

Prevalence of Hyperlipidemia in Coronary Heart Disease Patients Visiting OPD of DHQ Teaching Hospital DG Khan

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ABSTRACT

Aim: To determine the prevalence of hyperlipidemia in patients who are suffering with coronary heart disease and to compare it with patients having coronary heart disease with normal lipid profile.

Methodology: Cross-sectional study conducted in DHQ Teaching hospital DG Khan from November 2017 to April 2017. Sample size was 100 patients and simple random sampling technique was used. Obese people, MI patients, acute coronary syndrome were included while stroke patients with congenital heart anomalies were excluded.

Results: In a survey of 100 participants, 18% are below 40 years and 54% are between 40-60 years and 28% are above 60 years. 42% are female and 58% are male. Monthly income of 26% is less than 5000 rupees, 40% have 5000-10,000 rupees and 34% have above 10,000 rupees. 42% have family history of coronary heart disease and 58% have no family history. 72% individuals take vegetables and 28% take junk food. 62% have done their lipid profile among which 36% have normal lipid profile, 56% have high lipid profile and 8% are uncertain about their lipid profile while 38% have not done their lipid profile. 44% individuals have active lifestyle and 56% have sedentary life style.

Conclusion: Hyperlipidemia is known and important independent risk factor for coronary heart disease and there is a need to identify preventive and controlling measures for its increasing prevalence in Dera Ghazi Khan.

Keywords: Hyperlipidemia, Coronary Heart Disease, lipid profile.

INTRODUCTION

For human beings and other populations, the most noticeable improvements in health system has occurred in last century in history. Life expectancy has increased at birth from an average of 46 years in 1950 to 66 years in 1998¹. It has been noticed that health status and disease outcome of human societies is largely linked to the level of economic development and social improvement. With increasing number of industries, this has become one of major cause of death and disability in advanced countries. Now the disease pattern has been shifted from nutritional deficiencies and infectious diseases, to more chronic and degenerative [chronic diseases such as cardiovascular disease (CVD), cancer, and diabetes]. This shift has been termed "the epidemiologic transition"².

Ischemic heart disease is a disease³ in which a sticky substance called plaque builds up inside coronary artery. The common symptoms are pain in chest radiating to neck, jaw or upper part of stomach, shortness of breath, nausea, and vomiting and light headedness.

It has been noted in different surveys and reports that burdens of non-communicable diseases (NCDs) are increasing and it also highlighted by the Global Burden of Disease Study and in the World Health Report 1999 which shows that these diseases together contributed to 59% of mortality (31.7 million deaths) and 43% of the morbidity in 1998. Several NCDs such as diabetes cardiovascular diseases (CVD), chronic obstructive pulmonary disease and cancer are associated with common lifestyle determinants which include use of tobacco, exercise and level of activity, use of various diet and also stress at workplace. The above mentioned four disorders, like Cancer, Diabetes, COPD and CVD contribute to about 50% of worldwide mortality. As these conditions affects individual in middle and old age, they account for a low morbidity (19%) of the global burden of disease. It is estimated that 30.9% of all deaths in 1998, as well as 10.3% of the total disease related burden, in terms of disability adjusted life year loss (DALY loss) were attributable to CVD⁴.

Cardiovascular diseases are the number one cause of death globally⁵. In south Asia, it contributes 60% of global CVD burden. Among them, Pakistan ranks at number 17 which has high mortality rate due to coronary artery disease⁶. According to latest WHO data published in April 2011, coronary heart disease in Pakistan reached 196,258 (15.36%) of total deaths.

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CHD is primarily associated with hyperlipidemia. "Elevated lipid level in blood can be inherited and increase the risk of blood vessels leading to stroke and heart disease". Major lipids in the stream are fatty acids; TAG, cholesterol ester, fat soluble vitamins and steroids are present in small amount. When these substances are excessively present in blood, they deposit in the wall of arteries, a process called atherosclerosis⁽⁷⁾. Arteries become narrow and blood flow to heart muscles is slow down or blocked eventually. Due to oxygen insufficiency or hypoxic conditions, chest pain is felt by patients. It is classified into two categories:

Primary Hyperlipidemia: It is due to high intake of fatty food or due to some genetic defect.

