

Comparative Study of Serum Lipid Profile of Healthy Young Obese and Non Obese Subjects At Safedabad,**Barabanki**Tanushri¹, Deepak Saxena², Nisar Ahmad³¹Junior Resident, Department of Physiology²Professor & Head, Department of Physiology³Professor, Department of Physiology

Department of Physiology, Hind Institute of Medical Sciences, Barabanki

Correspondance Author: Tanushri, Junior Resident, Department of Physiology, Department of Physiology, India**Type of Publication:** Original Research Paper**Conflicts of Interest:** Nil**Abstract**

With the changing lifestyle, industrialization and digitization, there is a great shift in epidemics from infectious diseases to lifestyle diseases. Amongst all the lifestyle disorders, obesity has emerged as one of the most widespread disorders which itself is associated with a number of other lifestyle disorders such as diabetes, hypertension, coronary artery disease, chronic obstructive pulmonary disease and cancer. Obesity is a direct outcome of energy balance, *i.e.* a balance between dietary energy intake and energy expenditure.

This balance is dependent on a host of factors including dietary intake, level of physical activity, metabolic, endocrine, and behavioral factors. Keeping in view the relationship of obesity with lipid level, the present study was conducted in obese and non obese young subjects at Hind Institute of Medical Sciences, Safedabad, Barabanki.

Keywords: Safedabad, Barabanki, Young Obese and Non Obese.

Introduction

Amongst all the lifestyle disorders, obesity has emerged as one of the most widespread disorders which itself is associated with a number of other lifestyle disorders such

as diabetes, hypertension, coronary artery disease, chronic obstructive pulmonary disease and cancer^{1,2,3,4}

Obesity has a huge health and economic burden. In the year 2010, overweight and obesity already were estimated to cause 3.4 million deaths, 3.9% of years of life lost and 3.8% of disability adjusted life years (DALYs) globally⁵. Some of the co-morbidities related to overweight and obesity include cancers (cancers of breast, endometrial, ovarian, colorectal, esophageal, kidney, pancreatic, prostate), Type 2 diabetes, hypertension, stroke, Coronary Artery Disease, Congestive Heart Failure, asthma, chronic back pain, osteoarthritis, pulmonary embolism, gallbladder disease, and also an increased risk of disability. All this leads to more than three million deaths worldwide annually^{6,7}. Obesity or overweight is defined as a condition of abnormal, excessive fat accumulation that may impair health. The words 'obese'/'obesity' have their origin in French and Latin, where 'obedere' means 'over eat' and 'obesitas' means being very fat⁸. Obesity is a major contributor to the global burden of chronic disease and disability, affecting all age groups and socioeconomic groups. Therefore this study was carried out at hind institute of medical sciences Safedabad, Barabanki to

compare the lipid profile of healthy young non obese subjects (BMI<=25) and in healthy young obese subjects (BMI>25)

Material and Methods

This study was conducted in the Department of Physiology at Hind Institute of Medical Sciences, Safedabad, Barabanki. The study was approved by the Institutional Ethical Committee. It was a case control study, conducted on 200 apparently healthy subjects from age 18 to 29 years of age, who met the inclusion criteria were included after taking proper consent. 100 subjects with BMI more than or equal to 25 were categorized as obese and 100 subjects with BMI less than 25 were categorised as non obese subjects. BMI was calculated using the Quetels index. Anthropometric variables such as height (in kgs) and weight (in meters) were measured.

Inclusion Criteria

- Obese young subjects of age group 18 to 29 years of age
- Non – obese young subjects of age group 18 to 29 years of age

Exclusion Criteria

- Known case of diabetes
- Known case of hypertension
- Known case of respiratory disease
- History of drug usage such as steroids etc
- History of chronic alcohol abuse

Blood sampling was done after ten hours of overnight fasting. The venepuncture was done in the cubital fossa and serum was send to pathology lab for lipid profile analysis.

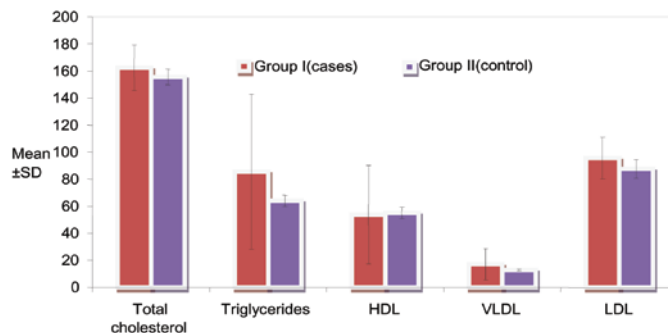
Statistical Tools Employed

The statistical analysis was done using SPSS (Statistical Package for Social Sciences) Version 15.0 statistical Analysis Software. The values were represented in Number (%) and Mean±SD.

