

Top Three Risk Factors of Coronary Artery Disease in Chittagong, Bangladesh

Abu Tarek Iqbal^{1*}

M Jalal Uddin²

Shaikh Md Hasan Mamun¹

Rajat Sankar Roy Biswas¹

¹Department of Medicine
Chattagram Maa-O-Shishu Hospital Medical College
Chittagong, Bangladesh.

²Department of Community Medicine
Chattagram Maa-O-Shishu Hospital Medical College
Chittagong, Bangladesh.

*Correspondence to:

Dr. Abu Tarek Iqbal

Associate Professor of Medicine and Cardiology
Chattagram Maa-O-Shishu Hospital Medical College
Chittagong, Bangladesh.
Mobile : +88 01711107987
Email: dr.tarekiqbal@yahoo.com

www.banglajol.info/index.php/CMOSHMCJ

Abstract

Background: Many studies were conducted on the subject in home and abroad but there is none in Chittagong, Bangladesh. To know about top three risk factors for coronary artery disease we conducted the study. **Methods:** It was a retrospective study. Records of a private cardiac center from July 2013 to June 2014 was collected. Only coronary stenosed cases (As per angiogram) was studied. Age, sex, BMI, diabetes mellitus, hypertension, smoking and other risk factors were considered. Collected data was managed manually. Finally discussion was made and conclusion was done. **Results:** Majority cases 58(76%) were of 40-60 years age group. Male preponderance was there 64(83%). BMI of 45(60%) cases was normal (<25). Family history was positive among 11(14%) cases. Dyslipidemia was found in 08(10%) cases, 56(73%) cases were hypertensive, 43(56%) cases were type-2 diabetic and 35(45%) were smoker. **Conclusion:** Hypertension, Diabetes and Smoking are top 03 risk factors for coronary artery disease. All are modifiable. So, primordial prevention should be taken to reduce prevalence of coronary artery disease.

Key words: Risk factors; Coronary artery disease; Dyslipidemia.

INTRODUCTION

Coronary artery disease (Synonym: Coronary heart disease, Ischaemic heart disease) has been defined as "Impairment of heart function due to inadequate blood flow to the heart compared to its need caused by obstructive changes in coronary circulation¹. It claims 30% deaths in developed countries and WHO describes it as modern epidemic throughout the world. The disease may manifest in following ways:

- Angina pectoris
- Myocardial infarction
- Arrhythmia
- Cardiac failure
- Sudden death

Natural history of disease varies widely. Some may die in first attack and some after long history of disease².

The disease is caused by multiple risk factors. The more the risk factors the more chance of occurrence of disease. The principal risk factors are:

A. Modifiable Risk Factors

- Smoking
- Hypertension
- Dyslipidemia
- Diabetes mellitus
- Obesity
- Sedentary habits
- Stress

B. Non-modifiable Risk Factors

- Age
- Sex
- Positive family history

Main objective of the study is to make a ranking of risk factors of coronary artery disease in Chittagong so that we can identify top notorious factors. As a result we could reduce coronary artery disease significantly.

MATERIALS AND METHODS

It was a retrospective study. All positive coronary angiographic reports were collected from a private cardiac center of Chittagong. Study period was 01 year (July 2013-June 2014). Sample size was conveniently fixed. It was 77. All reports were meticulously studied. Data was manually managed and presented with tables. Results were contrasted with other studies of home and abroad.

RESULTS

Total 77 cases were studied. Angiographic reports of all cases manifested various stenosis. Among the cases 05(06%) cases were below 40 years. 58(76%) cases were of 40-60 years age group and remaining 14(18%) were above 60 years age group. Male were 64(83%) and 13(17%) were female. BMI of 45(58%) cases was normal (<25), 24(31%) were over weight and 08(11%) were obese. Modifiable risk factors were: Hypertension 56(73%), Diabetes 43(56%), Smoking 35(45%) and Dyslipidemia 08(10%). Positive family history was 11(14%) only.

Table 1 : Age structure of coronary artery disease cases.

Age structure	No. of cases (%)
< 40 years	05(06%)
40-60 years	58(76%)
>60 years	14(18%)
Total	77(100%)

Source: CMPH 2014

Table 2 : Sex structure of coronary artery disease cases.

Sex of patients	No. of cases (%)
Male	64(83%)
Female	13(17%)
Total	77(100%)

Source: CMPH 2014

Table 3 : BMI of coronary artery disease cases.

BMI of cases	No. of cases (%)
<25 (Normal)	45(59%)
25-30 (Overweight)	24(31%)
>30 (Obese)	08(10%)
Total	77(100%)

Source: CMPH 2014

Table 4 : Risk factors of coronary artery disease cases.

Risk factors	No. of cases (%)
Hypertension	56(73%)
Diabetes Mellitus	43(56%)
Smoking	35(45%)
Positive family history	11(14%)
Dyslipidemia	08(10%)

Source: CMPH 2014

DISCUSSION

According to present study most risky age group for coronary artery disease is 40-60 years covering 58(76%) cases. In America 37% male and 29% female die due to myocardial infarction below 55 years age group. This is consistent with 76% stenosis (CAD) of present study because myocardial infarction is definitive for coronary artery stenosis³.

Present study shows male 83% and female 17% suffered from coronary artery disease. It is about 5:1. Previous report shows 4:1 but over 70 years the ratio was almost equal³.

BMI is unrelated to coronary artery disease⁴. According to present study only 08(10%) cases were obese (BMI>30).

According to NICVD (1997) 14% of MI cases had positive family history³. Present study also shows 14%. Information about sedentary life style is skipped here because it was not recorded in primary data sheet. Dyslipidemia was found only 08(10%) cases of coronary artery disease cases.

Present study shows top 03 risk factors are Hypertension 56(73%), Type -2 Diabetes 43(56%) and Smoking 35(45%). Hypertension is the single most notorious risk factors for coronary artery disease because it accelerates atherosclerotic changes in blood vessels². It ranks first position in our study. Next notorious factor is Diabetes which contributes 30-50% deaths among coronary artery disease cases. It ranks 2nd position in our study⁵. According to NICVD Smoking was found among 43% cases and our study shows 45%. No significant difference has been detected among the figures of different studies (p<0.05).

CONCLUSION

Hypertension, Type-2 diabetes and Smoking are 3 most notorious risk factors. Combination of these factors increases IHD occurrence many folds. All are modifiable risk factors. So, appropriate measures (Primordial prevention) should be taken to reduce coronary artery diseases significantly.

DISCLOSURE

All the authors declared no competing interest.

REFERENCES

1. WHO. Technical report series. No. 678. 1982.
2. Park. Text book of Preventive & Social medicine. Jabalpur(India): Banarashi Das Bhanot: 2005.
3. Probir. Healthy Heart. Chittagong: Chittaranjon Das: 1999.
4. BMI & CAD. Available at <http://sevencountriesstudy.com/body-fatness-and-coronary-heart-disease>.
5. WHO. Technical report series. No. 727. 1985.