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# A REVIEW ON STRESS & HYPERTENSION

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**ABSTRACT**

The purpose of this study was to estimate the current prevalence and distribution of hypertension and to determine the status of hypertension awareness, treatment, and control. Study was based on a questionnaire, carrying out the history and status of patients. In INDIA, due to low literacy rate and poor health conditions, people are unaware of the effects of smoking, using the proper medication, and prevention of major diseases. According to study, prevalence of hypertension in aged patients is high, smoking plays a major part in it. Reason for it lies in the life style, consuming too much fatty food and poor consultation to physician. Basic education and better health conditions can lower the prevalence of disease.

## 1. INTRODUCTION

**Definition and classification:**

Hypertension (HTN or HT), also known as high blood pressure or arterial hypertension, is a chronic medical condition in which the blood pressure in the arteries is elevated.

Blood pressure is expressed by two measurements, the systolic and diastolic pressures, which are the maximum and minimum pressures, respectively, in the arterial system[1]. The Seventh report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure [3] provides a classification of blood pressure for adult saged ≥18 years.

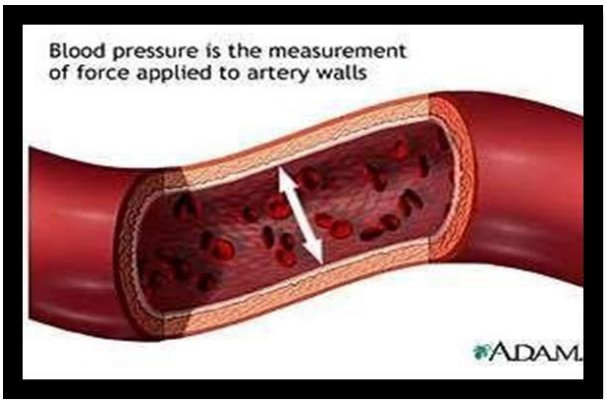
**Classification of blood pressure for adults aged ≥18 years**

| BP Classification | Systolic BP(mmHg) | Systolic BP ( mmHg) | Diastolic BP(mmHg) |
|---|---|---|---|
| Normal Prehypertensi | <120 | and | <80 |
| On | 120–139 | or | 80–89 |
| Stage 1 hypertension | 140–159 | or | 90–99 |
| Stage 2 hypertension | ≥160 | or | ≥100 |

Hypertension is also classified as either primary (essential) hypertension or secondary hypertension. About 90–95% of cases are categorized as primary hypertension, defined as high blood pressure with no obvious underlying cause.[3] The remaining 5– 10% of cases are categorized as secondary hypertension, defined as hypertension due to an identifiable cause, such as chronic kidney disease, narrowing of the aorta or kidney arteries, or an endocrine disorder such as excess aldosterone, cortisol, or catecholamines.

## 2. SIGNS AND SYMPTOMS:

Hypertension is rarely accompanied by any symptoms, and itsidentification is usually through screening, or when seeking healthcare for an unrelated problem. Some with high blood pressure report headaches (particularly at the back of the head and in the morning), as well as lightheadedness, vertigo, tinnitus (buzzing or hissing in the ears),altered vision or fainting episodes.[7]



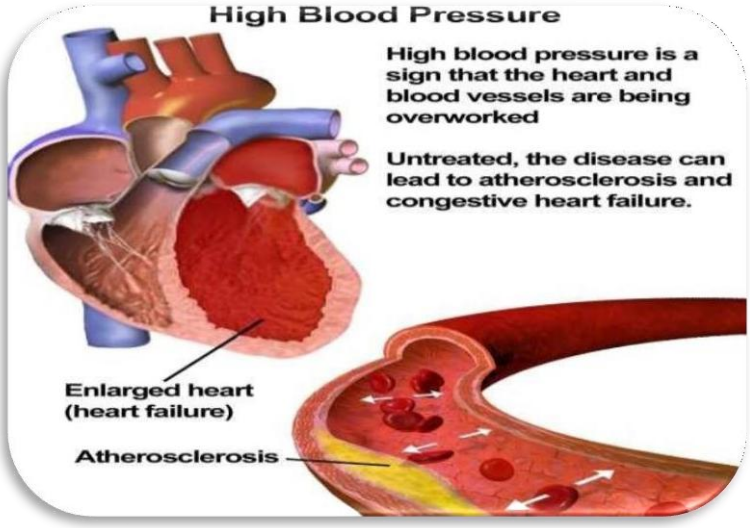

**CAUSES:**

**Primary hypertension:**

- **Essential hypertension:** Hypertension results from a complex interaction of genes and environmental factors. Numerous common genetic variants with small effects on blood pressure have been identified as well as some rare genetic variants with large effects on blood pressure, but the genetic basis of hypertension is still poorly understood. Several environmental factors influence blood pressure. High salt intake raises the blood pressure in salt sensitive individuals; lack of exercise, obesity, stress, and depression can play a role in individual cases. The possible role of other factors such as caffeine consumption, and vitamin D deficiency are less clear.