Results

Table 1: Between Group Comparison of Lipid Levels

	Group I (n=100) cases		Group II (n=100) Control		Statistical significance	
	Mean	±SD	Mean	±SD	't'	'p'
Total cholesterol	162.46	16.81	155.65	5.80	3.828	<0.001
Triglycerides	85.61	57.39	64.05	4.22	3.747	<0.001
HDL	53.80	36.38	55.14	4.15	-0.365	0.716
VLDL	17.12	11.48	12.81	0.84	3.747	<0.001
LDL	95.59	15.40	87.71	6.96	4.668	<0.001



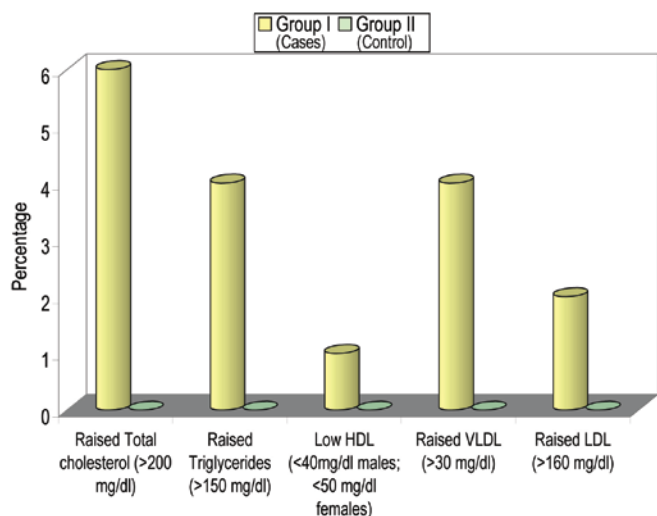
Graph-1

In our study raised levels of serum cholesterol, triglycerides , vldl (very low density lipoprotein) and ldl (low density lipoprotein) were found among subjects of Group I (cases) as compared to Group II(control)as shown in above table 1 and graph I Total cholesterol was significantly higher (162.46±16.81) in group I in comparison with the Group II (155.65±5.80 mg/dl) p value<0.001, Triglycerides were also significantly higher in Group I (85.61±57.39) as compared to Group II (60.05±4.22 mg/dl) p value<0.001. Similarly the value of VLDL was also found to be significantly higher among Group I (17.12±11.48) as compared to Group II (12.81±0.84 mg/dl) p value< 0.001 and the values of LDL was found to be significantly higher in Group I (95.59±15.40) as compared to Group II (87.71±6.96 mg/dl) p value<0.001. These differences were found to be statistically significant.

While HDL values are not showing any significant variation p value = 0.716.

Table 2: Between Group Comparison of Lipid Abnormalities

	Group I(cases) (n=100)		Group II(control) (n=100)		Statistical significance	
	No.	%	No.	%	χ^2	P
Raised Total cholesterol (>200 mg/dl)	6	6.00	0	0.00	6.186	0.013
Raised Triglycerides (>150 mg/dl)	4	4.00	0	0.00	4.082	0.043
Low HDL (<40mg/dl males; <50 mg/dl females)	1	1.00	0	0.00	1.005	0.316
Raised VLDL (>30 mg/dl)	4	4.00	0	0.00	4.082	0.043
Raised LDL (>160 mg/dl)	2	2.00	0	0.00	2.020	0.155



Graph-2

Lipid abnormalities were found in higher proportion of subjects of Group I(cases) as compared to Group II(control) and differences were found to be statistically significant for Raised Total cholesterol, Raised Triglycerides and Raised VLDL levels.

Discussion

On comparison of blood lipid profile between obese and non obese it was observed that there was a significant difference between obese and non obese. The observed value of total cholesterol, triglycerides, ldl, vldl and hdl were found to be different in obese and non obese young subjects. The differences in total cholesterol, triglycerides, vldl (very low density lipoprotein) and ldl (low density lipoprotein) were found to be statistically significant (“p” value <0.001), however the difference in hdl among obese and non obese were not statistically significant. Our results are in close accordance with the study done by M.N Khan *etal* ⁹done in 2016 . Our results were also in

accordance with a cross sectional study done by V Nagashree *etal*¹⁰.A cross sectional study during 2009 -10 by Michael khoury *etal* ¹¹which also shows statistically significant association between lipid profile and measures of adiposity. Another case control study of adolescents done by Gilles Plourde on Caucasian adolescents also revealed that the lipid profile was significantly associated with obesity.¹²

Conclusion

In our study the values of total cholesterol, triglycerides, ldl and vldl in obese group was significantly higher. Therefore an increased physical activity, healthy diet containing abundant fibers, and change in their sedentary lifestyle is very much required in the cases to prevent the complications of hypertriglycerideamia and hypercholesterolemia in future.

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