International Journal of Medical and Pharmaceutical Research
Website: https://ijmpr.in/ | Print ISSN: 2958-3675 | Online ISSN: 2958-3683
NLM ID: 9918523075206676
Volume: 4, Special Issue:3 (May-June 2023); Page No: 66-75

Original Article

A Brief Review on Hypertension

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ABSTRACT

Hypertension most frequent modifiable risk factor for death and disability, along with stroke, accelerated coronary and systemic atherosclerosis, heart failure, and chronic kidney disease, is hypertension. By lowering blood pressure with antihypertensive medications, cardiovascular disease risk factors such as target organ damage and frequency of occurrence are reduced. June 2017, the American College of Cardiology (ACC)/American Heart Association (AHA) guidelines for hypertension Diastolic blood pressure of 80 mmHg or higher is considered to be hypertension. In patients with CHD, CHF, diabetes mellitus, stroke, and kidney transplantation, BP should be less than 130/80 mmHg. Reducing dietary sodium intake, losing weight if the patient is overweight, exercising regularly, drinking alcohol in moderation, and consuming more potassium-rich foods were all recommended as lifestyle changes. The first antihypertensive medication should often come from one of the four types listed below: calcium channel blockers, thiazide diuretics, ACE inhibitors, and ARBs. These drugs have been found to lower cardiovascular events. Renal denervation and baroreflex activation therapy are the two interventional methods used in clinical practise to treat a variety of treatment-resistant hypertensions. Carotid body ablation and AVF implantation are two other interventional techniques, although none of them reduce the risk of cardiovascular disease or death in hypertensive patients.

Key Words: *Hypertension , SBP, DBP , HTN, RAAS etc.*

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INTRODUCTION

- Hypertension is a chronic, non-communicable condition in which the blood puts more pressure than normal on the arterial wall. It is categorised as Primary Hypertension and Secondary Hypertension. Primary hypertension, which is defined as hypertension without a clear cause, accounts for 90–95% of cases. Secondary hypertension is a condition that affects 5–10% of instances, and its causes include chronic kidney disease, pheochromocytoma, and various endocrine conditions. [1]

- Systolic blood pressure (SBP) > 140 mmHg or diastolic blood pressure (DBP) > 90 mmHg are considered to be the global health problems of hypertension (HTN). About two thirds of persons 60 years of age and older are at risk since it is the most prevalent risk factor for cardiovascular disease. According to estimates, uncontrolled HTN causes 7.5 million fatalities annually in the world.[2]

- Almost 90% of instances of hypertension fall into the category of primary hypertension, which is the most prevalent kind (Goodfriend, 1983; Mlunde, 2007). While secondary hypertension may have renal, endocrine, or cardiovascular origins, basic hypertension is deeply rooted in genetic, socioeconomic, and environmental variables. (Mlunde, 2007) [3]

- In fact, ischemic and hemorrhagic stroke, myocardial infarction, heart failure, chronic kidney disease, peripheral vascular disease, cognitive decline, and early mortality are all significantly increased by hypertension. [4]

- Adult population hypertension is rising, and consequences from it are responsible for 9.4 million deaths per year globally. Hypertension is most prevalent in low-income nations.[5]

- Hypertension is now acknowledged as a very significant global contribution to disease burden. In terms of years of life with a disability adjusted for, hypertension was rated third in the World Health Report 2003. A significant economic burden is created by the fact that over two thirds of hypertensives reside in low- and middle-income nations. According to a study, around one billion people, or 26% of the adult population worldwide, were predicted to have hypertension in the year 2000. Both developed and underdeveloped nations used it frequently.

However, there are significant regional differences in these rates, with rural India having rates as low as 3.4% for men and 6.8% for women and Poland having rates as high as 68.9% for men and 72.5% for women. Almost 95% of hypertensive patients have essential hypertension, which is the most prevalent kind of the disease.. [6]

- Cardiovascular illnesses are one of the top causes of fatalities worldwide, roughly 17.9 million deaths occurred in 2016 which was 31% of all deaths occurred globally. Uncontrolled hypertension has been estimated to be responsible for 57% of stroke deaths and 24% of coronary artery disease deaths globally. Ischemic heart disease, cardiac failure, cerebrovascular accidents, and chronic kidney disease can all be caused by uncontrolled hypertension.[7]

