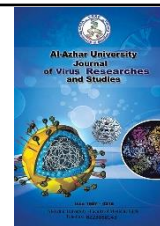




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Comparative Study between Fat Restriction and Normal Diet on Post Laparoscopic Cholecystectomy Patients in Early Postoperative Period

Essam M. El-shaer*¹, El Sayed M. Abdel Wahab¹ and Ahmed M. Said¹

¹Department of General Surgery, Faculty of Medicine for Girls, Al-Azhar University, Cairo, Egypt

*E-mail: elshaer_3@yahoo.com

Abstract

Post-cholecystectomy syndrome involves a heterogeneous group of gastrointestinal symptoms after cholecystectomy, including biliary and non-biliary disorders. Certain entities should be ruled out, such as choledocholithiasis, bile duct lesions or bile leaks, which have specific treatments. This work: is to compare between the effect of Fat Restriction and Normal Diet on Post Laparoscopic Cholecystectomy Patients. This study was a prospective study; it was carried out on 40 patients presented with chronic calcular cholecystitis admitted in the general surgery department at AL-Zahraa University Hospital during the period from January 2021 to July 2021 and underwent laparoscopic cholecystectomy, 20 patients were advised to consume fat restricted diet early post-operative, from the first post-operative day and for one month. Other 20 patients were advised to consume normal diet without restrictions early post-operative, from the first day post-operative, for one month. All patients were followed up in our outpatient clinic after discharge and were evaluated for the presence of Abdominal pain; Diarrhea; Steatorrhea; Nausea; Vomiting; Constipation; Distention; Bowel urgency; Fatty dyspepsia and Eructation. We applied this work on 40 patients underwent laparoscopic cholecystectomy and our results revealed that 2 patients presented with abdominal pain one patient (5%) normal diet and one patient (5%) fat restriction; one patient presented with diarrhea one patient (5%) normal diet (zero) fat restriction; one patient presented with steatorrhea one patient (5%) normal diet (zero) fat restriction; one patient presented with nausea one patient (5%) normal diet (zero) fat restriction; (zero) patient presented with vomiting; one patient presented with constipation (zero) normal diet one patient (5%) fat restriction; 3 patients presented with distention 2 patients (10%) normal diet one patient (5%) fat restriction; (zero) patient presented with bowel urgency; (zero) patient presented with fatty dyspepsia and (zero) patient presented with eructation. We found that Low fat diet does not seem to have an advantage over normal diet in post lap. Cholecystectomy patients in early post-operative period.

Keywords: Diet Post Laparoscopic Cholecystectomy, post cholecystectomy syndrome.

1. Introduction

Gallstone disease is one of the most common gastroenterological diseases, which can be complicated by several conditions including cholecystitis, pancreatitis and jaundice [1].

Cholecystectomy remains the only definitive therapy for acute cholecystitis and the gold standard for the treatment of symptomatic gallstones [2].

Since the introduction of laparoscopic cholecystectomy in the late 80', a dramatic increase in the number of cholecystectomies has been reported by several authors [3].

Some patients who undergo cholecystectomy report postcholecystectomic syndromes, defined as the recurrence of symptoms similar to those experienced before the cholecystectomy, such as abdominal symptoms, dyspepsia and diarrhea [4].

Post cholecystectomy syndrome involves a heterogeneous group of gastrointestinal symptoms after cholecystectomy, including biliary and non-biliary disorders. Certain entities should be ruled out, such as choledocholithiasis, bile duct lesions or bile leaks, which have specific treatments [1].

Even though evidence is lacking, a low-fat diet has been traditionally recommended after cholecystectomy [1].

The aim of this work is to compare between the effect of Fat Restriction and Normal Diet on Post Laparoscopic Cholecystectomy Patients

2. Patients and Methods

This study was prospective study; it was carried out on 40 patients presented with chronic calcular cholecystitis admitted in the general surgery department at AL-Zahraa University Hospital during the period from January 2021 to July 2021 and underwent laparoscopic cholecystectomy. 20 patients were advised to feed on fat restricted diet early post-operative, from the first day post-operative, for one month

Another 20 patients were advised to feed on normal diet early post-operative, from the first day post-operative, for one month.

