HYPERTENSION

by:
Dr. NAVPREET
Assistant Prof., Deptt. of Community Medicine
GMCH Chandigarh
HIGH BLOOD PRESSURE

• Force of blood pushing against the walls of blood vessels (arteries) as it circulates through the body.

• A condition in which the blood vessels have persistently raised pressure.
• Blood pressure is written as two numbers e.g. 120/80 mm Hg
  – First (systolic) : pressure in the blood vessels when the heart beats.
  – Second (diastolic) : pressure in the blood vessels when the hearts rests between beats.

• Normal levels of both systolic & diastolic blood pressure important for efficient functioning of vital organs
  – heart, brain, kidneys & for overall health & well being.
JNC 7: CLASSIFICATION OF HYPERTENSION

NORMAL
- SYSTOLIC: < 120 mmHg
- DIASTOLIC: < 80 mmHg

PRE-HYPERTENSION
- SYSTOLIC: 120 - 139 mmHg
- DIASTOLIC: 80 - 89 mmHg

STAGE I HYPERTENSION
- SYSTOLIC: 140 - 159 mmHg
- DIASTOLIC: 90 - 99 mmHg

STAGE II HYPERTENSION
- SYSTOLIC: > 160 mmHg
- DIASTOLIC: > 100 mmHg
<table>
<thead>
<tr>
<th>PRIMARY (ESSENTIAL)</th>
<th>SECONDARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOST PREVALENT (90%)</td>
<td>(10%)</td>
</tr>
<tr>
<td>Cause- Unknown</td>
<td>Cause – Disease process or abnormality involved</td>
</tr>
<tr>
<td></td>
<td>-Chronic Glomerulonephritis</td>
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<tr>
<td></td>
<td>-Chronic Pyelonephritis</td>
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<tr>
<td></td>
<td>-Tumours Of Adrenal Gland</td>
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<td></td>
<td>-Congenital Narrowing Of Aorta</td>
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<tr>
<td></td>
<td>-Toxemia Of Pregnancy</td>
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</tbody>
</table>
“RULE OF HALVES”
Why high blood pressure is a public health concern

• Raises the probability of
  – heart attack, stroke and kidney disease.

• Hypertension is identified as *the world’s most prevalent preventable disease* in WHO’s Health 2020 policy.
HIGH BLOOD PRESSURE: GLOBAL & REGIONAL OVERVIEW

• GLOBAL BURDEN:
  • Cause of premature death world wide killing nearly 9.4 million people every year globally, & problem is growing.
  • Over 1 billion people: living with high B.P.
  • In 2008, globally the overall prevalence of high B.P in adults aged 25 & above was around 40%.
Age-standardized prevalence of raised blood pressure in adults aged 25+ years by WHO Region, 2008

- African Region: Males - 46.7%, Females - 44.6%
- Region of the Americas: Males - 39.0%, Females - 31.5%
- Eastern Mediterranean Region: Males - 41.0%, Females - 38.6%
- European Region: Males - 44.5%, Females - 37.1%
- South-East Asia Region: Males - 37.3%, Females - 34.9%
- Western Pacific Region: Males - 40.3%, Females - 34.7%
- Global: Males - 40.6%, Females - 35.8%
• Among all WHO regions, the prevalence of raised B.P
  ➢ Highest- African Region (46%)
  ➢ Lowest – Region of America (35%)

• In South- East Asia Region, 36% of adults have Hypertension.

• In all WHO regions: males had slightly higher prevalence of raised B.P than females.

• Prevalence of raised B.P is higher in low, lower- middle & upper middle income countries (40%) than in high- income countries (35%).
• In high–income countries,
  ➢ Strong public health policies
  ➢ Multisectoral preventive action
  ➢ Widely available diagnosis & treatment
• Led to reduction in prevalence of high B.P

• In contrast, in many developing countries – disease burden caused by raised B.P – increased over past decade.
BURDEN IN SOUTH – EAST ASIA REGION (SEAR)

- High B.P – leading risk factor for death claiming 1.5 million lives each year in the Region.
- 1 in 3 adults in the Region has high B.P
- Males have slightly higher prevalence of high B.P than females.
Age-standardized prevalence of raised blood pressure in adults aged 25+ years, South-East Asia Region, 2008
• In the 10 countries from which data were available, the prevalence of high B.P –
  ➢ 19% in Democratic People’s Republic of Korea
  ➢ 42% in Myanmar
• In India, raised B.P increased from 5% in 1960s to nearly 12% in 1990s, to more than 30% in 2008.