- At least 45% of heart disease deaths and 51% of stroke deaths are attributable to hypertension. [8]

- In India, hypertension is a major strain on the healthcare system and is a growing public health issue.[9]

- Clear evidence from intervention studies shows that blood pressure levels can be reduced through behaviour and lifestyle changes, either by themselves or in combination with antihypertensive medication.[10]

- It is a silent killer since very few symptoms appear in the early stages before a serious medical emergency like a heart attack, stroke, or chronic renal failure occurs. [11]

- Modifiable cardiovascular risk factors, such as type 2 diabetes, being overweight, living a sedentary lifestyle, smoking, and salt consumption, are present in the majority of hypertension patients. Then, in order to maintain a controlled blood pressure, these parameters are evaluated and modified.

- Modifiable cardiovascular risk factors, such as type 2 diabetes, being overweight, living a sedentary lifestyle, smoking, and salt consumption, are present in the majority of hypertension patients. Then, in order to maintain a controlled blood pressure, these parameters are evaluated and modified. [12]

- This public health issue has also been made more difficult by the pervasive sedentary behaviour and lack of exercise across significant portions of society. Degenerative adult disorders like HTN, obesity, and diabetes mellitus have been made easier to develop as a result of these described factors and additional risk factors that have been researched in the public health literature. [13]

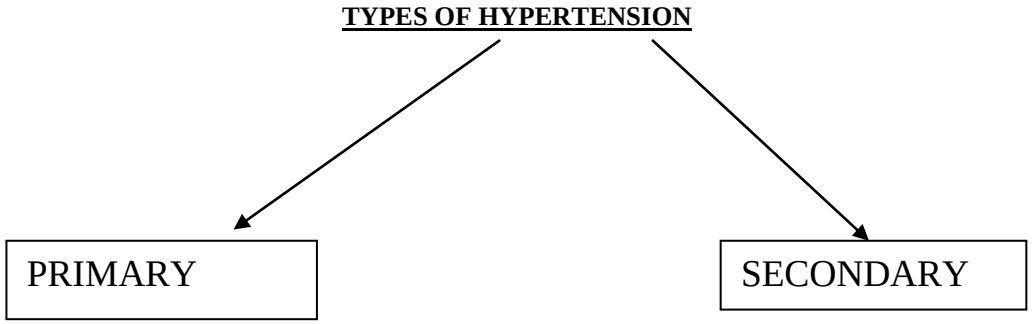
- To achieve the Sustainable Development Goals (SDG) aim of decreasing premature mortality from non communicable diseases (NCDs) by one-third by 2030, India has committed to a number of activities. Yet, the capacity to stop the growth in hypertension is crucial for attaining this goal. [14]

HYPERTENSION

- The term "hypertension" refers to an ongoing rise in systolic blood pressure, which causes a rise in diastolic blood pressure.
- 120/80 mm Hg is the normal blood pressure range.

CATEGORY	SBP (mm Hg)	DBP (mm HG)
Normal	<120	<80
Prehypertension	120-139	80 -89
Hypertension (Stage 1)	140-159	90-99
Hypertension (Stage)	≥160	≥100

Flow chart:(1) Classification of Hypertension



Primary Hypertension

- It merely has control; there is no cure.
- Essential hypertension is another name for this.
- Over a long period of time, primary hypertension usually develops gradually.

- It could manifest as a result of generic lifestyle and hereditary variables. Lifestyle factors that can raise the risk of primary hypertension include: excessive alcohol use, stress, increased salt consumption, and changes in the renin-angiotensin system.

Secondary Hypertension

The complication of other diseases causes secondary hypertension:

- Cushing's syndrome
- Hyperthyroidism
- Pheochromocytoma,
- Pregnancy
- Kidney disease[15]

Clinical manifestation

- ❖ Even when blood pressure readings are at dangerously high levels, most persons with high blood pressure don't exhibit any symptoms.

- ❖ Some people with high blood pressure may have headaches, breathlessness, or nosebleeds, but these signs and symptoms are vague and typically do not appear until the condition has reached a severe or life-threatening level.

Etiopathogenesis

There are two types of high blood pressure .