2.1 Inclusion criteria:

It Symptomatic gallstones undergoing laparoscopic cholecystectomy.

2.2 Exclusion criteria:

- It is Open cholecystectomy.
- Complicated Cases e.g., Missed stone, bile leak.

2.3 All patients were subjected to the following:

Informed consent was obtained for all Patients and approved by local ethical committee.

a) Detailed history including:

- Personal history (Name, age, sex, residency, special habits).
- Complaint includes (pain, fever, nausea, vomiting).
- History of present illness includes analysis of patient complaint and other symptoms suggestive other system affection.
- Past history of similar attack, recurrent biliary colic or other diseases, history of previous operation or medication.
- Family history.

b) Examination was done for all patients including:

- **General examination:** (conscious level, pulse, blood pressure, temperature, respiratory rate, and heart rate).

- **Local abdominal examination** with special attention to presence of tenderness, guarding, rigidity, palpable mass and positive murphy sign at right hypochondrium.

- 1- Abdominal pain
- 2- Diarrhea
- 3- Steatorrhea
- 4- Nausea
- 5- Vomiting
- 6- Constipation
- 7- Distention
- 8- Bowel urgency
- 9- Fatty dyspepsia
- 10- Eructation

c) Investigation included:

- **Laboratory investigation:** (CBC, liver function tests, renal function tests, alkaline phosphatase, RBS, CRP, ABG, amylase, lipase).
- **Radiological investigations:** abdominal US.

3. Results

Our study included 40 patients, their age ranges from 19 - 61 years with mean age (16.43) in fat restriction group and (16.24) in normal diet group distributed as shown in Table (1).

The gender distribution in this study is 12 (30%) male patient (7) (17.5%) in fat restriction group and 5(12.5%) in normal diet group) and 28(70%) female patients (13) (32.5%) in fat restriction group and 15(37.5%) in normal diet group) as shown in table (2) and Figure (1).

In our study there were 2 patients presented with abdominal pain

In normal diet group there was one patient (5%) patient presented with abdominal pain and in fat restriction group there was one patient (5%) patient presented with abdominal pain as shown in Figure (3).

2.4 Postoperative management:

All patients received good support from intravenous maintenance fluid, analgesics and had warm oral liquids after the operation.

2.5 Follow up after discharge:

All patients were followed up in outpatient’s clinic after discharge as 20 patients was advised to eat normal diet and other 20 patients advised to restrict fat in their diet for 1 month postoperative then all these patients were evaluated according to presence of:

Table (1): Showing age data in this study.

	Fat restriction (N=20)		Normal diet (N=20)		Paired <i>t</i> test.	
	Mean	SD	Mean	SD	Sig.	<i>t</i>
Age	16.43	2.85	16.24	2.55	0.682	> 0.05

P < 0.05: Significant

P > 0.05: not Significant

Table (2): Showing male to female ratio in the patients included in this study

	Fat restriction (N=20)		Normal diet (N=20)		Paired <i>t</i> test.	
	N	%	N	%	Sig.	<i>t</i>
Male	7	35%	5	25%	1.012	> 0.05
Female	13	65%	15	75%	1.10	> 0.05