- **Secondary hypertension:** Secondary hypertension results from an identifiable cause. Kidney disease is the most common secondary cause of hypertension. Hypertension can also be caused by endocrine conditions, such as Cushing's syndrome, hyperthyroidism, hypothyroidism, acromegaly, Conn's syndrome or hyperaldosteronism, hyperparathyroidism and pheochromocytoma. Other causes of secondary hypertension include obesity, sleep apnea, pregnancy, coarctation of the aorta, excessive liquorice consumption and certain prescription medicines, herbal remedies and illegal drugs.

**Pathophysiology:** The increased peripheral resistance in established hypertension is mainly attributable to structural narrowing of small arteries and arterioles, although a reduction in the number or density of capillaries may also contribute. Whether increased active arteriolar vasoconstriction plays a role in established essential hypertension is unclear. Hypertension is also associated with decreased peripheral venous compliance which may increase venous return, increase cardiac preload and, ultimately, cause diastolic dysfunction. Pulse pressure (the difference between systolic and diastolic blood pressure) is frequently increased in older people with hypertension. This can mean that systolic pressure is abnormally high, but diastolic pressure may be normal or low a condition termed isolated systolic hypertension. The high pulse pressure in elderly people with hypertension or isolated systolic hypertension is explained by increasedarterial stiffness, which typically accompanies aging and may be exacerbated by high blood pressure.




- **Diagnosis of Hypertension**: Initial assessment of the hypertensive people should include a complete history and physical examination. With the availability of 24-hour ambulatory blood pressure monitors and home blood pressure machines. Other methods to diagnose Hypertension are,

| System | Tests |
|---|---|
| Kidney | Microscopic urinalysis, protein in the urine, BUN and/or creatinine |
| Endocrine | Serum, sodium, potassium, calcium, TSH |
| Metabolic | Fasting blood glucose, HDL, LDL, and totalcholesterol, triglycerides |
| Other | Hematocrit, electrocardiogram, and chest radiograph |

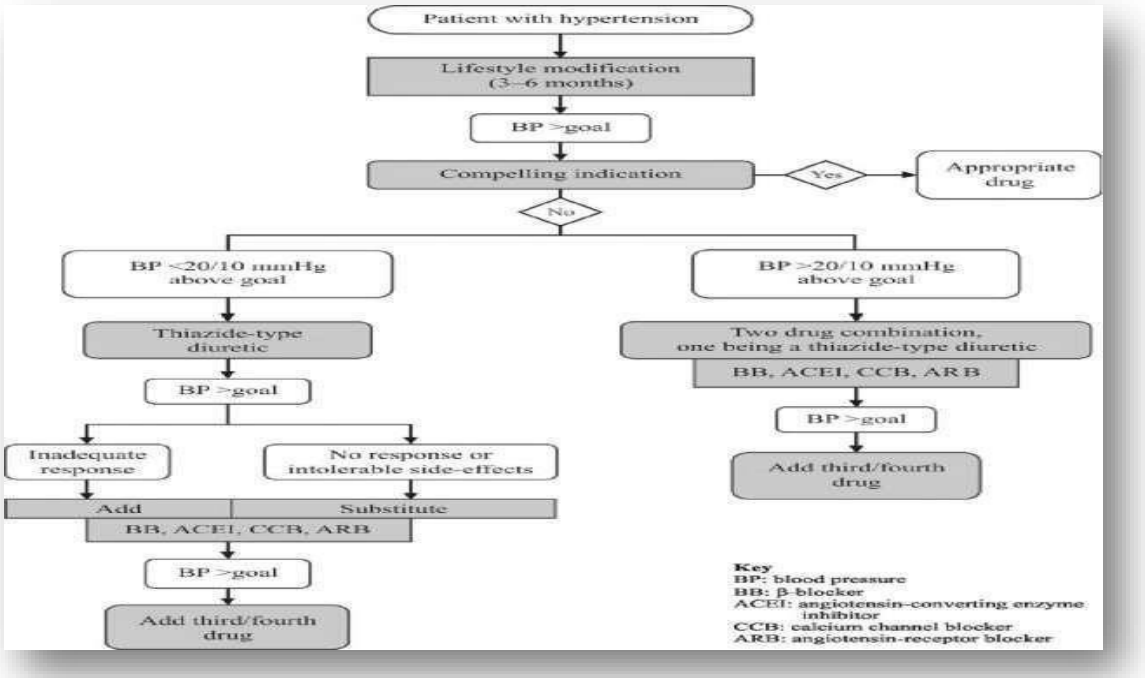
- **Prevention**: Much of the disease burden of high blood pressure is experienced by people who are not labeled as hypertensive. Consequently, population strategies are required to reduce the consequences of high blood pressure and reduce the need for antihypertensive drug therapy. Lifestyle changes are recommended to lower blood pressure, before starting drug therapy. Prevention of hypertension:
  - Maintain normal body weight for adults (e.g. body mass index 20–25 kg/m2)
  - Reduce dietary sodium intake to <100 mmol/ day (<6 g of sodium chloride or < 2.4 g of sodium per day)
  - Engage in regular aerobic physical activity such as brisk walking
- **Hypertensive crisis**: Severely elevated blood pressure (equal to or greater than a systolic 180 or diastolic of 110—sometimes termed malignant or accelerated hypertension) is referred to as a "hypertensive crisis", as blood pressure at this level confers a high risk of complications.
- **Evaluation for hypertensive crisis**: A "hypertensive emergency" is diagnosed when there is evidence of direct damage to one or more organs as a result of severely elevated blood pressure greater than 180 systolic or 120 diastolic. They may be separated into the following groups. Hypertensive emergencies, which are associated with severe symptoms of progressive target organ damage. They require immediate reduction of blood pressure (within 1 hour usually with parenteral agents). Hypertensive urgencies, which are asymptomatic and not associated with target organ damage. They require slower reduction of blood pressure by oral agents.