Primary (essential) hypertension

For the majority of adults, high blood pressure has no known cause. Primary (essential) hypertension is a form of high blood pressure that often develops gradually over several years**.**

Secondary hypertension

High blood pressure can sometimes be the result of underlying health issues. Secondary hypertension is a form of high blood pressure that typically develops unexpectedly and raises blood pressure more than primary hypertension does. Secondary hypertension is a disease and drug side effect that includes:

- Obstructive sleep apnea
- Kidney disease
- Adrenal gland tumours
- Thyroid problems
- Certain defects you are born with (congenital) in blood vessels
- Certain medications, such as birth control pills, cold remedies, decongestants, over the counter pain relievers and some prescription drug
- Illegal drugs, such as cocaine and amphetamines

Measurements of blood pressure fall under a number of categories:

Normal blood pressure : Blood pressure is normal if it is below 120/80mm Hg.

Elevated Blood pressure: A systolic blood pressure of 120 to 129 mm Hg and a diastolic blood pressure of less than (but not more than) 80 mm Hg are considered to be elevated. If blood pressure control measures are not taken, elevated blood pressure usually gets worse over time. Another name for high blood pressure is pre-hypertension.

Stage 1 hypertension: is a systolic pressure between 130 and 139 mm Hg, or a diastolic pressure between 80 and 89 mm Hg**.**

Stage 2 hypertension:is more severe hypertension, defined as systolic or diastolic pressures of at least 140 mm Hg or 90 mm Hg, respectively.

Hypertensive crisis:A blood pressure reading of more than 180/120 mm Hg indicates an emergency requiring immediate medical attention.[16]

Following are the basic investigation of hypertension

- Complete blood count-TLC, DLC, Hb %, RBC
- Renal function test-Blood urea, serum creatinine, potassium, Sodium, calcium, uric acid
- Blood sugar level
- Urinalysis
- Lipid profile
- Thyroid function test
- Electrocardiography
- Urine albumin to creatinine ratio
- Measure plasma aldosterone/Renin ratio
- Measurement of 24 hours urinary metanephrine[17]

Pathophysiology

There are some important pathophysiological mechanisms in hypertension:

- Over activation of rennin- angiotensin aldosterone system **(RAAS)**
- Salt sensitivity.
- Activation of sympathetic Nervous system
- Stimulation of vascular Endothelium.

Over Activation of RAAS- Hypertension is brought on by vasoconstriction and the retention of Na+/H2O, which raise blood pressure**.**

Salt sensitivity- This is because increased salt in a person's bloodstream causes the body to take in more water, which raises the pressure inside blood vessels.

Activation of Sympathetic Nervous system- The sympathetic nervous system is stimulated when the blood pressure decreases. The heart rate and cardiac contraction are accelerated by the elevated sympathetic nervous system activity. Renin is released from the kidneys and the peripheral arterioles are constricted as a result of the increased heart rate and cardiac contraction. The overall result of sympathetic nervous system activation is an increase in systemic vascular resistance and cardiac output, which raises aetrial blood pressure.

Simulation of vascular Endothelium: A single cell layer called the vascular endothelium lines the blood vessels. Nitric acid, endothelin, and other growth factors are produced by this layer. These chemicals have strong vasoconstrictors, which raises blood pressure.(18)

