

# ***SCREENING FOR HEPATIC & BILIARY DISEASE***

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# HEPATIC AND BILIARY PATHOPHYSIOLOGY

- Hepatitis
- Viral hepatitis



# RISK FACTORS

- ❖ Injection drug use
- ❖ Acupuncture
- ❖ Tattoo inscription or removal
- ❖ Ear or body piercing
- ❖ Recent operative procedure
- ❖ Liver transplant recipient



- ❖ Blood or plasma transfusion
- ❖ Hemodialysis
- ❖ Health care worker exposed to blood products or body fluids
- ❖ Exposure to certain chemicals or medications
- ❖ Unprotected homosexual/bisexual activity
- ❖ Severe alcoholism
- ❖ Travel to high risk areas

<b>Factor</b>	<b>Hepatitis A</b>	<b>Hepatitis B</b>	<b>Hepatitis C</b>	<b>Hepatitis D</b>	<b>Hepatitis E</b>
<b>Incidence</b>	<b>Areas of poor sanitation</b> ▪Fall and early winter	<b>Drug addicts, homosexuals, exposed to blood</b> ▪All years	<b>Post transfusion</b> •All years	<b>Occurs in association with Hepatitis B &amp; presence of HbsAG</b> ▪Mediterranean area	<b>Poor sanitation</b> <b>Parts of Asia, Africa, Mexico</b>
<b>Incubation period</b>	<b>2-6 weeks</b>	<b>6 weeks-6 months</b>	<b>6-7 weeks</b>	<b>6 weeks-6 months</b>	<b>2-9 weeks</b>
<b>Risk Factors</b>	<b>Close personal contact, or handling contaminated food or water</b>	<b>Contact with secretion, blood, blood transfusion</b>	<b>Contact with secretion, blood, blood transfusion</b>	<b>Contact with secretion, blood, blood transfusion</b>	<b>Travelling or living in areas where incident is high</b>
<b>Prophylaxis and active &amp; Passive immunity</b>	<b>Hygiene</b> <b>Vaccine available</b>	<b>Avoidance of risk factors</b> <b>Hygiene</b> <b>Vaccine</b>	<b>Hygiene</b> <b>Treatment with interferon (Alfacon-1)</b>	<b>Hygiene</b> <b>Vaccine available</b>	<b>Hygiene</b> <b>Sanitation, no immunization is available</b>



# METABOLIC DISEASE

- *Wilson's disease*
- *Hemochromatosis*



*CLINICAL SIGNS AND SYMPTOMS OF  
TOXIC AND DRUG-INDUCED HEPATITIS*

- ❖ Anorexia, nausea, vomiting
- ❖ Fatigue and malaise
- ❖ Jaundice
- ❖ Dark urine
- ❖ Clay-colored stools
- ❖ Headache, dizziness, drowsiness
- ❖ Fever, rash, arthralgias, epigastric



# COMMON HEPATOTOXIC AGENTS

- ❖ **Analgesics**
- ❖ **Cardiovascular**
- ❖ **Anesthetics**
- ❖ **Hormonal**
- ❖ **Re-creational Drugs**
- ❖ **Antidepressants**
- ❖ **Vitamins**





# *CIRRHOSIS*

- Cirrhosis is a chronic hepatic disease characterized by the destruction of liver cells and by the replacement of connective tissue by fibrous bands.
- As the liver becomes more and more scarred & fibrosed, blood and lymph flow become impaired, causing hepatic insufficiency and increased clinical manifestations.