**MANAGEMENT OF HYPERTENSION:**

- **Lifestyle modifications**: Adoption of healthy lifestyles by all individuals is critical in the prevention of high blood pressure and an indispensable part of the management of those with hypertension. Lifestyle modifications decrease blood pressure, enhance antihypertensive drug efficacy and decrease cardiovascular risk. Patients with prehypertension and no compelling indication (including heart failure, prior myocardial infarction or stroke, high coronary risk status, diabetes mellitus, chronic renal disease) respond well to lifestyle modifications

and usually do not need drug therapy. For all other abnormal blood pressure categories, drug therapy is indicated if goal blood pressure is not achieved by lifestyle modification alone.

## 3. MEDICATION




**Medications to treat high blood pressure:**

- Thiazide diuretics. ...
- Beta blockers. ...
- Angiotensin-converting enzyme (ACE) inhibitors. ...
- Angiotensin II receptor blockers (ARBs). ...
- Calcium channel blockers. ...
- Renin inhibitors.

## 4. REVIEW OF THE LITERATURE

It is known that hypertension and obesity are common among patients with T2DM. This systematic review has captured data from observational studies from 36 countries around the world, demonstrating that the high prevalence of both obesity and hypertension is a worldwide issue. In this review, most of the studies reported hypertension rates above 60%, with rates even exceeding 75% in many of the studies.

India, Japan and Iran were notable for having even their highest prevalence estimates below 50%, whereas Mexico, Romania, and Taiwan had single or highest estimates just above 50%. Even for the countries with relatively low prevalence rates of hypertension in this review, the rates were consistent with higher hypertension rates among adults with diabetes when compared with reports of general populations or adults without diabetes. In India, although the overall hypertension rate among patients with T2DM in the study was 39%, the urban prevalence was 63.2% and the rural prevalence was 36.8%. Hypertension prevalence among adults from the general population in urban India ranges from 20% to 40% and in rural areas from 12% to 17%. Of the studies evaluating obesity prevalence in patients with T2DM, over one-quarter based on BMI were above 50%, whereas over four- fifths of the rates estimated by waist circumference were above 50%. The high prevalence of central obesity (high waist circumference) in most regions was observed despite the fact that only seven studies used waist circumference cut points as low as32,47,72,83,98 or lower than47 ,98 those recommended by the International Diabetes Federation (IDF) (≥80 cm for women and ≥94 cm for men from Europe, Sub-Saharan Africa, Eastern Mediterranean, and Middle East; ≥80 cm for women and ≥90 cm for men from South Asia, South and Central America, People's Republic of China, and Japan). Therefore, the prevalence rates for central obesity are likely underestimates for many of the studies in this review. All of the studies compared diet modification and antihypertensive medications in relation to reducing blood pressure. Diet interventions included weight loss, low energy/calorie, sodium restriction, and potassium increased diets. The three TAIM studies did not specify type of diet for "weight reduction". In addition, only the TAIM study participants received nutritional counseling.

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