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A Prospective Observational Study on Comorbid Condition and Treatment Options in Chronic Liver Disease and Cholelithiasis

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ABSTRACT:
AIM: To evaluate the comorbidities and study of treatment options in chronic liver disease and cholelithiasis patients.
OBJECTIVES: A prospective observational study on comorbid conditions and treatment options in chronic liver disease and cholelithiasis. To know best medical and surgical treatment in chronic liver disease and cholelithiasis. To evaluate the drug use pattern based age, gender and class of drugs usage. To evaluate the complications and most used surgical procedures in cholelithiasis and chronic liver diseases.
METHODS: A total of 220 cases were collected in the study. Among the 200 cases,100 cases are chronic liver disease and 100 cases are cholelithiasis were followed for prospective study in "KIMS SUNSHINE HOSPITAL",SECUNDERABAD for 6months. The evaluations were made from collected data.
RESULTS:A total of 200 were selected for the study. Among the 200 patients cholelithiasis most commonly seen in females and chronic liver disease was observed in males. In the patients we found that diabetes mellitus, hypertension and jaundice are the most common comorbidities.
In cholelithiasis patients ERCP, CBD STENTING, are the major surgeries usually done and the drugs UDILIV(gallstone dissoluting agents)is prescribed.
In chronic liver disease patients hepatoprotective drugs, monoamino oxidase inhibitor are the common drugs used in severe conditions like liver transplantation is the surgical procedure preferred.
The information gathered was true good and straight forward.
The patient information was helpful to known the best treatment options and there is a need to increase the prescription pattern in chronic liver disease.
CONCLUSIONS:According to the findings the most observed comorbidities are diabetes mellitus, hypertension and jaundice.
UDILIV, hepato protective drugs, mono amino oxidase inhibitors are majorly prescribed.
ERCP, CBDSTENTING, LAPCHOLECYSETOMY in severe cases liver transplantation are the surgical treatments for cholelithiasis and chronic liver disease.
Cholelithiasis is commonly seen in females due to hormonal replacement therapy.
There are many complications associated with chronic liver disease such as portal hypertension, Ascities, Esophageal varices, hepatocellular carcinoma and hepatomegaly.
KEYWORDS: Chronic liver disease, cholelithiasis, ERCP, udiliv, hepatoprotective drugs, liver cirrhosis, jaundice, portal hypertension diabetes, hepatitis.

I. INTRODUCTION:

CHRONIC LIVER DISEASE:
It is a dynamic obliteration of liver capacities for over a half year, which incorporates blend of coagulating factors, various proteins, detoxification of perilous results of digestion and discharge of bile.[1]

COMPLICATIONS OF CHRONIC LIVER DISEASE:
HYPERTENSION: This is the most notable serious complexities.

Section hypertension is a development in the strain in passage vein . This extension in pressure is achieved by a blockage of blood course through your liver in view of cirrhosis. Exactly when blood travels through the vein is fairly block, veins in your throat , stomach or processing plots can become widened . As the strain in these veins creates, these veins can deplete or attempt to break, typical causing outrageous internal passing on. [1]
•Expanding (edema) in your legs, lower feet.
•ASCITES: Development of liquids in your midsection.
•SPLENOMEGALY: Expanding or expansion of your spleen.

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•HEPATOPULMONARY
Condition: Arrangement and enlargement of veins in the lungs, prompting diminished degrees of oxygen in the endlessly blood and body and even windedness.

•HEPATORENAL
Condition: Disappointment of kidney capability because of having gateway hypertension as a complexity of cirrhosis. This is sort of kidney disappointment.

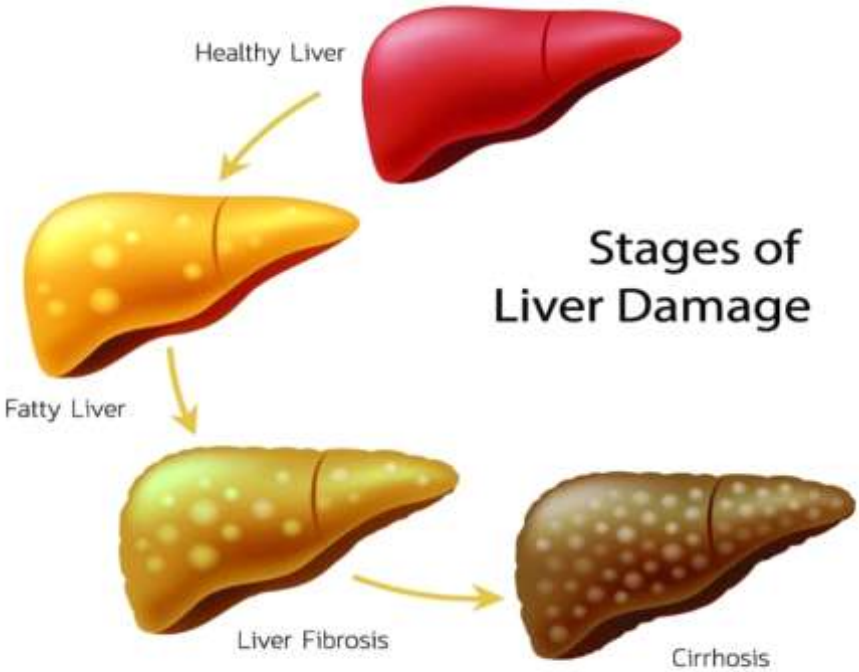
•HEPATIC ENCEPHALOPATHY:
Disarray, trouble thinking, changes in your way of behaving, even unconsciousness. This happen when poisons from your digestion tracts are not eliminated by your harmed liver and pass through the circulation system and development in your cerebrum.

•HYPERSPLENISM:
Hypersplenism is an overactive spleen. This condition causes fast and unexpected passing of platelets.

•Hunger:
Solid liver cycles supplements. A harmed liver makes this more troublesome and prompts general shortcoming and weight reduction.
•Contaminations:
Cirrhosis builds your gamble of getting and battling serious diseases, like bacterial peritonitis •LIVER DISEASE:
The vast majority who foster liver malignant growth have cirrhosis of the liver.

•LIVER DISAPPOINTMENT:
Many sicknesses and conditions cause liver disappointment including cirrhosis of the liver. As its name shows, liver disappointment happens when your liver isn't functioning admirably to the point of carrying out its numerous roles.

•BUDD-CHIARI SYNDOME:
Budd-Chiari disorder is what is happening in which the hepatic veins are obstructed or restricted by a coagulation. This blockage makes blood back up into the liver, and accordingly, the liver becomes bigger.[2]



TREATMENT:
1. PREDNISOLONE
BRAND NAME: Floored, oraped – ODT, Pediapred.

CLASS: Corticosteroids.
DOSE: 40MG/DAY.
ROUTE: Per oral.

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2. INTERFERON
BRAND NAME: Referon – A, Intron - A
CLASS: Immuno modulator.
DOSE: 10mil1u/ml.
ROUTE: IV (intravenous).

3. CETRIZINE.
BRAND NAME: Zyrtec, Quzyttir
CLASS: Antihistamine.
DOSE: 5-10mg
ROUTE: per oral.
USES: to treat allergic symptoms.

4. URSODEOXYCHOLICACID (UDCA)
BRAND NAME: Urso, Actigall, Reltone.
CLASS: Hepatoprotective agent, gallstone solubilizing agent.
DOSE: 10-15mg/kg (in two divided doses).
ROUTE: per oral
USES: to treat cholestatic liver disease and pruritus.

5. CHOLESTYRAMINE
BRAND NAME: Prevalite, Choltran.
CLASS: Bile acid sequestrants
DOSE: 4-16 g/day
ROUTE: per oral

6. CHLORPHENAMINE
BRAND NAME: Acolate, Cadistin, Advil.
CLASS: Antihistamine
DOSE: 4-16MG/DAY.
ROUTE: Per oral

7. NALTREXONE
BRAND NAME: Revia, Vivitrol.
CLASS: Opiate antagonist
DOSE: 50mg/day
ROUTE: per oral
USES: to treat pruritus.

8. SPIRONOLACTONE.
BRAND NAME: Aldactone, BN –Dytor -20.
CLASS: Aldosterone receptor antagonists.
DOSE: 500-400mg
ROUTE: per oral.
USES: to treat ascites.

9. FUROSEMIDE
BRAND NAME: Lasix, Furoscix.
CLASS: loop diuretics
DOSE: 40-160mg
ROUTE: per oral
USES: To treat ASCITES.

10. LACTULOSE
BRAND NAME:Duphalac, lactugal.
CLASS: laxatives
DOSE: 15-30ml, 2-4 times daily
ROUTE: oral.
USES: in management of encephalopathy.[3]

SURGICAL PROCEDURE FOR MANAGEMENT OF CHRONIC LIVER DISEASE.

- **TRANSJUGULAR INTRAHEPATIC PORTOSYSTEMIC SHUNTING (TIPS):**

A decent decision for draining isn't constrained by endoscopy. The Trans jugular intrahepatic Porto fundamental shunting process makes a fake association between the entryway and hepatic veins of the liver. This allows the blood to sidestep veins in the liver returning to the heart.[4]

- **PARACENTESIS**

Serious cirrhosis can make liquid aggregate in the mid-region. Paracentesis is finished to take overabundance liquid out. A desensitizing medication is infused. Imaging is utilized to assist with directing the needle and supplement it into the stomach. Liquid will be long through the needle.

- **LIVER TRANSPLANTATION**

A liver transfer might be required when: others techniques fall flat. At the point when the liver will turn out to be harmed to such an extent that it quits functioning as it ought to during a liver transfer, a sick liver is supplanted with a solid liver from a giver who has kicked the bucket.

- **OTHER SURGICAL SHUNTS:**

SPLENORENAL SHUNTS: A Splenorenal shunt helps to decrease the pressure in the variceal system by connecting the spleen vein to a kidney vein.

PORTA – CAVAL SHUNT: Lowers pressure in varices by completely bypassing the liver. This is done through a shunt that moves blood returning to the heart from body into the inferior vena cava.[5]

CHOLELITHIASIS (GALLSTONES)

Cholelithiasis is the state of getting gallstones. Many individuals have cholelithiasis and don't have any acquaintance with it. Gallstones wouldn't be guaranteed to lead to any issues. In the

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event that they don't cause. You can let them be. Be that as it may, gallstones can here and there bring on some issues by fostering a blockage. This will cause agony and irritation in your organs. On the off chance that it isn't dealt with, it might cause significant entanglements.[6]

COMPLICATIONS OF CHOLELITHIASIS:

- GALLBLADDER DISEASE:

Gallstones are the most well-known reason for gallbladder illnesses. At the point when they stall out, they cause bile back up into your gallbladder, causing aggravation. This can cause long - term damage to your gallbladder over the long haul., scarring the tissyes and preventing it from functioing.[7]

- LIVER DISEASE:

A blockage anyplace in the biliary framework can make bile back up into your liver. This will cause aggravation inliver, prompting a lengthy gamble of disease and longterm scarring overtime. If your liver quits working great, your entire biliary framework separates.

- GALLSTONE PANCREATITIS:

A gallstones that impedes the pancreatic conduit will cause irritation in your pancreas. Likewise with your different organs, transisient aggravation causes torment, and ongoing irritation causes long haul harm that can prevent your organ from working.

- CHOLANGITIS:

Aggravation in your bile conduits can cause diseases temporarily and scarring in the long haul. Scarring in your bile conduits makes them tight, which confines the progression of bile. This can cause long - term bicycle stream issues even after the blockage has been eliminated.

- JAUNDICE:

Backed –up bile will leak into your bloodstream, making you sick. Bile incorporates toxins that your liver has filtered from your body. The bilirubin content has a yellow color, which will be seen in the whites of your eyes.

- GALL BLADDER PERFORATION:

In 90–95% of instances, gallstones cause cholecystitis.

- Cholecystitis regardless of cholelithiasis is the essential driver of nerve bladder break.
- Nerve bladder unconstrained hole can foster in advanced age because of atherosclerosis, vasculitis, or limited vasospasm.
- There are three unique classes for nerve bladder holes: Intense, subacute, and ongoing. Intense nerve bladder hole is characterized as a free hole into the peritoneal cavity.

- GALLBLADDER POLYPS:

Gall bladder polyps are growths that are seen on the inside lining of the gallbladder. Most are benign and cause no symptoms. They may be caused by excess cholesterol deposits, inflammation or abnormal cell growth.

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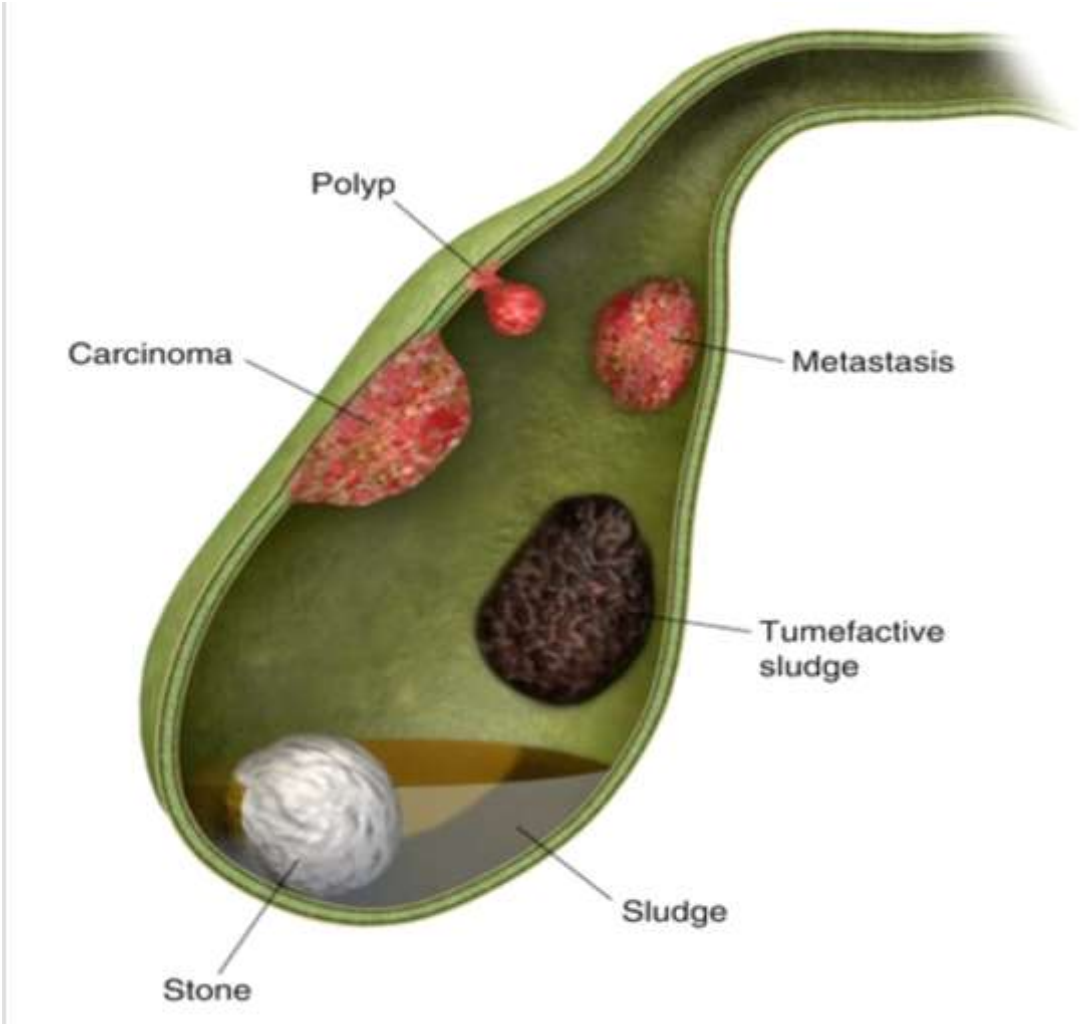

ADENOMAS :
Benign tumours composed of cells that resemble the lining of the biliary tract, the channel that connects the gallbladder to others organs.

ADENOMYOMATOSIS:
An unusual over growth of the gallbladder lining the forms cysts in the gallbladder wall.

MALABSORPTION:
If bile can't travel to your small intestine as intended, you might have difficulty breaking down and absorbing nutrientsfrom your food. Bile is specially important down fats and for absorbong fat-souble vitamins in your small intestine.

- MIRIZZI SYNDROME :

It is a complication of chronic gallstone disease in this the common hepatic duct obstruction is caused by extrinsic compression from an impacted stone present in the cystic duct or infundibulum of gallbladder.[7]

TREATMENT:

1. PANTOPRAZOLE
BRAND NAME: Protonix, PAN -40
CLASS: Proton pumps inhibitors.
DOSE: 40mg
ROUTE: oral.
USES: to treat gastro esophageal reflux.

2. URSODEOXYCHOLIC ACID OR UDILIV
BRAND NAME: Urso, Actigall.
CLASS: Hepato protective Agent or Biliary agent.
DOSE: 300mg.
ROUTE: oral.

3. ANETOL
BRAND NAME: Anetol, Dolo, Tylenol.
CLASS: Analgesic.
DOSE: 1000mg.

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ROUTE: Intravenous (IV).
USES: Reduce fever and pain from gallstones or complications caused by gallstones.

4. DICLOFENAC
BRAND NAME: Dyloject, Cataflam, Voltaven–XR.
CLASS: Non- steroid anti- inflammatory drug's (NSAID'S)
DOSE: 100-150 mg.
ROUTE: oral.
USES: Reduces inflammation (swelling) and pain.

5. MORPHINE SULPHATE.
BRAND NAME: Roxanol, Vermor.
CLASS: Opiate Analgesic.
DOSE: 20mg every 4-6 hrs.
ROUTE: Intramuscular (IM).
USES: To treat Biliary pain.

6. HYOSCYAMINE
BRAND NAME: Levsin, Egazil.
CLASS: Anticholinergic or Antispasmodics.
DOSE:0.125mg.
ROUTE: Oral.
USES: To treat Cramping Pain caused by Gallstones.

7. KETOROLAC
BRAND NAME: Toradol, Sprix.
CLASS: Non steroid Anti – Inflammatory Drug's (NSAID'S).
DOSE: 10mg.
ROUTE: Oral.
USES: To Avoid Complications of gallstones.[8][9]

SURGICAL PROCEDURES:
ENDOSCOPICRETROGRADECHOLANGIO PANCREATOGRAPHY (ERCP):

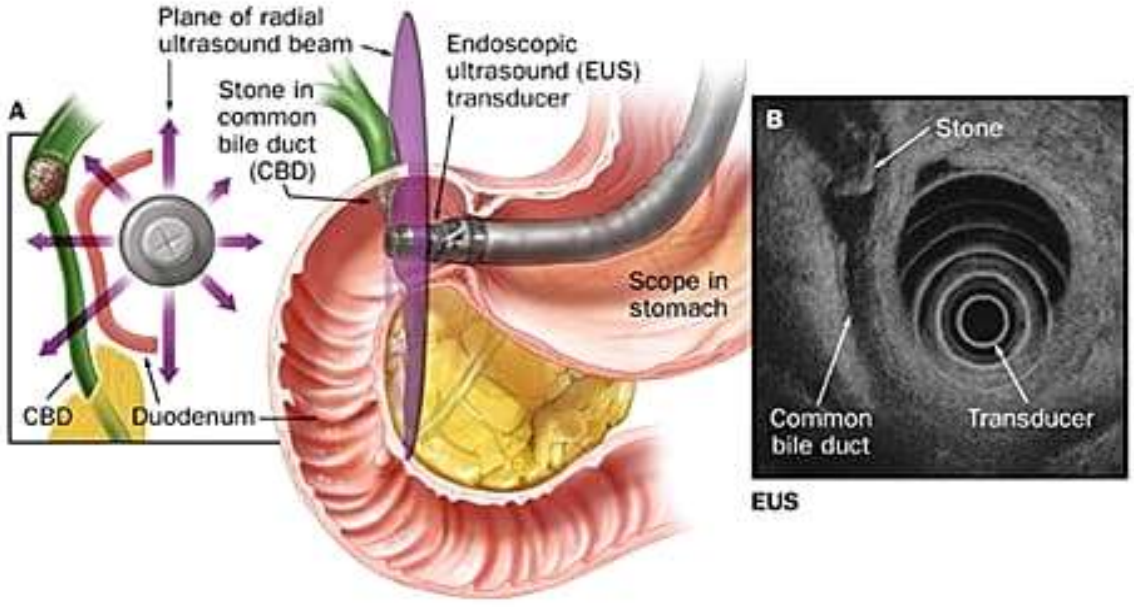
Endoscopic retrograde cholangial pancreatography assists with diagnosing and treat gallstones, excited gallbladder, bile channel blockages, pancreatitis, pancreatic malignant growth and different circumstances.

LAPAROSCOPIC CHOLECYSTECTOMY:

In a laparoscopic cholecystectomy, the doctor makes a few little cuts in the midsection and supplements a laparoscope - a slight cylinder with a minuscule camcorder connected. The camera sends an amplified picture from inside the body to a video screen, giving the doctor a nearby - up perspective on organs and tissues. While looking the screen, the doctor utilizes gadgets to painstakingly isolate the gallbladder from the liver, bile conduits, and different designs. Then the specialist eliminates the gallbladder through one of the little cuts. Patients for the most part get general sedation.

OPEN CHOLECYSTECTOMY:

An open cholecystectomy is done when the gallbladder is genuinely excited, tainted, or scarred from different tasks. .



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SHOCK WAVE LITHOTRIPSY:

Doctors use shock waves to break the gallstones.[10]

METHODOLOGY: INCLUSION CRITERIA:

- Both Male and Female patients are included.
- Patients with comorbidities.
- Inpatients are selected.
- Patients who are above 18 years of age are selected for study.
- Patients who are willing to give consent.

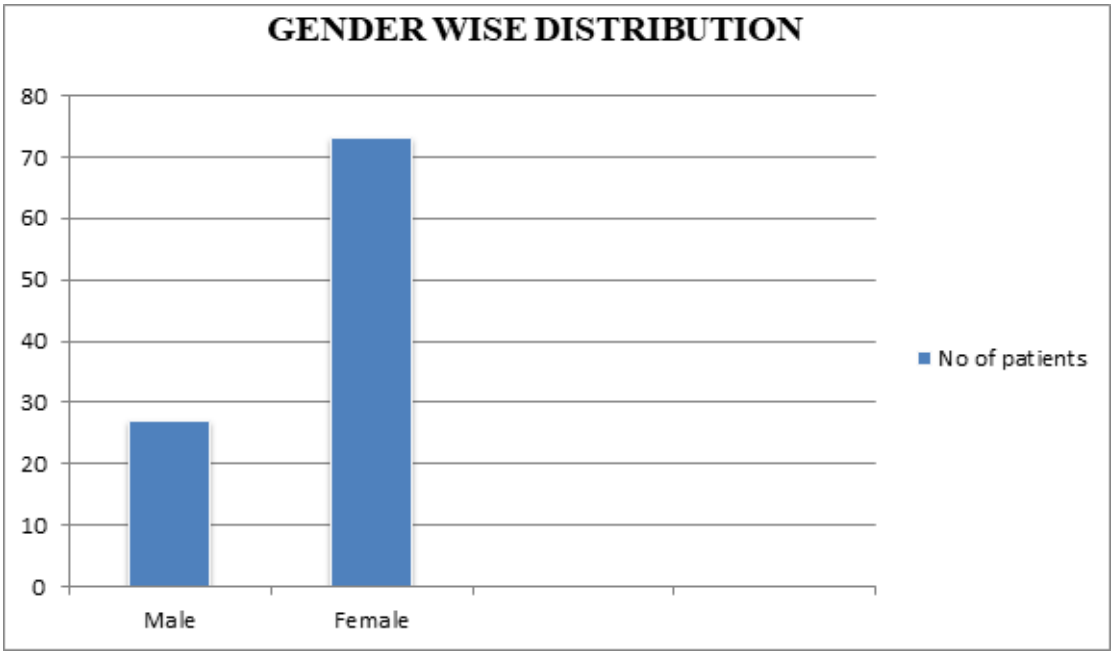
EXCLUSION CRITERIA:

- Pregnant and lactating women.
- Paediatrics.
- Patients who are not ready to give consent.
- Patient with communicable disease are excluded.

II. RESULTS:

GENDER WISE DISTRIBUTION OF CHOLELITHIASIS DISEASE:

Gender	No. Of Patients(n)	Percentage (%)
Male	27	27%
Female	73	73%
Total	100	100%



From the Above table in addition graph it is concluded that cholelithiasis is most commonly seen in Female patients that is 73% and it is less seen in Male patients that is 27%

COMORBIDITES IN CHOLELITHIASIS DIASEASE:

Comorbidities	No. Of Patients	Percentages
Diabetes Mellitus	48	48%
Hypertension	44	44%
Thyroid	14	14%
Jaundice	18	18%
Sepsis	6	6%
Coronary artery disease	8	8%

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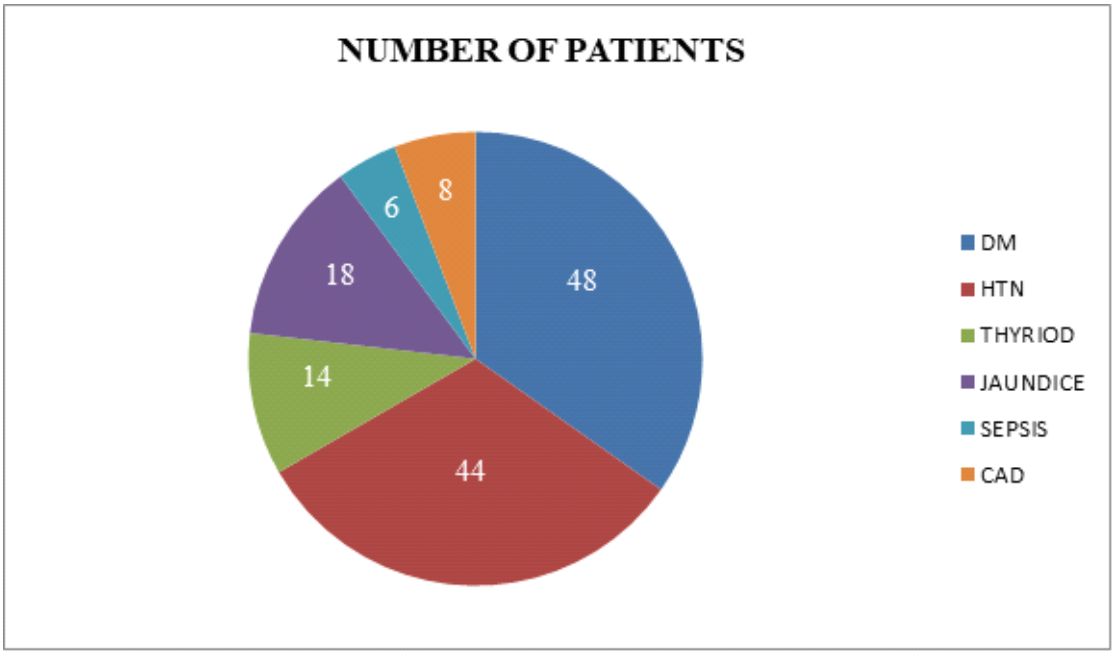

From the Above table and graph the utmost seen comorbidity in relation to cholelithiasis is Diabetes Mellitus (48%)also less seen in Sepsis (6%)

CLASS OF DRUGS USED IN CHOLELITHIASIS:

Class of drugs used	No of patients
Gallstone dissolution agent	91
Hepatoprotective drugs	85
Antibiotic	89
Proton pump inhibitor	85
Antiemetic's	75
Laxative	48
Antacids	9
Vitamin supplement	20
Chlorpheniramine	14
Non steroid anti – inflammatory drugs	15

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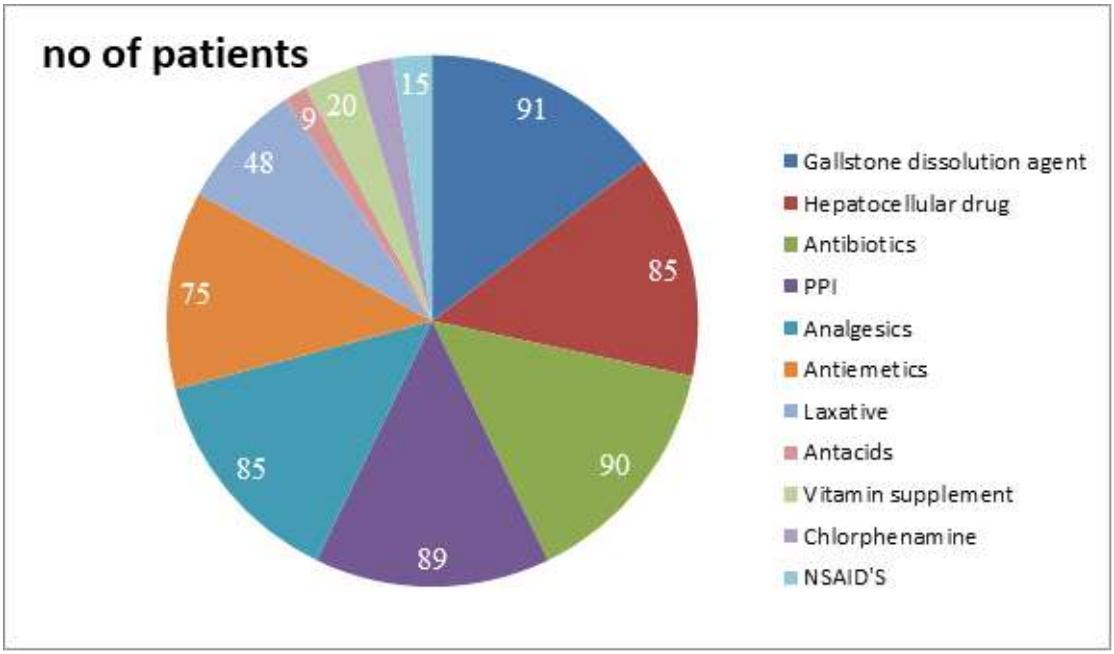
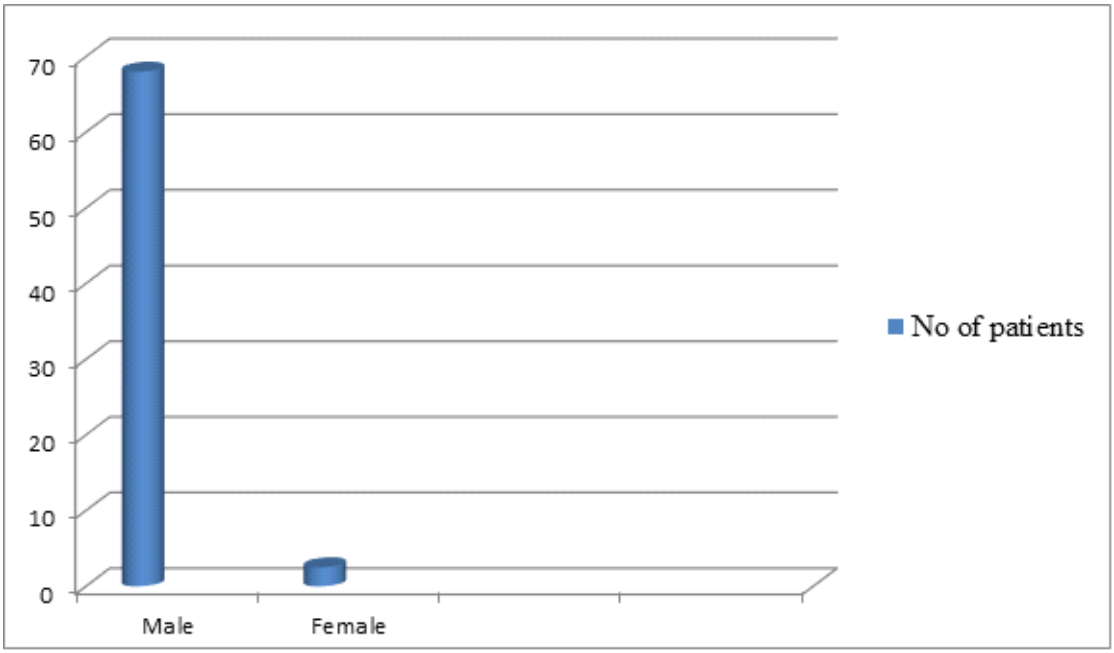


Gallstone dissolution agents be situated mostly prescribed drug in patients suffering with cholelithias.

GENDERWISE DISTRIBUTION IN CHRONIC LIVER DIASEASE:

Gender	No Of Patients (n)	Percentage (%)
Male	68	68%
Female	32	32%
TOTAL	100	100%



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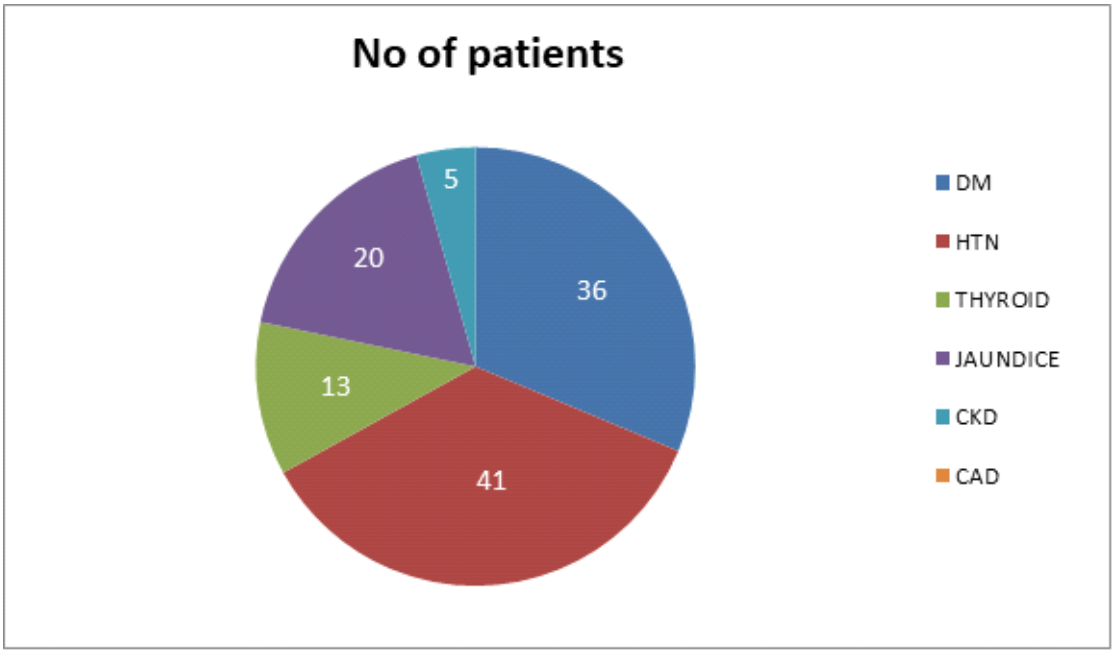
From the Above table in addition graph it is concluded that chronic liver disease is most commonly seen in Male patients that is 68% and it is rarely perceived in Female patients that is 32%.

COMORBIDITES IN CHRONIC LIVER DIASEASE:

Comorbities conditions	No of patients	Percentage
Diabetes Mellitus	36	36
Hypertension	41	41
Thyroid	13	13
Jaundice	20	20
Chronic kidney disease	5	5
Coronary artery disease	9	9



From the Above table in addition graph the most seen comorbidites in relation to chronic liver disease is Hypertension (41%) and rarely perceived in chronic kidney disease (5%).

MAJOR DRUGS USED IN CHRONIC LIVER DISEASE:

Major drugs	No of patients
Hepatoprotective drugs	72
Monoamine oxidase inhibitors	55
Antibiotic	81
Corticosteroids	50
Proton pump inhibitors	64
Analgesic	85
Multi vitamin	31
Laxative	19
Diuretics	15

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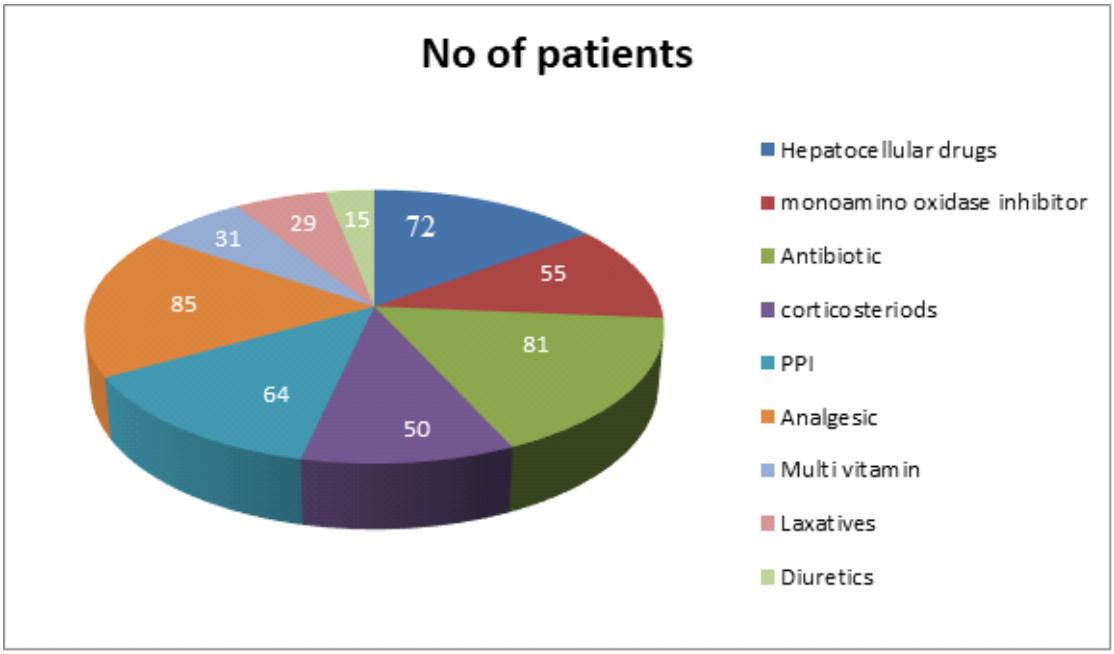

Antibiotics (81%) and hepatoprotective drugs (72%) are majorly prearranged for chronic liver disease patients in addition Diuretics (15%) are leastly prescribed.

III. DISCUSSION

In the current review we have 200 patients Information, in which 100 patients are enduring with cholelithiasis and 100 patients are enduring with ongoing liver sickness.

Most of patients with cholelithiasis were viewed as over the age 18 years in the two guys and females.

Orientation wise appropriation of gallstones presumes that females (73%) are generally affected (27%) with cholelithiasis.

This study reasons that age dissemination to which gallstones were seen between 31-40 years that is (28%), trailed by 51-60 years (26%), 61-70 years (16%), 71-80 years (15%), 41-50 years (12%), 21-30 years (2%) and lastly found in age gathering of 81-90 years (1%).

The normal comorbidities related with gallstones are Diabetes Mellitus (DM), Hypertension (HTN), Thyroid, Jaundice, sepsis and Coronary vein illness (computer aided design).

Diabetes mellitus is the major comorbid condition in cholelithiasis and sepsis is the minor comorbid condition.

The patients with cholelithiasis are recommended with the medications like Hepatoprotective medications. Anti-microbials, Analgesics, proton siphon inhibitors and Antiemetic's are utilized.

The complexities related with cholelithiasis are choledocholithiasis, intense analytics cholecystitis, and pancreatitis and gallbladder carcinoma.

Ongoing liver illness is significantly found in Guys (68%) contrasted with females (32%).

The review reasons that Age appropriation to which constant liver illness were seen between 51-60 years (26%) of patients were in that age bunch.

Hypertension (HTN) IS (43%) and Diabetes Mellitus (36%) are most normal Comorbidities related with Constant liver sickness.

Hepatoprotective medications and Monoamine oxidase inhibitor (MAOI'S) drugs are generally recommended for patients experiencing persistent liver sickness.

There are numerous intricacies related with persistent liver illness like Obstructive Jaundice, Oesophageal varices, Gateway hypertension, Gross ascites, hepatomegaly, and hepatic encephalopathy and hepatocellular carcinoma.

IV. CONCLUSION

As per the discoveries the comorbid conditions related with constant liver sickness and cholelithiasis as Diabetes Mellitus, Hypertension, coronary course infection, ongoing liver illness, Jaundice.

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Laparoscopic cholecystectomy, Endoscopic retrograde cholangial pancreatography, normal bile conduit stenting are the surgeries to treat cholelithiasis prescriptions generally recommended are Udiliv (ursodeoxycholic corrosive), Analgesics, antiemetic, proton siphon inhibitors and anti-microbials.

Udiliv is the gallstone disintegration specialist, the unfavourable impacts related with this medication are Looseness of the bowels, Stomach distress and muscle and joint agony.

Persistent liver sickness is treated with medication like Hepatoprotective medications, corticosteroids, monoamine oxidase inhibitors and Immuno modulators are utilized. Surgeries like Trans jugular intrahepatic Porto fundamental shunting (TIPS) and liver transfer a medical procedure are utilized.

Serious difficulties are seen in persistent liver illness like Entrance hypertension, oesophageal varices, Ascites, Hepatocellular carcinoma and hepatomegaly.

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