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STUDY OF EVALUATION OF MODIFIABLE RISK FACTORS IN CORONARY ARTERY DISEASE.

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ABSTRACT

INTRODUCTION: Coronary artery disease is the most common cause of death worldwide. Hence study of risk factors in coronary artery disease helps in the prevention of mortality and morbidity.

AIMS AND OBJECTIVES: Study of modifiable risk factors in coronary artery disease.

METHODS AND MATERIALS:

Inclusion criteria: Patients suffering from coronary artery disease, who were admitted in SVRRGG hospital, Tirupati, were taken in the study.

Exclusion criteria: Patients who were previously diagnosed as having coronary artery disease.

RESULTS: Coronary artery disease was more common in men (68%), above the age of 50 years. The common modifiable risk factors for coronary artery disease were Hypertension (60%), smoking (46%), diabetes mellitus (40%). No risk factors were found in 8% of cases.

CONCLUSION: In our study the common modifiable risk factors for coronary artery disease are Hypertension, Smoking, Diabetes mellitus, and obesity. Among these, Hypertension was the commonest cause followed by smoking and diabetes mellitus.

KEYWORDS : Coronary arteries, Myocardial infarction, Angina, Acute coronary syndromes

INTRODUCTION:

Coronary artery disease (CAD) is one of the most common causes of mortality and morbidity in both developed and developing countries. It is a leading cause of death in India, and its contribution to mortality is rising: the number of deaths due to CAD in 1985 is expected to have doubled by 2015.[1] Coronary artery disease is the most common form of heart disease and the single most important cause of premature death in Europe[2].

Table 1: Risk factors for coronary heart disease[3]

Non-modifiable risk factors	Modifiable risk factors
Increasing age	Smoking
Male gender	High blood pressure
Family history	Dyslipidaemia
Ethnic origin	Diabetes mellitus
	Obesity and the metabolic syndrome
	Psychological stress
	High calorie high fat diet
	Physical inactivity

In the U.K., 1 in 3 men and 1 in 4 women die from coronary heart disease, an estimated 3,30,000 people have myocardial infarction each year and approximately 1.3 million people have angina.

The right and left coronary arteries arise from the ascending aorta in its anterior and left posterior sinuses. Atherosclerosis is characterized by the deposition of lipid and accumulation of macrophages in the intima. The plaques are susceptible to rupture with concomitant thrombus formation, which leads to acute occlusion of one of the coronary arteries and may cause myocardial infarction[4].

Acute coronary syndrome means unstable angina, non-ST elevated MI and ST elevated MI. The major risk factors for atherosclerosis (high plasma LDL, low plasma HDL, cigarette smoking, hypertension and diabetes mellitus) are thought to disturb the normal function of vascular endothelium[5].

Hypertension is one of the major risk factor for cerebrovascular disease (stroke), coronary heart disease (acute myocardial infarction and angina pectoris), Congestive heart failure and chronic renal failure.[6] The conventional risk factors for coronary artery disease are smoking, hypertension, obesity, diabetes mellitus. Other than advanced age, smoking is the single most risk factor for coronary artery disease. Cigarette consumption is the leading preventable cause of death in the USA, which it accounts for more than 4,50,000 deaths annually.[7]

AIMS AND OBJECTIVES:

To study the incidence of modifiable risk factors in coronary artery disease in patients admitted in SVRRGG Hospital, Tirupati.

MATERIALS AND METHODS:

INCLUSION CRITERIA:

Patients admitted in SVRRGG Hospital with the diagnosis of coronary artery disease based on clinical history, ECG findings and Echo findings. This study included 50 patients who are admitted in SVRRGG Hospital, Tirupati.

EXCLUSION CRITERIA:

Patients who were already diagnosed as coronary artery disease patients before admission in this hospital.

All selected individuals were subjected to a detailed questionnaire, medical examinations and anthropometric measurements. Blood samples were collected for blood glucose and serum lipid profile estimation, and resting ECG, Echo are taken. Results were analyzed using appropriate statistical tools.

RESULTS:

Table 2: Incidence of risk factors in Coronary Artery Disease

S.No	Risk factor	No. of patients (out of 50)	Percentage
1	Hypertension	30	60
2	Smoking	23	46
3	Diabetes mellitus	20	40
4	Alcohol	13	26
5	Obesity	5	10
6	No risk factors	4	8

In this study hypertension was the commonest cause present in 60% of patients followed by smoking present in 46% of patients. Diabetes mellitus was present in 40% of patients and excessive alcohol intake was there in 26% of patients. Obesity was the risk factor in 10% of patients. However, there were no risk factors in 8% of patients.

DISCUSSION:

A hospital based cross sectional study was done to know the risk factors in coronary artery disease patients. Among the 50 patients, 34 were male and 16 were female. This indicates coronary artery disease is common in male. Among 50 patients, 35 were aged more

than 50 years. In our study, we have observed risk factors in 92% of patients. In 8% of patients no risk factor is observed. The common modifiable risk factors in our study are hypertension, smoking, diabetes mellitus, excessive alcohol intake and obesity.

In this study the commonest risk factor found was hypertension (60%) Hypertension was identified in 2383 (22.4%) of the 10 642 men and in 264 (13.4%) of the 1966 women (p<0.001). The overall prevalence of hypertension was 21% among study subjects. Of these subjects, only 4.76% were aware of they had the condition and were on medication, with a further 16.22% identified during the study[8]. The present results can be compared with the findings in 739 subjects (451 men and 288 women) of the Jaipur Heart Watch-5 study by Gupta et al. That study found that 46.2% of men and 50.7% of women were overweight or obese. The prevalence of hypertension was 39.5% in men and 24.6% in women, and 33% of men and 32.7% of women had high cholesterol levels[9]. The above two studies shows that hypertension was the commonest risk factor for coronary artery disease, which is supported by our study.

In our study the second commonest modifiable risk factor was smoking (46%). Heart attacks and strokes can strike suddenly and can be fatal if treatment is not sought immediately. Heart attacks and strokes are made more common by smoking. Quitting tobacco use reduces the chance of heart attack and stroke[10].

Diabetes mellitus is the third commonest modifiable risk factor in our study, which is supported by Gupta et al. diabetes, was present in 15.5% of men and in 10.85% of women[9]. The overall prevalence of diabetes was 16% in the study population, with no significant difference between men (16.6%) and women (12.7%). These 16% comprised 5.6% who were diagnosed during the study and 10.4% who had known DM and were already on medication[8].

In our study excessive alcohol intake with smoking and with other diseases like DM & HTN, was the risk factor with 26% incidence.

Obesity was the risk factor in 10% patients. Obesity (BMI ≥30 kg/m^2) was present in 6.6% of men with a mean BMI of 32.78±4 and in 16.7% of women with a mean BMI of 33.41±3.74 (p<0.05)[8].

In this study we could not find any risk factor in 8% of patients.

The incidence of CAD is likely to increase further because of rapid urbanization and its accompanying lifestyle changes, including changes in diet, physical inactivity, drug and alcohol intake, as well as an increase in the prevalence of DM[11,12].

CONCLUSION:
In this study the commonest risk factor for coronary artery disease was hypertension. To prevent mortality from coronary artery disease strict control of blood pressure is necessary. Other common risk factors found were smoking and diabetes mellitus. So lifestyle modifications and strict blood sugar control are necessary to prevent morbidity and mortality from coronary artery disease.

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