

"A Wake Up Call and Current Guidelines for Hypertension"

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Understanding Hypertension

Hypertension is the result of persistent elevation of arterial blood pressure. The key word here is persistent. Persistent in the sense that just about all of us at one point or another have elevations in blood pressure such as in the classical "fright, fight and fear" situations described in adrenaline surge. In those circumstances, we do not say that hypertension exists. Even this understanding is applied in clinical medicine in diagnosing hypertension. Usually your physician will have to check your blood pressure two or more times in different settings before diagnosing you with hypertension. Knowing that hypertension is persistent high blood pressure, we need to understand clearly what we mean by blood pressure and why we need to be concerned about it.

Blood pressure is a measure of the pressure(force per unit area) of the flowing blood against the walls of the arteries. The arteries are the portions of our blood vessels that carry blood away from the heart(the pump) to all the various organs of our body such as the brain, heart muscle, kidneys, eyes,etc. This pressure against the walls of the arteries is dependent upon the following factors: the volume and thickness of the blood itself, the action of the heart pump and finally the elasticity(stretchability) of the arterial walls. These factors can independently or in combination affect our blood pressure.

Blood pressure is usually expressed as two numbers: the systolic and diastolic blood pressure. The systolic blood pressure is the upper or higher number and is the pressure on the arteries at the time of contraction of the heart(as the heart-the pump pushes the blood out to the body). The optimal systolic blood pressure should be 120 mmHg or less. In contrast, the diastolic blood pressure which is the lower number is the pressure on the arteries during the relaxation phase of the heart(during which the emptied heart pump is being refilled with blood from the other parts of the body). And the accepted optimal value for diastolic blood pressure is less than 80 mmHg.

Hypertension is defined as systolic blood pressure of 140 mmHg or greater, diastolic blood pressure of 90 mmHg or greater, and we need to be concerned because it afflicts about 50 million persons in the US (1 out of 6 persons). Left uncontrolled is a major contributor to heart attacks, heart failure, strokes and kidney failure.

With these numbers in mind, hypertension has been reclassified since November 1997 by the JNC VI report (The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure) into the following:

- Stage 1: Systolic BP of 140-159 mmHg or diastolic BP of 90-99 mmHg
 - Stage 2: Systolic BP of 160-179 mmHg or diastolic BP of 100-109 mmHg
 - Stage 3: Systolic BP of 180 mmHg or greater or diastolic BP of 110 mmHg or greater
- Another important addition by the expert panel to the above classification is to consider individual patient lifestyles and risk factors to heart attacks when making treatment decisions. We now for the first time have patients being assigned to risk groups A, B or C based on these risk factors (smoking, abnormal cholesterol, diabetes mellitus, family history of heart disease in men younger than age 55 or women younger than age 65, age greater than 60 years (for men and postmenopausal women).
- Risk Group A: No other risk factors to heart disease and no evidence of organ damage from Hypertension.
 - Risk Group B: At least one risk factor, not including diabetes.

- Risk Group C: Patients with diabetes, target organ damage, heart disease with or without other risk factors to heart disease.

The real message here from the staging and assigning of risk factors is to be more aggressive in treating for instance a patient with stage 1, but belongs to group C. Someone that in the past, we would have been less aggressive with because of the minimally elevated blood pressure. For instance, a patient with say diabetes or prior heart attack or even angina with a systolic BP of 145 mmHg should at the outset be treated with medications rather than waiting for lifestyles, diet or exercise to control his/her hypertension. In the past, the option not to use medication in this instance described would have been okay, but not any more. The current guidelines are borne out of the fact that hypertension remains perhaps the most undiagnosed and undertreated illness in this country if not the world over. Nearly half of 50 million people in the United States who are affected by hypertension do not receive treatment according to a new report issued by the National Heart, Lung, and Blood Institute (NHLBI). In the words of Sheldon G. Sheps, MD, Emeritus Professor of Medicine, Mayo Clinic and Mayo Medical School, Rochester, Minnesota and Chairman of the expert panel that wrote the guidelines, he said "We are not doing well as well as we thought on the hypertension front. Stroke deaths are up a bit, coronary heart disease mortality has hit a plateau, congestive heart failure affects more and more people, and the number of people with end-stage renal disease continues to increase in number. Uncontrolled hypertension is a major contributor to all of these conditions."

Other important aspect of the new guidelines worthy of mention is the recognition of a class called the (High-normal Blood Pressure). This designation is used in persons whose blood pressure are not high enough to be termed hypertensive, and not optimal enough to be deemed absolutely normal. A systolic blood pressure of 130-139 mmHg or a diastolic of 85-89 mmHg defines this group. The real relevance of identifying this group is for both the patients and the healthcare givers to intervene sooner than later since this group of patients are at increased risk of developing hypertension. In this category, the goal is to prevent hypertension and is achievable if the right measures are taken. Such measures will of course include:

- Lifestyle modification program
- DASH(Dietary Approaches to Stop Hypertension) diet in controlling blood pressure.

Lifestyle modification will include: losing weight if overweight, increased physical activity, giving up smoking and reducing salt intake. DASH diet is a diet rich in fruits, vegetables and low-fat dairy foods, with reduced saturated and total fats. It is also low in cholesterol, high in dietary fiber, potassium, magnesium and moderately high in protein. The DASH eating plan is based on 2,000 calories per day and is proven to lower blood pressure when followed religiously.

Conclusion

The most important take home message from this article and the new guidelines is that despite our vast knowledge of the harmful effects of untreated or poorly controlled high blood pressure, most patients who have it remain untreated. And even among those who are being treated, more than 50% (about 12 million) remain uncontrolled. It is our responsibility - patients and healthcare givers alike to change this current abysmal state of treating hypertension. In otherwords, patients need to show more compliance with medications, healthy diet, lifestyle changes and demand application of latest practice guidelines to their care. For the healthcare givers, this is a wake up call for all of us to do more than we are currently doing in controlling this potentially devastating condition.

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