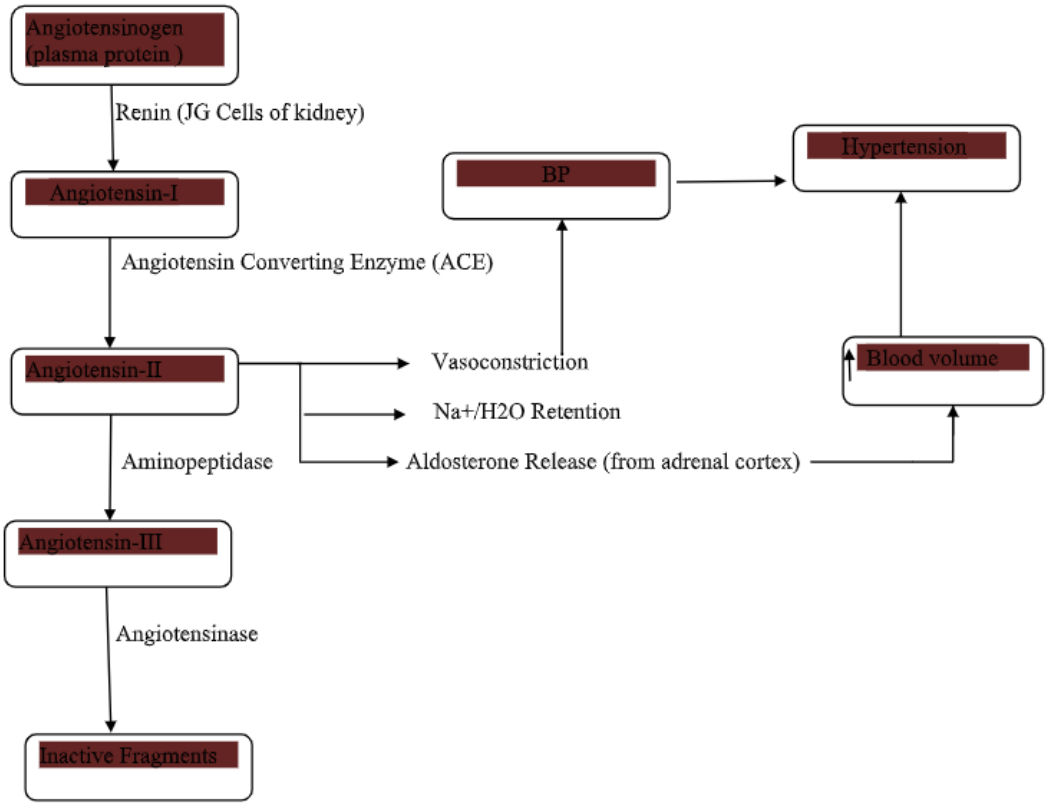


Figure :(1) Renin Angiotensin Aldosterone System (RAAS)

Risk factors
There are various risk factors for high blood pressure, including:

o **Age**: Life expectancy is decreased the earlier hypertension is first noticed but untreated.
o **Sex**: Hypertensive women seem to do better than hypertensive men.
o **Atherosclerosis**: Essential hypertension is always accompanied by accelerated atherosclerosis. This may be caused by the independent factors such obesity, increased serum cholesterol, glucose intolerance, and smoking that play a contributing role.[19]

Other risk factors :

- Other elements that affect the prognosis in hypertension include:
- smoking, drinking excessive amounts of alcohol,
- Evidence of end-organ damage, such as damage to the heart, eyes, kidneys, or neurological system. Diabetes mellitus.
- Consistently high diastolic pressure above normal.[19]

Major side effects of antihypertensive medications	
Drug	**Side effect**
Diuretics	
Thiazides	Hypokalaemia, hypomagnesaemia, , hyperuricaemia
Loop diuretics	Hypercalcaemia and ototoxcity may occur
K-sparing diuretics	Hyperkalaemia
Adrenergic inhibitors	
Acting within neurons reserpine	Nasal congestion, lethargy, sexual dysfunction,
depression guanethidine	Postural hypotension
α-agonists	
Methyldopa	Sedation, dry mouth, impotence, galactorrhea
Clonidine	Inflammatory side effects withdrawal syndrome
α-adrenergic receptor	First-dose hypotension, dizziness, weakness
β-adrenergic receptor	Bradycardia, bizarre dreams
α-/β- blockers	Nausea, fatigue, postural hypotension, hepatotoxicty
Direct vasodilators	
Hydralazine	Tachycardia, flushing, headache, angina
Minoxidil	Hirsutism, pericardial effusion, ascites
Calcium antagonist	
Deltiazem	First-degree AV block, bradycardia
Verapamil	Constipation
Dihydropyridines	Ankle oedema, flushing , tachycardia
ACE inhibitors	Cough,rash,hyperkalaemia,angioedem

Flow chart (2) MAJOR SIDE EFFECTS

PREVENTION:
As a result, it is advised that people with hypertension limit their daily sodium intake to 6 grammes of sodium chloride salt, or 2.4 grammes of sodium. The following actions need be taken in order to accomplish that much sodium restriction:
As a result, it is advised that people with hypertension limit their daily sodium intake to 6 grammes of sodium chloride salt, or 2.4 grammes of sodium. The following actions need be taken in order to accomplish that much sodium restriction:

a) Reduce cooking salt by half.
b) Substitute natural foods for processed ones.
b) Avoid salty foods such salted almonds, pickles, chutneys, and pappad.