Secondary Hyperlipidemia: It is due to metabolic illness. Sedentary life style and smoking are the major causes of hyperlipidemia in Pakistan, which are increasing day by day and now, become an alarming situation. So, this provokes us to determine the prevalence of hyperlipidemia in Faisalabad.

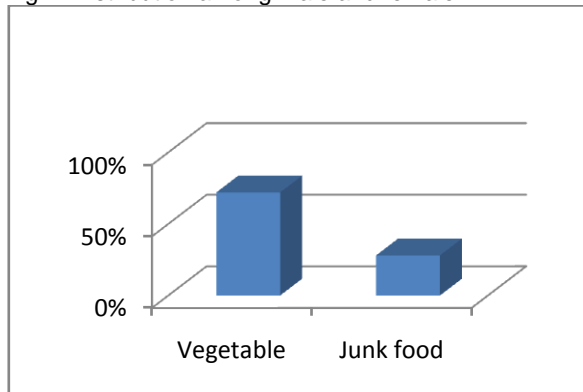
The objective of the study was to access the lipid profile among heart patient.

METHODOLOGY

This cross sectional study was conducted in DHQ Teaching Hospital DG Khan from November 2016 to April 2017. Sample size was 100 patients and sampling technique used was simple random sampling technique. All obese having MI with acute coronary syndrome were included in the study. Stroke patient with congenital heart anomalies were excluded from the study. The data was computed and analyzed using the software of Excel.

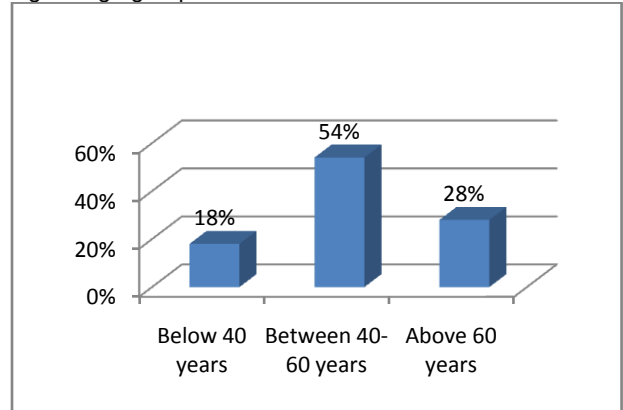
RESULTS

Fig. 1: Distribution among male and female



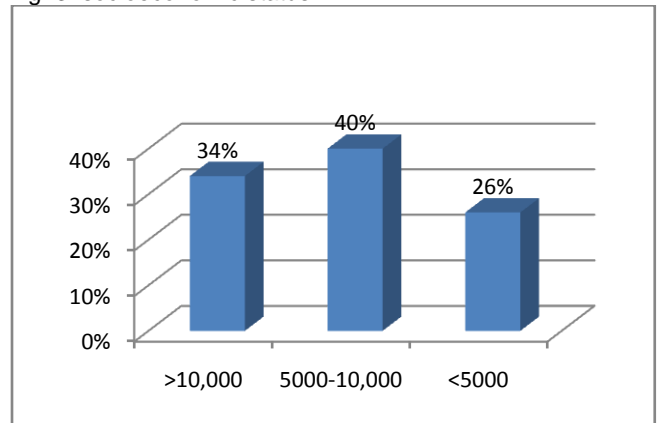
In 100 individuals, 58 are male=58% and 42 are female=42%

Fig. 2: Age group



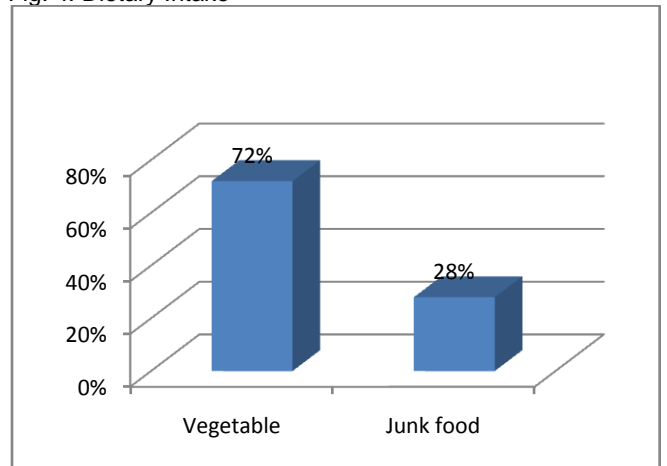
In 100 individuals, 18 are below 40 years = 18% and 54 are between 40-60 years = 54% and 28 are above 60 years = 28%

