

STANDARD TREATMENT WORKFLOW (STW)

IMAGE GUIDED MANAGEMENT OF OBSTRUCTIVE JAUNDICE

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Standard Treatment Workflow (STW)
IMAGE GUIDED MANAGEMENT OF OBSTRUCTIVE JAUNDICE
ICD-10-K83.1

CLINICAL PRESENTATION

- Jaundice
- Pruritus
- Dark coloured urine & Pale stool

COMMON ETIOLOGIES

- Non obstructive:** Hepatitis related- viral hepatitis (A,B,C,E,NASH), alcohol, auto-immune cirrhosis
- Obstructive:** Mechanical obstruction
- Benign:** stone, sludge, stricture, worm, primary sclerosing cholangitis, bilio-enteric anastomotic stricture (HJ stricture)
- Malignant:** Carcinoma GB, hepatocellular carcinoma, cholangiocarcinoma, hepatic metastasis, pancreatic head carcinoma, extrinsic compression by lymph node/mass, pseudotumor

KEY TO DIAGNOSIS

- In presence of jaundice
- High AST/ALT + relatively normal SAP/GGT suggests hepatitis
- Elevated SAP & GGT + relatively normal AST/ALT suggests obstructive etiology
- USG* abdomen would mostly differentiate between obstructive and non-obstructive causes

Do not suspect obstructive jaundice if:

- AST/ALT elevation > 1000 IU
- ALP/GGT normal/mildly elevated (s/o hepatitis)

If non obstructive jaundice: refer to district hospital/tertiary care to be managed by physician (medicine/gastroenterologist/hepatologist)

RED FLAGS

- Cholangitis
- Pain in right hypochondrium
- Fever
- Chills
- Tachycardia & tachypnoea

Patients should be administered IV fluids & antibiotics- Cefoperazone + Sulbactam in a ratio of 1:1 administered IV 20-40 mg/kg/day in equal doses over duration of 6-12 hrs

INVESTIGATIONS

	ESSENTIAL	DESIRABLE	OPTIONAL
HEMATOLOGICAL	LFT, CBC, PT/INR	KFT, Screen Hepatitis A/E B/C markers	Hepatitis A/E B/C markers
IMAGING	USG Abdomen	MRCP, CECT Abdomen	

PHC

Patient with clinical features and/or red flag signs

CHC/DISTRICT HOSPITAL

- Clinical examination; hematological investigations – LFT, CBC, PT/INR and imaging – USG abdomen
- If cholangitis is suspected – Fluid resuscitation and IV antibiotics and refer to tertiary level care for further management

TERTIARY CARE

- Clinical examination, repeat hematological investigations if > 2 weeks. Imaging – NPTBD to confirm diagnosis & look for level of obstruction, CECT abdomen to decide for definitive vs palliative care
- Suspected cholangitis – Fluid resuscitation & IV antibiotics
- Biliary drainage (PTBD/ERCP) to make patient fit for surgery/palliative care (chemotherapy/radiotherapy)
- PTBD preferred for high CBD/hilar obstruction, ERCP preferred in low CBD obstruction

Once the bilirubin starts reducing, the patient can be taken up for surgery or chemo/radiotherapy or refer back to regional cancer centre

BASIC HEMATOLOGICAL AND USG FINDINGS IN OBSTRUCTIVE JAUNDICE

LFT


- Serum bilirubin – Elevated
- AST/ALT – Normal to elevated
- ALP/GGT – Markedly elevated (ALP>GGT)

CBC

- Hb: Normal to low
- TLC: Normal to elevated
- PT/INR: Normal to elevated

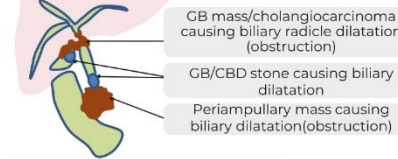
USG ABDOMEN

- Gall bladder stone/mass
- Dilatation of Common bile duct/intrahepatic biliary radicles



Ultrasound image showing causes and findings in obstructive jaundice

COMMON CAUSES OF BILIARY OBSTRUCTION



- GB mass/cholangiocarcinoma causing biliary radicle dilatation (obstruction)
- GB/CBD stone causing biliary dilatation
- Periampullary mass causing biliary dilatation (obstruction)

