Hypertension

Hypertension

Hypertension or high blood pressure is a significant risk factor for heart disease, stroke,and other cardiovascular ailments. The prevalence of hypertension globally has increased immensely over the years and is now considered as the most common of all the morbidities relating to the circulatory system. Around 6 million Australian aged 18 years old and above are classified as hypertensive while close to 4 million of the 6 million hypertensive Australians have unmanaged and uncontrolled high blood pressure. The 2017 American College of Cardiology/ American Heart Association classifies hypertension as Blood Pressure more than 120/80. Untreated and undiagnosed hypertension may lead to fatal outcomes secondary to cardiovascular and renal complications of hypertension.

Causes

Hypertension is classified into two types; the first is primary hypertension which nmeans that the hypertension is not associated with another medical condition. The other type is secondary hypertension wherein other medical diseases of the heart, arteries, heart,and endocrine system may cause the blood pressure to rise. Leading causes are summarized below:

- Primary Hypertension

Although it is still medically elusive to pinpoint the leading causes of primary hypertension, several risk factors are associated with elevated blood pressure

- Age: risk of hypertension increases with age. While hypertension is more common in men, women may develop hypertension after the age of 65.
- Obesity: increased weight correlates with the development of hypertension
- Family History:hypertension is common among people who have hypertensive parents
- Race/Ethnicity:usually, blacks have a higher risk of developing hypertension than other races
- High salt diet: high salt diet means >3 g/day intake of table salt (Sodium Chloride), the high sodium in the diet retains more fluids in the body leading to increased blood pressure
- Alcoholism:heavy drinking of alcoholic beverages may lead to heart damage
- Sedentary lifestyle/lack of activity:lack of exercise may cause higher heart rate, the higher the heart rate, the higher the blood pressure it would result. A sedentary lifestyle also leads to obesity which is another risk factor for primary hypertension.

- Secondary Hypertension

  Several diseases may elevate blood pressure that leads to hypertension. In most cases, it can coincide with risk factors related to primary hypertension hindering the efforts to control adequate blood pressure readings

  - Some over the counter medications have adverse or side effects including elevated blood pressure, examples of drugs which may cause hypertension are oral contraceptives (those with higher doses of estrogen), nonsteroidal anti-inflammatory drugs (NSAIDs) used for pain relief, antidepressants, steroids and nasal decongestants such as phenylephrine and pseudoephedrine.
  - Primary and secondary kidney diseases
  - Pheochromocytoma is a tumor in the adrenal glands
  - Problems in the thyroid such as hypothyroidism (underactive thyroid) and hyperthyroidism(overactive thyroid)
  - Use of illegal drugs
  - Obstructive sleep apneais most commonly identified with men who snore loudly
  - Cushing Syndrome is a problem with a hormone which tends to retain more water than usual
  - Heart diseases and genetic disorders

Signs and Symptoms

Most of the hypertensive patients do not even know they already have elevated blood pressure since high blood pressure can only be detected through sphygmomanometer, a blood pressuremeasuring apparatus. In some extreme hypertensive cases, the patient may complain of headaches, the difficulty of breathing and nose bleed.

Diagnosis

The primary diagnostic tool to detect hypertension is a blood pressure measurement device called sphygmomanometer. A nurse or a physician putsan inflatable armcuff in your arm to measure the blood pressure using an analog or digital pressure-measuring gauge. Blood pressure readings are expressed in millimeters mercury and fraction. The upper number represents systolic blood pressure that measures the pressure in the arteries when the heart pumps. The lower figure shows the strength in arteries in between beats and is known as diastolic pressure. Blood pressure is categorized into four classifications:

1. Normal Blood Pressure: Blood pressure is below 120/80
2. Elevated Blood Pressure: Systolic blood pressure spans from 120-129 mm Hg and the diastolic pressure below 80
3. Stage 1 Hypertension: the systolic blood pressure ranges from 130-139,and the diastolic pressure is 80 to 89 mm Hg
4. Stage 2 Hypertension: The most severe category, the systolic pressure is more than 140 mm Hg with a diastolic pressure of 90 mm Hg and higher

While blood pressure measurement is essential, it is not always accurate; some patients might have “white coat hypertension,” an elevation of normal blood pressure during a visit to health practitioners or doctors. Medical staff usually takes sequential blood pressure readings before they decide to establish hypertension as the diagnosis.

The most accurate measurement of blood pressure can be done outside the medical clinic using a 24-hour BP reading. However, it is only advisable to use if atypical symptoms of hypertension are suspected.

Further laboratory tests are typically ordered such as :

1. Blood chemistry-to check sodium and potassium
2. Electrocardiogram – to check the heart’s electrical activity
3. Urinalysis –to test urine and check for specific compounds
4. Lipid profile – to check for cholesterol levels.

Management and Treatment

Lifestyle modification, in general, is the main recommendation of physicians to lower blood pressure and reduce cardiovascular disease (CVD) risk. These measures are not considered a substitute, but it aims to compliment possible drug therapy . Practical steps to lower blood pressure are :

- Regular aerobic exercise
- Lessening alcohol intake
- Low sodium diet
- A well-balanced diet (high in fiber and vegetables)
- Weight reduction for obese/overweight patients (5kg weight loss can reduce BP by 7/3 mmHg)

Drug therapy may be prescribed by the physician and might usually start with a single drug of any of the following:

- Angiotensin-convertingenzyme inhibitors (ACE)

- Angiotensin II receptors blockers (ARB)
- Dihydropyridine calcium channel blockers
- Thiazide and thiazide-like diuretics (promotes urination)

If your BP does not improve with a single drug, it may be combined with other antihypertensive drugs.

Treatment of secondary hypertension may not improve with antihypertensive drugs;thus attention is drawn on the primary cause of secondary hypertension. It will be addressed first, and the management of hypertension is often achieved after treating primary reasons.