Fig. 3: socioeconomic status



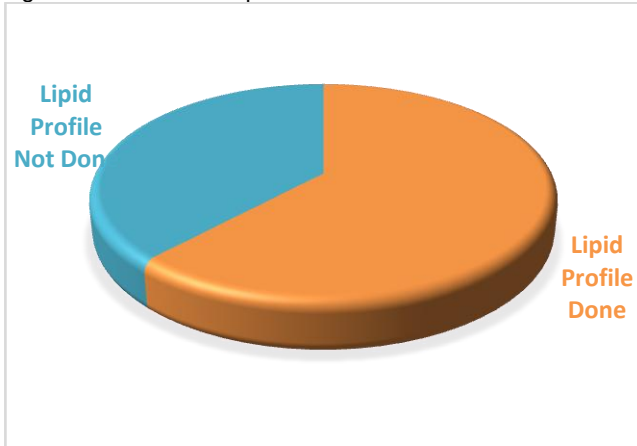
In 100 individuals, 26 have less than 5000= 26%, 40 have 5000-10,000=40% and 34 have >10,000= 34%.

Fig. 4: Dietary Intake



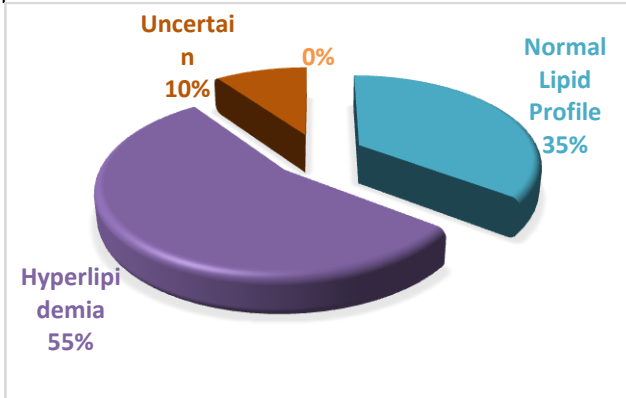
In 100 individuals, 72 eat Vegetables= 72 % and 28 eat Junk food= 28 %

Fig. 5: Evaluation of Lipid Profile



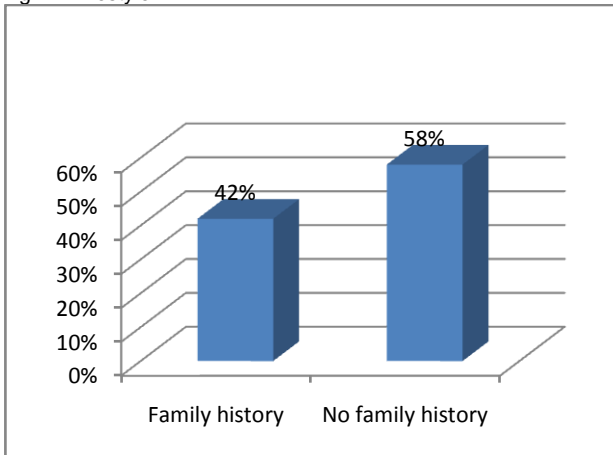
In 100 Individuals, 62 have done their lipid profile = 62% and 38 have not done their lipid profile = 38%

Fig. 6: Distribution among normal and hyperlipidemic patients.



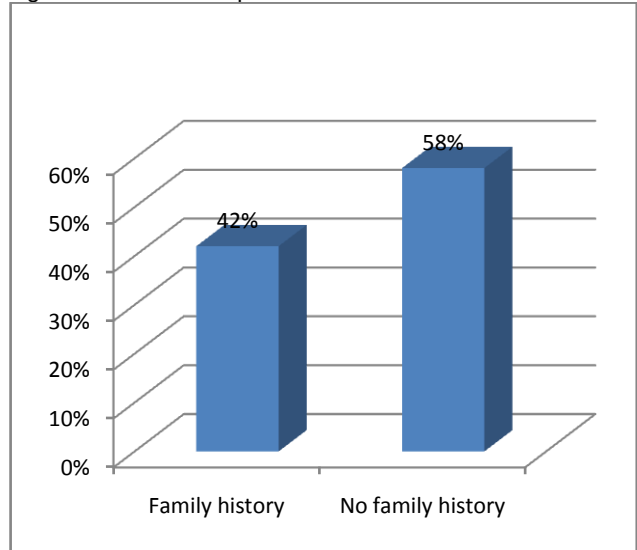
In 100 Individuals, 22 have Normal Lipid Profile = 36%, 35 have High Lipid Profile = 56% and 5 have Uncertain = 8%

