



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.2596585>Available online at: <http://www.iajps.com>

Research Article

LAPAROSCOPIC OR CONVENTIONAL CHOLECYSTECTOMY FOR SYMPTOMATIC CHOLELITHIASIS

¹Dr Rabia Murad, ²Dr Kinza Anwar, ³Dr Kawish shafqat
¹Jinnah Hospital Lahore.

Article Received: December 2018 Accepted: February 2019 Published: March 2019

Abstract:

Objective: In this research study we compare the result of conventional open to laparoscopic cholecystectomy on the basis of duration and positive result on patient after surgery.

Methodology: This research study is done in five years from January 2014 to December 2018 four hundred cholelithiasis patient participate in this study 200 patients treated with open and 200 patients was treated with Laparoscopic cholecystectomy. During surgery we noted the duration and positive parameters of both surgery and also determine advantages & disadvantages of both procedures. All 400 patients were equally divided in 2 groups one OC for open cholecystectomy & 2nd LC for laparoscopic cholecystectomy.

Results: The surgery time of LC was shorter than OC patients the duration of surgery in OC was 54.16±11.94 minutes & in LC was 46.89±14.83 minutes' p values are greater than 0.001. The OC group surgery was fifty point five percent complicated as compared to LC it was thirty-seven percent as well as all negligible and extensive problems with joined morbidity of forty-three point seventy-five percent p value is greater than 0.001. The hospital stay was also longer in OC group with respect to LC group i.e. 5.56±9.8 (range 4-10) days vs. 3.02±1.75 (range 1-5) days respectively. OC patient take longer time to return it routine work with respect to LC i.e. 31.61±7.6 days (range three-six weeks) & 18.06±5.16 days (range one-four weeks) respectively p<0.001.

Conclusions: The LC is more admirable & good to OC due to short operational duration, early unrest & fast return, decrease the duration of pain & less complicated, decrease in bed rest & patients able to return it routine work in short time.

KEY WORDS: Morbidity, Biliary Pathology, Cardiopulmonary, Perusal Parameters, Gallstones.

Corresponding author:

Dr. Rabia Murad,
Jinnah Hospital Lahore.

QR code



Please cite this article in press Rabia Murad et al., *Laparoscopic Or Conventional Cholecystectomy For Symptomatic Cholelithiasis.*, Indo Am. J. P. Sci, 2019; 06(03).

INTRODUCTION:

Gall stones disease is one of the famous biliary pathology suffering females mostly all over the world. The popularity of this disease decreases from fifteen-twenty percent in U.K, U.S.A. and Australia decrease the ratio of this disease up to one percent of its population. OC is one of the famous procedures operated in surgery. OC consider one of the oldest & good methods from past one century now a days LC considered 1st choice for cholelithiasis. Common biliary surgery has undergone a few modifications from traditional open to minilaparotomy cholecystectomy but since the introduction of laparoscopy into general practice in 19907 the surgical treatment of gallstones is changed and therefore elective laparoscopic cholecystectomy has almost replaced the open procedure.

About seventy to eighty percent of surgery is operated according to LC & thirty to twenty percent operated on OC all patient is aged, cardiopulmonary conciliated patients and patients with difficult gallstones where laparoscopic surgery is not beneficial. This procedure of surgery beneficial for cirrhotic patient if it was done experienced surgeon. According to our clinical approach LC has advantages over OC due to short operation duration, short recovery time, less costly, less bed rest time, low disability ratio. In this research we compare many functioning & perusal parameters of both procedures impose the good surgical option for our patients with cholelithiasis. The principle to be imposed was duration of surgery, duration of pain, complication in both procedure, bed rest time & duration of return to routine works.

METHODOLOGY:

This study was conducted in the surgery department of Jinnah Hospital Lahore, and the duration of this research was from January 2014 to December 2018. All cholelithiasis patients were admitted in hospital under the observation of study. The procedure of surgery selection on the bases of patients aims either the patient want OC or LC depend on the patient selection, demonstration of gallstone disease (simple or complicated), exorbitant corpulence and related comorbid circumstances of patients. Conventionally the cases due to over age of 65 years, having negotiated cardio-respiratory situation and patients

with difficult gallstone disease were favored for open cholecystectomy. The cases with medical or surgical jaundice, pancreatitis, and imagined or proven gallbladder malignancy were removed from study. From the hospital administration were given in oral and written instruction to the patient about the type of operation with details of their eventually and complications and also inform about hospital rest.

