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Department of Health Research
Ministry of Health and Family Welfare, Government of India

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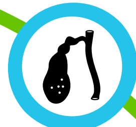
# Standard Treatment Workflow (STW)

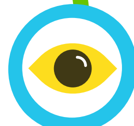
# GALL STONE DISEASE

## ICD-10-K80.20

### SYMPTOMS



1) Pain
A) Biliary colic- slowly progressive, constant pain in right upper quadrant or mid - epigastrium, crescendo-decrescendo pattern
B) Acute cholecystitis - prolonged pain more than biliary colic, (> 24 hrs) associated with fever



2) Nausea or vomiting
3) Dyspepsia
4) Flatulence
5) Food intolerance
6) Jaundice - GB stone impacted at the neck or hartmann's pouch that compresses CBD
7) Acute cholangitis – pain, fever, jaundice

### PRESENTATION OF A PATIENT WITH GSD

- SYPMTOMATIC
- ASYPMTOMATIC
- COMPLICATED
  1. Acute cholecystitis
  2. Empyema
  3. Mucocoele
  4. Acalculous cholecystitis (critically ill patients – unexplained fever, lack of right upper quadrant tenderness, leukocytosis)
  5. Gangrene/ perforation
  6. Biliary obstruction
  7. Acute pancreatitis

### INVESTIGATIONS

| | | |
|---|---|---|
| Haemogram,RFT, electrolytes, CXR, RBS, ECG (to distinguish from cardiac pain) | • LFT–Serum bilirubin, SGOT/PT, Alkaline Phosphatase<br>• Amylase, lipase | • USG abdomen–investigation of choice (sensitivity–95%)<br>1. To look for status of gall bladder and characteristic distal acoustic shadow<br>2. Status of liver/ CBD/ Intra hepatic biliary radicle dilatation (IHBRD)<br>3. Other intra abdominal pathology like renal stones, ovarian pathology etc |

### MRCP

Indications- jaundice, high ALP, dilated CBD (on USG), suspected CBD stones or mirizzi's syndrome (CBD obstruction caused by extrinsic compression from an impacted stone in cystic duct or Hartmann's pouch)

### EVALUATION OF COMORBIDITIES

- DM – fasting & post prandial blood sugar, HbA1c, sugar charting
- Cardiac evaluation – ECHO and other as required
- COPD patient – PFT
- Coagulation profile - PT/ INR
- Thyroid function test

### MANAGEMENT

#### ASYMPTOMATIC

Laparoscopic Cholecystectomy +/-

**Absolute indications:**
- Suspected malignancy
- GB polyp > 1cm
- Porcelain GB
- Chronic hemolytic anemia
- Transplant patient especially (cardiac transplant)
- Calculi > 3cm
- Multiple small stones
- Paediatric gall stones

**Relative Indications:**
- Calculi > 2 cm
- Calculi < 3mm, patent cystic duct
- Diabetes mellitus
- Non functioning GB

#### SYMPTOMATIC

Laparoscopic Cholecystectomy

- Acute calculous cholecystitis → Conservative
  - NON RESOLVING: Cholecystostomy followed by laparoscopic cholecystectomy by experienced laparoscopic surgeon after 6 weeks
  - STABLE: Early LC – within 24-72 hours (if expertise available) OR Delayed LC – after 6 weeks by experienced lap surgeon
- Gangrene/ perforation → Emergency lap/ open cholecystectomy
- Acute pancreatitis → Conservative management
  - Mild/ moderate pancreatitis → Lap cholecystectomy within same hospital admission
  - Severe pancreatitis → Lap cholecystectomy after 4-6 weeks of resolution of pancreatitis

#### COMPLICATED

(If possible patient should be managed in a tertiary centre after initial resuscitation)

- Acalculous cholecystitis → Conservative management
  - Unstable → Non resolving symptoms → Cholecystostomy → Lap Cholecystectomy (if required)
  - Stable → Conservative management only → Lap cholecystectomy if symptoms persists after resolution of acute phase
- Concomitant GSD+ CBD stones → Refer to CBD stones STW

### MANAGEMENT OF ACUTE CHOLECYSTITIS (CONSERVATIVE)

| | | |
|---|---|---|
| **At PHC level**: initial resuscitation, IV antibiotics (3rd generation cephalosporin, metrogyl ± aminoglycosides), analgesics, bowel rest, USG abdomen (if available) and refer to higher centre | **At district hospital level:** IV hydration, antibiotics (3rd generation cephalosporin, metrogyl ± aminoglycosides), analgesics, bowel rest, USG abdomen, surgical consultation | **Tertiary level-** Early (if presents within 72 hrs)/ interval laparoscopic cholecystectomy depending on expertise in laparoscopy |

### POST LAP CHOLECYSTECTOMY COMPLICATIONS

- Patient not looking well, non ambulatory, not tolerating orally
- Pain out of proportion / not explained / not responding to analgesics
- Tachycardia, Fall in BP
- Abdominal distention, bile/ blood in drain

### FOLLOW UP

- Suture removal after 1 week, HPE report
- Continue antibiotics – if mucocele, empyema, diabetic

**CONVERT EARLY IN CASE OF DOUBT IN LAP CHOLECYSTECTOMY**

**REFER PATIENT EARLY IN CASE OF ANY DOUBT IN POST OP**

### ABBREVIATIONS

**CBD:** Common biles ducts
**GSD:** Gall stone disease
**HPE:** Histopathological examination
**LC:** Laparoscopic cholecystectomy
**MRCP:** Magnetic resonance cholangiopancreatography

**KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES**

This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory, and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit the website of DHR for more information: (**stw.icmr.org.in**) for more information.
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