P < 0.05: Significant *P* > 0.05: not Significant

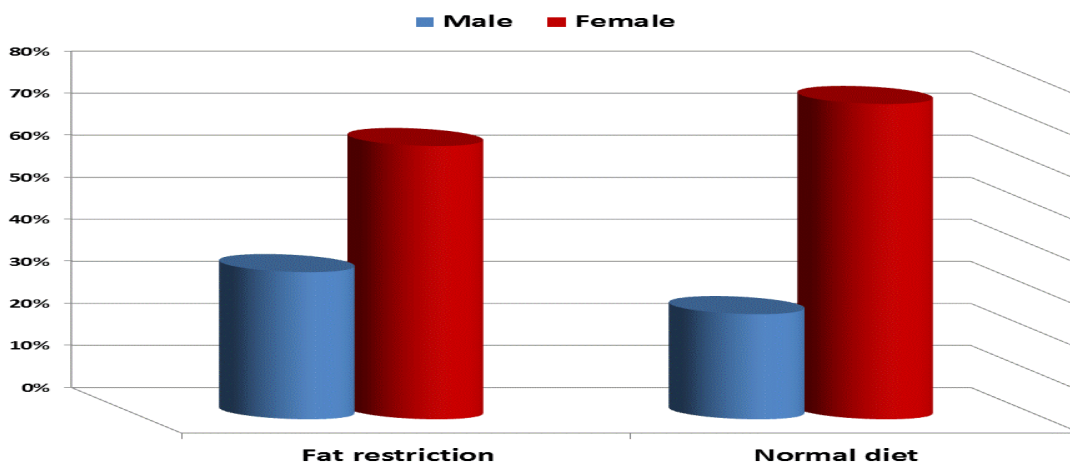


Figure (1): Diagram showing age data of patients of both groups of the study.

Table (3): Showing comorbidities among patients of both groups in this study.

Baseline Characteristics	Fat restriction (N=20)		Normal diet (N=20)		Paired <i>t</i> test.	
	N	%	N	%	Sig.	<i>t</i>
Diabetes mellitus	3	15%	2	10%	0.956	> 0.05
Hypertension	4	20%	2	10%	0.892	> 0.05
Bronchial asthma	2	10%	1	5%	0.521	> 0.05
Renal	0	0%	0	0%	-	> 0.05
Cardiac	1	5%	0	0%	-	> 0.05
Liver diseases	0	0%	0	0%	-	> 0.05

P < 0.05: Significant

P > 0.05: not Significant

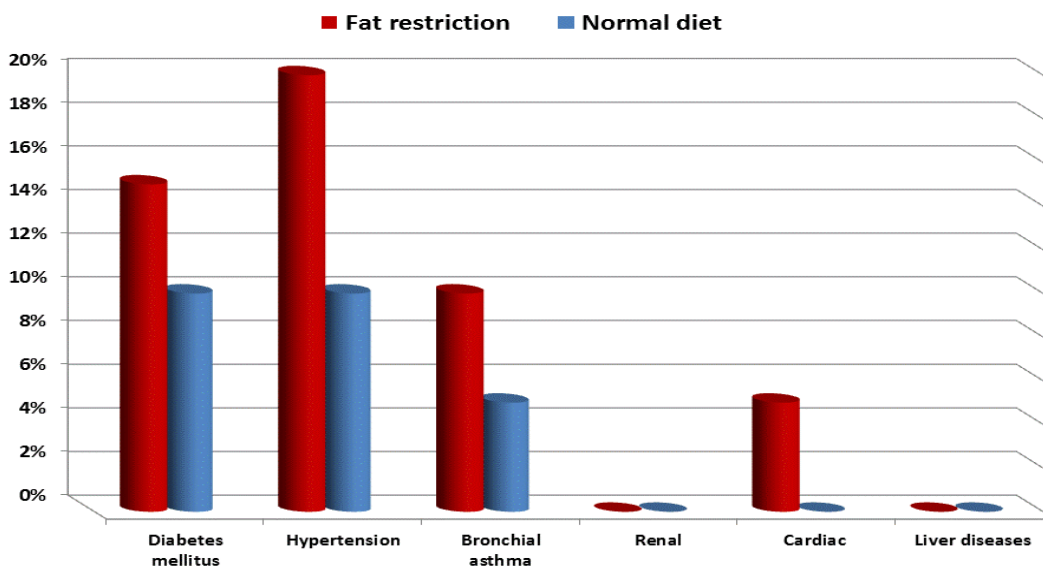


Figure (2): Diagram showing age data of patients of both groups of the study.

