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A STUDY OF RISK FACTORS RELATED TO CORONARY VASCULAR DISEASE AMONG PATIENTS ATTENDING A TERTIARY HEALTH CARE INSTITUTE OF RAJASTHAN.

Medicine

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ABSTRACT

Background-Prevention strategies must be strengthened to control cardiovascular diseases which can significantly reduce morbidity and mortality.

Aim and objectives- This study aimed to know current prevalence of risk factors related to cardiovascular disease especially in young.

Material and method - This cross sectional study was conducted for a period of six months (May to October, 2017). All patients (old and new cases) of coronary artery disease (CAD) were evaluated for common risk factors like age, obesity, diabetes mellitus (DM), hypertension (HTN), lack of exercise, smoking, dyslipidemia and positive family history.

Result- Among study population it was found that 94.3% patients had lack of exercise, 76.9% patients had age more than 60 years, 63.2% patients had HTN before emergence of CAD, 61.3% patients were smoker, 40.5% patients had DM before emergence of CAD, 37.7% patients were obese, 17.9% patients had dyslipidemia, 13.2% patients had positive family history. In young patients (age less than 40 years) dyslipidemia was found in much higher prevalence (81.8%) than older CAD patients (10.5%).

Conclusion- Lifestyle modification like proper exercise and cessation of smoking can benefit significantly. Monitoring of lipid profile can predict cardiovascular event especially in young.

KEYWORDS

Cardiovascular diseases, risk factors, prevention.

Introduction

Cardiovascular diseases (CVD) are most common cause of death worldwide. An estimated 17.7 million people died from CVDs in 2015, representing 31% of all global deaths. Over three quarters of CVDs deaths take place in low and middle-income countries. Out of the 17 million premature deaths (under the age of 70 years) due to non communicable diseases in 2015, 82% are in low- and middle-income countries and 37% are caused by CVDs[1]. India is currently facing epidemic of cardiovascular disease. Age, obesity, diabetes mellitus (DM), hypertension (HTN), lack of exercise, smoking, dyslipidemia and positive family history are well known risk factors for cardiovascular diseases. Lifestyle modification can be mainstay of prevention of this dreadful disease. People who are at high cardiovascular risk can be specially benefited. This study was conducted to know the current prevalence of risk factors of coronary artery diseases (CAD) along with understanding emerging risk factors of CAD in younger patients to make better framework to control the disease.

Material and Methods

This cross-sectional study was conducted for a period of six months (May to October, 2017) in general medicine department of a tertiary health care institute of Rajasthan. All patients (old and new cases) of coronary artery disease (CAD) were included in this study on indoor and outdoor basis. After informed consent all the cases were subjected to detail history and clinical examination. A pre-structured proforma was filled with all the necessary information. All the cases were evaluated for common risk factors like age, obesity, DM, HTN, lack of exercise, smoking, dyslipidemia and family history of DM, HTN, coronary vascular disease (CAD), stroke. Age more than 60 years was considered as one of the risk factor for development of CAD. Body mass index (BMI) equal or more than 25 kg/m^2 was taken as criteria for obesity. DM and HTN were taken as risk factor only if present before emergence of CAD. A criterion for appropriate physical activity was taken as minimum 30 minutes walk per day for at least five days in a week. A criterion for significant smoking was taken as more than 5 packs per year. Total cholesterol more than 200 mg/dl, triglycerides more than 150 mg/dl, HDL cholesterol less than 50 mg/dl and LDL cholesterol more than 100 mg/dl were taken as criteria of dyslipidemia. Relevant statistics were applied, data has been represented using tabulation and proportions. (Table No.1)

Table No. 1- Criterion for risk factors considered in study.

S.No.	Risk factor	Assumed criteria
1	Age	More than 60 yrs.
2	Obesity	BMI equal or more than 25 kg/m2.
3	Smoking	More than 5packs per year.
4	Lack of physical activity	Less than 30 minutes walk per day for at least five days in a week.
5	Dyslipidemia	Serum total cholesterol more than 200 mg/dl.
		Serum triglycerides level more than 150 mg/dl.
		Serum HDL cholesterol less than 50 mg/dl.
		Serum LDL cholesterol more than 100 mg/dl.
6	Diabetes mellitus	If present before emergence of CAD.
7	Hypertension	If present before emergence of CAD.
8	Family history	Family history of DM, HTN, coronary vascular disease (CAD), stroke.

Results:

In current study total of 212 CAD patients participated. Study population comprised of subjects ranging from 17 years to 86 years of age with male female ratio approximately 3:2.

On risk factor evaluation of 212 CAD patients it was found that 200 (94.3%) patients had lack of exercise, 163 (76.9%) patients had age more than 60 years, 134 (63.2%) patients had HTN before emergence of CAD, 130 (61.3%) patients were smokers under above mention criteria, 86 (40.5%) patients had DM before emergence of CAD, 80 (37.7%) patients were obese, 38 (17.9%) patients had dyslipidemia, 28 (13.2%) patients had family history of HTN, DM, CVA and CAD. (Figure No.1)

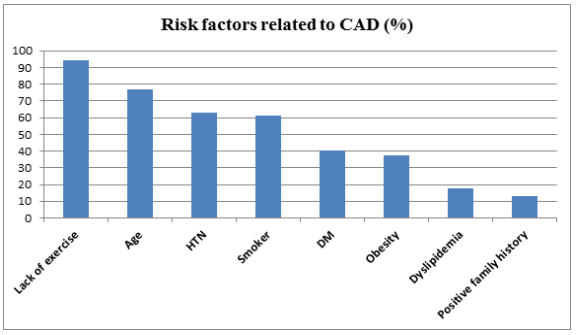

Figure No. 1- Distribution of risk factors in CAD patients.

