Original Research article

Low HDL levels as a major risk factor of acute myocardial infarction in Pakistani old age population

Abstract

Introduction: Cardiovascular disease (CVD) is the main source of death around the world, which has turned into an overall general medical condition. Acute myocardial infarction (AMI) is a typical clinical basic disease. **Objective:** The basic aim of the study is to analyse the low high density lipoprotein (HDL) levels as a major risk factor of acute myocardial infarction in Pakistan. **Material and methods:** This cross sectional study was conducted in Ghazi Khan Medical College and DHQ Hafizabad between June and November 2021, according to the ethical committee of the hospital. The data was collected from 100 patients of both genders. **Results:** The mean age was 45±5.46 years. The extent of male subjects was higher in bunches with high Triglycerides (TG) levels, while the distinction in age was not measurably critical. **Conclusion:** It is concluded that low HDL level is noted to be present in a high percentage of acute myocardial infarction patients and can be a major risk contributor to old age patients.

Key word: Low HDL levels, acute myocardial infarction, Cardiovascular illness, Cardiovascular illness

Introduction

Myocardial infarction (MI) remains a leading cause of death worldwide. An acute MI happens when myocardial ischemia surpasses a basic edge, normally because of an intense

plaque burst in the coronary courses, and the cell course of occasions overpowers myocardial cell fix systems prompting myocardial cell harm. Myocardial ischemia happens because of plaque develop in the coronary veins, officially known as atherosclerosis or coronary supply route illness (CAD) [1]. Breaking of weak atherosclerotic plaque follows a time of ceaseless plaque destabilization or potentially plaque development due to different patho-organic cycles. Plaque substances are encased inside a settling sinewy cap that forestalls openness of the thrombogenic center to the circulatory system, and debilitating of this cap can hence prompt plaque crack and MI [2].

Cardiovascular illness (CVD) is the main source of death around the world, which has turned into an overall general medical condition. Intense myocardial dead tissue (AMI) is a typical clinical basic disease [3]. Specifically, the ascent of reperfusion treatment essentially decreased mortality and worked on the anticipation of AMI. As of late, the job of low thickness lipoprotein thickness (LDL-C) in the pathogenesis of atherosclerosis (AS) has drawn in much consideration [4]. Nonetheless, an ever increasing number of clinical preliminaries have uncovered that in the wake of controlling for deterministic gamble factors like LDL-C, the gamble for coronary illness (CHD) stayed, while the expansion in fatty oils (TG) was essentially related with the expansion in mortality, the rate of myocardial localized necrosis (MI) and the repeat pace of coronary course illness [5].

Aim

The basic aim of the study is to analyse the low HDL levels as a major risk factor of acute myocardial infarction in Pakistan.

Material and methods

This cross sectional study was conducted in Ghazi Khan Medical College and DHQ Hafizabad between June and November 2021. The review was led by the moral advisory

group of the medical clinic. The information was gathered from 100 patients of the two sexes who visited the OPD of the medical clinic routinely. TC level in serum was estimated using the endpoint test technique. HDL-C and LDL-C were estimated utilizing the immediate test technique. Non-HDL-C not set in stone by deducting serum HDL-C from serum TC. With the expansion in TG level, the extent of individuals with a background marked by smoking expanded, weight file (BMI), SBP, DBP, FBG, UA and the pace of MI expanded, while HDL-C level step by step diminished, and the distinctions were all measurably huge. Contrasts in TC and LDL-C levels were not genuinely huge.

Data were entered into Epidata 3.0 and analysed using Statistical Package for Social Science (SPSS) version 20.0. Estimation information were communicated as mean ± standard deviation (SD). Intergroup examination was led utilizing investigation of fluctuation.

Results

The information was gathered from 100 patients of the two sexes. The mean age was 45±5.46 years. The extent of male subjects was higher in bunches with high TG levels, while the distinction in age was not measurably critical.

Table 1: Socio-demographic values of selected patients [11]

Variables	Univariate		Multivariate	
	OR (95% CI)	***p* value**	**OR (95% CI)**	***p* value**
Age	1.01 (0.97–1.04)	0.75	1.01 (0.96–1.05)	0.79
Sex, male	0.66 (0.26–1.67)	0.38		
Body mass index	0.98 (0.89–1.09)	0.73		
Current smoking	1.63 (0.70–3.82)	0.26	2.46 (0.87–6.95)	0.090
Hypertension	0.77 (0.34–1.75)	0.53		
Diabetes mellitus	0.77 (0.37–1.58)	0.48	0.65 (0.27–1.58)	0.34
eGFR	0.99 (0.97–1.01)	0.48	0.98 (0.96–1.01)	0.22
LDL cholesterol	1.00 (0.99–1.02)	0.63		

HDL cholesterol	0.97 (0.93–1.00)	0.058		
HDL2 cholesterol	0.97 (0.92–1.02)	0.26		
HDL3 cholesterol	0.86 (0.76–0.98)	0.018	0.86 (0.74–0.99)	0.038
Triglyceride	1.00 (0.99–1.01)	0.16		
C-reactive protein	1.18 (0.90–1.54)	0.22		
Total stent length	1.06 (1.01–1.10)	0.011	1.04 (0.99–1.09)	0.16
Total inflation time	1.01 (1.00–1.01)	0.014	1.00 (0.99–1.01)	0.22

Discussion

In a broadly referred to meta-examination of four enormous investigations (absolute number of people contemplated: 15,252), a 1 mg/dL increment of HDL-C levels was accounted for to be related with a 2%-3% diminished CVD risk [6]. Niacin, by and by endorsed with a statin, is one of the most regularly involved pharmacological treatment pointed toward bringing HDL-C focuses up in patients with such dangers. At a pharmacological portion of ~1.5-2 g each day, Niacin is perhaps the most intense specialist accessible for this reason. Niacin likewise decreases all proatherogenic lipids and lipoproteins, including absolute cholesterol, TGs, exceptionally low-thickness lipoprotein, LDL, and lipoprotein [7]. Notwithstanding its prevalence, the viability of niacin has come into question in ongoing examinations. Two particular examinations, Atherosclerosis Intervention in Metabolic Syndrome with Low HDL/High Triglycerides and Impact on Global Health Outcomes (AIM-HIGH) and Heart Protection Study 2 - Treatment of High-thickness Lipoprotein to Reduce the Incidence of Vascular Events (HPS2-THRIVE) were pointed toward assessing whether adding the cutting edge, stretched out discharge niacin details to statin treatment gives steady advantage over statin treatment alone as far as cardiovascular essential occasions in patients with laid out CAD [8]. These clinical preliminaries concentrated on explicit populaces of stable ischemic coronary illness patients, barring patients with MI or those with critical remaining blended dyslipidemia not treated with ideal portions of serious statin treatment [9]. Both the AIM-HIGH and HPS2-THRIVE clinical preliminaries were halted rashly because of an absence of

gainful impacts and a failure to meet essential endpoints of decreased cardiovascular illness and MI risk [10].

Conclusion

It is concluded that low HDL level is noted to be present in a high percentage of acute myocardial infarction patients and can be a major risk contributor

Ethical Approval:

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

Consent

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

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