d) Utilize salt replacements that include potassium.
e) Avoid taking medications with a lot of salt in them, such as antacids.
f) It is now well accepted that cutting back on salt consumption is necessary. Less than 10 grammes of sodium chloride per day are normally indicated.

g) The WHO recommends 5 grammes or less, particularly in populations known to eat large amounts of salt or to have high blood pressure rates.
h) Chain smokers frequently experience high blood pressure. Hence it's imperative to refrain from smoking here.
They are regularly employed to lessen stress. There is currently no compelling evidence to support the benefits of yoga or meditation. Yet, despite the existence of some controlled trials, yoga's overall cost-effectiveness, and the absence of any negative side effects, more research is urgently required. There are several clinical trials being conducted in the medical industry.[21]

PHARMACOLOGICAL TREATMENT OF HYPERTENSION

Recommendations

RECOMMENDATION FOR BLOOD PRESSURE THRESHOLD FOR PHARMACOLOGICAL TREATMENT INITIALIZATION

Those with a verified diagnosis of hypertension and a systolic blood pressure of less than 140 mmHg or a diastolic blood pressure of less than 90 mmHg are advised to begin pharmacological antihypertensive treatment. High recommendation, evidence of moderate to high certainty.

Those with pre-existing cardiovascular disease and systolic blood pressure of 130–139 mmHg are advised to have pharmacological antihypertensive therapy. High recommendation, evidence of moderate to high certainty.

Those without cardiovascular illness but with high cardiovascular risk, diabetes mellitus, or chronic renal disease with systolic blood pressure of 130–139 mmHg are advised to have pharmacological antihypertensive medication, according to the WHO.
Conditional advice, evidence of moderate to high certainty.

2. LABORATORY TESTING RECOMMENDATION
WHO advises having tests to check for comorbidities and secondary hypertension before to beginning pharmacological treatment for hypertension, but only if testing does not postpone or obstruct starting treatment.
Low-certainty evidence and conditional recommendations

3. CARDIOVASCULAR DISEASE RISK ASSESSMENT RECOMMENDATION The WHO recommends cardiovascular disease risk assessment at or after the start of drug treatment for hypertension, but only in cases where it is practical and does not cause a delay in therapy.
Conditional advice, uncertain evidence.

4. **ADVICE FOR USING CERTAIN CLASSES OF DRUG AS FIRST-LINE AGENTS**

WHO advises using pharmaceuticals from any of the three classes of pharmacological antihypertensives listed below as an initial treatment for adults with hypertension who need to take medication for their condition:

1. Thiazide and thiazide-like substances
2. Angiotensin-converting enzyme inhibitors (ACEis) and angiotensin receptor blockers (ARBs)
3. Calcium channel blockers with a long half-life of dihydropyridine (CCBs)
4. Evidence with high certainty and a strong recommendation

5. ADVICE FOR COMBINATION THERAPY

WHO recommends combination therapy, ideally with a single-pill combination (to promote adherence and persistence), as an initial treatment for individuals with hypertension who require pharmacological treatment. The following three drug classes should be used as a starting point when selecting antihypertensive drugs for combination therapy:
Diuretics (thiazide or thiazide-like) (thiazide or thiazide-like),
Long-acting dihydropyridine calcium channel blockers, ACEis, and ARBs (angiotensin-converting enzyme inhibitors) (CCBs).
Conditional recommendation, evidence of moderate certainty.

6. ADVICE REGARDING TARGET BLOOD PRESSURE

All individuals with uncomplicated hypertension are advised to have a target blood pressure treatment goal of less than 140/90 mmHg.
High recommendation, evidence of reasonable certainty.
In individuals with hypertension and known cardiovascular disease, the WHO advises a target systolic blood pressure treatment objective of less than 130 mm Hg (CVD). High recommendation, evidence of reasonable certainty.
In high-risk patients with hypertension, the WHO recommends a target systolic blood pressure treatment objective of less than 130 mm Hg (those with high CVD risk, diabetes mellitus, chronic kidney disease).
Conditional recommendation, evidence of moderate certainty.

