Primary Hypertension

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Primary Hypertension
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Introduction
Hypertension - The Silent Killer
• Affects 85 million Americans (American Heart Association, 2017)
• Becoming more prevalent as obesity (Alexander, 2017)

Signs and Symptoms of Primary Hypertension
• Blood Pressure
• Vomiting and headaches may be noticed by some individuals as a symptom of primary hypertension

The Underlying Pathophysiology
Hypertension is known as the “silent killer” because an individual with the disease may experience no warning signs or symptoms; this results in 47% of those with hypertension not knowing they have the disease (Paul et al., p.328, 2014). It is a condition that only 5% are receiving pharmacologic treatment (Paul et al., p.328, 2014). This further emphasizes the importance of being aware of the primary care to prevent disease advancement and to reduce mortality. It is not only important for the patient to monitor their own health but also their individual state of health is noticed, which puts an individual at increased risk for end organ damage related to hypertension.

The following guidelines are from the American Heart Association as of 2017 to categorize blood pressure readings (American Heart Association, 2017).

Hypertension
SBP 120-159 and DBP < 80
Hypertension Stage I
SBP 160-179 or DBP 100-119
Hypertension Stage II
SBP 180+ or DBP 120+

The inflammatory response of the immune system to a cascade of events that occur as patients with hypertension have increased aldosterone levels (Klabunde, 2016). This is the initial event in the cascade of events that occur as patients with hypertension have increased aldosterone levels, which results in increased blood pressure and blood flow through the kidneys.

Studies have shown that patients with primary hypertension are unable to maintain normal blood pressure through regulating blood volume and systemic vascular resistance. Renin is an important enzyme released from the kidneys in response to changes in blood pressure, which increases in response to any change in blood pressure or blood flow (Renna, Heras, & Guarnieri 2014). This release then triggers the cascade of events that occur as patients with hypertension have increased aldosterone levels, which results in increased blood pressure and blood flow through the kidneys.

The renin-angiotensin system is the process that controls blood pressure. Angiotensin II is a polypeptide hormone that has a role in the regulation of blood pressure and blood volume. The renin-angiotensin system is a cyclic process and can occur over a long period of time.

Primary Hypertension
• Abnormal stimulation of the sympathetic nervous system as seen with primary hypertension is a predictor of cardiovascular and renal mortality due to blood pressure variability and stress

The C.U. Preventive Services Task Force has made the following recommendations for screening and treatment (Siu, 2015):
• Adults 10 to 39 years old with blood pressure of <130/85 mm Hg with no risk factors should be screened every five to five years
• Initial treatment for nonblack patients should include a thiazide or a calcium channel blocker, and treatment for black patients should include an angiotensin-blocking agent

Although the underlying pathophysiology is a complex process for physicians to understand, there are risk factors known to put a patient at increased risk for hypertension. It is crucial for patients and healthcare providers to understand the importance of primary hypertension and to provide education to prevent complications often have a history of coronary artery disease, heart failure, and stroke; all of which are potential complications of primary hypertension (Centers for Disease Control and Prevention, 2013, 2015).

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