



Cardiovascular Illnesses and Their Impact in Hypertension

Emily Lee*

Department of Cardiology, University of Harvard, Cambridge, United States

DESCRIPTION

Heart disease, stroke, and occasionally even death can be brought on by hypertension. The force that a person's blood exerts against the walls of their blood vessels is known as blood pressure. The blood vascular resistance and the amount of work required by the heart determine this pressure. About half of all adults in the United States have high blood pressure, but many may be completely ignorant of it. Hypertension is a major factor in cardiovascular disease, including stroke, heart attack, heart failure, and aneurysm. Controlling blood pressure is essential for staying healthy and reducing the likelihood of contracting these serious diseases.

When the body's smallest blood vessels (the arterioles) become constricted, the result is hypertension, which makes the heart work harder to maintain blood pressure by causing the blood to exert excessive pressure against the artery walls. The heart and blood vessels can withstand elevated blood pressure for months or even years, but eventually, the heart may grow (a condition known as hypertrophy) and become weakened to the point of failure. There may also be damage to the blood arteries in the brain, eyes, and kidneys.

Systolic pressure, which is the first value measured and the highest pressure, is the force that blood applies to artery walls while the heart beats to pump blood to the body's peripheral organs and tissues. The second figure measured, the diastolic pressure, is the residual pressure that the heart exerts on the arteries as it rests in between beats. It is the lower pressure. When a person's blood pressure is 140/90 mmHg or higher (sometimes referred to as "140 over 90 millimeters of mercury"), hypertension is diagnosed.

This type of high blood pressure affects 90 to 95 percent of people and is by far the most prevalent. The occurrence of essential hypertension appears to be significantly influenced by genetic variables. Secondary hypertension is linked to an underlying condition that may be renal, neurological, or endocrine in nature. These conditions include Bright disease (glomerulonephritis, an inflammation of the kidney's urine-

producing tissues), cerebral atherosclerosis, and Cushing syndrome (hyperactivity of the adrenal glands). The underlying cause of secondary hypertension may be treated to alleviate symptoms. Numerous outside factors might also cause blood pressure to increase. Cocaine, amphetamines, over-the-counter cold medications, thyroid supplements, corticosteroids, nonsteroidal anti-inflammatory medicines (NSAIDs), and oral contraceptives are a few of them.

Among African Americans, high blood pressure is substantially more common and dangerous. The severity and prognosis of the condition can be affected by a number of factors, including age, race, sex, smoking, alcohol use, high blood cholesterol, salt consumption, glucose intolerance, obesity, and stress. Age raises the likelihood of getting high blood pressure in both men and women.

The term "silent killer" refers to hypertension since it frequently causes no symptoms. Therefore, it's crucial for everybody who has risk factors to have their blood pressure checked frequently and adopt the necessary lifestyle adjustments.

Complications are caused by atherosclerosis (increased coronary, cerebral, and renal vascular resistance), decreased blood flow, and ischemia in addition to the increased pressure (cerebral hemorrhage, retinopathy, left ventricular hypertrophy, congestive heart failure, arterial aneurysm, and vascular rupture) (myocardial infarction, cerebral thrombosis and infarction, and renal nephrosclerosis). When hypertension is discovered in a young adult, the likelihood of having many of these consequences is significantly increased.

The prevalence of cardiovascular morbidity and mortality will decrease with effective treatment. The components of non-drug therapy are:

- Stress Reduction
- Dietary Management (Limited Intake of Salt, Calories, Cholesterol, and Saturated Fats; Adequate Intake of Potassium, Magnesium, Calcium, and Vitamin C)
- Regular Aerobic Exercise
- Weight Loss

Correspondence to: Emily Lee, Department of Cardiology, University of Harvard, Cambridge, United States, e-mail: emilylee@gmail.com

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- Quitting Smoking
- Reduced Intake of Alcohol and Caffeine

Treatment

However, because they deplete the body's potassium reserves, it is advised to employ potassium-sparing diuretics or to add potassium supplements. The effects of epinephrine (adrenaline), which is blocked by beta-adrenergic blockers (beta-blockers), reduce heart rate and widen blood vessels. Vasodilators work by relaxing the smooth muscle in blood vessel walls, causing tiny arteries to widen and lowering overall peripheral resistance as a result. Calcium channel blockers lower vascular resistance and encourage peripheral vasodilation. Angiotensin-Converting Enzyme (ACE) inhibitors may delay the breakdown of a robust

vasodilator (bradykinin), involve the creation of vasodilatory prostaglandins, and block the generation of angiotensin II, a powerful vasoconstriction agent.

Angiotensin-Converting Enzyme (ACE) inhibitors may delay the breakdown of a robust vasodilator (bradykinin), involve the creation of vasodilatory prostaglandins, and block the generation of angiotensin II, a powerful vasoconstriction agent. In terms of utility and tolerance, angiotensin receptor antagonists are comparable to ACE inhibitors, but instead of preventing the synthesis of angiotensin II, they entirely prevent it from attaching to the angiotensin II receptor. Statins, which are most commonly used to control cholesterol, have also shown promise as antihypertensive medications due to their capacity to reduce both diastolic and systolic blood pressure.