Prevalence of Diabetes Mellitusin Patients with Hyperlipidaemia in Rural Areas of Palakkad District A Prospective Study

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ABSTRACT
Back ground
The prevalence of Diabetes Mellitus is growing in epidemic proportions all over the world, particularly in India. It is now known that India has the highest number of diabetic subjects, in the world even higher than China and USA. India has the highest prevalence rates of diabetes i.e about 20% of the total diabetic population in the world. Hyperlipidemia is an important risk factor for coronary artery disease (CAD).Therefore, lowering the elevated cholesterol is crucial for primary and secondary prevention. A cluster of other metabolic risk factors are often found in association with this hyperlipidaemia including obesity, glucose intolerance, insulin resistance and hypertension. These metabolic derangements are considered as the risk factors for Atherosclerosis.
Purpose of the study
The aim of the study was to determine prevalence and risk factors of diabetes mellitus (DM) in hyperlipidemic patients in rural areas of Palakkad district in Kerala.
Methodology
This study was a prospective study conducted in two hospitals at Palakkad district in Kerala. During the study period(From APRIL 2013 to October 2013) 152 cases were collected.The inclusion criteria was that Subjects with hyperlipidaemia receiving hypolipidemic drugs were included in the study andalsoage greater than 20 years of both sex.
Result
Study shows that out of 152 subjects 53 (34.86%) were males and 99 (65.13%) were females. Study categorized,the study subjects into 5 groups.0-20Yrs,21-40Yrs,41-60Yrs,61-80Yrs,and 81-100 Yrs, in which greater number of cases (91) 59.86% were reported under the age group 41-60 Yrs,10 cases(6.57%) were reported under the age group 21-40 ,49 cases were reported under the age group 61-80 Yrs,(32.23%) and 2 cases (1.3%) were reported under the age group 81-100Yrs.There was no cases in the age group 0-20 years. our study showed hyperlipidaemia more prevalent in the age group 41-60 years.
Conclusion
Aggressive drug management, education, counselling, proper checking of blood sugar and cholesterol is necessary for the prevention of hyperlidemia and diabetes by this way we can control the rate of incidence of Coronary Artery disease.
Key words: Hyperlipidaemia,Coronary Artery Disease, LDL,Diabetes

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INTRODUCTION

According to the American Heart Association, 98.6 million Americans aged 20 and older have total blood cholesterol levels above the optimal level of less than 200 milligrams per decilitre (mg/dl). [1]Hyperlipidaemia is one of the leading contributors to coronary heart disease, the number one cause of death of Americans.[2] Globally hypercholesterolemia is estimated to cause 56% of ischemia heart diseases and about 4.4 million deaths per year[2].
An elevated concentration of serum LDL cholesterol is a major risk factor for CHD. In fact, some elevation of LDL cholesterol appears to be necessary for the initiation and progression of atherosclerosis. In populations having very low, LDL cholesterol levels clinical CHD is relatively rare, even when other risk factors hypertension, cigarette smoking, and diabetes are common. In contrast, severe elevations in LDL cholesterol can produce full-blown atherosclerosis and premature CHD in the complete absence of other risk factors. The view has been expressed that most patients with diabetes do not have anelevated serum LDL cholesterol; if not, a high LDL serum cholesterol would not be a common risk factor in patients with diabetes. It is true that most patients who have diabetes do not have marked elevations of LDL cholesterol, but these patients nonetheless carry high enough levels to support the development of atherosclerosis.[3]

A large body of epidemiological and pathological data documents that diabetes is an independent risk factor for CVD in both men and women. Women with diabetes seem to lose most of their inherent protection against developing CVD.CVDs are listed as the cause of death in ≈65% of persons with diabetes.Diabetes acts as an independent risk factor for several forms of CVD. To make matters worse, when patients with diabetes develop clinical CVD, they sustain a worse prognosis for survival than do CVD patients without diabetes. These considerations have convinced the Scientific Advisory and Coordinating Committee of the American Heart Association (AHA) that diabetes mellitus deserves to be designated a major risk factor for CVD. This formal designation commits the AHA to a greater emphasis on diabetes as a risk factor in its scientific and educational programs. This statement provides the scientific rationale for the decision to classify diabetes as a major risk factor for CVD [3]

MATERIALS AND METHODS

This study was a prospective study conducted in two hospitals at Palakkad district.152 cases are collected from these hospitals at a period of 6 months.The study was designed as a prospective population based questionnaire survey.Duration of study was from APRIL 2013 to OCTOBER 2013.The patients are selected as per inclusion criteria that receiving hypolipidemic drugs and age group above 20 years.

