

HYPERTENSION

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Hypertension is the single most important predictor of Cardiovascular risk. Increased blood pressure level is related to increased severity of atherosclerosis, stroke, nephropathy, peripheral vascular disease, aortic aneurysm and congestive heart failure. The fifth report of Joint National Committee on Detection, Evaluation and Treatment of hypertension notes the remarkable changes in the control of hypertension since the mid 1970's. Members of the public are more knowledgeable about high blood pressure, more likely to visit a healthcare provider for hypertension and more likely to follow medical advice.

Definition

High blood pressure or arterial hypertension is generally defined as a persistent elevation of systolic blood pressure of 140 mmhg or above and of diastolic pressure of 90 mmhg or above.

Classification of Hypertension

- Systolic and diastolic hypertension.
- Primary and secondary hypertension.
- "White Coat" hypertension.
- Isolated systolic hypertension.
- Malignant hypertension.

Etiology and Risk Factors

- Genetic propensity.
- Obesity associated with

high levels of insulin that starts high blood pressure. Loss of elastic tissue and arteriosclerosis of aorta and other large arteries. Secondary hypertension can result from variety of identifiable primary cause.

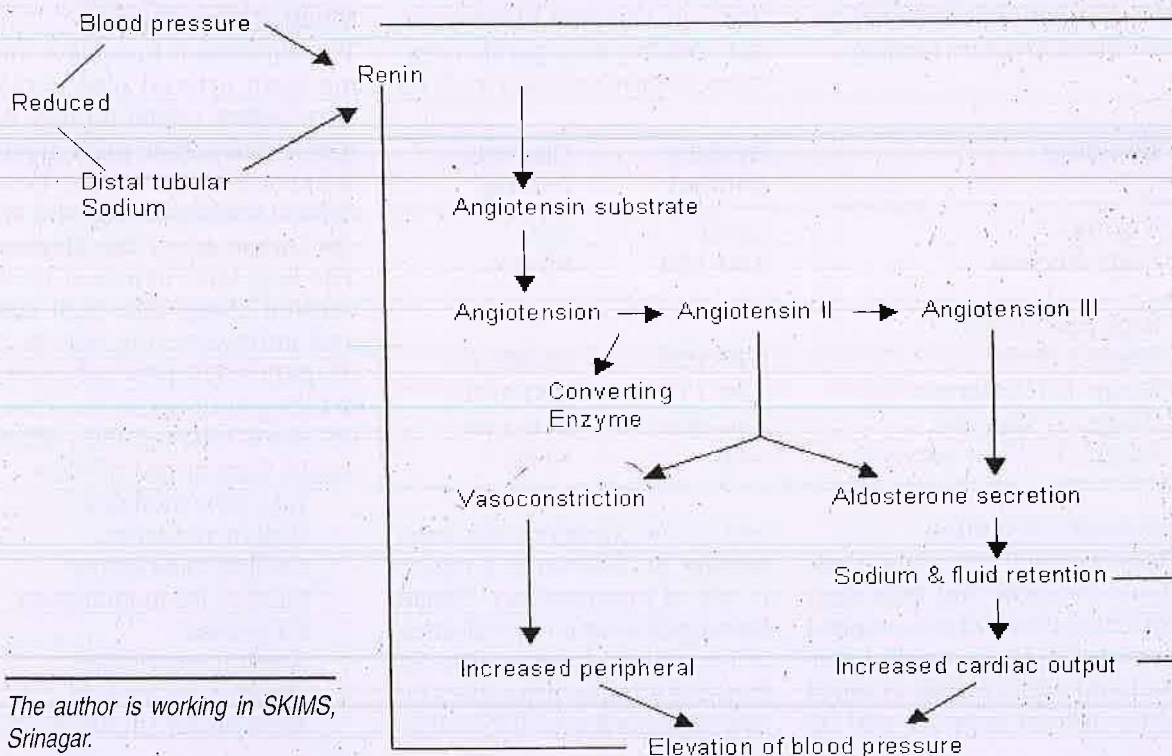
Non Modifiable Risk Factors

- Family history.
- Age
- Sex
- Ethnic group (More prevalent in blacks than in whites.)