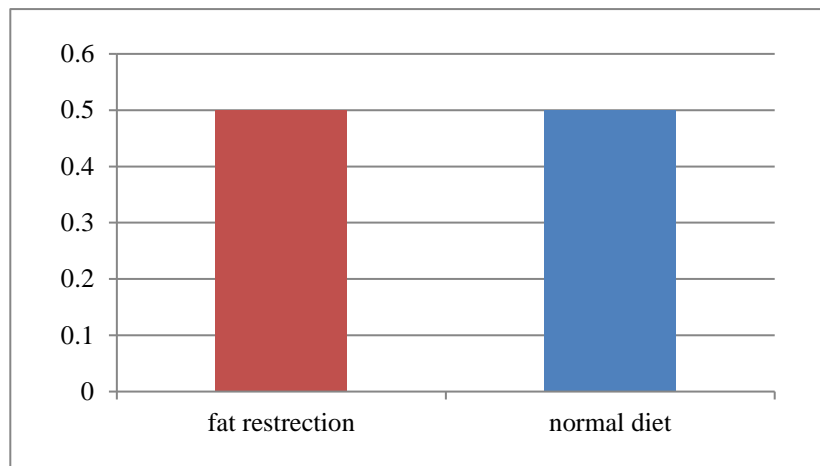


Figure (3): Diagram showing result of the abdominal pain in both groups fat restriction and normal diet.

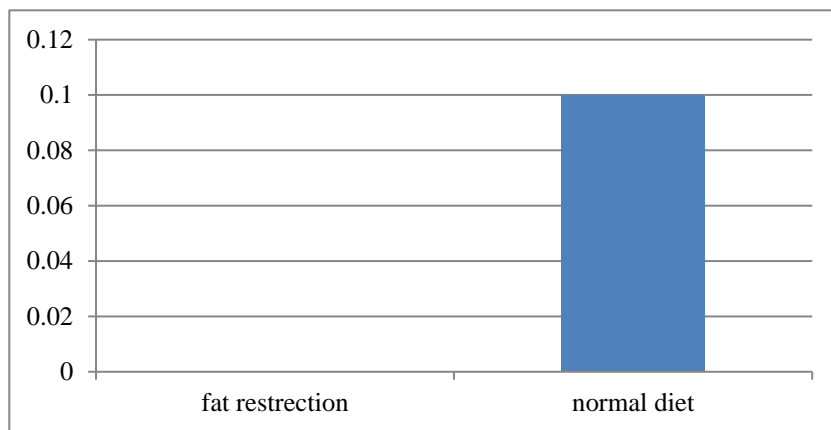


Figure (4): Diagram showing result of the diarrhea in both groups fat restriction and normal diet.

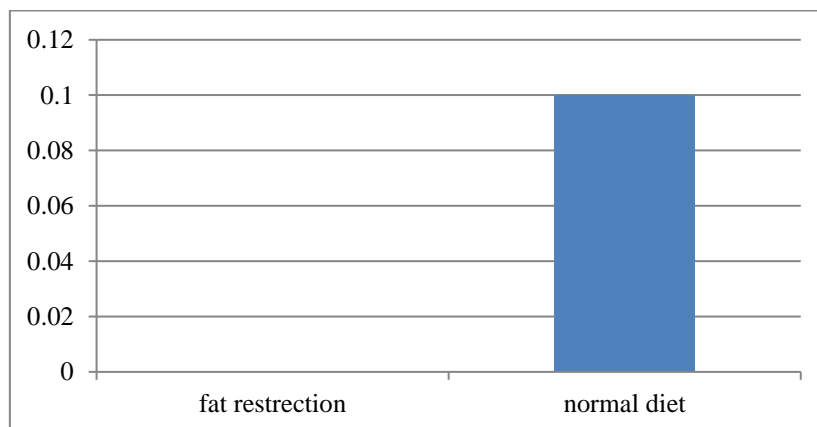


Figure (5): Diagram showing result of the steatorrhea in both groups fat restriction and normal diet.