RESULT AND DISCUSSION

During six months study period 192 cases were collected and recorded, in which 40 subjects were excluded and 152 subjects were included as they satisfied our inclusion criteria. Table 1 shows that out of 152 subjects 53 (34.86%) were males and 99 (65.13%) were females.Our study categorized the study subjects into 5 groups.0-20Yrs,21-40Yrs,41-60Yrs,61-80Yrs,and 81-100 Yrs,in which greater number of cases (91) 59.86% were reported under the age group 41-60 Yrs,10 cases(6.57%) were reported under the age group 21-40 ,49 cases were reported under the age group 61-80 Yrs.,(32.23%) and 2 cases (1.3%) were reported under the age group 81-100Yrs.There was no cases in the age group 0-20 years. our study showed hyperlipidaemia more prevalent in the age group 41-60 years. Figure 2 shows that the prevalence of comorbidities of hyperlipidaemia.Out of the 152 patients 40.13% suffered from diabetes mellitus,34.21% suffered from diabetes with hypertension,9.86% were suffered from diabetes with hypertension and CAD,5.92% suffered from diabetes with

hypothyroidism,1.97% suffered from hypertension,7.9% suffered from miscellaneous condition .This results shows that diabetes mellitus was the most prevalent comorbid condition in the hyperlipidemic patient. Figure 3 shows the risk factors associated with hyperlpidemic patients out of the 152 patients only males (34.86%) having the smoking and alcoholic habits. Out of 53 male patients 5.66% having smoking habits,16.98% alcoholics,16.98% having smoking and alcoholic habits and 60.37% patients having no habits of smoking and alcoholic.

One reason for the poor prognosis in patients with bothdiabetes and ischemic heart disease seems to be an enhanced myocardial dysfunction leading to accelerated heart failure (diabetic cardiomyopathy). Thus, patients with diabetes are unusually prone to congestive heart failure. Several factors probably underline diabetic cardiomyopathy: severe coronary atherosclerosis, prolonged hypertension, chronic hyperglycaemia, micro vascular disease, glycosylation of myocardial proteins, and autonomic neuropathy. Improved glycaemiccontrol, better control of hypertension, and prevention of atherosclerosis with cholesterol-lowering therapy may prevent or mitigate diabetic cardiomyopathy.

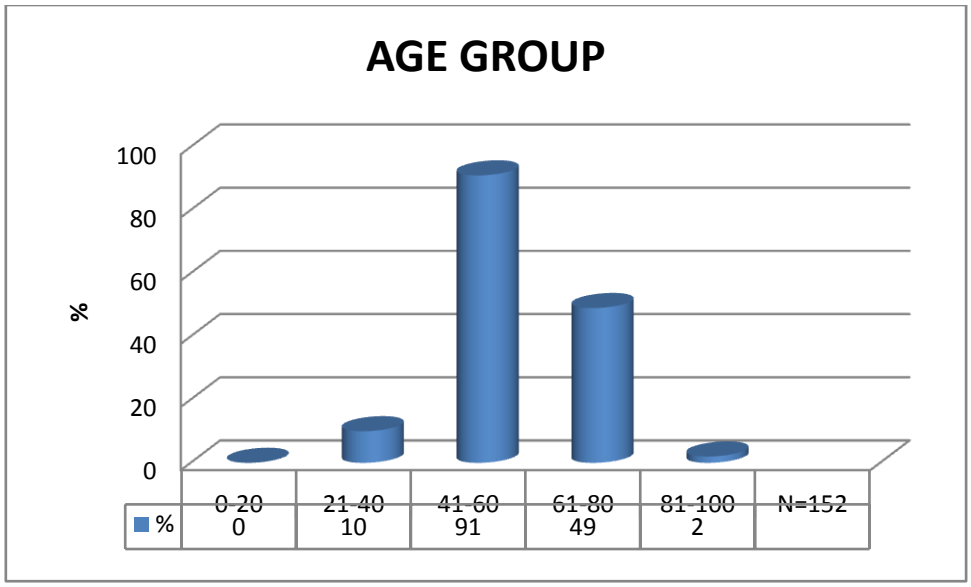
The metabolic syndrome increases the risk of coronary heart disease; it also increases the risk of diabetes. Coronary heart disease risk is increased with hypertension, dyslipidemia, and abnormal glucose levels. But when starts combining these factors, for instance dyslipidemia and glucose problems, and then add hypertension, are up to over 6 times the usual rate of coronary heart disease.

