

HYPERTENSION IN THE PERSPECTIVE OF CURRENT KNOWLEDGE AND PRACTICES**Dr. Mahesh Ghodke and Dr. Jagruti Suresh Kasar***

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ABSTRACT

Hypertension is a modern day's endemic and pandemic disease worldwide, especially in the developing countries. It has been observed that cardiovascular diseases are increasing in developing countries and it has been estimated that CVD will be the major cause of morbidity and mortality in these countries by the year 2020. They account for nearly a third of all deaths worldwide. It is seen that majority of the hypertensive patients remain asymptomatic, only few of them develop some symptoms like headache, giddiness and irritability. That's why hypertension is known as silent killer.

KEYWORDS: Hypertension, Homoeopathy, Psychosomatic disease.**INTRODUCTION**

Being one of the most important comorbidities influencing the emergence of stroke, myocardial infarction, heart failure, and renal failure, hypertension has been the most researched problems of the preceding century.

Hypertension is the leading global contributor to cardiovascular disease and early death. It is characterized by a blood pressure (BP) in the systemic arteries that is consistently high.

The lateral pressure that the blood column exerts on the artery walls, known as blood pressure (arterial), varies constantly in response to the heart's rhythm. Blood supply to all tissues is an essential component of physiology that makes life possible as long as it stays within normal bounds. However, when it goes above a certain point, it can be harmful to human health.

The term "silent killer" is frequently used to describe hypertension. Its incidence is high in both industrialized and emerging nations, and epidemiological studies indicate that this is not due to greater public awareness but rather to an absolute rise in disorder. A significant risk factor for the emergence of cardiovascular problems is hypertension.

The ratio of systolic to diastolic blood pressure, or the pressure the blood exerts on artery walls when the heart

contracts to rest, is a typical way to express blood pressure.

Depending on the measuring technique, different blood pressure levels identify hypertension (Table 1).

There is consensus that persistent blood pressure readings of 140/90 mm Hg or more should be treated with the normal therapeutic target of 130/80 mm Hg or below. The definition and classifications of hypertension have been evolving throughout time.

Hypertension may have several aetiologies. The majority of patients (90–95%) have primary hypertension with a complex gene-environment aetiology that is extremely varied and highly treatable. With the heritability (a measure of how much of the variance in a characteristic is related to variation in genetic variables) estimated between 35% and 50% in the majority of studies,^[1,2] patients with hypertension frequently have a favourable family history.

Table-1: Definitions of hypertension based on the 2013 ESH/ESC guidelines.

Category	Subtype	Systolic BP (mmHg)	Diastolic BP (mmHg)
Office BP	NA	≥ 140	≥ 90
Ambulatory BP	Daytime (awake)	≥ 135	≥ 85
	Night time (asleep)	≥ 120	≥ 70
	24hr	≥ 130	≥ 80
Home BP	NA	≥ 135	≥ 85

KEY FACTS ABOUT HYPERTENSION BY WORLD HEALTH ORGANIZATION

- Around the world, 1.28 billion adults between the ages of 30 and 79 are projected to have hypertension, with two-thirds of them residing in low- and middle-income nations.
- It is thought that 46% of adults with hypertension are ignorant of their disease.
- Only 42% of adults with hypertension have their condition properly diagnosed and managed.
- About one in five (21%) persons with hypertension have it under control.
- Worldwide, hypertension is a significant factor in premature death.
- Between 2010 and 2030, one of the global targets for non-communicable diseases is to cut the prevalence of hypertension by 33%.^[3]

ETIOLOGY

The most common form of hypertension is *idiopathic* or *essential hypertension*. The idea that eating extra salt increases the risk of hypertension has been around for a while.^[4] One of the discussed factors for the onset of essential hypertension is the patient's genetic capability for a salt response.^[5,6] Salt sensitivity affects between 50 and 60 percent of the patients, increasing their risk of developing hypertension.^[7]

EPIDEMIOLOGY

Over one billion people worldwide suffer from hypertension, which affects up to 45% of the adult population.⁸ Significant rates of hypertension are present across all social and income levels. These rates rise with ageing and can affect up to 60% of people over the age of 60.^[8]

According to the global health survey report from the year 2010 that was published in the Lancet, hypertension has been the leading cause of mortality and disability-adjusted life years globally since 1990. This study made use of patient information from 67 different nations.

HTN is the second-leading preventable cause of death overall, behind cigarette smoking, and is the sole risk factor in the US that causes more fatal cardiovascular disease-related deaths than any other modifiable risk factor.^[9]

There may be close to 1.5 billion hypertension patients worldwide by 2025, an increase of 15% to 20%, according to recent estimates.^[10]

PATHOPHYSIOLOGY

Enhanced salt absorption that promotes volume expansion, a subpar response of the renin-angiotensin-aldosterone system (RAAS), and enhanced sympathetic nervous system activation have all been associated to the development of hypertension. These changes lead to an increase in afterload and total peripheral resistance, which eventually results in the development of hypertension.