PERCUTANEOUS TRANSHEPATIC BILIARY DRAINAGE (PTBD)#

INDICATIONS

- Decrease bilirubin to commence appropriate therapy (surgical/palliative)
- Cholangitis (draining infected bile)
- Intense pruritus

DAYS OF HOSPITALISATION

- 1-3 days (non-infected/no cholangitis cases)
- 7-14 days (Cholangitis, can be prolonged in severely septic patients)

CONTRAINDICATIONS

- Deranged coagulation (correct before procedure)
- Emergent cases: infuse fresh frozen plasma (FFP) - 10ml/kg body weight prior to the procedure
- Elective cases: IV vitamin K injection (5-10 mg) - 3 to 5 days
- Ascites (to be drained before therapy)

MANAGEMENT

CLINICAL FEATURES

- LFT: Raised serum bilirubin with/ Markedly raised ALP and/ or GGT
- Normal/ mildly raised AST/ALT
- If signs of cholangitis: Jaundice with fever, rigor, pain

USG

- CBD/IHBR dilatation
- GB stone/Mass

MEDICAL MANAGEMENT FOLLOWED BY

- USG/MRCP
- Lower CBD obstruction: ERCP
- Higher common bile duct/Hilar Obstruction PTBD#

URGENT REFERRAL TO HIGHER CENTRE

MRCP

- Ascertain level and cause of obstruction in the biliary tree
- Lower CBD obstruction: ERCP preferred
- High CBD obstruction: PTBD# preferred

CHOLEDOCHOLITHIASIS/OTHER BENIGN CAUSE NEEDING BILE DRAINAGE

- ERCP
- PTBD# (If ERCP not possible)

BILIARY TRACT MALIGNANCY

CECT ABDOMEN

- Identify the malignancy and extent of disease
- Decide for definitive vs palliative care

DEFINITIVE TREATMENT

- PTBD followed by surgery

PALLIATIVE TREATMENT

- PTBD# followed by Biliary stenting
- Chemotherapy/Radiotherapy

PROCEDURAL DETAILS

- External drainage** for infected cases (aim to establish internal drainage with or without biliary stenting, once the infection is treated. In cases of long-term external drainage – electrolytes should be replaced for ongoing bile salt loss)
- Internal drainage** using internal external drainage catheter for non infected cases else may be considered for primary biliary stenting

EXPECTED OUTCOMES

- Normal bile drainage through the catheter
- Reduction in bilirubin to make patient fit for required therapy

AFTER CARE

- Appropriate antibiotics*: Ofloxacin/Cefixime 200 mg 12 hrly for 3-5 days
- LFT & CBC
- Clinically stable patient with reducing bilirubin can be planned for biliary stenting/ definitive surgery/discharge as per the requirement and suitability

FOLLOW UP

- Follow-up with IR in case of non-reducing or rise in bilirubin/sign of cholangitis/ stent block
- Patients to follow with respective physician (surgeon/medical or radiation oncologist) after successful biliary drainage and normalization of bilirubin

COMPLICATION

- Development of cholangitis post PTBD
- Haemorrhagic output should prompt an immediate evaluation to rule out vascular injury

****Respective contraindications, risks and precautions, pediatric dose of antibiotics to be considered before prescription**

Patients with obstructive jaundice having no/ minimal IHBRD with distended CB may be considered for percutaneous cholecystostomy in emergent situations. Similarly, cholecystostomy may be a bridge to surgery in patients with pyocoele/mucocele of GB

ABBREVIATIONS

ALP: Alkaline Phosphatase	ERCP: Endoscopic Retrograde Cholangiopancreatography	IR: Interventional Radiology	PT/INR: Prothrombin Time/International Normalized Ratio
ALT: Alanine Aminotransferase	GB: Gall Bladder	KFT: Kidney Function Test	PTBD: Percutaneous Transhepatic Biliary Drainage
AST: Aspartate Aminotransferase	GGT: Gamma Glutamyl Transferase	LFT: Liver Function Test	SAP: Serum Amylase P
CBC: Complete Blood Count (Hemogram)	IHBRD: Intrahepatic Biliary Radicle Dilatation	MRCP: Magnetic Resonance Cholangiopancreatography	USG: Ultrasonography
CBD: Common Bile Duct		NASH: Non Alcoholic Steatohepatitis	
CECT: Contrast Enhanced Computed Tomography			

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CHOLANGITIS IN OBSTRUCTIVE JAUNDICE NEEDS AN EARLY BILIARY DRAINAGE

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