The Study of Prevalence of Cardiovascular (CV) Risk Factors in Diagnosed Patients of Acute Coronary Syndrome (ACS).

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ABSTRACT

Background: Coronary Artery Disease (CAD) as a life style disease is a significant public health problem that can no longer be disregarded. The risk factors of ACS, if identified at an early stage can be extremely useful in planning primary and secondary preventive strategies for ACS and its complications. **Method:** We conducted a study to find out the prevalence of various risk factors associated with increase in incidence of Coronary Heart Disease (CHD) in north India particularly in Punjab. The present study was carried out in 100 clinically diagnosed more than 40 yrs of either sex ACS patients admitted to Intensive Coronary Care Unit/ Medical wards of Rajindra Hospital Patiala,to calculate the prevalence of various modifiable and non-modifiable CV risk factors and gender differences associated with ACS. **Result:** In our study family history of CAD was present in 13% of the patients, smoking in 33% and 44% were Hypertensive, female patients showed greater preponderance towards HT , DM and Obesity. There was a significant gender difference in prevalence of decreased HDL ,33% in females and 13% in males. 50% men were non-vegetarian and only 9% females were non-vegetarian. In present study 10% of the ACS patients did not manifest any Coronary risk factor, included in the study. **Conclusion:** A high prevalence of risk factors for ACS was verified, indicating a necessity of Health Education Program to reduce morbidity and mortality.Most of the risk factors are modifiable and therefore its early identification is vital to set the strategy for preventive measures.

Keywords: Coronary Artery Disease, Coronary Heart Disease.

INTRODUCTION

Coronary Artery Disease (CAD) as a life style disease, is a significant public health problem that can no longer be disregarded. The risk factors of ACS, if indentified at an early stage can be extremely useful in planning primary and secondary preventive strategies for ACS and its complications. Once this was considered as a disease of high socio-economic group, but now increasingly involves people from lower socio-economic strata especially the younger age group because of atherogenic dietary habits similar to those seen in developed world and sedentary life style. We conducted a study to find out the prevalence of various risk factors associated with increase in incidence of Coronary Heart Disease (CHD) in north India particularly in Punjab.

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Aims and Objectives
To calculate the prevalence of various modifiable and non-modifiable CV risk factors and associated with ACS.

MATERIALS AND METHODS

The present study was carried out in 100 clinically diagnosed ACS patients of more than 40 yrs of age admitted in Intensive Coronary Care Unit/ Medical wards of Rajindra Hospital Patiala. It was hospital based crossectional study.

Exclusion Criteria
1. All patients diagnosed with deranged renal functions.
2. Unconscious or hemodynamically unstable patients.

Evaluation of patients was carried out as follows
The detailed history including presenting complaints, socio-economic factors, behavior and lifestyle factors, significant past and family history was taken. It was followed by general physical examination of the study of the patients. Then FBS

Lipid Profile and other Biochemical investigations were done. Risk factors evaluated in the study were age, sex, hypertension, diabetes mellitus, hyperlipideamia, Body mass index and smoking.

RESULTS

Among the 100 patients of ACS, there were 52 men and 48 women although ACS prevalence was higher in males than females but male to female ratio was very narrow. This may be indicative of rising prevalence of ACS in women and suggestive of the changing trends that Heart disease is no longer that affects just men.[1]

In our study 61 % of the patients were from urban background and 39 % belonged to rural background. It reflects that even though there is still a higher prevalence of ACS among urban population but urban versus rural gap is narrowing at faster rate even in developing countries.

Female patients of ACS in our study were significantly older (62.65 +11.93) than their male counterparts (56.38 +11.68) in line with international experience. This could be due to increased longevity among females due to greater life expectancy and higher risk of CAD with advancing age.[2]

Table 1: Characteristics of patients of Acute Coronary Syndrome.

Category	Variable	Frequency (n=100)	Percentage (%)
Gender	Male	52	52
	Female	48	48
Back ground	Urban	61	61
	Rural	39	39

Table 2:- Age wise Distribution of study subjects

Age Group (In years)	Frequency (n=100)	Percentage (%)
40-50	24	24.0
50-60	25	25.0
60-70	24	24.0
70-80	19	19.0
80-90	7	7.0
Above 90	1	1.0

Table 3: Dietary and lifestyle Risk factors among study participants.

Category	Variables	Frequency (n=100)
Dietary Habits	Non-Vegetarian	30(30)
	Vegetarian	70(70)
Smoking Status	Smoker	33 (33)
	Non- Smoker	67(67)
Alcohol Use	Alcohol User	22 (22)
	Non Alcoholic	78(78)

In our study among the 44% of hypertensive patients, 60.4% were females and 28.8% were males 3,416% of the patients were diabetic in our study5and these findings are consistent with INTERHEART study (16% versus 18.5%) using the criteria of BMI >25 kg/m2. Our study had 50%

prevalence of obesity and 11% of BMI criteria of Obesity (>30) were used6. We could not find any significant rural-urban difference in prevalence of obesity.[7]

Table 4: Prevalence of Hypertension in patients of ACS.

Hypertension	Frequency (n)	Percentage (%)
Isolated systolic Hypertension	19	19
Isolated diastolic Hypertension	4	4
Both systolic and diastolic Hypertension	7	7
Freshly diagnosed Hypertension	14	14
Total Cases of Hypertension	44	44

Table 5: Prevalence of Diabetes Mellitus among patients of ACS.

