Harsukh Educational Charitable Society
International Journal of Community Health and Medical Research
Journal home page: www.ijchmr.com doi: 10.21276/ijchmr

ISSN E: 2457-0117 **ISSN P:**2581-5040 **Index Copernicus** ICV 2017=57.10

Original Research

Lipid profile assessment among laproscopic cholecystectomy patients

Vishakha Sirpal[1] , Harsh Kumar[2], Prince kumar[3]

[1]Medical Officer At Kamal Hospital , Nakodar , District Jalandhar, Punjab [2]Consultant Physician At Swami Harigiri Hospital Kakira District Chamba HP [3]Consultant Physician At Sukhmani Hospital, Zira , Ferozpur, Punjab

ABSTRACT

Background: Cholelithiasis (gallstone disease) is one of the most common gastrointestinal disorders being prevalent in about 10-15% of adults in the developing countries. The present study was conducted to assess lipid levels in patients underwent laproscopic cholecystectomy. **Materials & Methods:** The present study was conducted on of 128 patients who underwent laproscopic cholecystectomy. All quantitative estimations in serum were made by standard medical laboratory methods such as TC by enzymatic end point CHOD-PAP, TG by enzymatic colorimetric GPO-PAP and HDL-C by enzymatic colorimetric phosphotungstate/magnesium method. **Results:** Out of 128 patients, males were 52 and females were 76. The clinical features comprised of epigastric pain in 46%, hypochondrium pain in 65%, dyspepsia in 62%, nausea in 31% and flatulence in 53%. Triglyceride level after 6 months was 130.2 mg/dl and 182.6 mg/dl after 1 year. LDL level was 84.5 mg/dl after 6 months and 92.4 mg/dl after 1 year, HDL was 50.8 mg/dl after 6 months and 53.2 mg/dl after 1 year, cholesterol level was 165.2 mg/dl after 6 months and 170.2 mg/dl after 1 year. **Conclusion:** The study found higher triglyceride level postoperatively in patients who underwent laproscopic cholecystectomy. However, LDL, HDL and cholesterol found to be unaffected.

Key words: Cholelithiasis, Gallstones, Lipid

Corresponding author: Dr. Vishakha Sirpal, Medical Officer At Kamal Hospital , Nakodar , District Jalandhar, Punjab

This article may be cited as: Gautam DK and Sharma P Lipid profile assessment among laproscopic cholecystectomy patients. HECS Int J Comm Health Med Res 2019; 5(1):25-27

INTRODUCTION

Gallstones have become a major health problem because of their silent manifestation and unclear pathogenesis. Cholelithiasis (gallstone disease) is one of the most common gastrointestinal disorders being prevalent in about 10-15% of adults in the developing countries.[1]

There are three stages of gallstone formation: super saturation, nucleation and aggregation. The association of cholesterol super saturation of bile with cholesterol gallstones paved the way for the physical-chemical basis for gallstone formation. It soon became evident that other factors including nucleation of cholesterol crystals, binding together of these crystal with mucin and hypomotility of the gallbladder also plays an equally important role in gallstone formation. However, the molecular events that underlie these processes are far from clear. It is reported that an increase in biliary arachidony -1- lecithin may lead to increased prostanoid synthesis, which may be responsible for increased mucin secretion as well as gallbladder hypomotility.[2]

The association between gallstones and altered lipid profile and later increase in risk of coronary artery disease and stroke and even hepatocellular carcinoma (HCC) has been shown in many studies. In a recent study, 36 (80.0%) of the female patients had one or other abnormality in their lipid profile preoperatively. Plasma concentration of total cholesterol (TC), triglycerides (TG) and low density lipoprotein cholesterol (LDL-C) were significantly reduced in patients on day 3 and 6 months of cholecystectomy.[3]

Laparoscopic cholecystectomy has established itself firmly as the "gold standard" for the treatment of gallstone disease. Existing literature has focused most exclusively on the biliary complications of this procedure, but other complications such as significant hemorrhage during laparoscopic cholecystectomy have not been documented.[4]The present study was conducted to assess lipid levels in patients underwent laproscopic cholecystectomy.

MATERIALS & METHODS

The present study was conducted in the department of general surgery. It comprised of 128 patients who underwent laproscopic cholecystectomy. The study protocol was approved from institutional ethical committee. All patients were informed regarding the study and written consent was obtained.

