Hypertension crisis

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Introduction

Blood pressure is the product of cardiac output multiplied by peripheral resistance.

In normal circulation, pressure is exerted by the flow of blood through the heart and bloodvessels. High blood pressure, known as hypertension, can result

Hypertension is sometimes called “the silent killer” because

people who have it are often symptom free

Definition of hypertension

Hypertension is a systolic blood pressure greater than 140 mm

Hg and a diastolic pressure greater than 90 mm Hg over a sustained period, based on the average of two or more blood pressure measurements taken in two or more contacts with the health care provider after an initial screening

Primary hypertension

Meaning that the reason for the elevation in blood pressure cannot be identified.

Secondary hypertension

Is the term used to signify high blood pressure from an identified cause. Various conditions and medications can lead to secondary hypertension, including:

- Obstructive sleep apnea
- Kidney problems
- Adrenal gland tumors
- Thyroid problems
- Certain defects you're born with (congenital) in blood vessels
- Certain medications, such as birth control pills, cold remedies.

- Illegal drugs, such as cocaine and amphetamines

Pathophysiology of hypertension

Although the precise cause for most cases of hypertension cannot be identified, it is understood that hypertension is a multifactorial condition. Because hypertension is a sign, it is most likely to have many causes, just as fever has many causes. For hypertension to occur, there must be a change in one or more factors affecting peripheral resistance or cardiac output . In addition, there must also be a problem withthe control systems that monitor or regulate pressure

Signs and Symptoms of Hypertension

Hypertension does not always cause symptoms; in fact, about a third of people who have hypertension don’t know they have it because of no or few symptoms.

The most common symptoms of hypertension:

- Headache
- Ringing or buzzing in the ears
- Fatigue
- Irregular heartbeat
- Confusion or dizziness
- Nosebleed
- Blurred vision
- Difficulty breathing
- Chest pain
- Blood in the urine

Risk factor

- Smoking
- Obesity
- Lack of physical activity
- Too much salt in the diet
- Too much alcohol consumption (more than 1 to 2 drinks per day)
- Stress
- Older age
- Genetics
- Family history of high blood pressure
- Chronic kidney disease
- Adrenal and thyroid disorders
- Sleep apnea

Complication of hypertension

- Heart attack
- Stroke
- Aneurysm
- Heart failure
- Kidney damage
- Vision loss
- Peripheral artery disease
- Metabolic Syndrome
- Trouble Thinking or Remembering
- Erectile Dysfunction

Hypertensive crisis

is defined as a severe elevation in blood pressure (systolic

BP >180 mm Hg, diastolic BP >100 mm Hg), which may or may not lead to organ damage. There are two types of hypertensive crisis

Hypertensive emergency

Rapid (hours to days) marked elevation in BP .In this situation blood pressure must be lowered immediately (not necessarily to less than 140/90 mm Hg) to prevent damage to the target organ.

Hypertensive urgency

Slow (days to weeks) elevation in BP.in this situation blood pressure must be lowered within a few hours usually does not lead to organ tissue damag.

Hypertensive crisis manifestation

- Chest pain
- Dyspnea, orthopnea, paroxysmal nocturnal dyspnea
- Neurological deficits
- Severe, throbbing headache
- Visual disturbances
- Nausea and vomiting
- Dysphagia
- Back pain
- Severe anxiety
- Irritability, confusion
- Possible seizures
- Oliguria if kidneys affected

Diagnostic test

- CT or MRI of chest, abdomen, and brain
- echocardiogram or trans esophageal echocardiogram
- ECG
- CBC
- Cardiac biomarkers if appropriate

- Serum BUN, creatinine
- Urine analysis
- Renal ultrasound if kidney involvement
- Chest x-ray (if dyspnea or chest pain present)

Management of hypertensive crisis

- Check BP in both arms.
- Palpate pulses in all extremities.
- Provide continuous ECG monitoring and treatment of arrhythmias.
- Assess cardiac, respiratory, and neurological status.
- Administer analgesics for pain or headache.
- Administer vasodilators as doctor order.
- Hypertensive urgency: use short-acting.
- agents: captopril (Capoten) or clonidine (Catapres).
- Provide a quiet environment with low lighting.
- rest and sleep
- **Case study**

A 65 year old male comes into the ER complaining of blurred vision and a “very painful” headache. He states his wife took his blood pressure from his home blood pressure machine at home and it read 210/110. He states it scared him so that is why he came to the hospital. The patient has the following history: Diabetes Type 2, Hyperlipidemia, Hypertension, and 2 Cardiac Stents (2009).

The patient takes the following medications: Metformin 150 mg PO Daily, Liptor20 mg PO at night, Plavix 75 mg PO Daily, Coumadin 2 mg PO once a day, and Clonidine 2 mg PO Daily. Pt admits to not taking Clonidine for the past week because it makes him dizzy and weak feeling. Current VS: HR 85, BP

220/115, O2 Sat 96% on RA, Temp 37.5, and RR 16. Pt blood sugar is 150.

Hypertension Nursing Diagnosis:

1- Decreased cardiac output related to increased peripheral vascular resistance secondary to hypertension as evidence by BP 220/115, patient complaining of blurred vision, and headache.

Desired Outcomes:

- Pt's BP will be SBP 120-130 and DBP 80-95 within 24 hours.-Pt will verbalize an absent in a headache and blurred vision within 12 hours.
- Pt will verbalized his understanding of never stopping a medication without the advice of a doctor.

Interventions:

- The nurse will administer and titrate vasodilator medications to meet md
- Parameter for blood pressure.-The nurse will assess the patient blood pressure every hour until meeting md parameters.
- The nurse will assess the patient's headache pain level and blurred vision every 4 hours until absent.
- The nurse will educate the patient on how to consult with his doctor before stopping a medication.

2-Acute Pain (Typically Headache) related to high blood pressure as manifested by pain in head ,blurred vision, nausea and vomiting.

Desired Outcomes:

- Patient states they are no longer suffering from a headache and appear comfortable and pain-free.

Interventions:

- Determine the specifics of the pain, such as intensity, where it is located, and how long it has been going on.
- Note the patient's attitude towards pain and any history of substance abuse.
- Encourage rest during severe pain episodes.
- Recommend methods of relief, such as neck and back rubs, applying cool cloths to the forehead, and avoiding bright lights.
- Limit how much the patient moves around.
- Provide medication.

3-Activity Intolerance related to insufficient physiological or psychological energy to complete required or desired daily activities as manifested byweakness or fatigue.

Desired Outcomes:

- Patient participates necessary and/or desired activities.
- Uses identified techniques to enhance activity tolerance.
- Reports a measurable increase in his/her tolerance for activity.
- Demonstrates a decrease in noticeable signs of intolerance.

Interventions:

- Note each of the factors that contribute to fatigue (age, health, illness, etc.).
- Evaluate the patient's degree of activity intolerance and when it occurs.
- Monitor how the patient responds to activity (pulse, heart rate, chest pain, dizziness, excessive fatigue, etc.).
- Explain energy conserving techniques (having a shower, listen to music, practice yoga, etc.).

- Assess any emotional factors that may be contributing to activity intolerance (such as depression or anxiety).
- Encourage the patient to engage in self-care and progressive activity when possible.

Reference

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