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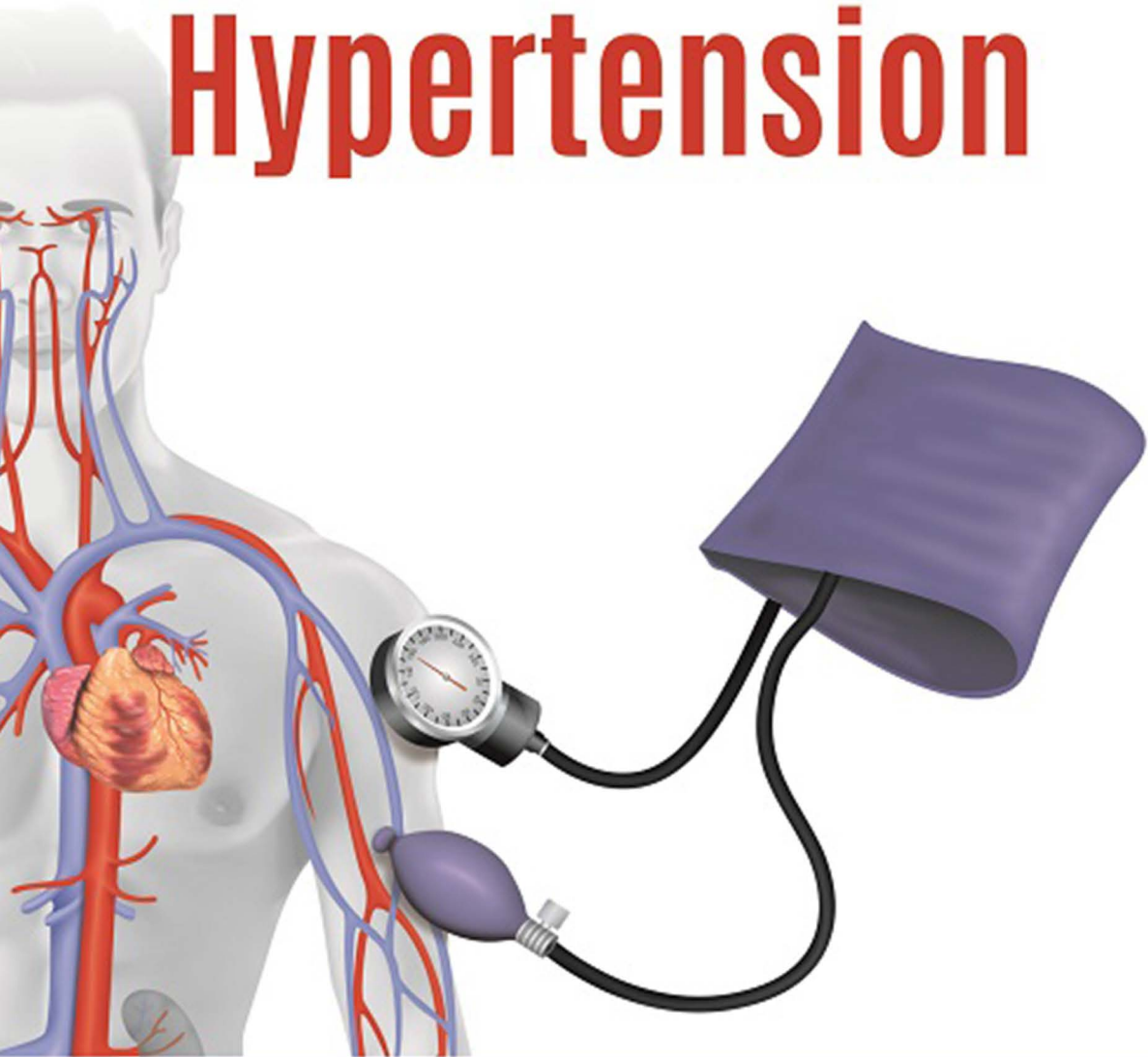
Manual of Essential Hypertension



Nihar Mehta

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CHAPTER
3

Lifestyle Management

Ruchit Shah

INTRODUCTION

Hypertension is a lifestyle disease. Lifestyle change is the cornerstone of hypertension management. Lifestyle changes should be emphasized in each and every patient of hypertension, even if drug therapy is initiated.

Lifestyle changes should be highlighted in the population at large, in normotensive people, and hypertensive patients. The idea should be to inculcate a healthy lifestyle from childhood. A program which integrates healthcare workers, children, parents, schools, communities, and patients as a whole should be developed.

There is sufficient evidence to prove that lifestyle changes reduce blood pressure (BP) and improve cardiovascular (CV) outcomes. However, it should not delay drug treatment initiation in patients with end-organ damage or high CV risk.

Patient education regarding the disease pattern, lifestyle changes, drug compliance, and prevention of complications with hypertension is important. Every follow-up visit for hypertension should include reiteration of lifestyle changes.

