A Study On Coronary Heart Disease Prevention-Nutritional Status, Dietary Patterns And Life Stlye Management

V.Bindu, K.R.Padma, Ch.Madhuri, D. Sarada

Abstract: World health organization (WHO) has highlighted the significance of augmented blood cholesterol as a menace for Coronary Heart Disease (CHD). Considerable Medical research over several years has unveiled the cause of many diseases. In India the heart diseases affect people of all ages, but most commonly affected individuals were in middle aged and often found to be suffering from arthrosclerosis. With upcoming modernization life style and economic development, nutritional changeover characterized by improvement in socio-economic status and increasingly sedentary life style contributed to the prevalence of CHD among adult, middle aged and elderly population. With the emergence of nutritional diet in accordance for control of blood cholesterol which is main source for CHD. In our current review, we have laid more emphasis on dietary patterns and behavioural life style which are crucially in relation to CHD.

Keywords: Coronary Heart Disease (CHD), arthrosclerosis, blood cholesterol, sedentary life style, Nutritional diet, WHO.

1. INTRODUCTION

Up till now cardiovascular disease (CVD) continues as one of the foremost reasons of morbidity and mortality globally. Even though genetic factors and age are primarily involved in determining the risk, other factors, embracing hypertension, hypercholesterolemia, insulin resistance, diabetes, and lifestyle factors such as smoking and diet are also chief menace influential with the disease [1]. The prominence is so far has been on the connection between serum cholesterol levels and the threat of coronary heart disease (CHD) [2]. Buddha basnyat [3] emphasised that, 16.7 million people died from cardiovascular disease and is associated with 30.3% of all deaths worldwide. Greater percentage of these deaths was from developing countries only. Amongst them in India, the prevalence of CHD has been accounted as being 11% in 2001 and further the percentage is being increased. Therefore alteration of threat features is an effectual method to reduce CVD menace, and most other associated cardiovascular risk factors which could be changed with lifestyle management and prescriptions [4]. The modified guidelines for principal anticipation of stroke were announced by the American Heart Association and American Stroke Association emphasizing lifestyle alteration in order to dwindle stroke threat [5]. Several guidelines for the deterrence of CVD in women have also been recommended in lifestyle interventions [6]. Augmenting facts has indicated that personally modified lifestyle factors (including physical activity [7–9], smoking [10, 11], alcohol consumption [12, 13], body mass index [BMI] [14, 15], and dietary factors [16–19] are associated with risks of coronary heart disease (CHD), heart failure (HF), and stroke. Nevertheless diet plays a key role in altering the threat factor in the deterrence as well as risk reduction of CVD [20–22]. Even though known facts that smoking cigarette, lack of physical activity and obesity, are primary causes of CHD, HF and stroke. However, particularly the role of dietary factors as well as joint association of modifiable life style patterns and outcomes of CVD has been the prime focus of this review which has not had not been clearly defined until more recently.

2. PREVALENCE OF CVD

The quandary of cardio vascular disease (CVD) is on the levitate worldwide. The deaths of CVD accounted for 30% globally [23]. The encumbrance of CVD is displayed to be the highest in India by the year 2020, in relation to other countries [24]. Although in the WHO-PREMISE examination, the amount of coronary heart disease (CHD) is amongst patients lesser than 50 years of age, which revealed to be highest in India (22.6% in males and 3% in females) [25]. Out of the Million Death Study (2009) the instigators concluded that cardiovascular diseases are the foremost reason of death (20.3% in males and 16.9% in females) amongst Indian adults (age 25e69 years) [26]. However it is intricate to get an inclusive depiction of the epidemiology and disease quanadary of coronary artery disease (CAD) in India. In the midst of the all-cause mortality rates, several guesstimated reports on mortality from cardiovascular diseases and apiece of predictive model to produce approximates of deaths and years of life lost (YLLs) due to premature mortality by location, age, sex, and year [27–28].
Table 1: Percentage of total deaths and Dalys due to CVD in India