All patient of this research was divided in 2 groups one for OC and other for LC equal number of patients was study in both cases. The result of both procedures noted to compare the advantages of both procedures.

The open cholecystectomy was achieved with Kocher's subcostal laceration or transverse minilaparotomy laceration whereas laparoscopic cholecystectomy operation was carried with standard 4 ports technique. All patients were inspired for early mobilization and mandatory anesthesia was given in form of non-steroidal anti-inflammatory drugs and opioid derivatives whatever required according to rigor of pain. The data was evaluated in statistical programme SPSS version 16.0. The recode option was applying for numerical parameters and was classify Pearson's chi square test was conducted for absolute variables on ninety-five percent certainty interval. P value <0.05 was studied as level of consequentiality.

RESULTS:

All four hundred cholelithiasis participant of this study were equally divided in two groups (OC & LC). In recent years more cases were treated on the base of OC now when patient familiar with laparoscopic procedure more ever all cases preferred laparoscopic cholecystectomy. Male to female ratio was observed in OC up to 1:4 in LC patients up to 1:8. The age limit of both sexes was ten to eighty years with average age of forty-five. 56 ± 12.18 years in open cholecystectomy and thirty-seven. 64 ± 9.08 years in laparoscopic cholecystectomy group.

In both groups commonly we noted upper abdominal pain, dyspepsia, nausea, and vomiting during clinical observation. In Ultrasound observation additional stones were seen in OC up to seventy-seven point five percent & in LC groups up to seventy-six percent.

Table-I: Operative Time

Operative time	OC	LC	P values
	Number of patients 200	Number of patients 200	
	percentage	percentage	
Thirty min	Seventeen (eight.5 percent)	Forty five (twenty two point five percent)	Greater than 00.001
Forty five min	Fifty three (twenty six.5 percent)	Seventy three (thirty six point five percent)	Greater than 00.001
Sixty min	Seventy eight (thirty nine percent)	Fifty five (twenty seven point five percent)	Greater than 00.001
Seventy five min	Thirty two (sixteen percent)	Fifteen (seven point five percent)	Greater than 00.001
Ninety min	Twenty (tine percent)	Towel (six percent)	Greater than 00.001

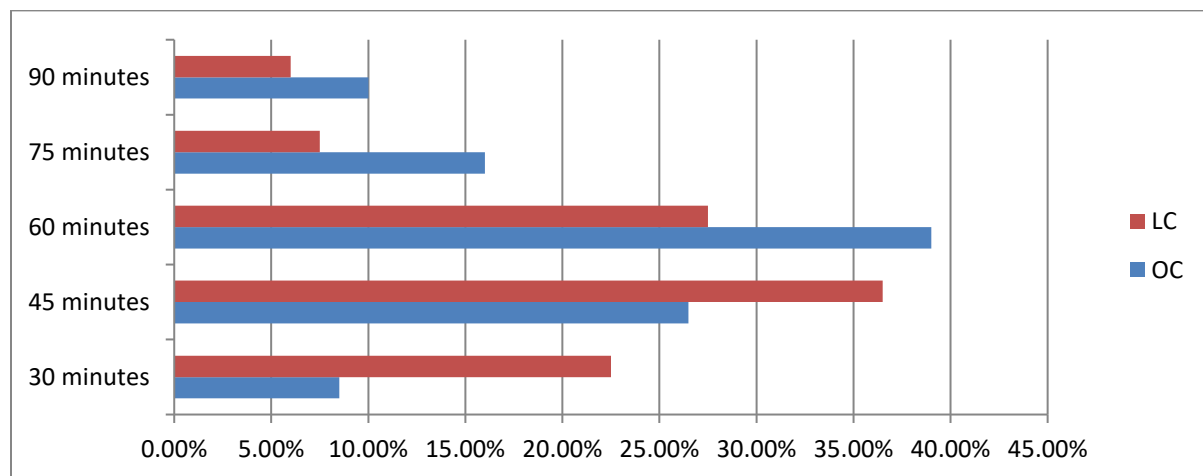
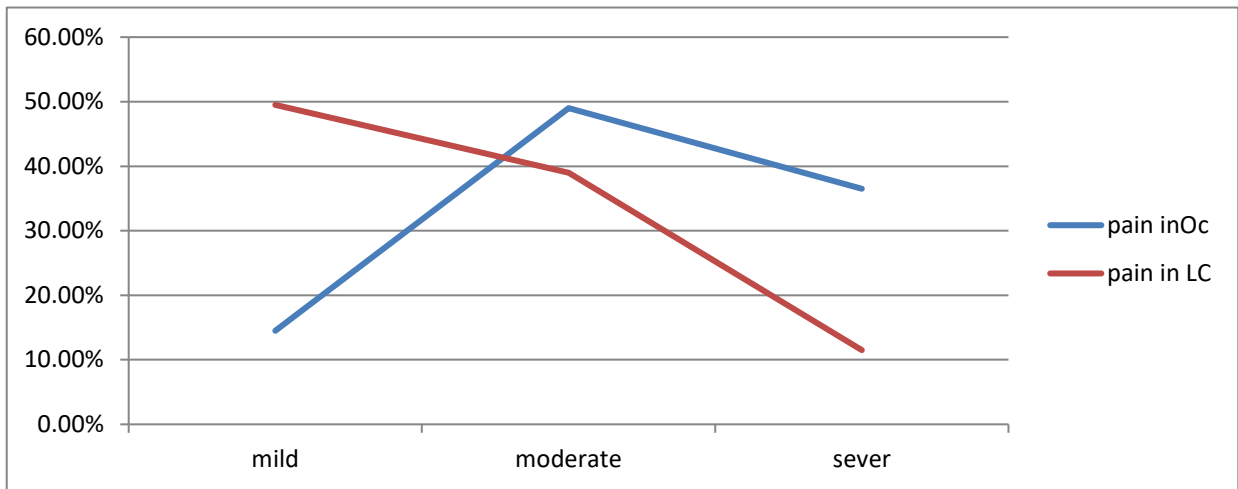


Table-I Postoperative pain

Postoperative pain	OC	LC	P value
	200 Patients	200 Patients	
Mild	Twenty nine (fourteen point five percent)	Ninety nine (forty nine point five percent)	Greater than 0.001
Moderate	Ninety eight (forty nine percent)	Seventy eight (thirty nine percent)	Greater than 0.001
Sever	Seventy three (thirty six point five percent)	Twenty three (eleven point five percent)	Greater than 0.001



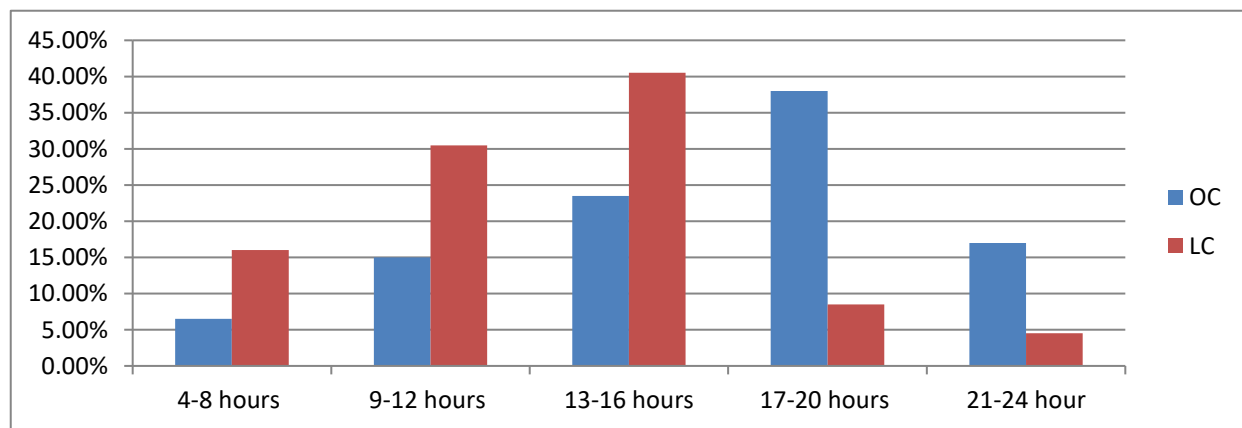
Mean operative time were 54.16 ± 11.94 minutes in OC which was slightly greater than LC were 46.89 ± 14.83 minutes. The average operative time of both OC & LC were 50.02 minutes & 43.15 minutes respectively. Open cholecystectomy group comparatively taken longer operative duration than Laparoscopic cholecystectomy compression of both groups with

respect to operative duration are given in Operative time table-1.

Also we compered the Postoperative pain of both Open cholecystectomy groups & Laparoscopic cholecystectomy groups in Postoperative pain table-1 average pain duration of OC groups are greater than LC groups.

Table-II: Mobilization Time

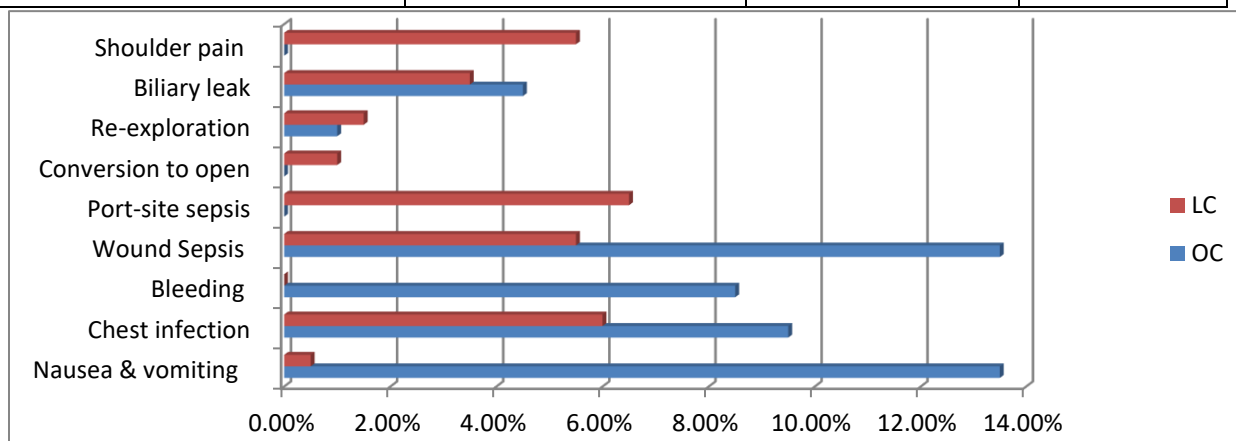
Mobilization Time	OC	LC	P value
	No of patient 200	No of patient 200	
	Percentage	percentage	
4-8 hours	Tar teen (six.5 percent)	Thirty two (sixteen per)	P value is greater 0.001
9-12 hours	Thirty (fifteen percent)	Sixty one (thirty.5 per)	P value is greater 0.001
13-16 hours	Forty seven (twenty.5 pr)	Eighty one (forty.5 per)	P value is greater 0.001
17-20 hours	Seventy (thirty 8 percent)	Seventeen (eight.5 per)	P value is greater 0.001
21-24 hours	Thirty four (seventeen percent)	Nine (four.5 percent)	P value is greater 0.001



Mobilization time of OC groups is commonly high from LC groups in the above figure when the mobilization time is increase the number of patient in OC groups increase and numbers of patient in LC decrease.

Table-II: Postoperative Complication

Complications	OC	LC	P value
	No of patients 200 percentage	No of patients 200 percentage	
Nausea & vomiting	Twenty seven (13.50%)	Fifteen (.50%)	<0.001
Chest infection	Nineteen (9.50%)	Towel (6.00%)	<0.001
Bleeding	Seventeen (8.50%)	zero	<0.001
Wound Sepsis	Twenty seven (13.50%)	Eleven (5.50%)	<0.001
Port-site sepsis	Zero	Thirteen (6.50%)	<0.001
Conversion to open	Zero	Two (1.0%)	
Re-exploration	2 (1.00%)	3 (1.50%)	<0.001
Biliary leak	Nine (4.50%) (with CBD Injuries Two cases)	Seven (3.50%) (with CBD Injuries Three cases)	<0.001
Shoulder pain	Zero	Eleven (5.50%)	<0.001

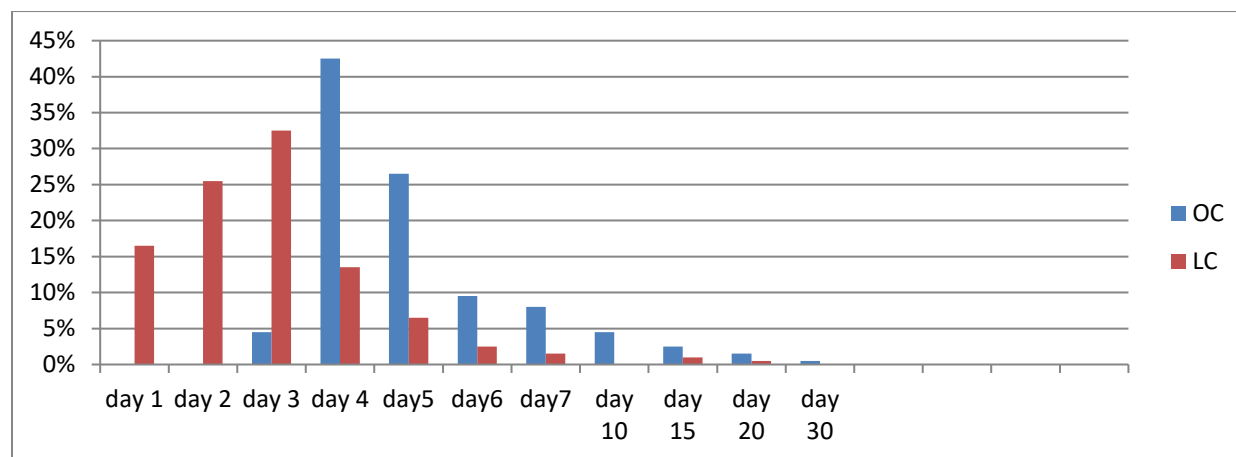


The repetition of complication determined was also higher in OC with respect to LC bleeding & biliary leak was observed in both patient but commonly higher in OC groups. On the other hand, wound sepsis thirteen point five was main problem of OC patients & port-site sepsis six.5 percent & shoulder pain five.5 percent was main complication of LC patients. More

ever all the minor and major complication of both groups were discoursed on the above figure- II. The average minor & major complication of both groups was forty-three point seventy five percent, OC is equal to fifty.5 percent as compere to LC were thirty-seven percent.

Hospital stay	OC patients 200	LC patients 200	P values
	percentage	percentage	Greater than 0.001
1 day	zero	Thirty three (16.500%)	Greater than 0.001
2 day	zero	Fifty one (25.50%)	Greater than 0.001
3 day	Nine (4.50%)	Sixty five (32.500%)	Greater than 0.001
4 day	Eighty five (42.50%)	Twenty seven (13.50%)	Greater than 0.001
5 day	Fifty three (26.500%)	Thirteen (6.50%)	Greater than 0.001

6 day	Nineteen (9.50%)	five (2.50%)	Greater than 0.001
7 day	Sixteen (8.00%)	Three (1.50%)	Greater than 0.001
10 day	Nine (4.50%)	zero	Greater than 0.001
15 day	Five (2.500%)	Two (1.00%)	Greater than 0.001
20 day	Three (1.50%)	One (0.50%)	Greater than 0.001
30 day	One (0.50%)	zero	Greater than 0.001

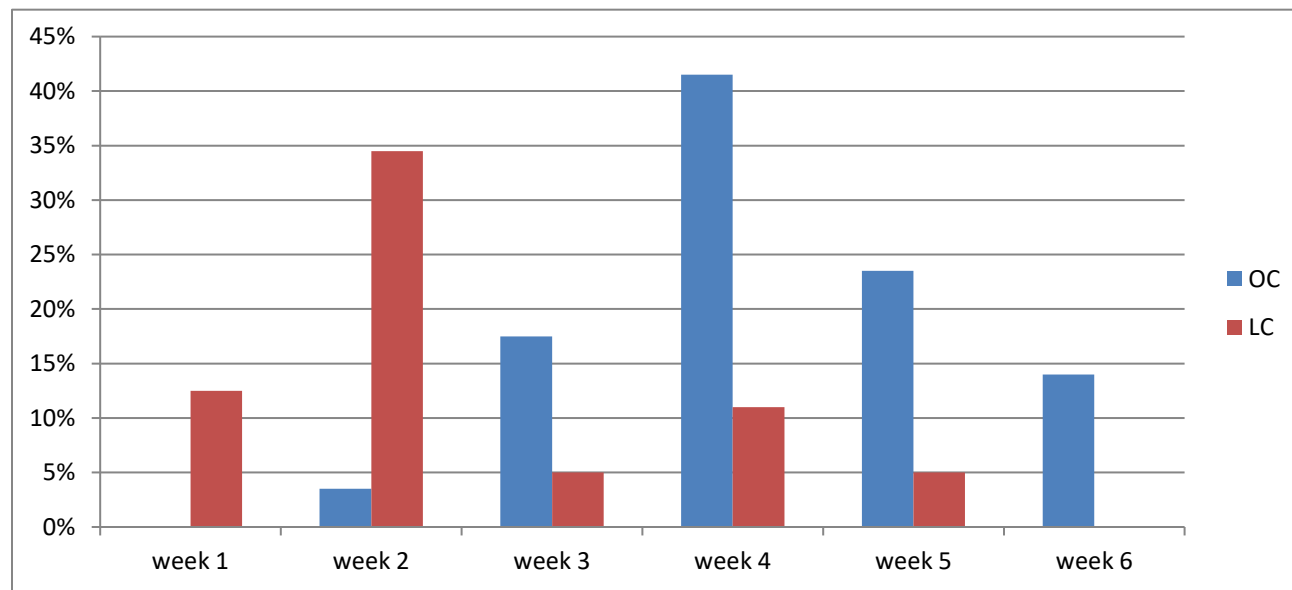


OC patients take more time in recovery due to this reason the hospital stay of OC patients is longer than LC patient approximately OC patient take four to ten days (91%) on the other hand LC patients take 1 to 5

days (94.5%) the average hospital stay was 5.56 ± 2.98 for OC & 3.02 ± 1.75 for LC groups. All the hospital stay of both groups is explain in above figure III.

Table-III Return to work

Return to Work	OC Patient 200	LC Patient 200	P value
	percentage	Percentage	
Weeks 1	Zero	Twenty five 12.5%	Greater than 0.001
Weeks 2	Seven (3.5%)	Sixty nine 34.5%	Greater than 0.001
Weeks 3	thirty five 17.5%	Eighty one forty.5 %	Greater than 0.001
Weeks 4	Eighty three 41.5%	Twenty two eleven %	Greater than 0.001
Weeks 5	Forty seven 23.5%	Three one.5 %	Greater than 0.001
Weeks 6	Twenty eight 14%	Zero	Greater than 0.001



OC patients more resumption time than LC patient it takes more time to return at routine work the mean resumption time of OC was 31.61 ± 7.6 days as compare to LC was 18.06 ± 5.16 days.

DISCUSSION:

The aim of our research study was to compared the advantages of both procedure and recode the operative duration and common parameters like duration of pain mobilization time complication in both groups bed rest and duration of return to routine works. The ratio of gallstones disease in females of western countries is about two times more to that of males in recent study they were lower as compare to past. Iqbal J. et study the sex ratio of both OC & LC patients in his study 5:1(93.100 percent: 6.90 percent) for OC & 19:10 (91.060%0percent:8.940 percent) for LC groups. Age also play important role in gallstone disease under the age of fifty to sixty years about twenty percent of female & five percent of male suffer of gallstone disease. In our research study high frequency was seen in 30 to 60 ages in OC group with average age of forty-five. 56 ± 12.10 years where as 30 to 50 ages with average age of thirty-six. 64 ± 9.080 years in LC patients which indicate higher overage age in OC patients. Rosen muller M et al also indicate high incidence for OC & low for LC sixty and fifty-four respectively.

The overage operating of OC is longer than LC the average operating time for OC was 54.16 ± 11.94 minutes & for LC was 46.89 ± 14.83 minutes 30 to 90 minutes was common range for both groups p value greater than 0.001. In some other research which shows shorter operative duration in OC group patients. According to Johansson M et al study (OC = 80 V/s LC = 90 minutes). Open cholecystectomy

groups patients seen more ill, sense more pain and have slowed recovery with respect to laparoscopic cholecystectomy where they have minimum surgical stress, less operation pain, faster recovery duration and early vomiting recovery flexibility and feeding. In this research study superiority of cases (eighty-five.5percent) of OC group sense balanced to serious pain and have slow recovery with respect to LC group where eighty-eight.5 percent sense smooth to balanced pain ($P < 0.001$) with faster recovery duration and early mobilization in LC groups patients.

The Postoperative bitterness due to different leading and negligible complications was seen more in open cholecystectomy with respect to laparoscopic cholecystectomy group (OC were fifty.5percent V/s LC were thirty-seven percent). The common bitterness in both cases was forty-three point seventy-five percent p value is greater than 0.001 this result was higher than Leo Jonas et to al concept which were six percent. The wound sepsis determine in OC was thirteen.50 percent as compared to LC group (six.50 percent) which is two times higher than LC group. the frequency of wound infection was also thrice higher in OC with respect to LC patients. Bleeding is also considering the serious case of OC groups (OC were eight.50 percent Vs LC=five.50 percent) & biliary leak (OC were four.50 percent Vs LC were three.50 percent) were the complications important for re-exploration [OC were 2 cases (one percent) V/s LC were 3 cases (one.5percent) & two one perent conversion from LC to OC of the groups.in

many studies it given that conversion ratio from LC to OC decrease from three.9 percent to towel percent.

The hospital stay was higher in open cholecystectomy groups as compare to Laparoscopic cholecystectomy.in our research study the range hospital stays from three to thirty days in OC & one to twenty days LC with average length of admitted duration as five.560 ± two.980 days in OC and three.020 ± one.750 days in LC group p value equal to 0.001. Different researcher given different idea about hospital stay many were like five point one days in OC & two point five days in LC group patients.

OC groups patient take more time to return it normal work as compare to LC groups patient OC were 6 weeks and LC group were one to four weeks. Majority of cases [OC=96.5% Vs LC 98.5% (P<0.001)]. Average reopening time to work was thirty-one.610 ± seven.60 days for open cholecystectomy & eighteen.060 ± 50five.160 days for Laparoscopic cholecystectomy patients. This study considers that LC group patients recently return to job as compared to OC group.

CONCLUSION:

From this research study we conclude that LC is admirable than OC in many respects like shorter operating duration, resent mobilization, the duration of pain was less, less postoperative complications, less bad rest and recently return to routine work.

REFERENCES:

1. Syrakos T, Antonitsis P, Zacharakis E, Takis A, Manousari A, Bakogiannis K, et al. Small incision (Mini-Laparotomy) versus laparoscopic cholecystectomy: A retrospective study in a University Hospital. *Langenbecks Arch Surg* 2004;389(3):172-177.
2. Conlon K. The gallbladder and bile ducts. In Russel RCG, Williams NS, Bulstrode CJK editors. *Baily and loves short practice of surgery 25th ed Arnold international student's edition* 2008; 2:1119.
3. Cuschieri AS. Disorders of biliary tree. In Cuschieri AS, Steele RJC, Moosa AR editors. *Essential. Surgical Practice*, 4th ed, Arnold Euston Road London NW 2002; 13 BH; II(I):406.
4. Schietroma M, Carlei F, Liakos C, Rossi M, Carloni A, Enang GN, et al. Laparoscopic versus open cholecystectomy an analysis of clinical and financial aspects. *Pannienerva Med* 2001;43(4):239-242.
5. Candela G, Varriale S, Manetta F, Dilibero L, Civitello F, Argenziano G, et al. Mimilaparotomy versus laparoscopy in treatment of cholelithiasis our experience. *G Chir* 2007;28(1-2):35-38.
6. Chau CH, Tang CN, Sui WT, Ha JP, Li MK. Laparoscopic cholecystectomy versus open cholecystectomy in elderly patients with acute cholecystitis retrospective study. *Hong Kong Med J* 2002;8(6):394-399.
7. Meyer C, De Mamzini N, Rohr S, Thiry CL, Perim-Khalil FC, Bachellier-Billot C. 1000 cases of cholecystectomy 500 by laparotomy versus 500 by laparoscopy. *J Chir (Paris)* 1993;130(12)501-506.
8. Zacks SL, Sandler RS, Rutledge R, Brown RS Jr. Laparoscopic cholecystectomy and open cholecystectomy. *Am J Gastroenterol* 2002;97(2):334-340.
9. Keus F, De Jong JA, Gooszen HG, Van Laarhoven CJ. Laparoscopic versus small incision cholecystectomy for patients with symptomatic cholelithiasis.. *Cochrance Database Sys Rev* 2006;18(4):CD006229.
10. Berggren U, Gordh T, Grame D, Haglund U, Rastad J, Arvidsson D. Laparoscopic versus open cholecystectomy hospitalization, sick leave, analgesia and trauma responses. *Br J Surg* 1994;81(9):1362-1365.
11. Poggio JL, Rowland CM, Gores GJ, Nagorney DM, Donohue JH. A comparison of laparoscopic and open cholecystectomy in patients with compensated cirrhosis and symptomatic gallstones. *Surgery* 2000;127(4):405-411.
12. Ros A, Carlsson P, Rahmqvist M, Bachman K, Nilsson E. Non-randomised patients in a cholecystectomy trial charac-teristics,

- procedures and outcomes. *BMC Surgery* 2006; doi:10.1186/1471-2482-6-17.
13. Johansson M, Thune A, Nelvin L, Stiernstan M, Westman B, Lundell L. Randomised clinical trial of open versus laparoscopic cholecystectomy for acute cholecystitis. *Br J Surg* 2005;92(1):44-49.
 14. Livingstone EH, Rege RV. A nationwide study of conversion from Laparoscopic to open cholecystectomy. *Am J Surg* 2004; 188:205-211.
 15. Iqbal J, Ahmad B, Iqbal Q, Rashid A. Laparoscopic V/S Open Cholecystectomy morbidity comparison. *Professional Med J* 2002;9(3):226-234.
 16. Attwood SE, Hill AD, Mealy K, Stephens RB. A prospective comparison of Laparoscopic versus open cholecystectomy. *Ann R Coll Surg Engl* 1992;74(4):397-400.
 17. Muller MR, Haapamaki MM, Nordin P, Stenlund H, Nilsson E. Cholecystectomy in Sweden 2000-2003: A nationwide study on procedures, patient characteristics and mortality *BMC Gastro-Enterol* 2007;7:35.
 18. Doherty GM, Way LW. Biliary tract. In Doherty GM editor current diagnosis and treatment 12th ed, Lange international edition MC Graw Hill companies 2006;582.
 19. Puckayastha S, Tilney HS, Giorgiou P, Athanasiou T, Tekkis PP, Darzi AV. Laparoscopic Cholecystectomy versus Mini-Laparotomy cholecystectomy a meta-analysis of randomized control. *Surg Endosc* 2007;21(8):1294-1300.
 20. Vegenas K, Spyrapoulos P, Karamikolas M, Sakelaropoulos G, Maroulis I, Karavias D. Mini-laparotomy cholecystectomy versus laparoscopic cholecystectomy which way to go. *Surg Laparosc Endosc Percutan Tech* 2006;16(5):321-324.
 21. Ros A, Gustafsson L, Krook H, Nordgren CE, Thorell A, Wallin G, et al. Laparoscopic Cholecystectomy versus Mini Laparotomy Cholecystectomy randomized single blind study. *Ann Surg* 2001;234(6):741-749.
 22. Supe ANN, Bapat VN, Pavdya SV, Dalvi AN, Bapat RD. Laparoscopic versus mini laparotomy cholecystectomy for gallstone disease. *Indian J Gastroenterol* 1996;15(3):94-96.
 23. Geng W, Cao Y, Chang Y, Tan W, Han J. Recovery of gas-trointestinal motility following laparoscopic versus open cholecystectomy. *Zhonghua Waike Za Zhi* 1999;37(7):415-417.
 24. Schietroma M, Carlei F, Cappelli S, Pescosolido A, Lygidakis NJ, Amicucci G. Effects of cholecystectomy (laparoscopic versus open) on PMN elastase. *Hepatogastroenterol* 2007;54(74):342-345.
 25. Siddiqui K, Khan AFA. Comparison of frequency of wound infection: Open Vs laparoscopic cholecystectomy. *J Ayub Med Coll Abbottabad* 2006;18(3):21-24.
 26. Jan YY, Chen MF. Laparoscopic versus open cholecystectomy a prospective randomized study. *J Formos Med Assoc* 1993;92(Suppl 4):5243-5249.
 27. Buanes T, Mjaland O. Complications in laparoscopic and open cholecystectomy: A prospective trial. *Surg Laparosc Endosc* 1996;6(4):226-272.
 28. Port RJ, DeVries BC. Laparoscopic versus open cholecystectomy: A prospective matched cohort study. *HPB Surg* 1996;9(2):71-75.
 29. Hardy KJ, Miller H, Fletcher DR, Jones RM, Shulkes A, Mc Neil JJ. An evaluation of Laparoscopic versus open cholecystectomy. *Med J Aust* 1994;160(2):58-62.
 30. Jonas L, Filipovic G, Kremntsova J, Norblad R, Soderholm M, Nilsson E. Open cholecystectomy for all patients in era of laparoscopic surgery: A prospective cohort study. *BMC Surg* 2006; 6:5

31. Saeed T, Zarin M, Aurangzeb M, Wazir A, Muqeen R. Comparative study of Laparoscopic versus Open Cholecystectomy. Pak J Surg 2007;23(2):96-99.
32. Gondal SH, Javed S, Bhutta AR. Postoperative pain Comparison between a Laparoscopic and Open Cholecystectomy: A two years' experience. Pak Postgrad Med J 2000;11(1):44-46.