

Frequency of Dyslipidemia in Obese

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ABSTRACT

Objective: frequency of dyslipidemia in obese subjects

Methodology: In this was a cross sectional study, we included a total of 100 cases, between 30 and 70 years of age of either gender having body mass index >30 whereas we excluded all those cases who were already taking treatment of dyslipidemia. A fasting blood sample was followed for lipid profile from the hospital lab and results were followed for presence/absence of dyslipidemia.

Results: In this trial, mean age was 44.57±8.52 years. Mean lipid profile was recorded as 210.17±36.73 total cholesterol, 178.83±12.10 triglycerides, 133.55±9.74 LDL and 34.42±6.58 HDL. Mean Body mass index was calculated as 34.11±7.25. Frequency of dyslipidemia in obese subjects was recorded as 51%(n=51)

Conclusion: We concluded that frequency of dyslipidemia is higher in obese subjects coming to a tertiary care hospital Lahore. So, it is recommended that every patient who present with obesity, should be sort out for dyslipidemia. However, it is also required that every setup should have their surveillance in order to know the frequency of the problem

Keywords: Obese, dyslipidemia, frequency

INTRODUCTION

Increased body mass index is captioned into global epidemic in recent years. During the last decade a significant increase in obesity is documented. This increase is equally increased in developed and developing countries.¹ According to a rough estimate, this population is doubled in last two decades.²

Approximately 44% of the diabetics and 23% of cardiovascular disease cases burden is associated with obesity and overweight, whereas mortality due to obesity is recorded in 2.8million of adults population every year.³

Abnormal lipid profile is considered as an accepted risk for CVD. Higher levels of triglycerides are directly correlated with the risk of MI whereas inverse with HDL-C levels.⁴ All the lipid abnormalities are classic features of metabolic syndrome(MS) and may be associated to a pro-inflammatory gradient which in part may originate in the adipose tissue itself and may cause directly affect the endothelium.⁵

In a local study conducted at Peshawar recorded 45.91% with increased BMI (obese) cases.⁶ The other study⁷ conducted in Pakistan in last 5 years recorded the frequency of dyslipidemia in obese but the exact prevalence of dyslipidemia was not recorded and the findings were calculated in mean±sd for total cholesterol, HDL cholesterol, LDL cholesterol and total TG i.e. Total cholesterol 202.51±42.51 in male and 200.44±33±42 in females, HDL cholesterol 34.55±16.58 in male 33.78±14.27 in females, LDL cholesterol 125.72±13.54 in male and 120.51±10.76 in females, total TG in male 173.64±11.85 and 170.87±13.74 in females. We need another recent study in our population to update the data.

METHODOLOGY

In this cross sectional survey, conducted at Lahore General Hospital, Lahore, we enrolled 100 cases with BMI>30 with age range 30-70 years in either gender, whereas those

already under treatment of dyslipidemia were excluded in the study. After obtaining informed consent, demographic information such as name, age, gender was collected. A fasting blood sample was followed for lipid profile from the hospital lab and results were followed for dyslipidemia. Mean age, BMI, TGs, TC, HDL & LDL was calculated. Qualitative data like gender and dyslipidemia in obese cases was recorded as frequency/percentage.

RESULTS

In this trial, mean age was 44.57±8.52 years. Mean lipid profile was recorded as 210.17±36.73 total cholesterol, 178.83±12.10 triglycerides, 133.55±9.74 LDL and 34.42±6.58 HDL. Mean Body mass index was calculated as 34.11±7.25. Frequency of dyslipidemia in obese subjects was recorded as 51%(n=51) while 49%(n=49) had no findings of the morbidity.

Table 1

| Dyslipidemia | Age (in years) | | Gender | |
|--------------|----------------|-------|--------|--------|
| | 30-50 | 51-70 | Male | Female |
| Yes | 29 | 22 | 24 | 27 |
| No | 18 | 31 | 32 | 17 |
| P value | 0.04 | | 0.66 | |

DISCUSSION

Globally, increased BMI is considered seriously, as in each country, its prevalence is consistently increasing. Consequently, associated mortality and morbidities in addition to economic burden is also increased. Most of the complications are linked to co-morbid conditions like CAD, DM, Hypertension, dyslipidemia and respiratory disorders. The risk of CVD is associated with obesity due to increased fasting plasma TG, LDL and low HDL level, increased blood glucose levels and high blood pressure. We planned this study to record the rate of dyslipidemia in obese patients, as we observed a higher number of obese cases in our outpatient department. The results of our study may

be helpful for early identification of dyslipidemia in these cases so that it may contribute to lower the risk of CVD related morbidity and mortality.

In our study, of 100 cases, mean age was 44.57±8.52 years. Mean lipid profile was recorded as 210.17±36.73 total cholesterol, 178.83±12.10 triglycerides, 133.55±9.74 LDL and 34.42±6.58 HDL. Mean Body mass index was calculated as 34.11±7.25. Frequency of dyslipidemia in obese subjects was recorded as 51%(n=51) while 49%(n=49) had no findings of the morbidity.

Our results are near to the study conducted at Peshawar, Khyber Pakhtunkhwa where 45.91% obese subjects had dyslipidemia.⁶ Similar to another local study who recorded HDL cholesterol, LDL cholesterol and total TG i.e. Total cholesterol 202.51±42.51 in male and 200.44±33.42 in females, HDL cholesterol 34.55±16.58 in male 33.78±14.27 in females, LDL cholesterol 125.72±13.54 in male and 120.51±10.76 in females, total TG in male 173.64±11.85 and 170.87±13.74 in females, which is nearly agreement with our study.

Hana T. Al Majed and others determined the prevalence of elevated levels of blood lipids and obesity among college students in Kuwait and recorded that the overall prevalence of dyslipidemia, overweight and obesity were 10.5%, 30.6% and 19.8% among the studied sample respectively.

Another study by Boyd GS and colleagues⁸ examined the lipid abnormalities in children with overweight and also compared the prevalence over dyslipidemia in hypertensive overweight and normotensive overweight children. They revealed that both population were equally prone to abnormal plasma lipid levels. However, severely obese boys had higher low HDL as compared to those with moderate obesity (40.3% v/s29.3%). High blood pressure was significantly higher in severely obese boys and girls as compared to moderate obese girls and boys. It was concluded that overweight children population was more prone to dyslipidemia, though this study was done in children, however, it supports our hypothesis.

Another trial⁹ revealed the association between obesity and dyslipidemia among Nigerian adults, their overall prevalence of increased BMI was 14.75%(19.5% females and 8.9% in males, p=<0.05). Female population was higher sedentary life style than males. Most of the obese cases preferred food with high calories. Overall

obesity rate was 28.5% whereas 40.7% obese subjects had abnormal lipid levels. These findings are consistent with our findings.

However, considering the above findings and our results, we are of the view that the frequency of dyslipidemia is higher in obese subjects. The early recognition of dyslipidemia in obese subjects may contribute towards lessening cardiovascular mortality and morbidity.

CONCLUSION

frequency of dyslipidemia is higher in obese subjects coming to a tertiary care hospital Lahore. So, it is required that every patient presenting with obesity, must be sort out for dyslipidemia and every setup should have their surveillance in order to know the frequency of the problem.

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