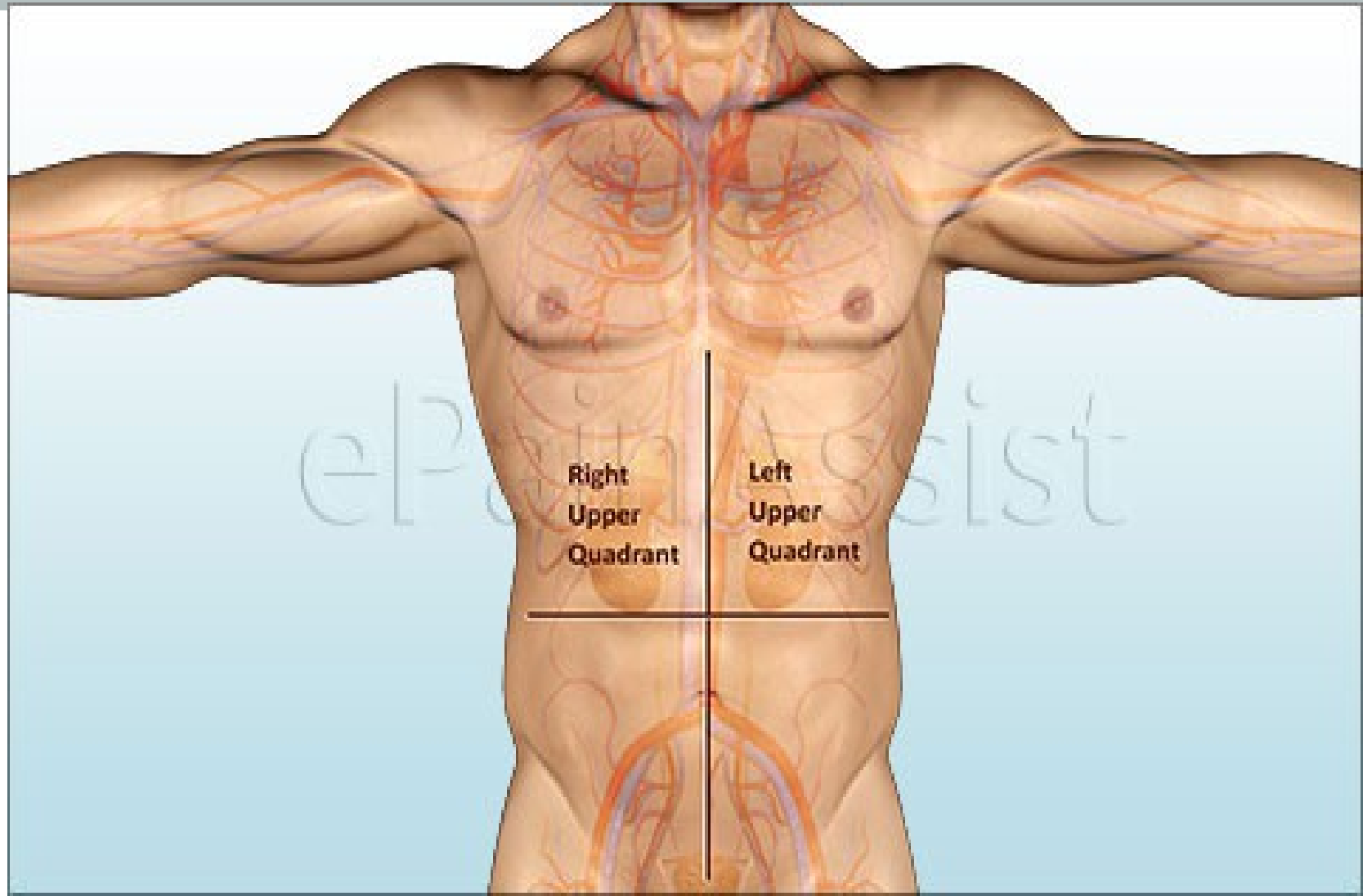
## NAFLD

Fatty infiltration of the liver exceeding 5% to 10% by weight.

- NAFLD is an illness closely associated with diabetes and obesity and may make liver damage caused by other agents (e.g., alcohol, industrial toxins, hepatatrophic viruses)
- people with NAFLD will develop liver inflammation leading to liver scarring and cirrhosis.
- Prevention and treatment of both diabetes and obesity, and protection of the liver from toxins can help to limit the course of this disease.

## *CLINICAL SIGNS AND SYMPTOMS OF CIRRHOSIS*

- ❖ Mild right upper quadrant pain
- ❖ GI symptoms
- ❖ Anorexia
- ❖ Indigestion
- ❖ Weight loss
- ❖ Nausea and vomiting
- ❖ Diarrhea or constipation
- ❖ Dull abdominal ache
- ❖ Ease of fatigue (with mild exertion)
- ❖ Weakness
- ❖ Fever





## *CLINICAL SIGNS AND SYMPTOMS OF* **PORTAL HYPERTENSION**

- Ascites
- Dilated collateral veins
- Esophageal varices
- Hemorrhoids
- Splenomegaly
- Thrombocytopenia



- *Ascites is an abnormal accumulation of fluid containing large amounts of protein and electrolytes in the peritoneal cavity as a result of portal backup and loss of proteins.*
- For the physical therapist, abdominal hernias and lumbar lordosis observed in clients with ascites.



- *Esophageal varices are dilated veins of the lower esophagus that occur as a result of portal vein blood backup.*
- These varices are thin-walled and can rupture, causing severe hemorrhage and sometimes death



## HEMORRHAGE ASSOCIATED WITH ESOPHAGEAL VARICES

- ❖ Restlessness
- ❖ Pallor
- ❖ Tachycardia



# ***HEPATIC ENCEPHALOPATHY (HEPATIC COMA)***

is a neurologic disorder resulting from the inability of the liver to detoxify ammonia in the intestine.





# ***NEWBORN JAUNDICE***

- ❖ Affects approximately 60% of newborn infants because liver function is somewhat slow to develop in the first few days of life.
- ❖ If left untreated for too long can result in brain damage from toxic levels of bilirubin in the blood.
- ❖ It is critically important for all newborns to be screened for the development of this condition.
- ❖ Development of any color change in newborns needs immediate referral and testing for abnormal bilirubin levels.



## ***LIVER ABSCESS***

- A liver abscess occurs when bacteria or protozoa destroy hepatic tissue and produce a cavity that fills with infectious organisms, liquefied liver cells, and leukocytes.



- ❖ Right abdominal pain
- ❖ Right shoulder pain
- ❖ Weight loss
- ❖ Fever, chills
- ❖ Diaphoresis
- ❖ Nausea and vomiting
- ❖ Anemia



# *LIVER CANCER*

- Metastatic tumors to the liver occur 20 times more often than primary liver tumors.
- The liver filters blood coming from the GIT, making it a primary metastatic site for tumors of the stomach, colorectum, and pancreas. It is also a common site for metastases from other primary cancers such as esophagus, lung, and breast.



## *CLINICAL SIGNS AND SYMPTOMS OF LIVER NEOPLASM*

- Jaundice
- Progressive failure of health
- Anorexia and weight loss
- Overall muscular weakness
- Epigastric fullness and pain or discomfort
- Constant ache in the epigastrium or mid-back
- Early satiety



## GALLBLADDER AND DUCT DISEASES

### Cholelithiasis

- Gallstones are stone like masses called calculi that form in the gallbladder possibly as a result of changes in the normal components of bile. Although there are two types of stones, pigment and cholesterol stones

