

JAUNDICE



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By

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INTRODUCTION:

Jaundice is a medical condition that results in yellowing of the skin, eyes, and mucous membranes due to high levels of bilirubin in the blood. Bilirubin is a yellow pigment that is produced when red blood cells break down. Normally, bilirubin is processed by the liver and excreted in the bile. However, in jaundice, there is a problem with the liver, bile ducts, or red blood cells that leads to an accumulation of bilirubin in the blood and tissues.

ETIOLOGY:

- **Liver disease:** Liver diseases, such as hepatitis, cirrhosis, or liver cancer, can damage the liver and impair its ability to process bilirubin.
- **Bile duct obstruction:** Obstruction of the bile ducts, which are tubes that carry bile from the liver to the small intestine, can cause bilirubin to build up in the blood. This can be caused by gallstones, tumors, or inflammation.
- **Hemolytic anemia:** Hemolytic anemia is a condition in which the body destroys red blood cells faster than it can replace them. This can result in an excess of bilirubin in the blood.
- **Gilbert's syndrome:** Gilbert's syndrome is a genetic condition that affects the liver's ability to process bilirubin, leading to an accumulation of bilirubin in the blood.
- **Medications:** Certain medications, such as acetaminophen and some antibiotics, can cause liver damage and lead to jaundice.

PATHOPHYSIOLOGY:

Jaundice occurs when there is an excessive buildup of bilirubin in the blood, which can result from a variety of underlying medical conditions affecting the liver, bile ducts, or red blood cells. The mechanism by which jaundice develops can be explained as follows:

- **Red blood cell breakdown:** The normal lifespan of red blood cells is approximately 120 days. As they near the end of their lifespan, they are broken down in the spleen and liver, releasing hemoglobin.
- **Bilirubin production:** Hemoglobin is broken down further into heme and globin. Heme is then converted to bilirubin by an enzyme called heme oxygenase.
- **Bilirubin transport:** Bilirubin is carried by albumin in the blood to the liver, where it is taken up by liver cells (hepatocytes).
- **Bilirubin processing:** In the liver, bilirubin is conjugated (modified) by attaching it to other molecules, which makes it more water-soluble and easier to excrete in the bile.
- **Bile excretion:** Conjugated bilirubin is excreted from the liver into the bile ducts and then into the small intestine. From there, it is eliminated in the stool.
- **Obstruction or dysfunction:** If there is an obstruction or dysfunction in any of the steps involved in bilirubin processing and excretion, bilirubin accumulates in the blood, leading to jaundice.

CLINICAL MANIFESTATION:

- **Dark urine:** Bilirubin can also cause the urine to appear dark or brownish in color.
- **Pale stools:** The absence of bilirubin in the stool can make it appear pale or clay-colored.
- **Itching:** The accumulation of bilirubin in the skin can cause itching.

- **Fatigue:** Jaundice can cause fatigue and weakness due to the underlying condition that is causing it.

- **Abdominal pain:** If the cause of jaundice is gallstones or other conditions that cause obstruction of the bile ducts, it can lead to abdominal pain.
- **Fever:** In some cases, jaundice can be accompanied by a fever.

DIGNOSIS:

- **Blood tests:** Blood tests can measure the levels of bilirubin and other liver enzymes to help identify the cause of jaundice. Elevated levels of bilirubin and liver enzymes can indicate liver disease, bile duct obstruction, or hemolytic anemia.
- **Urine tests:** Urine tests can detect the presence of bilirubin and urobilinogen, a byproduct of bilirubin breakdown. Elevated levels of bilirubin in the urine can indicate liver disease or other conditions that affect bilirubin metabolism.
- **Imaging tests:** Imaging tests such as ultrasound, CT scan, or MRI can be used to evaluate the liver, bile ducts, and pancreas for any signs of damage, obstruction, or tumors.
- **Liver biopsy:** A liver biopsy involves removing a small sample of liver tissue for examination under a microscope to help diagnose liver diseases.
- **Endoscopic retrograde cholangiopancreatography (ERCP):** ERCP is a specialized test that uses an endoscope to examine the bile ducts and pancreas for any abnormalities. It can also be used to remove gallstones or place stents to relieve bile duct obstruction.

PHARMACOLOGICAL MANAGEMENT:

- **Hepatitis:** Antiviral medications such as ribavirin, interferon-alpha, and direct-acting antiviral (DAA) medications can be used to treat chronic hepatitis B or C.
- **Cirrhosis:** Medications such as diuretics, lactulose, and rifaximin may be prescribed to manage symptoms and prevent complications associated with cirrhosis.
- **Bile duct obstruction:** Pain medications such as acetaminophen and ibuprofen may be prescribed to manage pain associated with bile duct obstruction. Antibiotics such as ciprofloxacin or metronidazole may be prescribed if there is an associated infection.
- **Hemolytic anemia:** Medications such as corticosteroids, immunosuppressants, and iron supplements may be prescribed to reduce the destruction of red blood cells.
- **Gilbert's syndrome:** No specific medication is used to treat Gilbert's syndrome. However, medications that can cause an increase in bilirubin levels such as sulfonamides, phenothiazines, and chloramphenicol should be avoided.

NON- PHARMACOLOGICAL MANAGEMENT:

- **Practice good hygiene:** Wash your hands frequently with soap and water to prevent the spread of hepatitis A and other infections.
- **Get vaccinated:** Vaccines are available for hepatitis A and B, and getting vaccinated can reduce the risk of contracting these infections.

- **Practice safe sex:** Practice safe sex by using condoms to reduce the risk of sexually transmitted infections such as hepatitis B and C.
- **Avoid sharing needles:** Do not share needles or other injection equipment, as this can increase the risk of contracting hepatitis B or C.
- **Avoid alcohol:** Alcohol can damage the liver and increase the risk of developing liver disease, including cirrhosis and hepatitis.
- **Maintain a healthy weight:** Obesity and being overweight can increase the risk of developing liver disease, so maintaining a healthy weight through diet and exercise is important.
- **Take medications as directed:** Follow your healthcare provider's instructions when taking medications to reduce the risk of medication-induced liver damage.
- **Avoid exposure to toxins:** Avoid exposure to toxins such as chemicals, pesticides, and other environmental toxins that can damage the liver.