Diabetes Mellitus	Frequency (n)	Percentage (%)
Impaired Fasting Glucose (IFG)	21	21
Old cases of diabetes	7	7
Freshly Diagnosed Diabetes Mellitus	9	9
Total Cases of DM	16	16

Table 6: Prevalence of obesity among patients of ACS.

Obesity	Frequency (n)	Percentage (%)
Overweight (BMI 25-29.9 kg/m2)	50	50
Obesity (BMI>30 kg /m2)	11	11
Central Obesity	25	25

Table 7: Prevalence of Dyslipidemia in patients of ACS.

Dyslipidemia	Frequency	Percentage
Hypercholestrolemia	37	37
Hypertriglycerdemia	35	35
Increased LDL	29	29
Decreased HDL	23	23

Table 8: Gender difference in prevalence of HDL cholesterol.

HDL Cholestrol	Normal	Decreased HDL Cholestrol	
Male	45 (86.5)	7(13.5)	
Female	32 (66.7)	16 (33.3)	
X2	**DF**	**'p' value**	**Significant**
5.565	1	0.018	Significant

Table 9: Gender Differences in distribution of smoking habits.

Smoking Habit	Smoker	Non-Smoker
Gender		
Male	30(57.7)	22(42.3)
Female	3(6.3)	45(93.8)
X2	**DF**	**'p' value**	**Significant**
29.874	1	<0.001	Significant

In our study 30% of the patients were current smokers and significantly more males and no difference in urban-rural population 8 prevalence of

elevated LDL was 29%, dyslipidemia was 43% and hypertriglyceridemia was 35%.[10,11] No significant urban-rural difference was found.[9,12,13]

Table 10: Distribution of subjects according to no. of risk factors.

Number of Risk factors	Number of subjects
0	10(10)
1	15(15)
2	21(21)
3	15(15)
4	8(8)
5	12(12)
More than 5	19(19)

DISCUSSION

The findings of our study coincide with a recent Nepali study by Parajuli et al in which 51.7% of ACS patients were males and 48.3% were females matching with the corresponding figure of 52% males and 48% females in our study.[1] Female patients of Acute Coronary Syndrome in our study were significantly older (mean age in years=62.65 + 11.93) than their male counterparts (mean age in years = 56.38 + 11.68) again in line with international experience.[2,3] The prevalence of Hypertension in present study compares well with previous studies from India by Ranjith et al Deb and Dasgupta and Mandal et al in which the proportion of diagnosed hypertensive population was 45%, 46% and 47.2% respectively.[4-6] A greater proportion of patients in this study had Hypertension when compared with the INTERHEART study (44% vs. 39%) In our study significantly more females (60.4%) were found to hypertensive compared to males (28.8%).[7] Similar findings have been noted in majority of the previous studies viz Khot et al.[8] This finding coincides with the results of study by Kalra et al and Yadav et al in which 15.9% and 16% of the study subjects were diabetic respectively. This finding is in agreement with the results of a previous Indian study by Deb and Dasgupta5 where 56% of the study subjects were obese. Significantly higher number of female subjects (43.8%) had central obesity compared to male subjects (7.7%) in our study matching with the results of a previous study by Khot et al.[8] The studies with findings most close to ours are those of Kalra et al and James et al with the corresponding figures for prevalence of smoking to be 38.7% and 24.0%.[9,11] Family histoy of CAD in present study was present in 12% of the study participants in present study. These finding matches closest with that of Yadav et al who found significant family history of CAD in 14%.[10] Hypercholestrolemia was found to be present in 37% of the study population compared to 12.6% in study by Kalra et al.[9] This is in agreement with the findings of study by Ranjit et al who reported that females were more likely to have decreased HDL cholesterol. Similar to this Aggarwal et al found that

compared with male patients, females had greater prevalence of dyslipidaemia and low HDL cholesterol.[12] Obesity was the least common risk factor (11%) in present study. This finding concurs with that of Hafeez et al who also reported the least common risk factor to be obesity present in only 4% patients. In present study 10% of the ACS patients did not manifest any coronary risk factor included in the study.[13] Around 20% of the subjects had more than 5 risk factors. In contrast to Kalra et al who found in their study that approximately on third of the subjects had more than one riks factor present study had around three fourth subjects manifesting more than 1 coronary risk factor.[9] In a similar study Kuklina et al had reported that 26% of the subjects had 2 or more risk factors,[14] 12% with 1 risk factor, and 7% with no risk factor.

CONCLUSION

In our study family history of CAD was present in 13% of the patients, smoking in 33%, 44% were Hypertensive, female patients showed greater preponderance towards HT & DM, Obesity. There was a significant gender difference in prevalence of decreased HDL-33% in females and 13% in males. 50% men were non-vegetarian and only 9% females were non-vegetarian. In present study 10% of the ACS patients did not manifest any Coronary risk factor included in the study.

A high prevalence of risk factors for ACS was verified, indicating a necessity of Health Education Program to reduce morbidity and mortality. Most of the Risk factors are modifiable and therefore its early identification is vital to set the strategy for preventing measures.

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