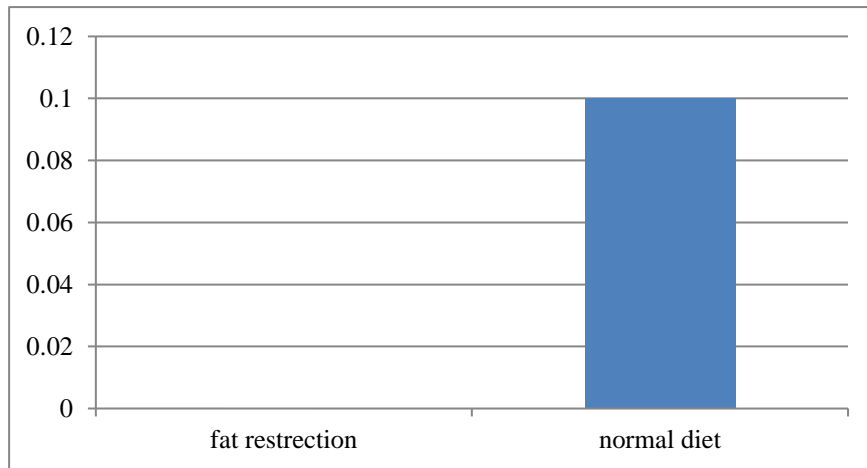


Figure (6): Diagram showing results of nausea among 2 groups

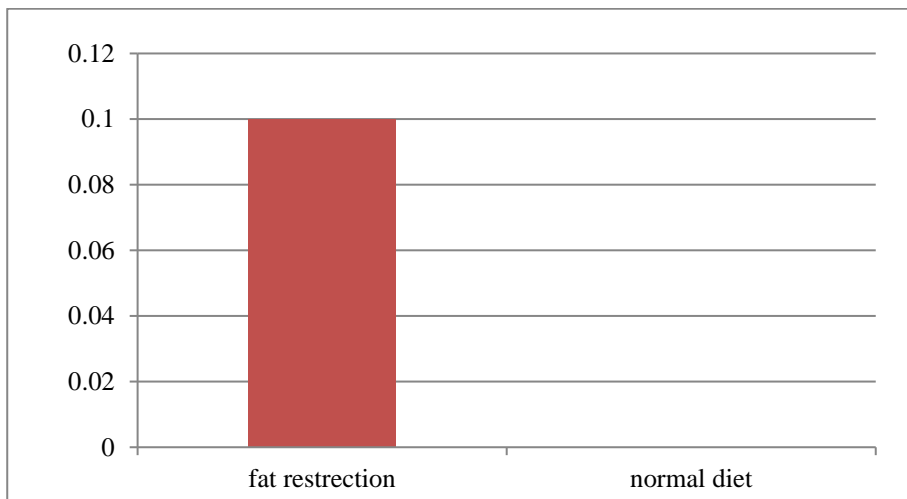


Figure (7): Diagram showing results of constipation in both groups of this study.

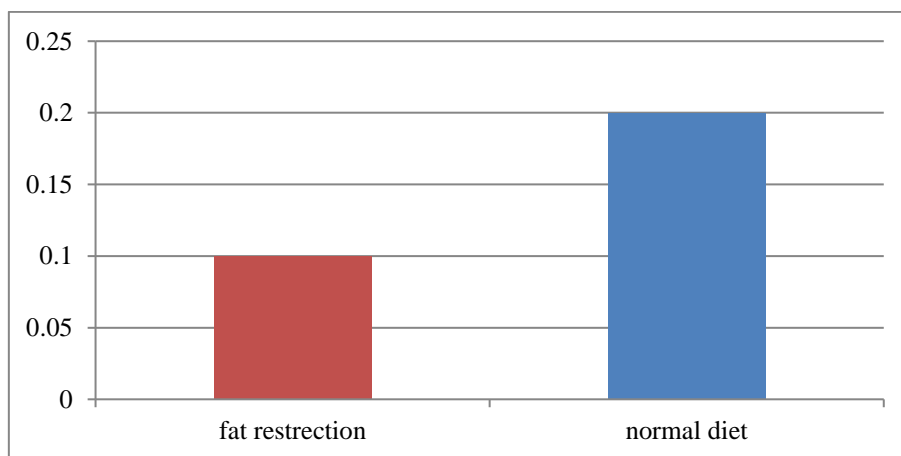


Figure (8): Diagram showing results of distention.

