Original Research Paper

Cardiology

CORONARY ANGIOGRAPHIC CORRELATION OF LONG TERM DIABETIC WITH TMT POSITIVITY

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ABSTRACT **AIM:** In type 2 diabetic patients coronary artery disease is usually detected at an advanced stage due to a lack of symptoms .The aim of this study was CORONARY ANGIOGRAPHIC CORRELATION in LONG TERM DIABETIC patients WITH TMT POSITIVITY

METHOD: Fifty asymptomatic type2 diabetic patients of more than 5 years duration , were randomly selected without any other risk factor. The basic investigations like ECG ,ECHO,TMT were conducted in all patients and coronary angiography was done in all TMT positive patients. The clinical parameters,diabetic status ,and coronary angiography findings were analysed .

RESULTS: The prevalence of CAD in our study was 20%. The duration on diabetes correlated well with prevalence of CAD . In our study , patients with diabetetic patients of more than 10 years had 67% prevalence of CAD .

CONCLUSIONS: We recommend a routine screening for CAD in type 2 diabetic patients of longer duration (10 years of diabetes) even if they are asymptomatic for CAD .

KEYWORDS : Diabetes mellitus , coronary artery disease ,early diagnosis .

INTRODUCTION

The Framingham Heart study revealed increased incidence, from one to five fold of CAD, MI, CHF, PAD and sudden death in type 2 diabetes mellitus patients. (1). Coronary artery disease accounts for 70 to 80% of mortality in diabetic patients and type2 DM is an important risk factor(2). Prevalence of CAD in asymptomatic adults is 11%.(3). CAD risk for those with type 2 DM is as great as that associated with a previous history of myocardial infarction (2 4 , 5). American Diabetes Association (ADA) recommends that treadmill exercise test (TMT) and/or coronary angiography should be done in diabetic patients having additional cardiovascular risk factors.(6). More sensitive diagnostic methods such as Single Photon Emission Computerized Tomography (SPECT) and multi-detector coronary MDCT may be done. But those diagnostic approaches cannot be done for asymptomatic patients on an out patients basis. 7 No unanimous accepted test suggested for early diagnosis of asymptomatic CAD.

METHODS

The study was conducted in Government Rajaji hospital Madurai , prospectively from 2006 to 2009. The total number of patients is fifty.

Twenty five male and twenty five female were included .50 patients were selected randomly from Diabetic OPD . All the 50 patients were asymptomatic .There was no other risk factor for CAD in them. Type 2 DM was defined as 1) Postprandial blood sugar level >200 mg/dl and diabetic symptoms based on ADA diagnostic criteria 2) Fasting blood sugar level >126 mg/dl. 3) Diagnosed and receiving treatment for DM. Duration of type 2 DM is taken as time period between diagnosis of DM to present CAD evaluation in years. Diabetic retinopathy, neuropathy and nephropathy .they were subjected to basic investigation .ECG,ECHO,and TMT Treadmill exercise test (TMT) was performed according to Bruce protocol. TMT was defined as positive if there was >1 mm horizontal/down sloping ST-segment 0.08 sec. after the J point. Coronary angiography was performed in all TMT +ve patients and , Coronary artery disease was considered if there was more than 70% stenosis. In case of >80% stenosis then appropriate Percutaneous Coronary Intervention (PCI) and CABG were done. The results were statisticaly analysed .The study was approved by our hospital ethical committee .

STATISTICAL ANALYSIS

The data obtained were input into the SPSS statistical software, version 20.0. A descriptive statistical analysis was performed. P value

was set significant at <0.05.

Age group	No.of cases	percentage
< 50	27	54
> 50	23	46
Total	50	100

Gender	No.of cases	percentage
Male	23	46
Female	27	54
Total	50	100

Duration of DM	No.of cases	percentage
< 5 years	0	0
5 - 10	46	92
> 10	4	8
Total	50	100

TMT	No.of cases	percentage
Positive	19	38
Negative	25	50
Inconclusive	6	12
Total	50	100

CAG	No.of cases	percentage
Done	15	30
Not done	35	70
Total	50	100

Findings CAG	No.of cases	percentage
SVD	4	8
DVD	3	6
TVD	3	6
Minimal	2	4
Normal	3	6
Total	15	30

Intervention	No.of cases	percentage
CABG	2	4
EECP	1	2
OMT	4	8
PCI	5	10
Not willing	1	2
Total	13	26

DM	No.of cases	percentage
< 200	9	18
200 - 300	33	66
> 300	8	16
Total	50	100

Age group	CAG	
	Done	Not done
< 50 (27)	7	20
> 50 (23)	8	15
Total	15	35
p value	0.710 Not significant	

Gender	CAG	
	Done	Not done
Male	8	15
Female	7	20
Total	15	35
p value	0.710 Not significant	

DM	CAG	
	Done	Not done
< 5 years	0	0
5 - 10	13	33
> 10	2	2
Total	15	35
p value	0.733 Not significant	

ECG / ECHO	CAG	
	Done	Not done
Normal (50)	15	35
Abnormal (0)	0	0
Total	15	35

Age group	TMT	
	Positive	Negative
< 50 (27)	11	13
> 50 (23)	8	12
Total	19	25
p value	0.907 Not significant	

Gender	TMT	
	Positive	Negative
Male	8	14
Female	11	11
Total	19	25
p value	0.202 Not significant	

DM	TMT	
	Positive	Negative
< 5 years (0)	0	0
5 - 10 (46)	17	24
> 10 (4)	2	1
Total	19	25
p value	0.517 Not significant	

ECG / ECHO	TMT	
	Positive	Negative
Normal (50)	19	25
Abnormal (0)	0	0
Total	19	25

DISCUSSION

The presence of asymptomatic CAD in DM patients is diverse and reportedly ranges from 9 to 75 % .(7-11).The prevalence of CAD in asymptomatic aduls is 11% in many studies. In our study it is 20%. Coronary angiogram was done in 15 patients. CAG finding revealed SVD in 3 patients ,DVD in 4 patients ,TVD in 3 patients ,normal coronaries in 3 patients ,and minimal disease in 2 patients .In diabetic patients of more than 10 years duration , 67 % had CAD. Among them 1 had TVD 2 had DVD .

CONCLUSIONS

Diabetes mellitus is a independent risk factor for CAD . In our study, patients with diabetes of more than 10 years duration , had 67% prevalence of CAD . So we conclude that in diabetic patients of more than 10 years duration , screening for CAD may be recommended. .

DECLARATION

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