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Hypertension vs. “Resistant Hypertension” – What Are the Key Differences?

Announcer:
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Dr. Shah:
Hello, everyone. It's great to be here today. My name is Nishant Shah and I'm an Assistant Professor of Medicine in Cardiology at Duke University School of Medicine, Duke Clinical Research Institute, and the Duke Heart Center. It's an absolute pleasure to be here with you guys today to talk about hypertension and the title of my talk today is "Hypertension Versus Persistent Hypertension, What Are the Key Differences?"

So, what is hypertension? We have some guidelines to help direct us, particularly from the International Society of Hypertension Guidelines. So it's defined as an office blood pressure of 140 over 90 or a home blood pressure of 135 over 85. Why are there two differences between office and home? It's because of the white coat effect. White coat hypertension is certainly real where people tend to have higher blood pressures in the office compared to what they are usually like on an otherwise normal basis. And so we need to adjust for that. And that's why we distinguish between office and home. Other criteria for blood pressure are a 24 hour average blood pressure on a 24 hour ambulatory monitoring system of 130 over 80, a daytime average of 135 over 85, and a nighttime average of 120 over 70. These are all the thresholds that define blood pressure.

So what is resistant hypertension? Resistant hypertension is defined as above-goal blood pressure, despite the concurrent use of three antihypertensive therapies at maximum or maximally tolerated doses, including a diuretic. These can also include other common medications like calcium channel blockers, ACE inhibitors, or angiotensin receptor blockers. Another important definition of resistant hypertension is a patient who don't have at-target blood pressure but are on four more antihypertensive medications including a diuretic.

So what are patient characteristics associated with resistant hypertension? Typically, this includes older age, high blood pressure from early childhood, obesity, excessive dietary salt ingestion, chronic kidney disease, diabetes, patients who have left ventricular hypertrophy which is oftentimes caused by the blood pressure being elevated, members of the black race, female gender, and residents of the Southern United States. Now it's important to remember that in the Southern United States, there's a higher prevalence of obesity. And so it, again, ties into obesity being a big factor when it comes to resistant hypertension.

So the diagnosis of resistant hypertension is really important, especially in identifying these people early so that treatment can happen and we can reduce their overall cardiovascular risk. But it's also important in the diagnosis that we look at medication adherence, we exclude the white coat effect that I was talking about earlier, and we evaluate for contributing lifestyle issues. We detect for other drugs that could be contributing to their elevated blood pressure. We screen for secondary hypertension or other conditions that could be dragging their blood pressure up. More importantly, we look to see if their blood pressure is causing any other target organ damage. And it's also extremely important to remember that there are way higher adverse outcomes associated with resistant hypertension compared to non-resistant hypertension. And as we look for resistant hypertension, identifying groups with refractory hypertension will be important. Refractory hypertension or those that have blood pressure that's not at-goal despite being on five or more

antihypertensive therapies including a diuretic. The downstream cardiovascular events for people with refractory hypertension is quite high.

So what are other drugs that could cause hypertension? These include common over-the-counter medications like NSAIDs, for instance, including aspirin or Celebrex like selective COX-2 inhibitors, some sympathomimetic drugs like decongestants, diet pills, illicit drugs like cocaine, stimulants of any type can certainly increase blood pressure, alcohol, oral contraceptives, immunosuppressives like cyclosporin. A lot of our endstage renal disease patients are on EPO or erythropoietin, that can cause hypertension and then things that are like herbal supplements like ephedra, ma huang, and then also natural licorice. All these things can certainly contribute to high blood pressure. It's important to kinda tease out when we're getting a history.

Common causes of resistant hypertension include obstructive sleep apnea. Sleep apnea in itself is a very underdiagnosed condition so important to keep in mind. Renal parenchymal disease, primary aldosteronism, and renal artery stenosis, and more rare conditions include pheochromocytoma, Cushing's disease, hyperparathyroidism, aortic coarctations, or intracranial tumor, which is just one example of anything that can cause increased intracranial pressure which can lead to a reflexive elevated blood pressure.

So in conclusion, resistant hypertension is above-goal elevated blood pressure in a patient despite being on concurrent use of three antihypertensive drugs, including a diuretic. These patients with resistant hypertension have been thoroughly evaluated and they are adhering to medications and they don't have a white coat effect. They truly are resistant despite the use of multiple antihypertensive therapies. And that we must distinguish these patients from those that just have regular hypertension because the therapies can be vastly different. And then also important to remember there are factors outside of just being on medical therapy that could be playing a role in patient's blood pressure, such as other conditions or secondary causes or social factors such as access to healthcare, understanding of their medications, understanding how to take their medications. These are key social determinants of health which are important. And it's also important to remember that we must evaluate and treat every patient equally as health equity is always key in this situation. Thank you so much.

Announcer:
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