FREQUENCY OF MAJOR RISK FACTORS FOR CORONARY HEART DISEASE IN PATIENTS OF SOUTHERN PUNJAB

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ABSTRACT

Background: Coronary Heart Disease (CHD) in most common form of heart diseases and premature deaths. **Objective:** To determine the risk factors of coronary heart disease (CHD) in patients from Southern Punjab. **Subjects & Methods:** This retrospective study was carried out in the Community Medicine Department, Nishtar Medical College, Multan in collaboration with the CPE Institute of Cardiology, Multan and Cardiology Ward, Nishtar Hospital, Multan. All patients presenting with acute coronary heart disease, from September to November, 2009, were included in this study. The diagnosis was made by a Cardiologist. Patients were interviewed for the presence or absence of Conventional Risk Factors for CHD. The risk factors studied were gender, smoking, hypertension, positive family history, diabetes mellitus, obesity, dyslipidemia, anxiety and depression. All information was entered into a pre designed proforma. Data was analyzed in SPSS version 10. **Results:** Among patients of CHD, 70% were males and 30% were females. Smoking habit was seen in about half of the patients (49.50%). Hypertension was present in 45%, positive family history in 32%, diabetes mellitus in 29.50% of patients 26% were obese, 23% have dyslipidemia while 15% reported to have anxiety and depression. **Conclusion:** We conclude that after male gender, smoking habit was the most prevalent risk factor seen in our study population. Other risk factors found, in the descending order, were hypertension, positive family history, diabetes mellitus, obesity, dyslipidemia, and anxiety and depression. Our study demonstrates the importance of modifiable risk factors which may be targetted in designing the preventive strategies for CHD.

Key Words: Coronary Heart Disease, Risk factors, Preventive measures.

INTRODUCTION

Coronary Heart Disease is the most common form of heart diseases and the single most important cause of premature death in Europe, the Baltic States, Russia, North and South America, Australia and New Zealand. By 2020, it is estimated that it will be the major cause of death in all regions of the world. In the United Kingdom 1 in 3 men, and 1 in 4 women die from Coronary Heart Disease (CHD) and an estimated 33000 people have a myocardial infarct each year and approximately 1.3 million people have Angina.[1]

Previously considered a disease of the affluent and developed countries; CHD is now emerging as epidemic in the developing world in general and South Asia in particular.[2] In South Asian immigrants to United States, their longevity of residence increases their risk many fold to develop CHD with a higher fatality rate compared to local reference population. Total variability in CHD risk in South Asia has not been explained by traditional risk factors, indicating the presence of other important, yet unidentified risk factors.[3]

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Coronary Heart Disease is most commonly due to obstruction of the coronary arteries by atheromatous plaque.[4] Coronary Heart Disease is an atherosclerotic disease that is multi-factorial in origin, giving rise to the concept of risk factors. Certain living habits promote atherogenic traits in genetically susceptible persons. A number of risk factors are known to predispose to the condition. Some of these, such as age, gender, race and family history can not be changed, whereas other major risk factors such as serum cholesterol, smoking habits, Diabetes Mellitus and hypertension can be changed.[5]

Since 1960, when the Framingham Heart Study first identified smoking, hypercholesterolemia and hypertension as risk factors for CHD,[6] various studies all over the world have validated the results of the historical Framingham Study.[7] Modifiable behavioral risk factors (smoking, obesity, lipid disorders, Diabetes Mellitus and hypertension) lead to cardiovascular diseases that are leading causes of mortality. The prevalence of modifiable risk factors for CHD such as tobacco use, inappropriate diet and physical inactivity, are responsible for significant morbidity and mortality.[8] There is evidence to suggest that the control of cardiovascular risk factors, particularly smoking, has resulted in a decline in mortality due to CHD.[9]

Unfortunately in most countries, the response to CHD prevention and control is still based on the infectious disease paradigm. Consequently the global and national capacity to respond to CHD

epidemic is woefully inadequate. The gap between the need for CHD prevention, control and capacity to meet them will go even wider unless urgent steps are taken.[10] The objective of prevention is to reduce incidence of first or recurrent clinical event due to CHD, Ischemic strokes and peripheral artery disease.[11] In Pakistan, the National Action Plan for Non-Communicable Disease Prevention (NAPNCD) incorporates prevention and control of CVD as part of a comprehensive and integrated non communicable diseases prevention effort.[12] This study was planned to determine the risk factors of coronary heart disease (CHD) in patients from southern Punjab.

