



Clinical profile of patients with family history of diabetes

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Abstract

Introduction: Disorders of lipid metabolism are common and prominent in diabetes and are important risk factors for the high frequency of atheromatous complications in the disease. Epidemiological and clinical studies have repeatedly demonstrated that diabetic individuals have 2-4 times higher risk of developing atherosclerotic cardiovascular disease than non-diabetic individuals.

Methodology: A total of 274 young asymptomatic adults were selected on the basis of stratified random sampling. The study group was further divided into 6 groups depending on the basis of Family History of Diabetes, Hypertension or both Diabetes and Hypertension present or absent in First degree relatives

Results: Majority of patients were in the age group of 20-25 years (2nd decade) with a frequency of 40.5%, followed by 26-30 years (2nd decade). Males were significantly more (66.5%) as compared to females (33.5%).

Conclusion: There is no significant difference in number of individuals in various study groups.

Keywords: diabetes, family history, hypertension

Introduction

Diabetes is expanding in pandemic proportions worldwide. Escalation in prevalence of diabetes appear to be more pronounced in developing countries, particularly in India, presently more than 30 million people are affected by diabetes in India.

Disorders of lipid metabolism are common and prominent in diabetes and are an important risk factors for the high frequency of atheromatous complications in the disease. Epidemiological and clinical studies have repeatedly demonstrated that diabetic individuals have 2-4 times higher risk of developing atherosclerotic cardiovascular disease than non-diabetic individuals.

The term diabetic dyslipidemia essentially refers to atherogenic dyslipidemia occurring in persons with type 2 diabetes. It is characterized by elevated TG, small LDL particles and low HDL-cholesterol concentration. In Indian diabetics hypertriglyceridemia with increased VLDL is more common dyslipidemia than low HDL cholesterol levels ^[1].

Hypertension is the third leading killer in the world and is responsible for 1 in every 8 deaths. A pooling of epidemiological studies show that hypertension is present in 25% of urban and 10% of rural population in India ^[2].

In the last few years, the focus has been shifting from merely controlling hypertension to controlling the overall risk of the hypertensive individual and especially in preventing cardiovascular complications. Studies have shown that high blood pressure is an independent risk factor for cardiovascular disease (CVD). This association holds for men and women and younger and older persons ^[3].

Both high blood pressure and high cholesterol are common in adults, and these two conditions frequently coexist. Persons with higher blood cholesterol have a higher than expected prevalence of high blood pressure and persons with hypertension have a higher than expected prevalence of high blood cholesterol. In person with both elevated cholesterol and high blood pressure, CVD risk is synergistically increased ^[4, 5].

Methodology

The present study was carried out in Department of Medicine for a period of 2 years. A total of 274 young asymptomatic adults were selected on the basis of stratified random sampling. The study group was further divided into 6 groups depending on the basis of Family History of Diabetes, Hypertension or both Diabetes and Hypertension present or absent in First degree relatives (Father, Mother and siblings).

The inclusion criteria are

1. Young asymptomatic individuals between 20-45 years of age.
2. Normotensive and normoglycemic individuals.
3. Without any systemic illness.

The Exclusion criteria are

1. Individuals less than 20 years and more than 45 years.
2. Known Hypertensives and diabetics.
3. Individuals with known systemic illness.

Results

Table 1: Distribution of sample by age and sex

Age in years	Sex		Total
	Male	Female	
20-25	60 (33.0%)	51 (55.4%)	111 (40.5%)
26-30	62 (34.1%)	26 (28.4%)	88 (32.1%)
31-35	13 (7.1%)	5 (5.4%)	18 (6.6%)
36-40	27 (14.8%)	6 (6.5%)	33 (12.0%)
41-45	20 (11.0%)	4 (4.3%)	24 (8.8%)
Total	182 (100%)	92 (100%)	274 (100%)

CC = 0.229; P < 0.004 (S)

Majority of patients were in the age group of 20-25 years (2nd decade) with a frequency of 40.5%, followed by 26-30 years (2nd decade). Males were significantly more (66.5%) as compared to females (33.5%).