In our study there was one patient presented with diarrhea. In normal diet group there was one patient (5%) patient presented with diarrhea and in fat restriction group there was zero patient presented with diarrhea as shown in Figure (4). In our study there was one patient presented with steatorrhea. In normal diet group there was 1 patient (5%) presented with steatorrhea and in fat restriction group there was zero patient presented with steatorrhea as shown in Figure (5). In our study there was one patient presented with nausea. In normal diet group there was one patient (5%) presented with nausea and in fat restriction group there was zero patient presented with nausea as shown in Figure (6). In our study there was zero patient presented with vomiting. In our study there was one patient presented with constipation. In normal diet group there was zero patient presented with constipation and in fat restriction group there was one patient (5%) presented with constipation as shown in Figure (7). In our study there were 3 patients presented with distention in normal diet group there were 2 patients (10%) presented with distention and in fat restriction group there was one patient (5%) presented with distention as shown in Figure (8). In our study there was zero patient presented with bowel urgency. In our study there was zero patient presented with fatty dyspepsia. In our study there was zero patient presented with eructation.

4. Discussion

Knowledge of gallbladder physiology can aid in understanding and treatment of gallbladder diseases [5]. Dysfunction in the physiology of the gallbladder most commonly results in the production of gallstones. Imbalances in the constituents of bile and biliary sludge secondary to gallbladder hypokinesia can lead to the precipitation of insoluble stones [6]. Cholecystitis simply means inflammation of the gallbladder. This is most commonly due to gallstones in the cystic duct, termed

calculous cholecystitis [5]. Many gallbladder pathologies will ultimately warrant surgical intervention, and thus cholecystectomy, is one of the most common surgical procedures performed [6]. Today, most cholecystectomies are performed laparoscopically as a day surgery case. This procedure affords a very low complication rate with a fast recovery [7]. An uncommon complication termed post-cholecystectomy syndrome can occur postoperatively for example, persistent abdominal pain despite the surgery [7]. The incidence of gallstone in females is higher than in males, about two thirds are females in compared to one third in mal and the cause of these incidence is multifactorial [8]. In this study the incidence of gallstones is 70% in females and 30% in males and this conceding with the previous study. Our study concluded that there is no difference between patients who eat normal diet and who eat low fat diet in rate of development of post cholecystectomy symptoms and concluded that low fat diet does not have role in improvement of post cholecystectomy symptoms. The same conclusion was obtained by [1] who concluded that a low-fat diet does not seem to have an influence on the improvement of symptoms after cholecystectomy [1]. In [4] other results were obtained which concluded that postchol-ecystectomy symptoms were positively associated with intake of cholesterol and negatively associated with intake of vegetables suggesting that diet was plays a role in postcholecystemic symptoms.

Patients with gallstones are often affected by alimentary disorders contributing to the onset of gallstones disease. Cholecystectomy can have nutritional and metabolic consequences in the short-term (diarrhea, abdominal pain and bloating) and in the long-term (increased Body Mass Index with metabolic syndrome, gastritis, liposoluble vitamin deficiency). Pathogenic mechanisms behind these disturbances are reviewed and the need for an early post-operative nutritional intervention based on

low-lipid, high-fibers diet, is highlighted [3].

The postcholecystectomy syndrome (PCS) include gastric discomfort, nausea, vomiting, flatulence, abdominal distention, diarrhea, or / and persistent abdominal pain. The proper diet can be a solution, and it is advisable to limit the food that can aggravate diarrhea, foods with a high content of fat, fried foods and sauces. Elevating the fiber quantity helps in normalizing the intestinal transit.

5. Conclusion

According to our study: Low fat diet does not seem to have an advantage over normal diet in post lap. Cholecystectomy patients in early post-operative period.

Recommendations:

Our recommendation as the following

- 1- Increase patient number.
- 2- Do the study in multicenter.
- 3- Results of our study guide us to recommend that a low-fat diet intake in patients post lap cholecystectomy does not have an effect on occurrence of post cholecystectomy symptoms and does not have role in improvement of these symptoms.
- 4- Exclude the first three days after surgery
- 5- Long term follow-up

Small and more frequent meals ensure a better combination of the alimentary chime with the available bile. An adequate meal should include small amounts of weak proteins, fish or chicken, non-fat meat, accompanied by vegetables, fruit and cereals. In conclusions, in case of functional PCS, the treatment is symptomatic, but an adequate diet may ameliorate or even remove the disabling symptoms [9].

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