LIFESTYLE INTERVENTIONS (TABLE 1)

Diet

- It is important to read and understand food labels.
- The diet should be low calorie and low fat.
- Saturated fats, total fats, and cholesterol should be reduced.
- Carbohydrate intake should be reduced.
- Low carbohydrate intake is associated with a lower mortality and stroke.
- The diet should include a high content of fresh fruits, green vegetables, fibers, sprouts, and roots.
- Whole grain intake in the form of cereals, bread, rice, and pasta should be increased.
- Walnuts, almonds, and hazelnuts may be added.
- A high protein intake in the form of eggs, poultry, low fat dairy products, meat, and plant protein is associated with BP reduction.

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TABLE 1: Lifestyle interventions.[1,2]

Intervention	*Recommendation*	*Systolic BP reduction*
Diet (DASH)	Fruits, vegetables, whole cereals, low fat dairy products, less saturated, and total fats	8–14 mm Hg
Sodium	Sodium <2.4 g/day (salt <6 g/day)	2–8 mm Hg
Alcohol	Total abstinence preferred. <1 drink/day (F) and <2 drinks/day (M)	2–4 mm Hg
Weight	Maintain BMI 20–25 kg/m^2	5–20 mm Hg for 10 kg weight loss
Exercises	Aerobic-exercises: 30 min/day for 5–7 days a week	4–9 mm Hg
Smoking	Do not start smoking; if started quit smoking. Tobacco abstinence	
(BMI: body mass index; DASH: Dietary Approaches to Stop Hypertension)		

- Avoid red meat.
- Fish is rich in omega-3 fatty acids which is beneficial.
- Consumption of sweets, sugar sweetened beverages, and carbonated drinks should be reduced.
- Use of rapeseed or flaxseed oil and olive oil should be encouraged.
- Fried food and junk food should be avoided.
- Vegetarians have a high intake of whole grains, fruits, vegetables, fibers, and low saturated fats which is healthy.

Dietary Sodium

- Worldover, dietary sodium intake is 3.5–5.5 g/day (9–12 g of salt/day). The mean salt intake in India is 9–14 g/day. It is advisable to reduce the dietary sodium intake to <2.4 g/day (<6 g of salt/day). One flattened teaspoon is equivalent to 5 g of salt. There is data to suggest that increased sodium intake, leads to rise in BP, and sodium restriction leads to reduction in BP. The effect of sodium restriction is well seen in blacks, old age, diabetics, metabolic syndrome, and chronic kidney disease (CKD) patients. It may also reduce the number of antihypertensives.
- One must avoid extra salt, processed foods, salt-preserved foods (pickles, chutneys, ketchups, papads, canned food, namkeens, and chips), French fries, foods containing baking powder, pizzas, Chinese, readymade soups, bakery products (breads, biscuits, and cakes), cheese, peanut butter, salted butter, and high salt-containing foods.

Potassium

- Increased potassium intake can cause BP reduction (avoid excessive potassium especially with drugs that cause hyperkalemia). Fresh fruits and vegetables are a rich source of potassium.
- Magnesium and calcium intake should be increased.
- DASH (Dietary Approaches to Stop Hypertension) and Mediterranean diet are the recommended diet plans. The diet plans vary according to

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the eating habits of the individual and it is best to customize it for every patient with the help of a certified dietician.

Alcohol

- There is a correlation between alcohol consumption, hypertension, and CV risk, hence total abstinence is preferred. Moderation of alcohol intake is suggested, i.e., <2 drinks/day for men and <1 drink/day for women. Each unit equals to 125 mL of wine, 250 mL of beer, and 25 mL of spirits. However, depending on brand, concentration, type of alcohol, and country in which it is served, units may differ. Even people who are light or moderate drinkers may benefit from reduction in alcohol intake. Binge drinking must be strongly avoided. It is advisable to have alcohol-free days.
- *Coffee contains caffeine:* Caffeine is known to raise BP, but may be associated with CV benefits. Green and black tea may also have mild BP-lowering effect.

Weight

- Overweight and obesity are associated with raised BP, increased CV morbidity, and mortality. Weight reduction is associated with decreased BP and decreased CV events. Visceral obesity and waist circumference reduction confer significant benefit. Weight reduction by every kilogram reduces the BP by 1 mm Hg. Avoid body mass index (BMI) >30 kg/m^2 and waist circumference >102 in men and >88 cm in women. It is best to have BMI 20–25 kg/m^2 and waist circumference <94 cm for men and <80 cm for women. Weight reduction should involve physical exercises, dietary changes, and motivational counseling. It should be maintained over a long period of time. Antiobesity drugs and bariatric surgery are options available for morbid obesity.

Physical Activity

- It is advisable to do moderate-intensity dynamic aerobic exercise (swimming, walking, jogging, and cycling) for 30 minutes a day for 5–7 days a week. Resistance exercises may be added for 2–3 days a week. The intensity of exercises can be gradually increased to 300 minutes of moderate intensity or 150 minutes of vigorous exercises. Isometric exercises such as weight lifting can raise BP and are better avoided.