Fig. 7: Lifestyle



In 100 Individuals, 44 have Active Lifestyle = 44% and 56 have Sedentary Lifestyle = 56%

Fig. 8: Genetic Predispositions



In 100 Individual, 42 have Positive family history of MI = 42% and 58 have No family History of MI = 58%

DISCUSSION

The extensive investigations in the last decade have established an association between coronary heart disease and elevated levels of plasma cholesterol and triglycerides.

The nature of different types of hyperlipidemia in carefully defined patients with coronary heart disease such as survivors of myocardial infarction or the patient with angiographically proven coronary heart disease.

In this study we have examined the relationship between triglyceride and coronary heart disease, To develop any valid association between triglyceride and coronary heart disease of inferring that is there any strong relation between the two. We are unable to collect any evidence from published study and also we don't have any evidence from analysis of data of Western Collaborative Group Study that can provide strong support for this casual association⁸.

In our study, 56% individuals are hyperlipidemic and 36% with normal profile levels and 8% are uncertain about their results.

Patterson and Slack's recent investigation was carefully designed and had few biases in patient ascertainment⁹. They found that about one fourth of survivors of myocardial infarction were hyperlipidemic as defined by cholesterol or triglycerides exceeding 2SD of control values. Their study included a total of 193 patients representing about 50% of all their consecutively ascertained hospital survivors of myocardial infarction.

Next we try to evaluate the age distribution among the patients with the Coronary heart disease and that

shows 54% individuals are between age 40-60 years, 18% below 40 years and 28% above 60 years.

In the Journal of clinical investigation, a study regarding hyperlipidemia in coronary heart disease included a group of 950 patients, give evidence that 60% of coronary heart disease was found in male below age 40 years and 60% in female below age 50 years¹⁰.

Next we try to find the relationship of coronary heart disease with inheritance and that shows 42% have positive family history with known cardiovascular disease and 58% have no family history of cardiovascular disease.

In the official Journal of American College of Medical Genetics and Genomics having title family history of heart disease and cardiovascular disease risk reducing behaviors, they included 3383 respondents without known cardiovascular disease but have positive family cardiovascular history, concluded that 28% were classified as being at moderate risk and 15% as being at high risk on family history¹¹.

As already shown that there are 56% individuals with hyperlipidemia lead to coronary heart disease at some age in life especially at the age of 40-60 years. When there is too much cholesterol in blood, it builds up in the walls of arteries, causing a process called atherosclerosis, a form of heart disease. The arteries become narrowed and the blood flow to heart muscle is slow down or blocked. Blood carries oxygen to heart and if enough blood and oxygen cannot reach heart will result in chest pain. If the blood supply to a portion of heart is completely cut off by blockage, result is heart attack.

Atherosclerosis and hypercholesterolemia are associated with endothelial dysfunction, which may play a part in pathogenesis of acute coronary syndromes.

Limitation: Following were the limitations

1. Lipid profile of the some patients had not been done.
2. 10% individual was uncertain about their lipid profile.

Recommendations: Serious efforts are needed to prevent the cardiovascular disease in Pakistan focusing on Hyperlipidemia, smoking cessation, dietary modifications, exercise and weight loss. All healthy individuals aged 18-65 years need moderate intensity physical activity for minimum of twenty minutes on three days each week. The entire adult population especially of age above forty should be screened for Hyperlipidemia for the purpose of cardiovascular risk assessment.

CONCLUSION

Based on combine data from our study, hyperlipidemia is a risk factor for cardiovascular disease for both men and women in general population. Therefore, there should be an awareness program regarding their lipid profile measurement in general public, if they have any of the following indications.

- Have family history of early coronary vascular disease.
- Have high blood pressure, diabetes or a health condition that can increase cholesterol levels.
- Prevention and treatment of hyperlipidemia should be an important component of a national strategy to reduce the substantial and increasing burden of cardiovascular disease in Pakistan.

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