• Major contributors to increased blood pressure in urban areas:
  – Ageing population,
  – Rapid urbanization,
  – Transition from agrarian life to a wage-earning, and
  – Modern city life.
PREVALENCE IN INDIA

• Community based survey –
  ➢ ICMR during 2007-08
  ➢ to identify risk factors for NCDs
  ➢ under state based IDSP Phase I.

• Carried out in states of Andhra Pradesh, Madhya Pradesh, Maharashtra, Uttarakhand, Tamil Nadu & Mizoram.

• Prevalence : 17 -21 % in all the states.
What Are The Risk Factors For High Blood Pressure

• Non-modifiable risk factors
• Modifiable risk factors
Non-modifiable Risk Factors

- Age
- Sex
- Genetic factors
- Ethnicity
Modifiable Risk Factors

• Obesity
• Diet
  – Salt
  – Saturated fat
  – Dietary fibres
• Alcohol
• Tobacco
• Physical activity
• Stress
• Socio-Economic Status
What Are The Symptoms Of High Blood Pressure

• Sometimes can present as:
  ➢ Headache
  ➢ Shortness of breath
  ➢ Dizziness
  ➢ Chest pain
  ➢ Palpitations
  ➢ Nose bleed

➢ But most people usually have NO warning signs or symptoms.
Prevention of Hypertension

• Primary Prevention
  – Population strategy
  – High risk strategy

• Secondary Prevention
Population Strategy

- Nutrition
- Weight reduction
- Exercise promotion
- Behavioral changes
- Self care
High Risk Strategy

• Identifying risk
• Specific advice
Dietary Approaches to Stop Hypertension (DASH)

• The National Heart, Lung, and Blood Institute (NHLBI).
• Flexible and balanced eating plan.

• Low in saturated fat, cholesterol, and total fat
• Focuses on fruits, vegetables, and fat-free or low-fat dairy products
• Rich in whole grains, fish, poultry, beans, seeds, and nuts
• Contains fewer sweets, added sugars and sugary beverages, and red meats.
**Life Style Modifications to Manage Hypertension**

<table>
<thead>
<tr>
<th>MODIFICATION</th>
<th>RECOMMENDATION</th>
<th>Approx. Systolic BP reduction range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight reduction</strong></td>
<td>Maintain normal body weight (BMI- 18.5- 24.9)</td>
<td>5-20 mmHg/ 10 kg Weight loss</td>
</tr>
<tr>
<td><strong>Adopt DASH eating plan</strong></td>
<td>Consume diet rich in fruits, vegetables &amp; low-fat diary products with reduced content of saturated fat &amp; total fat</td>
<td>8-14 mm Hg</td>
</tr>
<tr>
<td><strong>Dietary sodium reduction</strong></td>
<td>Reduce dietary sodium intake – no more than 100 M eq/D (2.4 g sodium or 6 g sodium chloride)</td>
<td>2-8 mm Hg</td>
</tr>
</tbody>
</table>
| Physical activity | Engage in regular physical activity  
brisk walking for at least 30 min/day  
most days of the week | 4-9 mm Hg |
|-------------------|-------------------------------------------------|----------|
| **Moderation of alcohol consumption** | Limit consumption to  
• no more than 2 drinks /  
day in most men  
• (1 oz or 30 ml ethanol  
• 24 oz beer,  
• 10 oz wine,  
• 3 oz 80 proof whiskey)  
• no more than 1 drink /  
day in women & lighter –  
weight persons. | 2-4 mm Hg |
Healthy lifestyles... healthy blood pressure

5–17 years
At least 60 minutes of moderate-to-intense physical activity daily

18–64 years
At least 150 minutes of moderate-intensity aerobic physical activity throughout the week

65 years and above
At least 150 minutes of moderate-intensity aerobic physical activity throughout the week
Secondary Prevention

- Early case detection
- Treatment
- Patient compliance
Increase Access to Early Diagnosis & Management of High B.P

• Integrated health programmes need to be established particularly at primary care level to increase access to health care services for high B.P & associated NCDs.

• Health workers should be trained in diagnosis & management of high B.P & other NCDs using standard guidelines.
• Primary health care facilities must be equipped with basic technologies & generic medicines for treatment of high B.P & associated NCDs such as DM.

• These should include **TECHNOLOGIES:**
  - B.P measuring device
  - Weighing scale
  - Urine strips for albumin assay
  - Blood sugar measurement device
• **MEDICINES:**
  - Aspirin
  - Statin
  - ACE-Inhibitor
  - Thiazide diuretic
  - Calcium channel bloker
  - Hypoglycemic agent
  - Insulin.

In addition to treatment, counselling should be offered to ensure adherence to treatment.
under PRESSURE?

Cut your risk of heart attack and stroke – control your blood pressure

WORLD HEALTH DAY 2013
www.who.int/control-blood-pressure