General information such as name, age, gender etc. was recorded. All quantitative estimations in serum were made by standard medical laboratory methods such as TC by enzymatic end point CHOD-PAP, TG by enzymatic colorimetric GPO-PAP and HDL-C by enzymatic colorimetric phosphotungstate/magnesium method using standard diagnostics kits from internationally reputed companies and LDL-C calculated by Friedwald formula. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

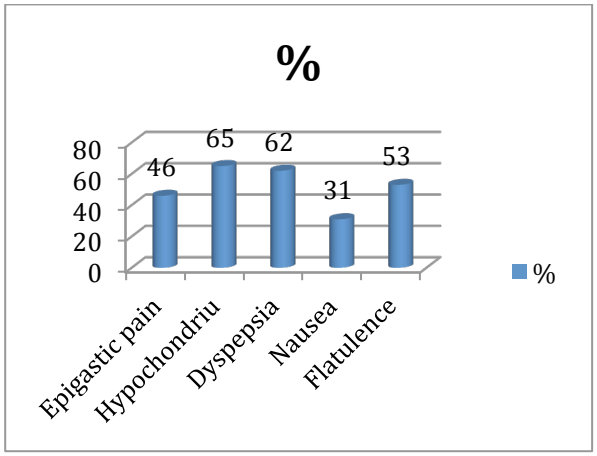
Table I Distribution of patients

Total- 128

Gender	Males	Females
Number	52	76

Table I shows that out of 128 patients, males were 52 and females were 76.

Graph I Clinical features in patients



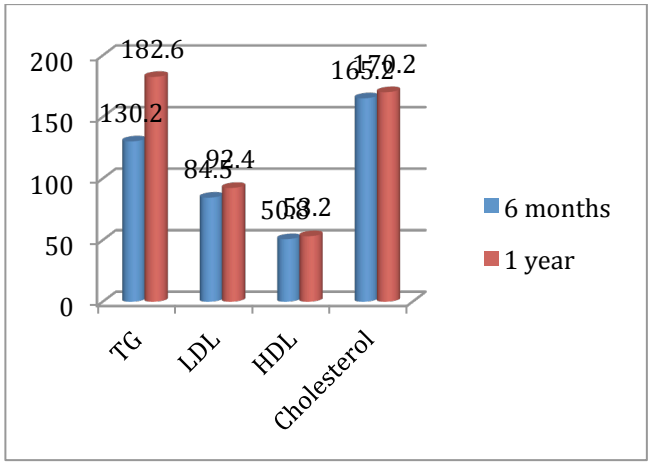
Graph I shows that clinical features comprised of epigastric pain in 46%, hypochondrium pain in 65%, dyspepsia in 62%, nausea in 31% and flatulence in 53%.

Table II Lipid profile in patients

Lipids	6 months	1 year	P value
TG	130.2	182.6	0.01
LDL	84.5	92.4	0.4
HDL	50.8	53.2	0.1
Cholesterol	165.2	170.2	0.2

Table II, graph II shows that triglyceride level after 6 months was 130.2 mg/dl and 182.6 mg/dl after 1 year. LDL level was 84.5 mg/dl after 6 months and 92.4 mg/dl after 1 year, HDL was 50.8 mg/dl after 6 months and 53.2 mg/dl after 1 year, cholesterol level was 165.2 mg/dl after 6 months and 170.2 mg/dl after 1 year.