Table 2: Distribution of sample into groups

Family history of	Sex		Total
	Male	Female	
HTN+	31 (17.0%)	23 (25.0%)	54 (19.6%)
HTN-	26 (14.3%)	17 (18.5%)	43 (15.7%)
DM+	30 (16.5%)	13 (14.1%)	43 (15.7%)
DM-	31 (17.0%)	13 (14.1%)	44 (16.1%)
HTN, DM+	24 (13.2%)	14 (15.3%)	38 (13.9%)
HTN, DM-	40 (22.0%)	12 (13.0%)	52 (19.0%)
Total	182 (100%)	92 (100%)	274 (100%)

CC = 0.146; P < 0.312

It is clear from the table that there is no significant difference in number of individuals in various study groups.

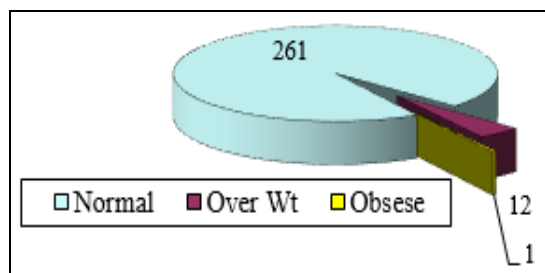


Fig 1: Graph showing body mass index (BMI) of sample

Most of the cases (261) were with normal BMI (95.3%), 12 cases were of overweight (4.4%) and 1 case of obese category, none of the case had malnutrition.

Table 3: Diet pattern of sample

Diet	Frequency	Percentage
Vegetarian	115	42.0
Mixed	159	58.0

$\chi^2=7.066$; P<0.008 (HS)

Out of 274 cases, 159 cases (58.0%) were consuming mixed diet and 115 cases (42.0%) were vegetarian. Persons consuming mixed diet were significantly more in number compared to vegetarian.

Discussion

A total of 274 asymptomatic cases between age group of 20-45 years attending inpatient and outpatient department of medicine were evaluated to study the presence and type of dyslipidemia. These patients were divided into 6 groups by stratified random sampling with special reference to family history of DM and HTN present or absent.

Majority of patient were in the age group of 20-30 years and males were significantly more in number as compared to females, no significant difference was noted in the number of individuals in various groups, earlier study conducted by P. Malhotra in 2003 showed similar age and sex distribution [6].

N. Gopinath and colleagues in 1994, studied lipid profile of subjects with and without coronary heart disease (CHD) in urban and rural population of Delhi and Gurgaon. The prevalence of CHD was 96.7 /1000 in the urban area and 27.1/1000 in the rural area. The lipid profile of rural population was significantly lower compared to the urban normal population and concluded that if the prevalence of CHD is to be reduced in the urban population, the desirable levels of lipids should be those obtained in the rural normal population rather than the urban CHD free, population and they also suggested that the guidelines suggested by the National Cholesterol Education program Expert Panel are not only not applicable in the Indian population but may be too high even for united States [7].

P. Malhotra and colleagues in 2003, studied isolated lipid abnormalities in rural and urban normotensive and hypertensive northwest Indians and concluded that the prevalence of dyslipidemia is in the range of 45-50% in normotensives and hypertensives. The most common lipid abnormality was isolated low HDL cholesterol. The prevalence was highest among rural normotensives (27.7%) followed by rural hypertensive population (21.5%) [8].

Population based studies on lipid profiles in India showed significant differences in the lipid profiles, dyslipidemia in patients from South India revealed higher triglycerides (TG) with marginally raised LDL-C, where as increase in total cholesterol and LDL-C was common in those from North India [4, 5].

Das S and Colleagues in the year 1984 stated that hypertriglyceridaemia is the common dyslipidemia seen in uncontrolled diabetic state, and in Indian subjects with DM the lipid profile and pattern is greatly influenced by the ethnic origin, food habit, nutritional status and lifestyle influences [6]. Wild and colleagues in the year 2004 stated that India has the largest number of diabetic subjects in the world. The concept of long-term prevention highlights the need for early detection of lipid disorders. Early detection links clinical and population approaches to primary prevention at an age when intervention can retard the early stages of atherogenesis. NCEP has long recommended that all adults, starting at age 20, undergo periodic testing for serum cholesterol levels. Early detection of cholesterol disorders provides the opportunity to curtail development of coronary atherosclerosis from young adulthood, a time when atherogenesis is beginning to accelerate [9, 10].

Conclusion

All adults starting at age 20 should undergo periodic testing for serum lipid levels, early detection of lipid disorders helps in preventing long-term complications

References

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