<table>
<thead>
<tr>
<th>Disease</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular disease</td>
<td>25.9%</td>
<td>31.6%</td>
<td>28.7%</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>18.6%</td>
<td>22.3%</td>
<td>20.5%</td>
</tr>
<tr>
<td>Stroke</td>
<td>10.7%</td>
<td>13.6%</td>
<td>12.1%</td>
</tr>
<tr>
<td>Hypertension and diabetes</td>
<td>12.6%</td>
<td>15.4%</td>
<td>13.8%</td>
</tr>
<tr>
<td>Atherosclerosis</td>
<td>10.9%</td>
<td>13.1%</td>
<td>11.9%</td>
</tr>
<tr>
<td>Other cardiovascular and diabetes</td>
<td>2.4%</td>
<td>2.9%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>0.9%</td>
<td>0.9%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Total death</td>
<td>25%</td>
<td>31%</td>
<td>28%</td>
</tr>
<tr>
<td>Total DALYs</td>
<td>20%</td>
<td>25%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Although the most commonly acknowledged symptom of coronary heart disease (CHD) was angina. Angina literally means pain in chest or anxiety that might occur while portion of the heart muscle doesn’t get adequate oxygen-rich blood. Angina might bring suffering like pressure or compression in the chest. This pressure or compression generally can be felt in the shoulders, arms, neck, jaw or back.

Symptoms of heart attack include:
- Chest pain or discomfort
- Nausea
- Sweating
- Dizziness
- Fatigue

The severity of the symptoms varies as the build up plaque continues to narrow the coronary arteries. But few people might not have any sort of signs or symptoms; this condition is called silent CHD [29].

**Figure-1: Prevalence of Coronary Heart diseases**

**Figure-2: Ischemic Heart Disease or coronary artery disease symptoms | cause treatments and prevention.**

### 4. HYPERTENSION AND OTHER FACTORS RELATED TO CHD

Hypertension is main threat factor attached to coronary heart diseases, in outlook of the verity that both atheroma and hypertension augment with age. In concurrence to Hollander W et al., [30] various dietary factors at high levels for example sodium elevated blood pressure. Joffres MR [31] described that 16% men and 13% of women had diastolic blood pressure of 90 mmHg or higher. Approximately 26% of these subjects were unaccustomed of their hypertension. About 42% were being medicated and their condition controlled hypertensive subjects displayed a higher prevalence of elevated total cholesterol, high body mass index, diabetes and sedentary life style than normoten sive subjects. Predominantly, it became evident that dietary cholesterol played a secondary role in regulating serum cholesterol levels. It was also revealed that dietary fatty acids are the chief determinants of serum cholesterol [32-33]. Although studies of lipoprotein metabolism illustrated that only the cholesterol-rich LDL fraction but not total cholesterol, was largely vigorously involved to the development of atherosclerosis and its sequelae [34]. Empirical research was initiated to comprehend the exact mechanisms by which hormones, genes, and diet intermingle together in order to regulate the serum cholesterol levels [35]. LDL cholesterol levels have been augmented by saturated fatty acids, especially those with 12 to 16 carbon atoms, and also by transfatty acids [36].
Among the other associated factors, the leading one is that of a high consumption of alcohol. Both alcohol and tobacco have significant impact on cardiovascular menace factors. On the whole, these two commonly do not affect the same threat factors in the same way, even though levels of blood pressure and triglycerides (i.e., fats in the blood) might be important exceptions [37-38]. In consequence of consumption of three to five drinks per day have chances of about 50 percent greater risk of high blood pressure (i.e., hypertension); threat augments even more with heavier intake [39]. The association between smoking and blood pressure is not much distinct, as in part because smokers tend to be inclined than non-smokers. Nevertheless, in few laboratory studies as well as controlled population studies, smoking revealed to raise blood pressure or threat of hypertension to a modest degree [40].

CONCLUSION
CHD is a chief public health problem in India, often influencing the most productive years of an individual’s life. Our current review has focussed on coronary heart diseases, its signs and symptoms as well as the prevalence of CHD globally. Although we persist to recognize the roles of nutrients and other compounds in foods in the complex pathways that contribute to CHD risk or protection, the field is augmenting its concentration on genetic modulation of these pathways. Hence changing our life style and adapting dietary patterns can reduce the chances of CHD.

ACKNOWLEDGEMENTS
The authors express their appreciation to Sri Padmavathi Mahila Visvavidyalayam (Women’s) University for providing access to the research facilities and for actively participating in the study and also thanks to the faculty, staff, and students from the Mahila University for their assistance in the research studies. I hereby acknowledge Dr.K.R.Padma and Prof.D.Sarada for her eminent guidance and timely help.
Competing interests
The authors declare that they have no competing interests.
Consent for publication
Not applicable.
Conflict of Interest
On behalf of all authors, the corresponding author states that there is no conflict of interest.

REFERENCES:


