



CODEN [USA]: IAJPB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3386692>Available online at: <http://www.iajps.com>

Research Article

**CORRELATION BETWEEN, BMI, HbA1C AND FASTING
LIPID PROFILE IN PATIENTS WITH ACUTE CORONARY
SYNDROME****¹Dr. Rizwan Ali Awan, ²Dr Huma Batool, ³Dr Nabila Kausar**¹Akhtar Saeed Medical and Dental College Lahore, ²University Medical and Dental College Faisalabad, ³University Medical and Dental College Faisalabad.**Article Received:** July 2019**Accepted:** August 2019**Published:** September 2019**Abstract:**

Introduction: Body Mass Index (BMI), glycosylated hemoglobin (HbA1c) and deranged fasting lipid profile forecast macro and microvascular changes. The macrovascular changes in coronary system are too common.

Aims: The purpose of our current research was to determine correlation of HbA1c, BMI and fasting lipid with acute coronary syndrome.

Design: Cross sectional study design was used.

Methods and Material: The study was conducted at Fauji Foundation Hospital Rawalpindi. A total of 200 individuals admitted with recent diagnosis of acute coronary syndrome were enrolled in current study. Sampling was done for HbA1c and fasting lipid profile. BMI was noted.

Statistical analysis used: Data was analyzed by using SPSS 24. Chi square test was applied, and p value was determined.

Results: The Chi square trial offered very unimportant p-value of 0.9785 that displays that developed HbA1c does not interpret to the developed Body Mass Index. **THIS IS NOT ACCORDING TO TOPIC OF STUDY change it accordingly**

Conclusions: BMI and HbA1c are associated with LDL in Lipid profile. BMI and HbA1c are independently associated with danger of emerging severe coronary disease.

Keywords: BMI, HbA1c, Severe coronary condition, DM Type-2, Fasting lipid outline.

Corresponding author:**Dr. Rizwan Ali Awan,**

Akhtar Saeed Medical and Dental College Lahore.

QR code



Please cite this article in press Rizwan Ali Awan et al., **Correlation Between, Bmi, Hba1c And Fasting Lipid Profile In Patients With Acute Coronary Syndrome** Indo Am. J. P. Sci, 2019; 06(09).

INTRODUCTION:

Among various diseases around globe, cardiovascular diseases (CVD) play a major role in terms of mortality and morbidity [1]. Atherosclerotic changes contribute to acute event of coronary syndrome [2]. The cardiovascular diseases are a result of the development of the atherosclerotic plaque, studied in various animals [3]. It has been seen from the INTERHEART case-control study that increased circulatory stress, sporadic lipids, smoking, DM, psychosocial aspects (altogether risky) contribute to 94% cases who have risk of Myocardial Infarction (MI) [4]. The Queenlet protocol rated BMI into normal, overweight or obesity, with clear CVD risks with increasing. HbA1c shows long term diabetic control of average last three months [5]. Cardiovascular events are noted in cases with Diabetes Mellitus (DM), overweightness and with deranged lipid profile. Glycated hemoglobin (HbA1c), very dependable indicator of DM, also forecast incidence of macro and micro vascular changes. Body Mass Index (BMI) and Fasting lipid play vital rule in deteriorating cardiovascular disease.

METHODOLOGY:

A total of 200 diagnosed cases of acute coronary syndrome were recruited in current study after taking ethical approval from hospital. Study setting was Pathology Department of Fouji Foundation Hospital Rawalpindi during July 2018 to Jan 2019. An informed consent was taken from each subject who was diagnosed to have acute cardiac event in cardiac emergency of same institute. Sample was taken when fasting was feasible for patient during stay in hospital. Demographic details like age gender height weight history of DM was noted. About 3 ml of venous sample was collected from each subject. Half was shifted to EDTA tube for analysis of HbA1c and remaining was shifted in gel tube for analysis of lipid profile. From gel tube serum was separated from cells by centrifugation at 3500 rpm. HbA1c was analyzed by Turbidimetric Inhibition Immunoassay technique and Lipid profile was analyzed spectrophotometrically. BMI was calculated while using Queenlet formula as weight in (kg) per height in (m²). Accuracy of result was confirmed using controls

run along with samples and all samples were analyzed according to standard operational principles. All data obtained was entered on Microsoft Excel and was then statically analyzed using SPSS version 24 program.

