

Study of Risk Factors in Coronary Heart Disease

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SUMMARY:

Study of risk factors was conducted in 92 patients suffering from acute attack of myocardial infarction, admitted to Coronary Care Unit, Mayo Hospital, Lahore. The diagnosis of infarction was based on clinical history, ECG findings, enzyme and isoenzyme studies. Among the major risk factors smoking was at the top and 67 per cent of patients were smokers. Hypercholestromlaemia was found in 30 per cent, Hypertension in 16 per cent and Diabetes mellitus in 14 per cent of patients. The role of minor risk factors like age, sex, occupation, genetics and stress was also studied. The age range was 20-89 years.

INTRODUCTION

Coronary Heart Disease (CHD) is the commonest cause of cardiovascular disability and death. It is the major cause of death in most industrialised countries [1]. Previously, it was thought that the incidence of CHD is more common in the affluent societies. It has now been recognised that CHD is also common in the developing countries, where the prevalence of CHD has been rising steadily.

The etiology of CHD is unknown. There is no single cause which can be pinpointed. There are various risk factors that predispose to the development of CHD. These risk factors are age, genetic predisposition, hypercholestromlaemia, high blood pressure, diabetes mellitus and cigarette smoking. Other factors of less importance include obesity and possibly physical fitness and personality type [2].

Since very few studies have been conducted in this country, as regards the role of risk factors in the incidence of CHD, our aim was to study the risk factors in detail, as the conclusion drawn from local studies may be more effective and

meaningful in the prevention of CHD.

MATERIAL AND METHODS

The study was carried out at Coronary Care Unit, Mayo Hospital, Lahore. Ninetytwo patients, including both males and females were included in the study. The data was collected on a special proforma, containing information about age, sex, occupation, family history, past history, smoking habits and presence or absence of hypertension and diabetes mellitus. Physical examination was performed and serial electrocardiograms were recorded in every patients.

The serum cholesterol was measured, using Leiberman Burchard reaction. The serum CKMB and HBDH were estimated by using ultraviolet test sets of Merck and Roche diagnostica. The ECG FINDINGS were interpreted according to WHO criteria [3].

RESULTS

Data on 92 Patients suffering from acute myocardial infarction was evaluated.

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DISCUSSION

Myocardial infarction is the most important single cause of death in most of the countries. In the United Kingdom a real increase has been found in the incidence of Coronary Heart Disease [CHD] [4]. Studies done during the past few years in Pakistan have also shown an appreciable increase in the prevalence of CHD, [5]. It is three to four times more common in males than females. Our study duplicates these findings (Table I).

Sex	Number	Percentage
Male	74	80
Female	18	20

Previously it was thought that coronary heart disease was more common in the affluent society and relatively less common in the lowest social class. But now this concept tends to change due to various risk factors which have been found in various studies. A recent British study has revealed that mortality from Coronary Heart Disease is more common in the working class than in those from the middle and upper classes [5].

Age Group (years)	Number of Cases	Percentage
20-29	1	1
30-39	7	8
40-49	24	26
50-59	24	26
60-69	25	27
70-79	8	9
80-89	3	3
Mean Age= (53.9 ± 11.6) yrs.		

Categories of occupation	Number	Percentage
Landlords	9	9.8
Labourers	3	3.3
Skilled Labourers	15	16.3
Doctors	2	2.2
Lawyers	2	1.0
Engineers	1	1.0
Housewives	18	19.6
Businessmen (small scale)	3	3.3
Businessmen (large scale)	11	11.9
Clerical	2	2.2
Shopkeepers	11	11.9
Peons and Sweepers	3	3.3
Officers (grade 16-18)	7	7.6
Officers (grade 19 & above)	1	1.0
Not recorded	4	4.4

Syed and his associates (1980) carried out a multicenter study of risk factors in Coronary Heart Disease in Pakistan and observed that amongst the professional groups the highest incidence was found in low-paid skilled workers. The present study (Table-III) is in conformity with these findings.

Smoking habits	Number	Percentage
Non-smokers	24	32.4
Smokers		
a) Heavy (more than 30 cigarettes/day)	35	47.3
b) Light (less than 30 cigarettes/day)	15	20.3

Several studies have shown that people who smoke have a higher incidence of CHD than non-smokers [6]. Our study confirms the above fact as 67.7 per cent of the patients suffering from myocardial infarction were smokers.

According to Keys et al, [7]. Hypertension and Diabetes mellitus are independent risk factors of coronary heart disease. This study indicates

TABLE - V

Distribution of patients according to past medical history.

Past medical history	Number	Percentage
Coronary heart disease	42	46
Hypertension	15	16
Diabetes mellitus	13	14
Combination of above	6	6
Cases with negative past medical history	16	18

that 16 per cent of patients were suffering from Hypertension, 14 per cent had Diabetes mellitus and 6 per cent were suffering from combination of these. There is an increased risk of coronary heart disease in close relatives of individuals

TABLE - VI

Distribution of patients according to family history of various diseases.

Positive family history	Number	Percentage
Coronary heart disease	11	11.9
Hypertension	9	9.8
Diabetes mellitus	4	4.3
Combination of above	16	18.0
Negative family history	52	56.0

who had suffered from myocardial infarction early in life. This strong association of the family history of relevant disease has also been reported by Syed et al, [5]. This association was found to be much greater in this study, as 44% of patients

TABLE VII

Serum cholesterol levels of the patients.

	Cholesterol below 200mg/dl	Cholesterol above 200mg/dl	Cholesterol above 250mg/dl
Number	28	43	21
Percentage	30	47	23

suffering from myocardial infarction gave a family history of either angina pectoris, myocardial infarction, hypertension, diabetes mellitus or any combination of these.

Among all the identified factors associated with increased susceptibility to coronary heart disease, high cholesterol level is the most common factor. Depending on the age group studies, clinicians have often found a higher concentration of cholesterol in blood of coronary patients, [8]. In our study too, 30 per cent of patients were having cholesterol above 250mg/dl, while 47 per cent patients had serum cholesterol above 200mg/dl.

In conclusion it is stated that both major and minor risk factors and the combination of various risk factors may play an important role in pathogenesis of coronary heart disease and their incidence may be increasing with changes in life style.

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