

Coronary Angiographic Findings of Symptomatic Patients with Essential Hypertension

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Abstract

Essential hypertension is a common risk factor for ischemic heart disease. So the Objective of the present study was to find the different angiographic pattern among the symptomatic patients having essential hypertension. A total of 100 symptomatic patients with essential hypertension were evaluated in a one year period by coronary angiography (CAG) in a tertiary care hospital of Chittagong, Bangladesh. Standard protocol and procedure were followed during doing CAG. All data were compiled and were analyzed by SPSS-20. Among 95 patients evaluated male were more 76 (80%) and male to female ratio was 4:1. Most of the patients were involved in service 55(57%). Among all 77(81%) patients were at age group <60 years. Regarding risk factor analysis 39 (41%) patients had DM, 18 (19%) patients had different kinds of dyslipidemia, 66 (69%) patients had hypertension and 25(26.5%) were smoker. Angiographic study revealed 9(9.2%) had involvement of LMCA, 56(58%) had LAD, 29(30%) had LCX, 31(32%) RCA and 18(19%) patients had triple vessel disease. ETT is be a valuable screening tool before doing invasive CAG in our setting.

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Introduction

Diagnosis and management of coronary artery disease represents major challenges to our health care system, affecting millions of patients each year. Until recently, the diagnosis of coronary artery disease was possible only through cardiac catheterization and invasive coronary angiography^{1,2}.

Coronary artery disease (CAD) is a leading cause of morbidity and mortality in hypertensive patients³. CAD are increasing in day by days in the developing country like Bangladesh⁴. But there are scarcity of studies in this context in our setting. So present study is aimed to see how coronary angiographic results among the symptomatic patients with essential hypertension.

Material and Methods

This was a prospective study done on 100 patients of symptomatic cases of ischemic heart diseases during a study period of one years from January 2016 to December 2016 in a tertiary care center with CCU facility in Chittagong, Bangladesh. Potential patients were initially evaluated who were presented with cardiac complaints. After initial evaluation consent was taken for further testing and CAG. History of hypertension was taken from drug history and on the spot measurement. Standard protocol of exercise test was followed during the test and patients were taken as study subjects thereafter. In these way a total of 100 patients were recruited. All patients were prepared for coronary angiogram and the test was done in a single center with the direct supervision of the researcher himself. All data were collected and analyzed by SPSS 20.

Results

Among 95 patients analyzed male were 76(80%) and female was 19(20%). Male to female ratio was 4:1. Most of the patients were involved in service 55(57%). 77(81%) patients were at age group <60 years and 55(57%) patients were from rural community. Among all 12(13%) patients were obese. Regarding risk factor analysis 39(41%) patients had DM, 18(19%) patients had different kinds of dyslipidemia, 25(26.5%) were smoker, 3(3%) patients had high total cholesterol, 66(69%) patients had hypertension, 2(2%) were taking jarda, 11(11%) patients had family history of coronary artery disease and one patients had history of alcoholism. Angiographic study revealed 9(9.2%) had involvement of LMCA, 56(58%) had LAD, 29(30%) had LCX, 31(32%) RCA and 18(19%) patients had triple vessel disease.

Table-I: Sociodemographic profile

Variables	Descriptions	Frequency	Percentages
Gender	Male	56	56%
	Female	44	44%
Occupation	Service	58	58%
	House wives	32	32%
	Retired	8	8%
	Others	2	2%
Age group	<60 years	57	57%
	>60 years	43	43%
Locality	Rural	58	58%
	Urban	42	42%
BMI	<30 kg/m ²	87	87%
	>30 kg/m ²	13	13%
		100	

Table-II: Risk factors

Variables	Frequency	Percentages
ETT positive cases	89	89%
DM	32	32%
Dyslipidemia	16	16%
Obesity	13	13%
High TC(>400mg/dl)	5	5%
HTN	100	100%
Smoking	23	23%
Jorda intake	3	3%
Family history	14	14%
Alcohol	2	2%
		100
		100%

Table-III: Angiographic findings

Variables	Frequency	Percentages
LMCA	15	15%
LAD	46	46%
LCX	22	22%
RCA	21	21%
Triple vessel	14	14%
No lesion	2	2%
		100
		100%

Multiple response table

LMCA- Left main coronary artery, LAD-Left anterior descending, LCX- left circumflex, RCA- Right coronary artery.

Discussion

In this study patients without known coronary artery disease who underwent invasive angiography after finding positive exercise testing in a tertiary care hospital of Chittagong, Bangladesh during the period from January 2016 through December 2016. A majority of patients undergoing this invasive test had obstructive coronary artery disease (i.e., >50% stenosis of the left main coronary artery or ≥70% stenosis of a major epicardial vessel). Angiographic study revealed 15(15%) had involvement of LMCA, 46(46%) had LAD, 22(22%) had LCX, 21(21%) RCA and 14(14%) patients had triple

vessel disease. Surprisingly 2(2%) patients were found to having no significant block during the procedures. A study done by Zeina et al³ found in their study that CAD was present in 103 (82%) hypertensive and 164 (72%) normotensive patients (P < 0.0001). Obstructive CAD was twice as common in hypertensive patients, and they had more plaques per coronary segment than did normotensive patients. Patients with hypertension duration of at least 10 years had more segments with CAD.

Among 100 patients analyzed male were 56(56%) and female was 44(44%). Male to female ratio was 1.27:1. Most of the patients were involved in service 58(58%). 57(57%) patients were at age group <60 years and 58(58%) patients were from rural community. Among all 13(13%) patients were obese. These sociodemographic profile are consistent with a Bangladeshi study done by Islam and Majumder⁴. A higher prevalence of ischemic heart disease in male than female has been reported in a study from England⁵. Thus the present results are in agreement that male population is more prone to IHD which may be linked to genetic/ hormonal difference.

Regarding risk factor analysis other than hypertension revealed 32(32%) patients had DM, 16(16%) patients had different kinds of dyslipidemia, 5(5%) patients had high total cholesterol, 3(3%) were taking jarda, 14(14%) patients had family history of coronary artery disease and 2(2%) patients had history of alcoholism.

The results of present study with reference to risk factors were similar to those published earlier that diabetes and hypertension are two common risk factors of IHD. Dyslipidemia were also found more. H/O smoking, life style and family history of IHD were found as common risk factors. All of the above findings are consistent with the earlier study⁶. So, it can be concluded that, hypertension is an important risk factor for CAD and its CAG findings may be variable.

References

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