7**. RECOMMENDATIONS ON REGULARITY OF EVALUATION** When starting antihypertensive medication, the WHO advises a monthly checkup or changing drugs until patients reach their goal blood pressure. Low certainty evidence and conditional recommendation.
For individuals whose blood pressure is under control, the WHO recommends a follow-up every three to six months. Low-certainty evidence and conditional recommendations.

8. RECOMMENDATIONS FOR TREATMENT FROM OTHER PROFESSIONALS THAN PHYSICIANS
As long as the following requirements are satisfied: appropriate training, prescribing authority, specific management protocols, and physician oversight, nonphysician professionals such as pharmacists and nurses can administer pharmacological treatment of hypertension, according to the World Health Organization.
Low-certainty evidence and conditional recommendations.[22]

Non-pharmacological management of hypertension

Nonpharmacological therapies postpone the transition from prehypertension to hypertension stage and assist lower the daily dose of antihypertensive medication. Non-pharmacological therapies might take the form of dietary changes, exercise, reducing stress, and drinking less alcohol. Using either the DASH diet or the classic Mediterranean diet can meet the nutritional needs of hypertensive people. These dietary recommendations encourage the use of foods high in K+, Mg+2, Ca+2, and phosphorus, as well as fruits, vegetables, grains, dairy products, and dairy products. The biggest impact on decreasing blood pressure comes from restricting Na+ intake. The effects of the DASH diet are comparable to those of a single medication therapy. Exercise and weight loss are the second primary strategy for hypertension control after dietary changes. A stressful lifestyle, depression, and anxiety need to be avoided as much as possible. Limiting alcohol consumption also helps lower blood pressure. Yet, changing one's lifestyle involves constant adherence and is a dynamic process. It is a multi-factorial strategy that includes multiple interventions. Nonetheless, stage 1 hypertension individuals without significant cardiovascular complications can try 6–12 months of lifestyle changes in the hopes that they will be beneficial enough to eliminate the need for medication.[23]

Homeopathic treatment of hypertension

Because of the stress in our lives today, high blood pressure, or hypertension, is a byproduct of modern civilization and has turned into a "Silent killer".

Homoeopathic Treatments for High Blood Pressure

1. **1.Aconitum napellus** - For high blood pressure and anxiety Aconitum Napellus is a drug used to treat high blood pressure, anxiety, and restlessness. The patient frequently has an unanticipated anxiety of passing away. Other linked symptoms include palpitations, pressure in the left side of the chest, a sensation of weight beneath the breastbone, and oppression in the chest. Moreover, a left shoulder-radiating heartache exists.

2. **Allium Sativum** - For High Cholesterol and High Blood Pressure A medication for high blood pressure and high cholesterol is allium sativum. This medication assists in lowering blood pressure and cholesterol levels. Additional signs include a chest ache that keeps you awake and causes palpitations.

3. **Amylenum Nitrosum** - To Treat High Blood Pressure and Tight Sensation When a constricting sensation around the heart is the primary symptom of high blood pressure, amylenum nitrosum is a medication that can help. In addition to restriction, there is also heartache. The other signs that point to the necessity for this medication include a feeling of swelling in the chest, fluttering in the heart, and faster heartbeats.

4. **Baryta Mur** –Low Diastolic/High Systolic A medication for high blood pressure called Baryta Mur has a high systolic and a low diastolic measurement. The predominant symptom, coupled with vertigo, irregular heartbeats, and a warm sensation in the upper area of the chest, are alterations in the arteries known as arteriosclerotic changes (abnormal thickening and hardening of artery walls). Low Diastolic/High Systolic A medication for high blood pressure called Baryta Mur has a high systolic and a low diastolic measurement. The predominant symptom, coupled with vertigo, irregular heartbeats, and a warm sensation in the upper area of the chest, are alterations in the arteries known as arteriosclerotic changes (abnormal thickening and hardening of artery walls).

5. **Crataegus Oxyacantha** – To Dissolve Calcareous Deposits Crataegus Oxyacantha is a medicine used to help lower the blood pressure by dissolving the calcareous deposits in the arteries. Symptoms indicative of this medicine include pain in the region of the heart, oppression of chest, accelerated pulse and irregular pulse. Other symptoms include anxiety and cardiac dyspnoea.