RESULTS:

The Chi square trial offered very unimportant p-value of 0.9785 that displays that developed HbA1c does not interpret to the developed Body Mass Index. The standard qualities of the assessors are listed in Table 1. The overall 200 persons remained encompassed in the current survey, of whom 570 remained man also 213 females. 520 stayed recognized examples of DM also 262 remained non-DM. The typical age remained 64 ± 11.9 years. Mean BMI was 26 ± 5 kg/m². Mean HbA1c was $8.42 \pm 2.9\%$. For the simplicity of the examination, the moderately strong, really fat, in all respects really heavy and past imposing, were arranged by means of overweight. The over-all 390 (53.6%) had an ordinary Body Mass Index. 35.8% were overweight and 13.5% strong, the breakdown is shown in Table 1. The lipid outline of fasting remained likewise bankrupt also typical over-all saturated fat was 177 ± 48.95 , HDL- 42 ± 13.73 and LDL 113 ± 43.56 . The remaining characteristics are shown in Table 1. The normal Body Mass Index in DM multitudes remained 27 ± 5.4 , whereas it was 26 ± 5.6 % in the non-DM masses (Ref Table 4). Whereas normal HbA1c value in the diabetic masses (9 ± 2.8) was higher than in non-DM population (7.3 ± 2.5) (ref. Table 4), p-value for the relationship among Body Mass Index also HbA1c, as measured through chi-square trial, remained not substantial (0.9786), as exposed in Table 2. Moreover, only BMI also HbA1c remained distinguished and the fast lipid profile and simply the LDL displayed enormous p-value (0.023, 0.0209) for assessment through Body Mass Index also the HbA1C exclusively. The respite of p considerations remains listed in Table 5. This remained found that typical HbA1C was virtually identical in altogether 3 classes of BMI (8.39, 8.48 and 8.38), by way of it exposed in Table 3. Mutually BMI also HbA1C remained differentiated and four different scoring systems for high risks of CVD were examined in the study and considered as enormous (see Table 6).

Table 1: Demographic details and major laboratory findings.

Limitations		Values
Age (Years)		65 ± 11.9
Sex	Man	570
	Woman	210
Body Mass Index (%)		
	Standard	389
	Overheavy	272

	Class 1 Overweight	78
	Class 2 Overweight	33
	Class 3 Overweight	8
HbA1c		8.42 ± 2.9
TG		137 ± 62.17
HDL		175 ± 49.99
LDL		112 ± 42.54
VLDL		40 ± 12.72

Table 2: Association Among Body Mass Index and HbA1c.

Body Mass Index	HbA1C		p-value
	Normal n=77 (38.7%)	Irregular n=123 (61.3%)	
Normal n= 387	240	147	0.9784
Overweight n= 272	103	169	
Obese n= 117	73	44	

Table 3: Contrast among Body Mass Index and HbA1c.

Body Mass Index	HbA1c
Standard	7.0
Overheavy ??????	7.3
Heavy	7.38

Table 4: Assessment amongst medians of Body Mass Index also HbA1c in DM also Non-DM inhabitants.

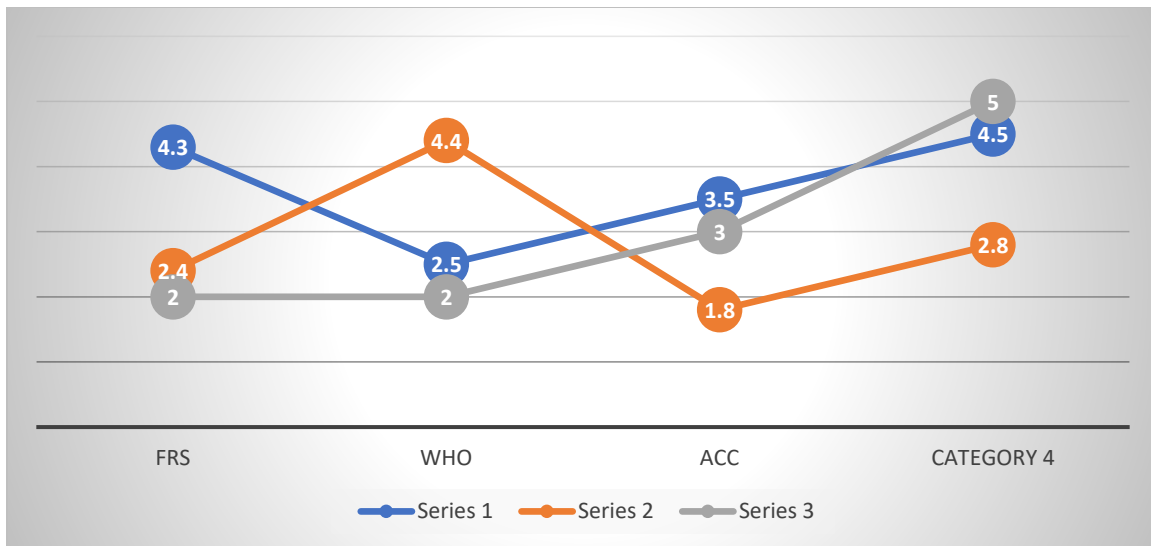
	Non-DM (n= 123)	DM (n=77)
Body Mass Index (Normal)	26 ± 4.3	25 ± 4.5
HbA1c (Normal)	8 ± 1.7	6.2 ± 1.4

Table 5: Contrast of p-values Among Body Mass Index, HbA1c also Fasting Lipid Outline.

	p-value				
	T. CHOL (mg/dL)	TGL (mg/ dL)	HDL (mg/ dL)	LDL (mg/ dL)	VLDL (mg/ dL)
BMI (%)	0.1833	0.8894	0.1102	0.4969	0.021
HbA1c (%)	0.7461	0.3068	0.03354	0.4254	0.0208

Table 6: Contrast among BMI, hba1c also CVD danger score calculators estimate of huge danger of CVD.

	p-Value			
	FRS	WHO	ACC/AHA	JBS-3
Body Mass Index	0.015	0.042	0.026	0.046
HBA1C	<0.002	<0.003	<0.003	<0.002



Graph: Contrast among BMI, HbA1c also CVD danger score calculators estimate of huge danger of CVD.

DISCUSSION:

HbA1c has recently ceased to be associated with BMI in some studies. It was found that HbA1c remains the possible dual indicator for glycemic regulate, dyslipidemia, in people by type 2 DM. An evaluation displayed that in West Asian people huge subjects with dyslipidemia had a gigantic direct connotation by HbA1c [6]. Similarly, the desire for the lipid status of a person based on HbA1c may mislead and lead to the error of variety 2. Health is fundamental to pathophysiology of kind 2 DM and related extensive vascular complexities. Similarly, epidemiological research on CVD risk factors in diabetics and various BMIs should provide evidence of the link between chunkiness and its promise of CVD chance, particularly in type 2 diabetics [7]. In our study we found that despite the way in which it was found that BMI was well related to a higher risk for the production of ACS, a majority of the masses really had an ordinary BMI [8]. The possibility that CVD is a contamination of only the "fat" is a relic from days past, as we have thought about improving the "metabolically well-padded", as the occurrence of individuals having the usual Body Mass Index in addition huge danger of CVD shows given proximity of extra CVD risk components growing in mass [9]. In this sense, the magnitude of BMI should never again be seen as a benchmark for screening CVD and only expect supportive activity. This is explained by the way in which BMI had an enormous association with a higher risk of CVD, although normal BMI was normal in the test masses and practically unclear in diabetics and non-diabetics. The Body Mass Index also HbA1c associated through LDL in Lipid outline. The Body Mass Index also HbA1c independently

associated fine through the huge danger of emerging severe Coronary Disease. Therefore, take home communication remains to be, the standard Body Mass Index does not assure the reduced Cardiovascular danger in Asian inhabitants owing to occurrence of metabolic overweightness. Thus, HDL cholesterol as a mechanical assembly can fulfil the wish for the risk of CVD in particularly young people [10].

CONCLUSION:

The HbA1c also Body Mass Index remain independently also collected pleasing apparatuses for forecast of CVD danger in the individual. Though, classification of the individual as little danger for metabolic disease, that remains himself the CVD danger in these by usual Body Mass Index, remains harmful. Therefore, main screening would pay for Body Mass Index the little Specificity also the tall Compassion in addition additional assessment for extra substantial danger aspects require to remain approved out for suitable CVD danger exposure.

REFERENCES:

1. Medan S, Medan S. Correlation between body mass index and glicosilat haemoglobin (Hba1C) of type 2 diabetes mellitus patients in primary health care (PHC) in Binjai City, Sumatera Utara. 2017; 10(4): 1-5.
2. Sheth J, Shah A, Sheth F, Trivedi S, Nabar N, Shah N, et al. The association of dyslipidemia and obesity with glycated haemoglobin. Clin Diabetes Endocrinol. 2015; 1-7.
3. Sindhughosa DA. Original individual lipids and lipid. 2017; 3-10.

4. Enas EA, Mehta J. Malignant coronary artery disease in young Asian Indians: Thoughts on pathogenesis, prevention, and therapy. *Clin Cardiol.* 1995; 18(3):131-35.
5. Mahalle N, Garg MK, Naik SS, Kulkarni MV. Study of pattern of dyslipidemia and its correlation with cardiovascular risk factors in patients with proven coronary artery disease. *Indian J Endocrinol Metab.* 2014; 18(1): 48-55.
6. Khalil A, Huffman MD, Prabhakaran D, Osmond C, Fall CH, Tandon N, et al. Europe PMC Funders Group Predictors of carotid intima-media thickness and carotid plaque in young Indian adults: results from the New Delhi Birth Cohort. *Int J Cardiol.* 2013; 167(4): 322-1328.
7. Schuijff JD, Achenbach S, Zoghbi WA, Boersma E, Raggi P, Weber M, et al. "How to Identify the Asymptomatic High-Risk Patient?" *Curr Probl Cardiol.* 2009; 34(11): 539-77.
8. Ofori SN, Odia OJ. Risk assessment in the prevention of cardiovascular disease in low-resource settings. *Indian Heart J.* 2016; 68(3): 391-98.
9. Berger JS, Jordan CO, Lloyd-Jones D, Blumenthal RS. Screening for cardiovascular risk in asymptomatic patients. *J Am Coll Cardiol.* 2016; 55(12): 1169-177.
10. Onda T, Inoue K, Suwa S, Nishizaki Y, Kasai T, Kimura Y, et al. "Reevaluation of cardiac risk scores and multiple biomarkers for the prediction of first major cardiovascular events and death in the drug-eluting stent era," *Int J Cardiol.* 2016; 219: 180-5.