Smoking

- Active and passive smoking is a major risk factor for CV diseases and cancer. Quit smoking is the single most important thing which can be done for protecting CV health. Stopping tobacco products is associated with decreased CV risk and events including stroke, myocardial infarction, and peripheral arterial disease. Varenicline (better than bupropion) and combination nicotine replacement therapy along with behavioral therapy and counseling increase the success of

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quitting smoking. E-cigarettes are now available and are harmful, hence needs to be discouraged.

Yoga and Meditation

- Regular practice of yoga and meditation is a stress reliever. It reduces BP by 2–6 mm Hg, heart rate, waist circumference, and lipid profile. These are metabolic factors which influence long-term morbidity and mortality. A meta-analysis showed practice of yoga which contains postures, breath control, and meditation brought about a significant reduction in BP. Poses with forward bend and head supported, *Shavasana*, conscious breathing (*Pranayama*), meditation, and relaxation techniques have a beneficial effect on BP. Handstand poses (*Adho Mukha Vrksasana*), headstand poses (*Shirshasana*), and poses that compress the diaphragm should be avoided by hypertensive patients.

SUMMARY

- Lifestyle changes are the cornerstone of treatment of hypertension and should be advised to every patient irrespective of drug therapy.
- DASH diet plan suggests eating a diet rich in vegetables, fresh fruits, whole grain, fibers, high protein, fish, and low fat dairy products. Saturated and total fats should be reduced.
- Sodium intake should be restricted to <2.4 g/day (salt <6 g/day).
- Stop tobacco and smoking.
- Moderation of alcohol intake, with a preference for abstinence.
- Weight reduction and maintain BMI 20–25 kg/m^2
- Aerobic physical activity for 30 minutes/day for 5–7 days a week.

MULTIPLE CHOICE QUESTIONS

1. What is the recommended salt intake for a hypertensive patient?
   A. 3 g/day
   B. 6 g/day
   C. 8 g/day
   D. 10 g/day
2. The DASH diet plan constitutes all, except:
   A. Low fat dairy
   B. Low saturated fats
   C. High carbohydrate diet
   D. High protein diet
3. The recommended BMI to reduce CV risk is:
   A. <20 kg/m^2
   B. <25 kg/m^2
   C. <30 kg/m^2
   D. <40 kg/m^2

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4. The following therapies should be used in order to quit smoking, except:
   A. Combination nicotine replacement therapy
   B. E-cigarettes
   C. Behavior therapy
   D. Counseling
5. The following physical activity is recommended for hypertensive patients, except:
   A. Brisk walking for 30 minutes
   B. Weight lifting
   C. Resistance exercises
   D. High-intensity interval training

Answers

1—B 2—C 3—B 4—B 5—B

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Manual of Essential Hypertension

Salient Features

- A concise guide to students and practitioners regarding the definition, diagnosis, and management of high blood pressure.
- Use of images, tables, and diagrams for illustrations and easier understanding of hypertension.
- Different chapters for different classes of antihypertensive drugs which includes mechanism of action, pharmacological characteristics, side effects, and contraindications as well as an overall guide to drug therapy.
- Special subsets for management of hypertension in various practical scenarios such as obesity, diabetes mellitus, ischemic heart disease, cerebrovascular disease, pregnancy, perioperatively, and emergencies, among others.
- A chapter on Newer Therapies for Systemic Hypertension including renal denervation therapy, carotid baroreceptor activation therapy, and arteriovenous fistula therapy among other future perspectives.
- New recommendations for the detection, evaluation, and management of hypertension in adults according to the international guidelines by WHO, ESC/ESH, ACC/AHA, and Indian Guidelines on Hypertension.

Nihar Mehta is a Cardiologist from Mumbai, Maharashtra. He has a stellar academic background with Gold medals and Vice Chancellors Certificates of Merit during his MBBS and MD training. After his Cardiology degree, he underwent training across the globe from Seoul, South Korea to Los Angeles and New York, USA as well as Budapest, and Hungary in various aspects of interventional and structural heart disease. Dr Nihar is also a Fellow of the Royal College of Physicians (London) and Fellow of the Indian College of Physicians. He has been a Governing body member of the Association of Physicians of India as well as the Hypertension Society of India. He has a special interest in hypertension, complex coronary intervention, and structural heart disease. He has set up and runs the Blood Pressure Clinic at Jaslok Hospital and Research Center. He is part of the core committee for the Indian Hypertension Guidelines III and IV which were published in 2013 and 2019 respectively.

Dr Mehta has a keen interest in academics and research. He is the editor of various textbooks including PJ Mehta's Practical Medicine. In addition, he has been the principle investigator of various international research trials. He is on the editorial board of the Journal of the Association of Physicians of India (JAPI) and is also the Assistant editor of the Clinical Journal of Hypertension. He strongly believes that hypertension is one of the biggest health challenges faced by the country and hopes that improved awareness helps us get a grip on this mammoth problem.

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