Modifiable Risk Factors

- Stress.
- Obesity.
- Nutrients.

Pathophysiology



The author is working in SKIMS, Srinagar.

Clinical Manifestations

The early stages of hypertension have no clinical manifestations other than elevation of high blood pressure. As hypertension advances client may report morning occipital headache, fatigue, dizziness, palpitation, flushing, blurred vision and epistaxis. Additional clinical manifestations include hypertensive encephalopathy manifested by restlessness changes in level of consciousness, blurred vision, dizziness, headache, nausea and vomiting.

Diagnosis

Hypertension is determined when the average of two or more diastolic blood pressure readings, on at least two separate visits at least one week apart, is 90 mmhg or higher or average of multiple systolic blood pressure readings over several visits is 140 mmhg or higher. The 1992 Joint Action Committee on Detection, Evaluation and treatment of high blood pressure has revised the classification of diastolic and systolic blood pressure readings.

Category	Systolic (mmhg)	Diastolic (mmhg)
Normal	<130	<85
High Normal	130-139	85-89
Highpertension		
Stage I (Mild)	140-159	90-99
Stage II (Moderate)	160-179	100-109
Stage III (Server)	180-209	110-119
Stage IV (Very server)	>210	>120

Primary Prevention

Hypertension presents a national problem that individual interventions alone cannot counter. To be successful, this national effort needs to enlist Government support and in-

volve such nationwide structures as healthcare institutions, voluntary associations and local communities.

Once high risk clients are identified, clinicians can teach them how to modify certain risk factors such as diet, sodium, intake, exercises, weight control.

Secondary Prevention

Symptomatic youngsters who have an elevated blood pressure reading on separate occasions require a careful work up

and follow up programme since obesity in children is a major cause of hypertension. Obese teenagers have an 80% chance of becoming obese adults. So these statistics dramatically demonstrate the need for atten-

tion to this issue.

Tertiary Prevention

Once diagnosed, hypertension

requires ongoing management despite the absence of manifestations. The many request of unmanaged hypertension (e.g. stroke, myocardial infarction) can be prevented if hypertension is well managed.

Medical Management

The objective is to achieve and maintain arterial blood pressure below 140/90 mmhg. As mentioned earlier, most hypertensive clients do not have clinical manifestations and are not aware about the disease. The long term nature of intervention along with high cost and untoward side effects of drugs promote poor adherence to therapeutic regimens. There are some interventions, which can be done as given below.

- Life style modifications
- Weight reduction
- Sodium restrictions
- Dietary fat modification
- Exercises
- Alcohol restriction
- Caffeine restriction
- Relaxation techniques -

Yoga, Biofeedback and psychotherapy.

Smoking cessation.

Potassium supplementation

Calcium supplementation

Magnesium supplementation.

Pharmacologic Intervention

Antihypertensive medications can be classified by mode of action into the following categories:

- Diuretics.
- Adrenergic inhibitors.
- Vasodilators.
- Angiotensin – Converting enzyme (ACE) inhibitors and;
- Calcium antagonist.

Stepped Care Approach

Management of Hypertension

STEP - 1: Life style modification

- Weight reduction
- Moderation of alcohol intake
- Regular physical activity
- Reduction of sodium intake
- Smoking cessation

If inadequate BP control, move to step 2

STEP - 2 : Continue above all and make initial pharmacological selection: diuretics or betablockers.

If inadequate BP control, move to step 3

STEP - 3 : Increase drug dose or substitute other drug or add 2nd drug from a different class. If inadequate BP control, move to step 4

Add 2nd or 3rd drug or diuretic if not already prescribed.

From the 1992 Joint National

Committee (1993).

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