PATIENTS AND METHODS

This descriptive study was carried out in the Department of Community Medicine in collaboration with the Cardiology Department, Nishtar Hospital Multan and CPE Institute of Cardiology Multan. This is important to mention that patients were selected from the Tertiary Care Health Facilities which cater mainly patients from Southern Punjab. The patients of Southern Punjab i.e., Multan, Bahawalpur, D.G. Khan and Rahim Yar Khan were included in the study, and the patients of other provinces were excluded. A total of 200 consecutive patients with CHD admitted during September- November 2009, were selected for this study. After taking informed verbal consent patients were interviewed to collect information regarding their health profile and personal and family history. All the data were entered into a pre-tested questionnaire. Data was entered & analyzed to get frequencies of different risk factors among the study population.

RESULTS

Important findings of the study are shown in table I. In the study population of 200 patients, majority of patients were males (70%) and female patients were only 30%. After gender predisposition to males, smoking was found to be the greatest risk factor. Among patients of CHD, 99 (49.5%) were smokers. Hypertension was seen among 90 (45%) patients. Among 64 (32%) there was a positive family history, 59 (29.5%) were having diabetes mellitus, 52 (26%) were obese, 46 (23%) were having dyslipidemia and 30 (15%) patients reported anxiety and depression.

Table I: Major Risk Factors for Coronary Heart Disease seen in the Study Population

Sr. No	Risk Factor	% age
1	Gender: Males (n=140) Females(n=60)	70% 30%
2	Smoking (n=99)	49.50%
3	Hypertension (n=90)	45%
4	Positive Family History (n=64)	32%
5	Diabetes Mellitus (n=59)	29.50%
6	Obesity (n=52)	26%
7	Dyslipidemia (n=46)	23%
8	Anxiety and Depression (n=30)	15%

DISCUSSION

This is documented that in the etiology of Coronary Heart Disease some factors are modifiable risk factors, while others are non-modifiable. Among the non-modifiable risk factors are the age, gender and genetics. Among modifiable risk factors are the factors which can be modified by life style such as smoking, obesity, physical inactivity and anxiety and depression. Some modifiable risk factors can be modified by pharmacotherapy and/or the life style changes. These are hypertension, diabetes mellitus and lipid disorders.[13] We found that there is a predisposition of male gender among patients of CHD (Male: Female ratio = 70:30). Many studies from different areas of Pakistan showed the same results.[14,15,16] The second most important risk factor for CHD found in our study was smoking (49.5%). Studies from Faisalabad, Lahore and Islamabad[14,15,16] showed the similar results. Hypertension and dyslipidemia were shown to be other risk factors for CHD in our study like other studies from this area.[17,18] There was a positive family history in our 32% patients of CHD. About 30% patients were Diabetic, 26% were obese and 15% reported to have anxiety and depression. These findings are similar with the findings of some other studies.[18] Coronary Heart Disease is primarily a disease of the masses. The strategy should therefore be based on mass approach focusing mainly on the control of underlying causes i.e. Risk Factors, in the whole population, not merely in individuals. This approach is based on the

principle that small changes in risk factors level in total population can achieve the biggest reduction in mortality. The population strategy centers on the following areas. Dietary modification is the principle preventive strategy in the prevention of CHD. Our study has also shown that many patients have risk factors based on dietary habits such as 29% have DM, 26% have obesity and 23% have dyslipidemia. As far as CHD is concerned, present evidence does not support promotion of the so-called "safer cigarette". The goal should be to achieve a smoke free society and several countries are progressing towards to achieve this goal. A comprehensive health programme would be required which focuses effective information and education activities, legislative restrictions, fiscal measures and smoking cessation programme. Our study has shown that almost half of the patients have smoking history. The goal of the population approach to hypertension would be to reduce mean population blood pressure levels. There should be reduced salt intake and avoidance of a high alcohol intake, regular physical activity and weight control. In our study, 45% has hypertension. Regular physical activity should be a part of normal daily life. It is particularly important to encourage children to take up physical activities that they can continue throughout their lives. 26% of the patients had obesity in our study. Secondary prevention must be seen as a continuation of a primary prevention. It forms an important part of an overall strategy. The aim of secondary prevention is to prevent the recurrence and progression of CHD. Secondary prevention is a rapidly expanding field with much research in progress in the areas of drug trials, coronary surgery and use of pacemakers.[19]

CONCLUSION

We conclude that in our study population, male gender was the most important risk factor for CHD. Other risk factors found, in the descending order, were smoking habit, hypertension, positive family history, diabetes mellitus, obesity, dyslipidemia, and anxiety and depression**.**

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