6. **Glonoinum** – For High Blood Pressure with Headaches Glonoinum is a medicine for high blood pressure accompanied by headaches. The headache feels intense, congestive, throbbing, and bursting in nature. Other symptoms include strong palpitations, dyspnoea, heat in the face and cardiac pains radiating to other parts.

Exertion leading to rush of blood to the heart and fainting spells is another feature that indicates the need for this remedy. Glonoinum is also indicated fornephritis (kidney inflammation) with high blood pressure.

7. **Kali Phos**- For Stress-Related High Blood Pressure When anxiety and stress are the primary causes of high blood pressure, kali phos is utilised. Together with mental and physical tiredness, the signs include palpitations that occur with even minor motion, shortness of breath, and an irregular heartbeats.

8. **Latrodectus Mactans** –Heart pain with high blood pressure A medication for high blood pressure with pronounced heart symptoms is called Latrodectus Mactans. The shoulder, arm, and fingers are also affected by the heartache. Upper limb numbness, suffocation, restlessness, and severe weakness could occur.

9. **Nux Vomica** -- For Young Persons with High Blood Pressure For young people who embrace sedentary modern lifestyle patterns, Nux Vomica for high blood pressure is an effective medication. These lifestyle practises include smoking, drinking, being inactive all day, not exercising, etc. These elements make someone more susceptible to high blood pressure.

10. **Tabacum Nicotiana** – For tobacco users with high blood pressure When a person smokes regularly, a medication for high blood pressure called tabacum nicotiana is utilised. Symptoms include palpitations, a tightness in the chest, and a rapid heartbeat—especially when lying on the left side. The difficulty to breathe deeply, soreness between the shoulders, and a twisting sensation around the heart are other symptoms.

11. **Strophanthus Hispidus** – High blood pressure brought on by stenosis Strophanthus Hispidus is a medication for older people with high blood pressure caused by atherosclerosis (hardening, thickening, and loss of elasticity of the arterial walls). Exercise and emotional release are observed to exacerbate already severe palpitations. Constriction behind the breastbone, difficulty breathing, and an alternating rapid and slow pulse are among the symptoms.

12. **Lachesis** – For High Blood Pressure during Menopause Lachesis is perhaps one of the most leading homeopathic remedies in controlling high levels of blood pressure. Lachesis may be given when there is marked restlessness physically as well as mentally. Another striking feature for prescribing Lachesis is that, anything tight around the neck like closed collars, neck ties or tight necklaces are unbearable. Even tight clothes are unbearable. Feel better by loosening the belts or by wearing loose clothes. Lachesis may be given in high blood pressure in women who are in their menopausal age or post menopause.

13. **Natrum Mur** – For Those with Salty Tooth Natrum Mur is one of the most indicated remedies in cases of high blood pressure which occur due to a prolonged intake of high levels of salty things. Due to this, there may be swelling of the feet in the mornings. Natrum Mur may be given in cases where there is an unusual fatigue especially in the mornings. Though there is a restriction for excess salt intake, it is seen that there is an unusual craving for salty things like pickles, papads etc. There may be a sense of tightness around the chest region and palpitations on slightest exertion. Natrum Mur may be given inn high blood pressure associated with hyperthyroidism and goiter. There is extreme sensitiveness to any external stimuli like sounds, smells or lights. Natrum Mur may also relieve the headaches due to high blood pressure.

Other single Homeopathic medicines and Homeopathic combination remedies

Other drugs like Arsenic alb, Aurum mur, Adonis ver, Apocynum cannabinum, Adrenalinum, Antimonium tart, Apis mellifica, Baryta carb, Berberis vul, Carbo animalis, Convallaria, Crataegus, Coffea, Digitalis, Kali-phos, Kalmia latifolia, Lycopodium, Lycopus virginicus, Plumbum met, Strophanthus, Sulphur, Thuja, Veratum viride, Viscum album are some of the commonly used drugs on the basis of symptoms similarity . Additionally 'Dr. Reckeweg's R85 Cephabol-High Blood Pressure drops' and 'R-185- Hypertension Drops 'also help in regulating blood pressure.[24]

