ORIGINAL ARTICLE

Association of Dyslipidemia with Acute Myocardial Infarction (CAD)

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ABSTRACT

Aim: To determine the dyslipidemia and waist hip ratio as a risk factor of myocardial infarction.
Methods:- This descriptive study was carried out in the Medical Wards, Nishtar Hospital, Multan from April 2012 to December 2012. A total of 200 patients of 1st acute myocardial infarction were included in the study. Age range was 35-70 years.
Results: Out of 200 patients, 150 (75%) were male and 50 (25%) were female. The age of patients ranges from 35-70 years. Among 200 patients, 95 (47.5%) had inferior wall MI, and 35 (17.5%) antroseptal. Total fasting cholesterol was > 200 mg in 150 (75%) patients and < 200 mg in 50 (25%) patients.As regards hyperlipidemia, 105 (52.5%) had < 35 mg/d, and 95 (47.5% had > 35 mg/dl.
Conclusion:- It is concluded from the study that dyslipidemia and truncal obesity are important modifiable risk factors. These risk factors must be sought out in all high risk groups and where possible be treated for both primary as well as secondary prevention of CAD.
Keywords:- Coronary artery disease, Dyslipidemia, Lipoprotein,.

INTRODUCTION

Coronary artery disease (CAD) particularly myocardial infarction secondary to atherosclerosis of coronary arteries remains the leading cause of morbidity and mortality worldwide including Pakistan[1]. The risk factors that predisposes to these conditions i.e. modifiable risk factors dyslipidemia, hypertension, diabetes mellitus, smoking and obesity and non-modifiable risk factors Like age, sex and positive family history) of CAD[2].

Myocardial infarction secondary to coronary atheroma may be silent but most commonly associated with symptoms like chest pain, dyspnoea, sweating, nausea, vomiting etc[3]. The risk of myocardial infarction is even further increased when two or more risk factors are present in the same individual[4].

The prospective studies such as those of Framingham study established the relationship of dyslipidemia and coronary artery disease. High levels of total cholesterol, LDL and low level of HDL are major risk factors for coronary atherosclerosis. Correction of dyslipidemia can reduce the risk of myocardial infarction[5]. Advanced dyslipidemia may clinically manifest in the form of corneal arcus, hapemiarelinulis, xanthclasma and tendon xanthoma of knee, ankle and elbow[5].

Obesity is one of the independent modifiable risk factor of coronary artery disease and is defined as excess of adipose tissue. The body mass index,

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which is calculated by dividing the body weight in kilograms by the height in meter squares, accurately reflects the presence of excessive adipose tissue[7].

Upper body obesity (excessive fate around the waist and flanks) is greater hazard than lower body obesity (fat in thighs and buttocks). It is also called central obesity[8]. An elevated waist to hip ratio and a waist circumference that exceeds the hip circumference are predictors of CAD[9]. Waist to hip ratio can be calculated by dividing the waist circumference by hip circumference, women with waist to hip ratio more than >0.8 and men with >1 have increased risk of CAD[10].

MATERIAL AND METHODS:

This descriptive study was carried out in the Medical Wards, Nishtar Hospital, Multan from April 2012 to December 2012. A total of 200 patients of 1st acute myocardial infarction were included in the study. Age range was 35-70 years.

RESULTS

Out of 200 patients, 150(75%) were male and 50 (25%) were female. The age of patients ranges from 35-70 years with mean age of 55 years. In males most of the patients were above 50 with mean age of 53.7. Out of 50(25%) females, 85% were postmenpausal. In females the mean age was 56.2. Among 200 patients, 95(47.5%) had inferior wall MI, and 35(17.5%) antroseptal(Table 1). Total fasting cholesterol was >200mg in 150(75%) patients and < 200mg in 50(25%) patients as shown in table-2. As

regards hyperlipidemia, 105 (52.5%) had < 35 mg/d, and 95 (47.5% had > 35 mg/dl Table 3.

Table 1: Distribution of MI (n=200)

MI	M	F	Total	%age
Interior wall	70	25	95	47.5
Anteroseptal MI	25	10	35	17.5
Anterolateral	25	10	35	17.5
Lateral wall	12	03	15	07.5
Global	08	02	10	05.0
Inferior right wall	05	-	05	02.5
Anterior wall	05	-	05	02.5

Table 2: Total cholesterol in patients with MI (n=200)

Cholesterol	Male	Female	Total	%age
>200	120	30	150	75.0
< 200	30	20	50	25.0

Table-3: HDL cholesterol level in patients with MI (n=200)

HDL-C (mg/dl)	Male	Female	Total	%age
< 35	85	20	105	52.5
> 35	65	30	95	47.5

DISCUSSION

Ischemic heart disease is the commonest cause of cardiovascular morbidity and mortality[1]. Some risk factors are inter related and other are age dependent. Most common modifiable or controllable risk factors are dyslipidemia, diabetes mellitus, hypertension, smoking and central obesity[2].

The incidence of MI definitely increases with the increasing age. According to the results of present study there was a linear relation between age and IHD risk.

Risk of MI increased with age as only 10 (20%) patients belonged to age group less than 40 years as compared to 40 (80%) who were 40-70 years of age. Obesity is diagnosed and measured by BMI. Body mass index is actually the amount of adipose tissue present in body. It does not differentiate between upper body obesity (waist and flanks) and low body obesity (thighs and buttocks).

In present study the patients included had either two of the typical chest pain, ECG changes or raised cardiac enzymes. The median value is same as that of Gupta et al i.e. >0.95 for females and >0.9 for males[11,12].

An Indian study by Gupta et al registered patients with WHR less than 0.88 as group-A and more than 0.88 as group-B. It was found that group-B had high prevalence of dyslipidemia i.e. low HDL level and high triglyceride level with CAD. IN present study we found median as 0.98 and had high total cholesterol, low HDL-C and high LDL-C level. These observations are almost alike Gupta et al. a study comparing waist to high as a predictor of CAD was conducted by Department of Community Medicine, Institute of Public Health[9].

Akhtar et al reported dyslipidemia in their study in 63.2% and obesity in 48% patients of CAD[13] while in present study 75% of patients had dyslipidemia. There is difference of 11.2% only and the evidence further strengthened by Gandapur et al who reported almost the similar results[14]. The reasons for increased prevalence of dyslipidemia are due to obesity to some extent. One study conducted at Aga Khan University by Jobbar et al reported that high total cholesterol and LDL cholesterol were statistically significant for WHR above 0.9 for males and 0.85 for females[9].

In present study the high total cholesterol and LDL cholesterol is definitely related to MI. another study by Verma et al is consistent with present study[1].

CONCLUSION

Dyslipidemia is an important contributing risk factor to CAD in our population.

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