HISTORY AND PHYSICAL EXAMINATION

- A large number of hypertensive cases are silent and are unintentionally identified when taking a blood pressure reading.
- End-organ damage can occasionally be indicated by symptoms such as acute pulmonary edema, chest pain, hypertensive encephalopathy, and stroke-like symptoms.
- Physical examination may be ordinary aside from sporadic pedal edema or high blood pressure, but one should keep an eye out for symptoms of the following conditions: coarctation of the aorta, aortic valve disease, renal disease or fibromuscular dysplasia (FMD), polycystic kidneys, endocrine disorders, and thyroid conditions.
- Left ventricular hypertrophy and diastolic dysfunction are suggested by the existence of a fourth heart sound, which symbolises a rigid and non-compliant left ventricle.
- Lung rales and/or peripheral edema are indicators of persistent hypertension and cardiac dysfunction, respectively.

EVALUATION

The ACC recommends collecting at least two office measures on at least two different days in order to identify hypertension.

If the first two readings are off by greater than or equal to 10 mm Hg, the ESC/ESH advises collecting three office blood pressure readings at least one to two minutes apart. The next step is to record the average of the last two blood pressure readings.

Both groups are in favour of using higher blood pressure measurements and assigning patients to higher levels or grades in order to provide them with effective medical care.

The patient should be sitting quietly for at least five minutes prior to taking their blood pressure, and the

proper procedure must be used. The blood pressure cuff should cover 80% of the arm circumference since larger or smaller pressure cuffs could inaccurately underestimate or overestimate blood pressure readings.

Ambulatory blood pressure monitoring is the most accurate method of identifying hypertension; it also aids in identifying cases of disguised hypertension and the white coat effect.

The evaluation looks for signs of end-organ damage and comprises the following tests

- Fundoscopy to check for retinopathy/maculopathy
- 12 lead ECG (to document left ventricular hypertrophy, heart rate, and rhythm);
- cbc, ESR, creatinine, eGFR, electrolytes, HbA1c, thyroid profile, blood cholesterol levels, and serum uric acid are among the haematological tests that can be performed.
- The ratio of urine albumin to creatinine
- Ankle-brachial index (ABI) (if signs of peripheral arterial disease are present)
- Imaging procedures such as carotid Doppler, USG, ECG, and brain imaging (where clinically appropriate) can also be performed.

TREATMENT/MANAGEMENT

Currently, both *pharmaceutical and non-pharmacological methods* are employed to manage hypertension.

All persons with elevated blood pressure should consider *non-pharmacological and lifestyle therapy*, regardless of their age, gender, comorbidities, or cardiovascular risk status.

For effective patient care, patient education is crucial and should always include detailed instructions for managing weight, reducing salt intake, stopping smoking, effectively treating obstructive sleep apnea, and exercising.

Further At every consultation, patients must be informed and reminded that the aforementioned changes must be kept up-to-date in order to properly manage their conditions.

Although the appropriate BMI and weight range are still unknown, losing weight is advised if obesity is prevalent. Simply decreasing weight can lower systolic blood pressure by up to 20 mm Hg.

Although smoking may not immediately increase blood pressure, quitting smoking will help to lessen the long-term effects.

Simple changes in lifestyle alone can reduce cardiovascular-related events by up to 15%.

Modern medicine uses ACE (angiotensin-converting enzyme) inhibitors (ACEi), angiotensin receptor blockers (ARBs), diuretics, calcium channel blockers (CCBs), and beta-blockers (BBs) as part of *Pharmacological therapy*. These medications are administered while taking age, race, and comorbidities like the presence of renal dysfunction, LV dysfunction, heart failure, and cerebrovascular disease into consideration.

REFERENCES

1. Luft FC Twins in Cardiovascular Genetic Research. *Hypertension*, 2001; 37: 350–356.
2. Fagard R et al. Heritability of Conventional and Ambulatory Blood Pressures: A Study in Twins. *Hypertension*, 1995; 26: 919–924.
3. World Health Organization. (WHO). Hypertension. Fact-sheet. Available on: <https://www.who.int/news-room/fact-sheets/detail/hypertension>. Last updated on: 16th March 2023. Accessed on: 14th August, 2023.
4. Frost CD, Law MR, Wald NJ. By how much does dietary salt reduction lower blood pressure? II--Analysis of observational data within populations. *BMJ*, 1991 Apr 06; 302(6780): 815-8
5. Guyton AC, Coleman TG, Cowley AV, Scheel KW, Manning RD, Norman RA. Arterial pressure regulation. Overriding dominance of the kidneys in long-term regulation and in hypertension. *Am J Med*, 1972 May; 52(5): 584-94.
6. Fagard R, Brguljan J, Staessen J, Thijs L, Derom C, Thomis M, Vlietinck R. Heritability of conventional and ambulatory blood pressures. A study in twins. *Hypertension*, 1995 Dec; 26(6 Pt 1): 919-24.
7. Warren HR, Evangelou E, Cabrera CP, *et al.* International Consortium of Blood Pressure (ICBP) 1000G Analyses. BIOS Consortium. *Nat Genet*, 2017 Mar; 49(3): 403-415.
8. NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in blood pressure from 1975 to 2015: a pooled analysis of 1479 population-based measurement studies with 19.1 million participants. *Lancet*, 2017 Jan 07; 389 (10064): 37-55.
9. Danaei G, Ding EL, Mozaffarian D, Taylor B, Rehm J, Murray CJ, Ezzati M. The preventable causes of death in the United States: comparative risk assessment of dietary, lifestyle, and metabolic risk factors. *PLoS Med*, 2009 Apr 28; 6(4): e1000058.
10. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J. Global burden of hypertension: analysis of worldwide data. *Lancet*, 2005 Jan 15-21; 365(9455): 217-23.