting enzyme (ACE) inhibitor or angiotensin

receptor blocker (ARB) which interacts with the renin-angiotensin system and a diuretic (so called "water pills"). The healthcare provider can then customize a medication regimen based on the individual characteristics of the patient to make sure they are taking the most effective medication for their situation. If blood pressure remains uncontrolled, a mineralocorticoid receptor antagonist (MRS), which blocks a hormone associated with blood pressure called aldosterone, can be added to help lower blood pressure.

Carey said it is also important to screen patients for secondary hypertension, an underlying condition that can cause high blood pressure. Treating patients for secondary hypertension can often cure them. Secondary hypertension frequently arises from a condition called primary aldosteronism, a disorder of increased aldosterone secretion, which is found in about 20 percent of patients with resistant hypertension. Other major causes of secondary hypertension include chronic kidney disease and renal artery stenosis, a narrowing of one or more arteries that carry blood to the kidneys.

"Patients with high blood pressure are more likely to develop cardiovascular diseases such as heart attacks, heart failure and stroke, and their prognosis deteriorates further if they have resistant hypertension," said Carey. "It is extremely important to get blood pressure down by whatever means one can, because study after study has shown the negative outcomes from pressures that remain elevated above the target level."

The new statement replaces an earlier statement on the topic published in 2008 and is based on a review of over 400 research studies by the writing committee. The major changes from the 2008 statement are that the criteria for defining resistant hypertension have become more specific, the recognition that sleep deprivation contributes to lack of blood pressure control, the importance of lifestyle change to prevent and

treat resistant hypertension.

In addition, there are new evidence-based recommendations from recent studies that suggest healthcare providers consider substituting the diuretics chlorthalidone or indapamide (water pills) for the more commonly prescribed diuretic hydrochlorothiazide and to consider adding spironolactone, a medication that reduces the effect of aldosterone, to the antihypertensive drug regimen.

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