Original article

Non-modifiable Risk Factors and Coronary Angiographic finding -Study in a tertiary rural Centre of Bangladesh.

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Abstract- This retrospective study was carried out in the Cardiology Department, "Khwaja Yunus Ali Medical College & hospital" a tertiary rural cardiac centre with all modern facilities, at sirajgong, around 150 km away from the capital city of Dhaka, from January 2007-july 2009.95 consecutive Patients with different age and sex who were admitted for Coronary angiogram were enrolled for study. Among the patients 89.4% were male and 10.6% were female. Coronary artery disease present in 74.73% patients, 78.8% in male, 40% in female. In respect of Age 33.3% in second decade, 37.5% in third decade, 67.74% in fourth decade, 83.33% in fifth decade & 81% in six decade. In conclusion, significant Coronary artery disease is most commonly seen in male and aged patients.

Introduction

Coronary heart disease (CHD) represents the leading cause of death in adults in the western world. Coronary artery disease is a major health problem throughout the world and most common cause of premature morbidity and mortality in Bangladesh. Approximately 8, 00,000 people in the United States experience AMI annually, of those about 213,000 die. One half dies within first hour of onset of symptom before reaching the Hospital.

The major cause of myocardial infarction is atherosclotic disease of the epicardial coronary artery. It is a pathological entity characterized by presence of intimal lesions called fibro fatty steak or atheroms which protrude into and obstruct the vascular lumen. When it occurs, it involves almost every vascular bed and can produce myriads of

manifestations of which Coronary artery disease in the most clinically significant. It starts at an early age as fatty streaks and then evolve into more complex atheromatous and fibro atheromatous lesion.

Atherosclerosis leading to Coronary Heart Disease (CHD) is complex in origin. Involved in the pathogenesis of atherosclerosis are homodynamic, thrombotic, carbohydrate-lipid metabolic variables along with intrinsic characterization of arterial wall. These physiologic and biochemical factors underlie the clinical events that may eventually occur. Environmental factors such as smoking and sedentary life style also sclerotic to this process. The progression of atherosclerotic disease and increase severity of atherosclerosis relate not only to the presence and extent of cardiovascular risk factor but also to the persistence of risk factor over time.

There is a marked difference in Coronary heart disease (CHD) risk between sexes. Among middle-aged people, CHD is 2 to 5 times common in men than women .In both sexes, the risk of CHD increase with age.

The Aim of the study was to asses 1) Age is a potent non-modifiable risk factor for CAD, 2) women are less suffering from CAD due to favorable risk factor(less smoker, High HDL).

Data collection:- From admitted patient in Cardiology word in collaboration with Data server , "Khwaja Yunus ali medical college and hospital" which is developed and managed by ATI limited.

Materials and Methods

This retrospective study was carried out in the Coronary Care Unit, Department of cardiology in "Khwaja Yunus Ali Medical College and hospital" a tertiary rural cardiac centre with all modern facilities, around 150 km away from the capital city of Dhaka, from January 2007-july 2009.

Total 95 consecutive Patients with different age and sex who were admitted for Coronary angiogram were enrolled for the study.

Inclusion criteria of this study were patient with stable angina-ETT positive, STEMI, NSTEMI. Exclusion criteria of this study were chest pain-ETT negative, cardiomyopathy ,valvular/congenital heart disease, any co-morbidity.(CKD-stageIII & above, liver failure, malignancy).Aims and objective of this study to see the pattern of coronary artery disease in respect of age and sex.

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Result:

95 patients who fulfill the criteria were included in this study.

Table-1 Showed sex difference for referral CAG among rural community.

Sex	Number	Percentage
Male	85	89.4%
Female	10	10.6%

Table-2 the mode of presentation

Disease	number	percentage
Stable angina &	44	35.78%
ETT positive		
STEMI	36	31.57%
NSTEMI	15	6.31%

Table-3 Angiograficaly coronary artery disease present.

Present	71	74.73%
Absent	24	25.24%

Table-4 Angiografic significant coronary artery disease in different sex

Male	67	78.8%
Female	4	40.0%

Table-5 Angiografic significant Cononary artery disease in different age distribution.

Age			
20-29	3	1	33,3%
30-39	5	3	37.5%
40-49	31	23	67.74%
50-59	36	30	83.33%
>60	16	13	81%

Table-6 Pattern of Coronary artery disease

normal	12	25.26%
minimal	17	17.89%
SVD	15	13.68%
DVD	7	5.26%
TVD	37	37.87%

Table-7 Pattern of Coronary artery disease in different age.

	Minimal CAD	SVD	DVD	TVD & LMS disease
20-29	0	1	0	0
30-39	0	3	0	0
40-49	2	6	3	12
50-59	7	5	3	15
>60	2	0	0	11

Discussion:-Coronary heart disease (CHD) represents the leading cause of death in adult in the western world. Coronary artery disease is a major health problem and most common cause of premature morbidity and mortality in Bangladesh. Myocardial infarction (MI) mainly occurs in patient older than 40.Young man and women can suffer MI, fortunately, its incidence is not common in patients younger than 40 years.

Better prognosis among young adult is achieved when appropriate investigation and treatment are offered. Myocardial infarction(AMI) at a young age(<40 years is characterized by low mortality rate, less extensive coronary disease, good residual left ventricular function and prognosis.

The role of major cardiovascular risk factors in the development of CHD was fairly similar in both sexes. Among young subjects, the overall risk factor level was more favorable in women. With age, however, this advantage of women diminished markedly.

CHD incidence among men was 3 fold and mortality 5 fold than women. The sex difference is the measured cardiovascular risk factors explained nearly half of the observed sex difference in CHD incidence and mortality. The difference in the HDL/total cholesterol ratio was the major determinant of the sex differed in the CHD risk. In addition, difference in smoking rate contributes to the excess CHD risk in men.

In both sex, the risk of CHD increased markly with age. Like serum cholestol, blood pressure trends to increase with age.

This study showed that both young men and women had higher prevalence of angiographic normal coronary artery and non-critical CAD. in total 63.63% young person(<40 years) and 60% female had zero vessels disease compare with 20.34% in older persons(above 40 years).Young patient were more like to have single vessels disease(100%) where older patient more often have multivesses disease(TVD-44.04%).

Limitation:- The present study was limited by a number of factors. First retrospective analyses can be inherently biased. Second, our sample size was small necessitating caution in the interpretation of our finding. Third other modifiable risk factors were not included in this study.

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