GENDER WISE DISTRIBUTION

TABLE 1

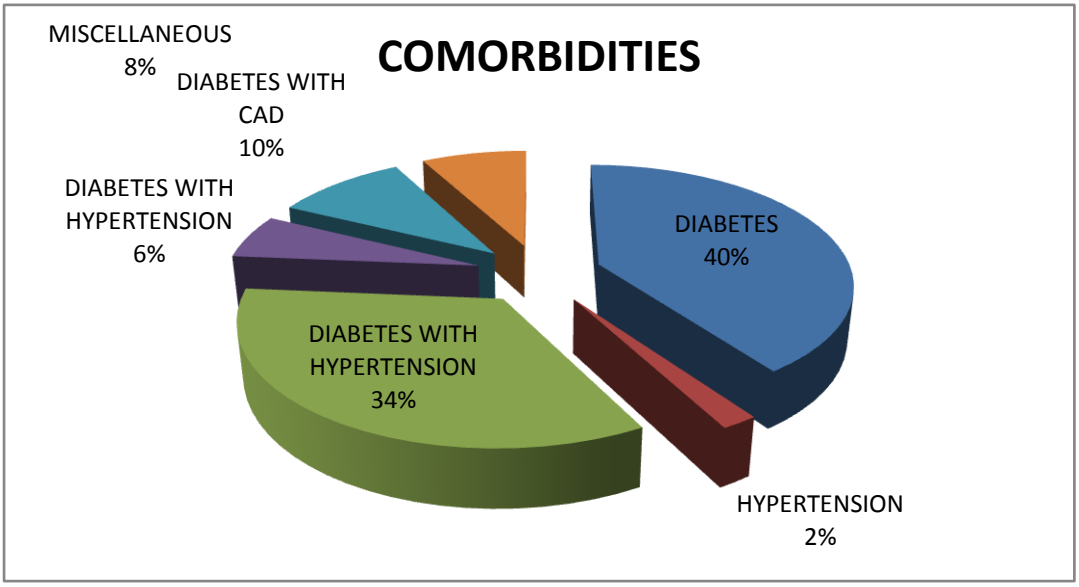
SL NO	GENDER DISTRIBUTION	NO OF PATIENTS (N=152)	%
1	MALE	53	34.86
2	FEMALE	99	65.13

FIGURE 1



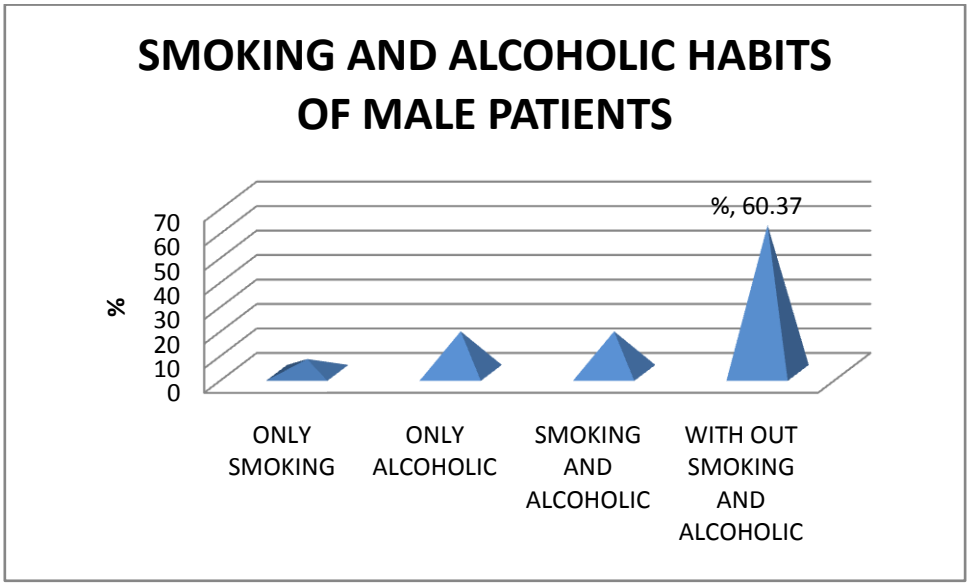
AGE WISE DISTRIBUTION OF HYPERLIPIDEMIC PATIENTS (N=152)

FIGURE 2



COMORBIDITIES OF HYPERLIPIDEMIC PATIENTS(N=152)

FIGURE 3



SMOKING AND ALCOHOLIC HABITS OF MALE PATIENTS (N=53)

CONCLUSION

Our study reveals that the hyperlipidaemia more prevalent in the age group 41-60 and diabetes mellitus was most comorbid condition in the hyperlipidemic patients and hyperlipidaemia more prevalent in females than males. As per the literatures the risk factors like smoking and alcohol negatively affecting the diabetic and hyperlipidemic condition. These risk factors increase the prevalence. In our study risk factors like smoking and alcoholism are not prevalent. We recommended aggressive drug management, education, counselling, and we also suggest the proper checking of blood sugar and cholesterol is necessary. In conclusion we should revise our point of view to treatment of hyperlipidaemia and diabetes to achieve the goal treatment and prevent cardiovascular event.

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