

Hypertension: Risk Factors, Prevention, and Management

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Introduction

Hypertension is considered a lifestyle disease. Each year 17th May is observed as World hypertension day. As per nearly ninety-six percent of global guidelines on hypertension, the cutoff mark for diagnosis of clinical hypertension is based on blood pressure $\geq 140/90$ mmHg (Philip et al. 2021). World Health Organization has devised a global action plan to reduce the prevalence of hypertension by 25% between 2010 and 2025. Preemptive screening, diagnosis, and intervention are the key to limit the risk of cardiovascular complications among hypertensive people.

Hypertension is a major global disease affecting nearly 1.4 billion people worldwide and accounts for 10 million premature mortalities per annum. WHO STEPS survey estimated that about 44% of men and 25% of women never had their blood pressure monitored so the prevalence of hypertension could be even higher with a greater risk of cardiovascular disease among middle-aged adults which could be as high as 13.8%. The prevalence of hypertension is increasing globally particularly among low and middle-income countries at the rate of 8% per decade, especially among older adults aged ≥ 60 years. Hypertension is a risk factor for stroke and globally, 70% of strokes were found to occur in low- and middle-income countries. Indians were reported to be highly susceptible to risk factors of developing hypertension at a younger age than Western cohorts and the timing of first heart attack or stroke incidence is estimated as one decade earlier than in Western countries. Epidemiological studies revealed that nearly 35% of the people have hypertension and out of them about 58% receive anti-hypertensive treatment. In India, almost half of the adult population in the age group of 20 to 44 years are hypertensive. Hypertension contributes to the economic burden of a country. The cost of hypertension management was \$51.2 billion in the USA. Identification of risk factors, timely prevention, and management of hypertension could avoid several severe health conditions and complications that are even more cost-intensive for treatment than hypertension. Therefore, the prevalence of hypertension needs to be reduced. Achievement of a 10-mmHg decrease in systolic blood pressure can significantly reduce the risk of coronary heart disease, stroke, and heart failure among the affected population.

Risk factors

Hypertension by itself a significant risk factor for cardiovascular diseases, cerebrovascular diseases, kidney disease, and cognitive dysfunction have observed that obesity is the most important risk factor for hypertension among all groups. The study stated that young and middle-aged men are at more risk for hypertension and the waist circumference and waist to height ratio were better predictors of hypertension than BMI among the middle age group. Some of the most prominent risk factors of hypertension are listed as follows:

- Lifestyle disorder
- Imbalanced dietary practice
- Abnormal high body mass index
- Extensive alcohol consumption
- Use of Tobacco and derived products
- Smoking
- Emotional stress
- Higher salt intake
- Family history and genetic factors
- Comorbidities such as diabetes and dyslipidemia
- Sedentary lifestyle

If hypertension is not controlled, it may potentially lead to overweight and obesity. Another study reports that smoking, alcohol consumption, overweight, and obesity were positively associated with hypertension, diabetes, and dyslipidemia among the adult Chinese population. Dietary pattern that is rich in sweets, beverages, glucose-rich fruit juices, and carbohydrate-rich starchy foods was associated with a risk of high blood glucose levels as well as hypertension. Low levels of physical activity, a sedentary lifestyle, and improper and inadequate diet pattern were associated with metabolic syndromes including hypertension. A higher level of visceral fat was also positively correlated to elevated blood pressure and increased risk of hypertension among adults. Among children and adolescents, higher consumption of energy-dense salty foods was positively associated with diastolic hypertension regardless of diet pattern. It was found that socioeconomic status, body fat distribution, physical inactivity, diabetes, and sleep quality influence the prevalence of hypertension. A higher susceptibility of men to hypertension could be due to the prevalence of tobacco and alcohol consumption in addition to factors such as overweight.

Prevention and management of hypertension

A lifestyle change is regarded as the cornerstone for the prevention of hypertension. Provision of a supportive environment for a healthy lifestyle by the Government organization and provision of better access to primary health care, formulation of public health care initiatives, promotion of sustainable healthy lifestyle is important for the prevention of hypertension (Karatzi and Manios). Several specific nutritional components, phytochemicals, and bioactive components have been identified that confer protection against chronic degenerative diseases including hypertension. Additionally, the environmental and social demographic factors need to be modified such that they are conducive for health promotion and the prevention of emotional distress. Production and promotion of healthy foods and making healthy foods available to the consumers is also a strategy to prevent and manage hypertension among populations. Telemedicine and electronic health monitoring, administration programs, e-health governance and nutrition management is also regarded as important for the prevention of hypertension and other metabolic syndromes. Interventions focusing on those with low socioeconomic position, control of diabetes, increasing opportunities of physical activity levels, and improving the quality of sleep have positive health outcomes in terms of reduction in hypertension. Education level was found

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to be a statistically significant factor for the prevention of hypertension and stroke. Continuous monitoring, evaluation, and risk assessment along with pertinent interventions at a national scale are necessary for the prevention and management of hypertension.

Conclusions

There is no doubt that hypertension is the root cause of several chronic degenerative diseases including cardiovascular disease which is the leading cause of mortality worldwide. Therefore hypertension needs to be taken seriously by the individual and by the government. Most importantly it is affecting the age groups of the adolescent, middle, and higher age groups which are socioeconomically productive, and hypertension can decrease productivity and contribute to a higher rate of disability-adjusted life years. Therefore, hypertension is a significant public health issue and economic

burden to any country. Better socio-economic and socio-demographic opportunities need to be created by the government and the individuals need to adhere to quality lifestyle and diet patterns. Medications for hypertension are available for treatment but it is better to take preventive measures before the onset itself. The main point to be noted is that hypertension is reversible by practicing a disciplined and healthy routine.

How to cite this article: Mary James. "Hypertension: Risk Factors, Prevention, and Management." *J Hypertens (Los Angel)* 10 (2021): 286.