SHORT-TERM EFFECT OF LAPAROSCOPIC SLEEVE GASTERECTOMY ON HYPERLIPIDEMIC OBESE PATIENTS

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INTRODUCTION

Obesity has become a global epidemic and major health problem in the 21st century. Dyslipidemia is one of the major metabolic consequences of obesity. Studies have shown that weight loss reduces elevated serum total cholesterol and low-density lipoprotein (LDL) cholesterol and increases high-density lipoprotein (HDL) cholesterol. Laparoscopic sleeve gastrectomy is one of the most recent ways to treat obesity and manage weight loss in overweight patients whose options for weight loss are limited. LSG was indicated as a definitive treatment in patients with BMI >40 kg/m2 or BMI >35 kg/m2 associated with co-morbidities.

AIM OF THE WORK

The aim of this study was to evaluate the short-term effect of laparoscopic sleeve gastrectomy on lipid profile in hyperlipidemic obese patients during the nine months of post- operative care.

PATIENTS AND METHODS

This prospective study was conducted on 50 hyperlipidemic obese candidates of bariatric surgery at the Main University Hospital in Alexandria, Egypt from July 2020 to October 2021. Body weight, Body mass index (BMI), waist circumference, fasting and postprandial blood sugar, serum cholesterol, triglyceride, HDL and LDL levels were measured before and one, three, six and nine months following the surgical intervention.

RESULTS

The mean age of the participants was 33.72-7.95 years. There was significant reduction in BMI, weight, blood sugar, Mean body mass index (BMI) of the patients before surgery was 48.59-5.78 kg/m^2, which was lowered to 32.58-3.91 kg/m^2 nine months after the intervention. Assessments showed a statistically significant increase in the serum level of HDL and a statistically significant decrease in the serum level of triglycerides, the serum level of total cholesterol and LDL. Moreover, results showed a positive correlation between lipid profile changes after LSG and preoperative variations in Age, BMI and diabetic condition.

Table 1: Demographic data of the patients

Parameters		Values
Age (years) range (mean±SD)		26-52 (33.72 ±7.95)
Sex (%)	Males	19 (38%)
	Females	31 (62%)

Table 2: Preoperative and postoperative measures of BMI and lipid parameters

	Preop	1 month	3 month	6 month	9 month	P value
BMI (Min- Max) (Mean± S.D)	35.9-62 48.5±5.7	30.6-58 43.7±5.6	29.3-49.9 38.6±4.7	24.4-46.4 33.2±4.2	25.3-46.1 32.5±3.9	<0.001*
TC (Min- Max) (Mean± S.D)	216– 265 237± 12.2	202– 249 224± 12.8	162 – 243 194 ± 21.2	155 – 201 176.± 12.9	150 – 193 169 ± 11.6	<0.001*
TG (Min- Max) (Mean± S.D)	108– 248 166 ± 42.8	99 – 210 143 ± 33.3	86 – 167 112 ± 21.6	80 – 152 99 ± 18.0	76 – 140 92 ± 15.6	<0.001*
LDL (Min- Max) (Mean± S.D)	122 – 181 154 ± 14.5	115 – 177 147 ± 15.5	95 – 150 127 ± 14.5	87 – 137 112 ± 14.4	83 – 130 109 ± 12.9	<0.001*
HDL (Min- Max) (Mean± S.D)	27 – 40 33.0 ± 3.90	30 – 46 37.6 ± 3.96	35 – 48 41.4 ± 3.34	39 – 48 43.5 ± 2.37	41 – 48 44.6 ± 1.85	<0.001*

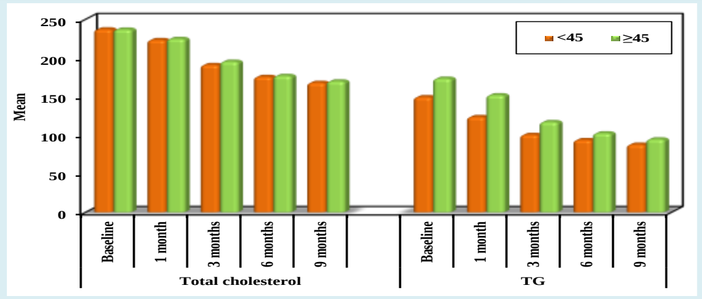

Figure 1: Relation between BMI and Total cholesterol and TG

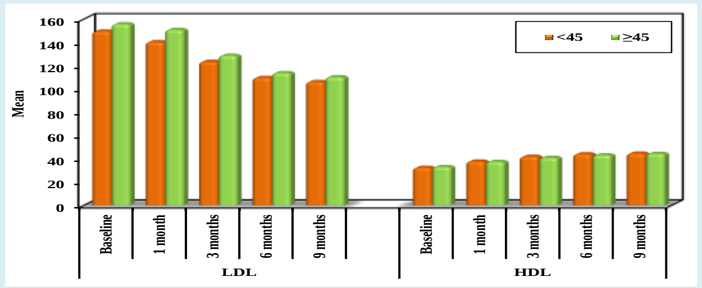

Figure 2: Relation between BMI and LDL and HDL

CONCLUSION

Laparoscopic sleeve gastrectomy reduces body mass and leads to improvement in glucose and lipid metabolism and lipid profile changes: it also decreases Total Cholesterol, Triglyceride and LDL cholesterol and increases HDL cholesterol in a significant way.