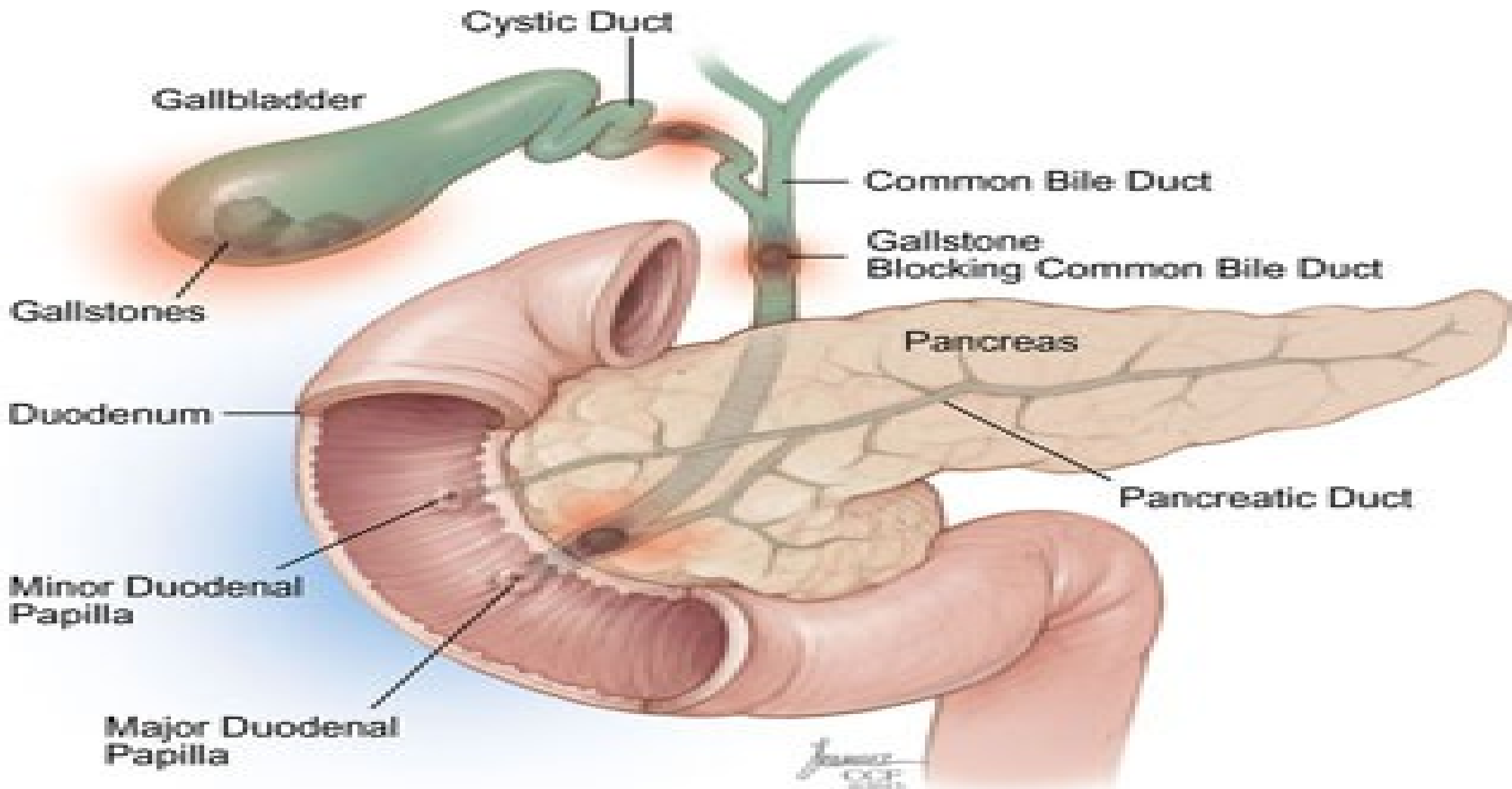


- **Age: Incidence increases with age**
- **• Sex: Women are affected more than men before age 60**
- **• Elevated estrogen levels**
- **Pregnancy**
- **Oral contraceptives**
- **Hormone therapy**
- **Multiparity (woman who has had two or more pregnancies)**



- ❖ **Obesity**
- ❖ **Diet: High cholesterol, low fiber**
- ❖ **Diabetes mellitus**
- ❖ **Liver disease**
- ❖ **Rapid weight loss or fasting**
- ❖ **Taking cholesterol-lowering drugs**