Twenty two patients of CAD were less than 40 years of age with minimum age of 17 years. Male female ratio was 10:1 among these young patients. All 22 (100%) patients had lack of exercise, 19 (86.3%) patients were smoker, 18 (81.8%) patients had dyslipidemia, 8 (36.4%) patients were obese, 6 (27.2%) patients had HTN, 2 (9.1%) patients had DM, 9 (40.9%) patients had positive family history of HTN, DM, CVA and CAD. (Figure No. 2)

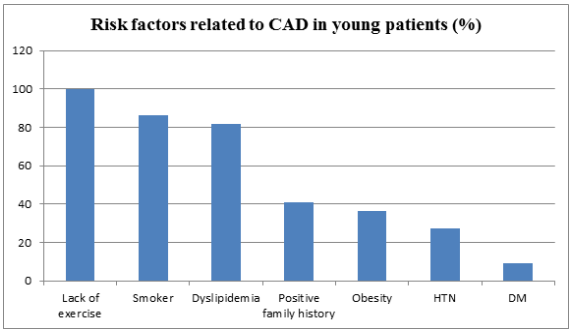

Figure No. 2- Distribution of risk factors in young CAD patients.

Discussion:

In current study 212 CAD patients were evaluated with age ranging from 17 to 84 years. Youngest case of current study was 17 years old male presented with acute anterior wall ST segment elevation MI. CAD in such young age is alarming. It shows the necessity of strengthening of preventive measures.

In current study male female ratio among study population was nearly 3:2 but the ratio in young CAD patients (Age < 40years) was 10:1. Jaswal et al[2] found similar male female ratio of 10:1 among CAD patients with age range from 25-59 years. This high male predominance in young CAD patients may be due to premenopausal protective effect of oestrogen in females.

On risk factor evaluation in current study 94.3% patients had lack of exercise, 76.9% patients had age more than 60 years, 63.2% patients had HTN before emergence of CAD, 61.3% patients were smoker under above mention criteria, 40.5% patients had DM before emergence of CAD, 37.7% patients were obese, 17.9% patients had dyslipidemia, 13.2% patients had family history of HTN, DM, CVA, CAD. According to Sekhri et al 4.6% of the study population had a family history of premature CAD. The overall prevalence of diabetes was 16%. Hypertension was present in 21% of subjects and the prevalence of dyslipidemia was 45.6% of study subjects having a high total cholesterol/high density lipoprotein ratio.[3] Study by Gupta et al was conducted among randomly selected adults age equal or more than 20 years of age. In this study risk factor prevalence showed that smoking/tobacco use was present in 23.9% of study population. Physical inactivity was seen in 25.5%subjects. Hypertension was present in 36.9%subjects. Diabetes was found in 12.1% subjects. Obesity was present in 27.4%, while truncal obesity was found in 63% of study population.[4] Study by Prabhakaran et al among men working in an industry in northern India found high serum total cholesterol/ HDL ratio in 62% of the population, overweight in 47%, hypertension in 30% and diabetes in 15% of study population.[5] According to study by Mohan and Deepa prevalence of risk factors were like diabetes in 11.9%, hypertension in 25.4%, dyslipidemia in 40.2%, overweight in 60.2% and metabolic syndrome in 34.1% of study population.[6]

In current study 22 patients of CAD were less than 40 years of age. All patients had lack of exercise, 86.3% patients were smoker, 81.8% patients had dyslipidemia, 40.9% patients had positive family history of HTN, DM, CVA, CAD, 36.4% patients were obese, 27.2% patients had HTN, 9.1% patients had DM. Young CAD patients (Age < 40 years) were having much higher prevalence of dyslipidemia in comparison of older CAD patients (81.8% vs 10.5%). On further evaluation of blood related family members of young CAD patients with evident dyslipidemia (n=18) it was found that in most of these patients (n=14) had evident dyslipidemia in atleast 2 members of their family. These results show necessity of screening of risk factors in family members of young CAD patients. This study favours the Adult Treatment Panel III (ATP III) guidelines recommendation of screening of lipid profile of all persons of age 20 years and older with re-evaluation in 1 to 5 years depending on the results.[7]

Conclusion

Effort should be made for effective application of preventive measures for CAD on community basis. Smoking must legally ban to prevent not only cardio-cerebro vascular diseases but also respiratory diseases and malignancies. Modification of lifestyle like promotion of exercise, dietary modifications, proper exercise, strict blood sugar and pressure control, screening and strict control of lipid profile can effectively prevent and delay CAD.

Limitations of study

1. Exercise criteria was same for individuals having strenuous or sedentary lifestyle.
2. Dyslipidemia and obesity were considered as risk factor on the basis of current values during study. It was not clear whether it is present before emergence of CAD or not.
3. Family history is not concrete in many cases.
4. Habit of smoking is less in female than male. In current study this risk factor (smoking) was not separately evaluated according to sex.

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