Ayurvedic treatment of hypertension

Although hypertension isn't specifically discussed in the book, we can nevertheless treat the condition on the basis of a general understanding of how it develops (ethiopathogenesis). When considering the condition, vitiated is the primary causative element; it may occur alone, in conjunction with other vitiations, or in addition to them. According to the aetiology, there are two approaches to cure the illness: either with medicine alone or (purificatory procedures).[25]

Ayurvedic medicine which are used in hypertension

Drug and Posology

Visit	Medicine	Duration	Procedure	Advise	BP & Pulse rate
1st	Arogyavardhini Vati	1 month	Virechana (purgation)	Suryanamaskara	140/90mmHg 108/min
	Sutashekhar Ras	1 month	Raktamokshana (blood letting)		

	Rasapachaka Vati	1 month	(After 15 days)		
1 st follow up	Arogyavardhini Vati	3 months	Virechana (purgation)	Suryanamaskara	130/90 mmHg 90/min
	Rasapachaka Vati	3 months	Raktamokshana (blood letting)		
	Laghutashekhar Ras	3 months	(After 15 days)		
	Mahatikta Ghrit				
2nd follow up	Arogyavardhini Vati	15 days	Anuvasana basti with Sesame oil 200ml for 5 days	Suryanamaskara	120/80 mmHg 76/min
	Rasapachaka Vati	15 days	Anuvasana basti with Sesame oil 200ml for 5 days		
	Laghutashekhar Ra	15 days	Anuvasana basti with Sesame oil 200ml for 5 days	Suryanamaskara	120/80 mmHg 76/mi

FLOW CHART (3) AYURVEDIC MEDICATION

Unani Treatment of Hypertension :

Zaghtuddam Qawi is the term used by contemporary Unani medical professionals and writers to describe hypertension. The current notion of Zaghtudam Qawi cannot be traced back to the entirety of Unani classics. The term "Imtila," however, has been the subject of extensive discussion throughout history among the Unani Hakeems. We can correlate that both names, Imtila and Hypertension, belong to the same context when we thoroughly study the clinical symptoms of Imtila in classical literature of Unani medicine and compare them to the clinical features seen in patients with hypertension.

- A later Unani doctor would refer to hypertension as "Zaghtuddam Qawi."
- Imtila-ba-hasbul auiya can be defined as anything that enhances cardiac outflow while increasing venous return. Increased cardiac output (increased venous return) is the antithesis of Imtila-ba-hasbul auiya in both Unani and Western medicine.
- Erasistratus came to the conclusion that disease was brought on by plethora, or an abundance of blood from partially digested foods that tended to spoil. Localized blood overflows that built up in the veins caused the overloaded vessels to become injured, causing blood to leak into the arteries. When this happened, the arteries, which were intended to distribute pneuma, or vital spirit, would get blocked.
- Unani physician has given the concept of hypertension as:
- Imtala bi Hasbil Auiya and said this occur due to sue-e-mijaz damwi and comes under the heading of Imtila. They also believed that hypertension is a manifestation of yabusat-e-mizaj (dryness) which is the main cause of atherosclerosis. Dryness causes hardening and narrowing of blood vessels. Hypertension is a condition associated with headache (especially in the morning) palpitation, breathlessness, fatigue (especially in the evening), flushing of the face and sometimes epitaxis. These symptoms may or may not be present in all the cases[26]

CONCLUSION

Worldwide, hypertension is a common condition, and as the population ages, the prevalence of the condition increases. As a result, identifying, treating, and controlling hypertension is a massive problem. The goal of current initiatives is to identify and treat hypertension in middle-aged and elderly people. Measures to avoid hypertension, like a good diet and regular exercise, should begin early in life because the prevalence of hypertension increases linearly with age. Early detection and treatment of people who have already developed hypertension are crucial. As current antihypertensive medications do not work well when taken alone, many individuals require a combination of medications. Such medications should be selected logically and using available evidence.

ACKNOWLEDGEMENT

I would especially like to thank to the Director of **KAILASH INSTITUTE OF PHARMACY AND AMANGEMENT (KIPM) GIDA GORAKHPUR,Dr. Jai Narayan Mishra &** my guide **Mrs, Jyoti Nayak** mam , who gave me a golden opportunity to proceed on my research work on the topic (**HYPERTENSION**).This helped me improve my knowledge and skills, and I am very appreciative of her.

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