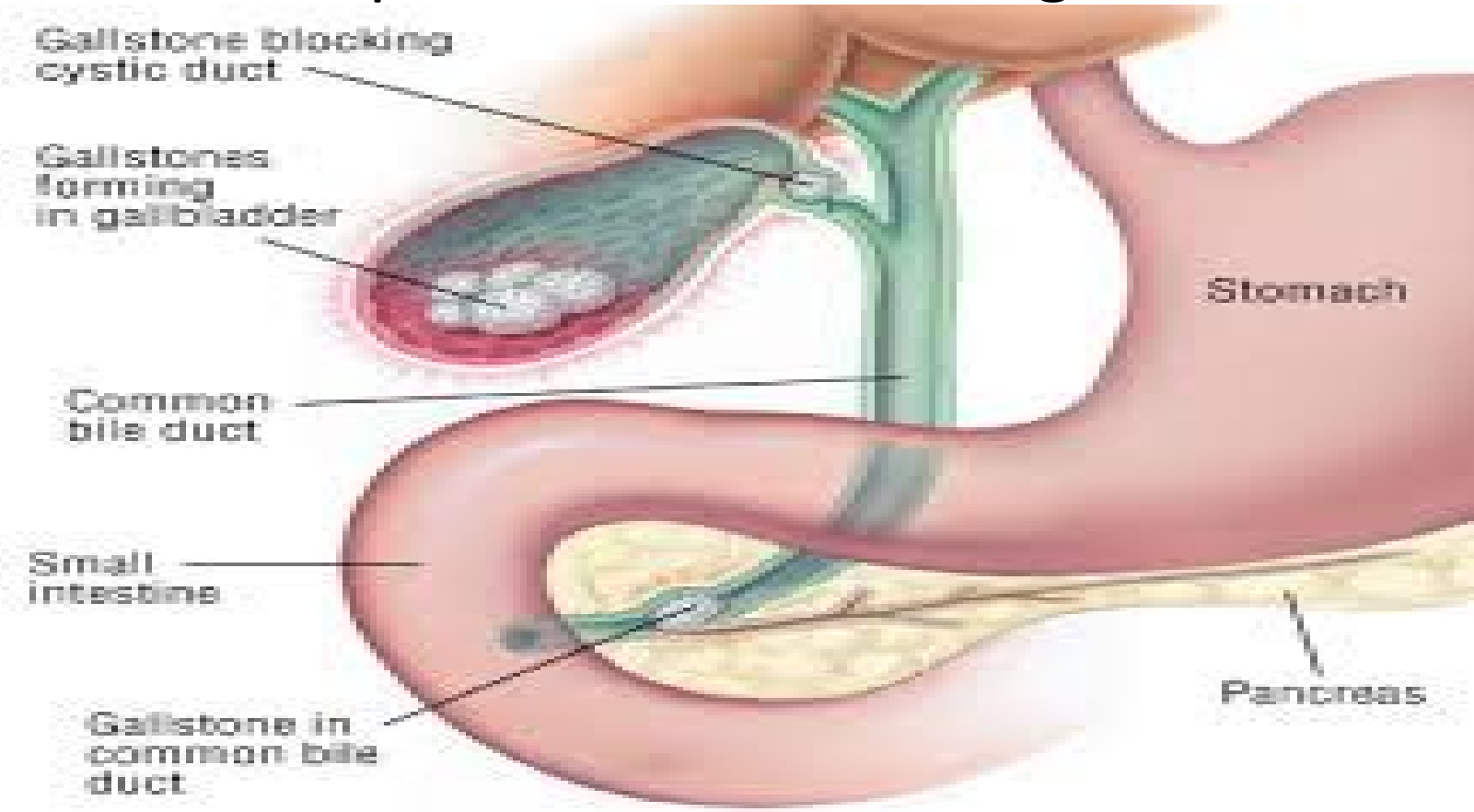




*James*  
2015

# ***BILIARY COLIC***

❖ the stone gets lodged in the neck of the gallbladder. Pain results as the gallbladder contracts and tries to push the stone through. The classic symptom of this problem is right upper abdominal pain that comes and goes in waves.





- ❖ The pain builds to a peak and then fades away.
- ❖ Obstructions of the gallbladder can result in biliary stasis, delayed gallbladder emptying, and subsequent mixed stone formation.
- ❖ Stasis and delayed gallbladder emptying can occur with any pathologic conditions of the liver, hormonal influences, and pregnancy.



# *CHOLECYSTITIS*

blockage, or impaction of gallstones in the cystic duct leads to infection or inflammation of the gallbladder.

- This condition may be acute or chronic, causing painful distension of the gallbladder.
- Steady, severe pain that increases rapidly, lasting several minutes to several hours.
- Nausea, vomiting, and fever may be present.



- ❑ Malignant tumor obstructing the biliary tract.
- ❑ Whatever the cause of the obstruction, the normal flow of bile is interrupted and the gallbladder becomes distended and ischemic.
- ❑ Gallstones may also cause chronic cholecystitis in which the gallbladder becomes fibrotic.
- ❑ It is not unusual for affected clients to have repeated episodes before seeking medical attention.



# *CHOLANGITIS*

- ❑ Gallstones lodged further down in the system in the common bile duct can cause cholangitis.
- ❑ Blocking the flow of bile at this point can lead to jaundice. Infection can develop here and travel up to the liver becoming a potentially life-threatening situation.



# ACUTE CHOLECYSTITIS

- Chills, low-grade fever
- Jaundice
- GI symptoms
- Nausea
- Anorexia
- Vomiting
- Tenderness over the gallbladder



- ❖ Hot rib
- ❖ Severe pain in the right upper quadrant and epigastrium
- ❖ Pain radiating into the right shoulder and between the scapulae





# PRIMARY BILIARY CIRRHOSIS

- PBC is a chronic, progressive, inflammatory disease of the liver that involves primarily the hepatic bile ducts and results in impairment of bile secretion.
- The disease, which often affects middle-aged women, begins with pruritus or biochemical evidence of cholestasis and progresses at a variable rate to jaundice, portal hypertension, and liver failure.



*CLINICAL SIGNS AND SYMPTOMS OF*  
**PRIMARY BILIARY CIRRHOSIS**

- ❖ Pruritus
- ❖ Jaundice
- ❖ GI bleeding
- ❖ Ascites
- ❖ Fatigue
- ❖ Right upper quadrant pain (posterior)



- ❖ Sensory neuropathy of hands/feet (rare)
- ❖ Osteoporosis
- ❖ Osteomalacia
- ❖ Burning, pins and needles, prickling of the eyes
- ❖ Muscle cramping



# GALLBLADDER CANCER

- Gallbladder cancer is closely associated with gallstone disease.
- The primary associated risk factors include cholelithiasis , obesity, reproductive abnormalities, chronic gallbladder infections, and exposure to radon and certain industrial exposures including cellulose acetate fiber manufacturing.
- Testing and treatment of symptomatic gallstones is the only preventative measure.



## CLUES FOR PHYSICAL REFERRAL

- Development of arthralgias of unknown cause in anyone with a previous history of hepatitis or risk factors for hepatitis
- Presence of bilateral carpal tunnel syndrome accompanied by bilateral tarsal tunnel syndrome unknown to the physician, asterixis, or other associated hepatic signs and symptoms
- Presence of sensory neuropathy of unknown cause accompanied by signs and symptoms associated with hepatic system impairment

