



ISSN 2582-6441 [Online]

# RESEARCH JOURNAL OF PHARMACY AND LIFE SCIENCES

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An International Peer Reviewed Journal

## Editorial

### LIFE STYLE MODIFICATION FOR PREVENTION OF HEART DISEASES

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#### Introduction

Since late 20<sup>th</sup> century, India is witnessing cardiovascular diseases as leading cause of mortality, even at a younger age compared to western population. 23 % of western populations face CVD deaths before the age of 70 years, in India, this number is 52 %. There is an epidemiological paradigm shift from infectious diseases, malnutrition to noncommunicable diseases. Both in urban and rural India about two-thirds of noncommunicable disease mortality is contributed by cardiovascular diseases. From global burden of diseases study, a quarter of all deaths in India are from cardiovascular diseases. Stroke incidence and stroke related fatality is also higher in India compared to western nations. Hypertension and hypertensive heart disease, rheumatic heart diseases are also continuing to be significant problem in India.

Atherosclerotic cardiovascular disease, the epidemic India is going through, because of increase in life expectancy (aging population), lifestyle behavioral changes, environmental factors. Acute myocardial infarction and stroke (cerebrovascular

accident) are sudden onset dreaded complications of atherosclerotic cardiovascular disease. To decrease the age adjusted cardiovascular disease burden we need strong implementation of preventive measures and population directed specific treatment.

#### Cardiovascular disease risk factors

CV risk factors are broadly classified as nonmodifiable and modifiable risk factors. While age, gender, genetics, race/ethnicity are considered nonmodifiable, modifiable risk factors are largely preventable by simple good lifestyle measures. Hypertension, diabetes mellitus, dyslipidemia, smoking, unhealthy diet, physical inactivity, obesity are largely preventable risk factors that are having causal relationship with cardiovascular diseases.

Hypertension prevalence in adult Indians is 34 % in urban areas and 28 % in rural areas and it is expected to double by 2025.

Prospective Urban and Rural Epidemiological (PURE) study showed that low educational status is associated with lower rates of awareness, treatment, and control of hypertension. Over last 20

years the prevalence of diabetes mellitus has doubled and quadrupled in urban and rural India respectively. It may reach an alarmingly high level, affecting more than 100million people by 2030. About 275 million aged  $\geq 15$  years consume tobacco in India either in form of smokeless tobacco or smoking of Bidi an indigenous form of leaf wrapped tobacco product. Tobacco related disease mortality in India is huge. It is higher among men than women and high among low education individuals. The ICMR-INDIAB study showed large proportion of people had at least 1 lipid abnormality either high total cholesterol or low-density lipoprotein (LDL) cholesterol or non-high-density lipoprotein (non-HDL) cholesterol or triglycerides except only 20 % having all within the normal range. In addition to above conventional risk factors Indians consume diet low in fresh fruits and vegetables, high trans fats, physical inactivity in about 50% population adds to the high burden of cardiovascular diseases.

### **Prevention strategies**

1. Primordial prevention - prevention of the development of risk factors. It focuses on living conditions, education, urbanization, air pollution, sedentary behavior, stress
2. Primary prevention - prevention of clinical manifestation of cardiovascular disease. Primary prevention focuses on controlling risk factors through lifestyle and treatment of established risk factors.
3. Secondary prevention - prevention of established diseases like heart attack and stroke to reduce recurrent events and mortality.

There are various risk scores and guidelines for prevention and treatment of cardiovascular diseases. Throughout life span one must maintain good CV health by adapting all preventive strategies from early life. American heart association (AHA) has recommended life's simple 7 health metrics for shifting the focus from disease to good CV and overall health. The recommendations are (a) to have  $\geq 150$ minutes of moderate activity/week, (b) eat diet with 4-5 cups of fresh fruits & vegetables, 3 servings of whole grains, avoid saturated fats and sugar sweetened beverages, 2times fish/week, less than 1.5 gms of sodium/day, (c) maintain ideal body weight (BMI  $< 25$  kg/m<sup>2</sup>), (d) never use any form of tobacco or quit absolutely for life long, (e) maintain total cholesterol  $< 200$ mg/dl or LDL cholesterol (bad cholesterol) $< 130$ mg/dl, (f) maintain blood pressure  $< 120/ < 80$ mmHg, (g) maintain fasting blood glucose  $< 100$ mg/dl.

### **Conclusions**

Prevention strategies will provide a win situation to combat CV diseases by reaching communities where our healthy and diseased people live, work and play. Prevention is a healthy practice rather than practice based on caring diseased individual. It should evolve as a "Precision Public Health" to motivate the right person (young individuals), at right time (from early life), for right duration (lifelong). Prevention is better than cure – it is easy, simple, appropriately low cost and very effective.