Graph II Lipid profile in patients



DISCUSSION

Although the association between the disturbed lipid metabolism and formation of gallstones has been elucidated in many studies, the effect of cholecystectomy on lipid profile has not been studied in detail. Based on evidence more than 50% of patients with gallstones have some sort of lipid disorder.[5] It is now widely accepted that the primary event in the pathogenesis of cholesterol gallstones is an altered lipid metabolism, because of which there is a relative increase in the cholesterol levels compared to other lipids secreted by the liver into the bile. Cholecystectomy causes redistribution of bile acid pool in the entero-hepatic circulation and increases the frequency of cycling cause reduction in pool size thus exerting effect on lipid profile decreasing total cholesterol and LDL cholesterol levels. Women are twice as likely as men to form gallstones. Most common gallstone type found is mixed type and least is cholesterol type.[6] In present study, out of 128 patients, males were 52 and females were 76. Al-Kataan et al[7] found that off the 72 patients enrolled in this study, 64 were female and eight were male. The age of patients ranged from 21 to 85 years, with a mean of 49.7 ± 16.6 years. The weight of patients ranged from 53 to 89 kg, with a mean of 70.1 ± 8.4 kg, and the body mass index (BMI) was from 17.76 to 48.78 kg/m2, with a mean of 26.11 ± 4.26 kg/m2. Four patients (5.6%) had diabetes mellitus, and six patients (8.3%) had hypertension. TG was observed to increase three days after surgery and although this parameter decreased slightly after one month, its increase was significant when compared to the values obtained for the samples taken prior to surgery (P = 0.001). A significant decrease was seen in total cholesterol, HDL, and LDL levels three days post-operation. However, no significant differences in total cholesterol, HDL, and LDL levels were seen 30 days after cholecystectomy as compared to the levels obtained for the samples taken prior to surgery. At the one-year follow-up, a lipid profile of the patients was obtained to complete our sample collection. The results are shown in Table1. As indicated, one year after surgery, TG increased significantly,

but no significant changes were observed in the total cholesterol, HDL, or LDL levels.

We observed that triglyceride level after 6 months was 130.2 mg/dl and 182.6 mg/dl after 1 year. LDL level was 84.5 mg/dl after 6 months and 92.4 mg/dl after 1 year, HDL was 50.8 mg/dl after 6 months and 53.2 mg/dl after 1 year, cholesterol level was 165.2 mg/dl after 6 months and 170.2 mg/dl after 1 year.

Juvonen et al[8] found that TG level was elevated in Serum- I^0 , Bile- I^0 and Serum- II^0 of patients, being highest in Bile- I^0 compared to controls (NC) ($p<0.001$). TG level was reduced in serum -II^0 after cholecystectomy compared to Serum- I^0 and Bile- I^0, although it remained significantly elevated compared to controls (NC) ($p<0.001$). TC level was elevated in Bile- I^0 compared to Serum- I^0 and Serum- II^0 ($p<0.001$). Interestingly, TC was elevated in Serum- II^0 after cholecystectomy, although no significant difference was observed between NC and patients Serum- I^0 ($p=0.835$). LDL-C levels in NC, Serum- I^0 and Serum- II^0 were similar ($p=0.126$, $p=0.121$), although Serum-II0 levels was elevated compared to Serum- I^0 ($p<0.001$) and it was much elevated in Bile- I^0 ($p<0.001$). HDL-C levels were similar ($p>0.05$) among NC, Serum- I^0 and Serum- II^0, but it was higher in Bile- I^0 significantly ($p<0.001$) higher.

CONCLUSION

Author found higher triglyceride level postoperatively in patients underwent laproscopic cholecystectomy. However, LDL, HDL and cholesterol found to be unaffected.

REFERENCES

1. Amigo L, Husche C, Zanlungo S, Lutjohann D, Arrese M, Miquel J, et al. Cholecystectomy increases hepatic triglyceride content and very-low-density lipoproteins production in mice. Liver Int. 2011;31:52-64.
2. Zhao J, Xiao L, Zhu H, Shu Y, Cheng N. [Change of serum lipid, apolipoprotein during cholesterol gallstone formation in rabbit model]. Hua Xi Yi Ke Da Xue Xue Bao. 1997;28:361-4
3. Channa NA. Gallstone disease: a review. Pak Arm Forces Med J 2008; 58: 197-208.
4. James HG, Kenneth RM, Scot LF. Current diagnosis and treatment in gastroenterology. (Int. ed) Appletin and Lange, Connecticut. 1996.
5. Batazoo H, Hazra NK (2013) Analysis of serum lipid profile in Cholilithiasis patients. J Nepal Health Res Counc 11: 53-55.
6. Rao PJ, Jarari A, EI Awami H, Patil TN. Lipid profile in bile and serum of cholilithiasis patients – A Comparative study. J Basic Med Allied Sci 2012; 1: 15-21.
7. Al-Kataan MAG, Dallal Bashi AY, Al-Khyatt MK. Some serum lipid profile and glucose levels pre- and post-cholecystectomy. J Bahrain Med Soc. 2010; 22(1):18-22.
8. Juvonen T, Kervinen K, Kairaluoma MI, Kesaniemi YA. Effect of cholecystectomy on plasma lipid and lipoprotein levels. Hepatogastroenterology 1995; 42: 377-382.