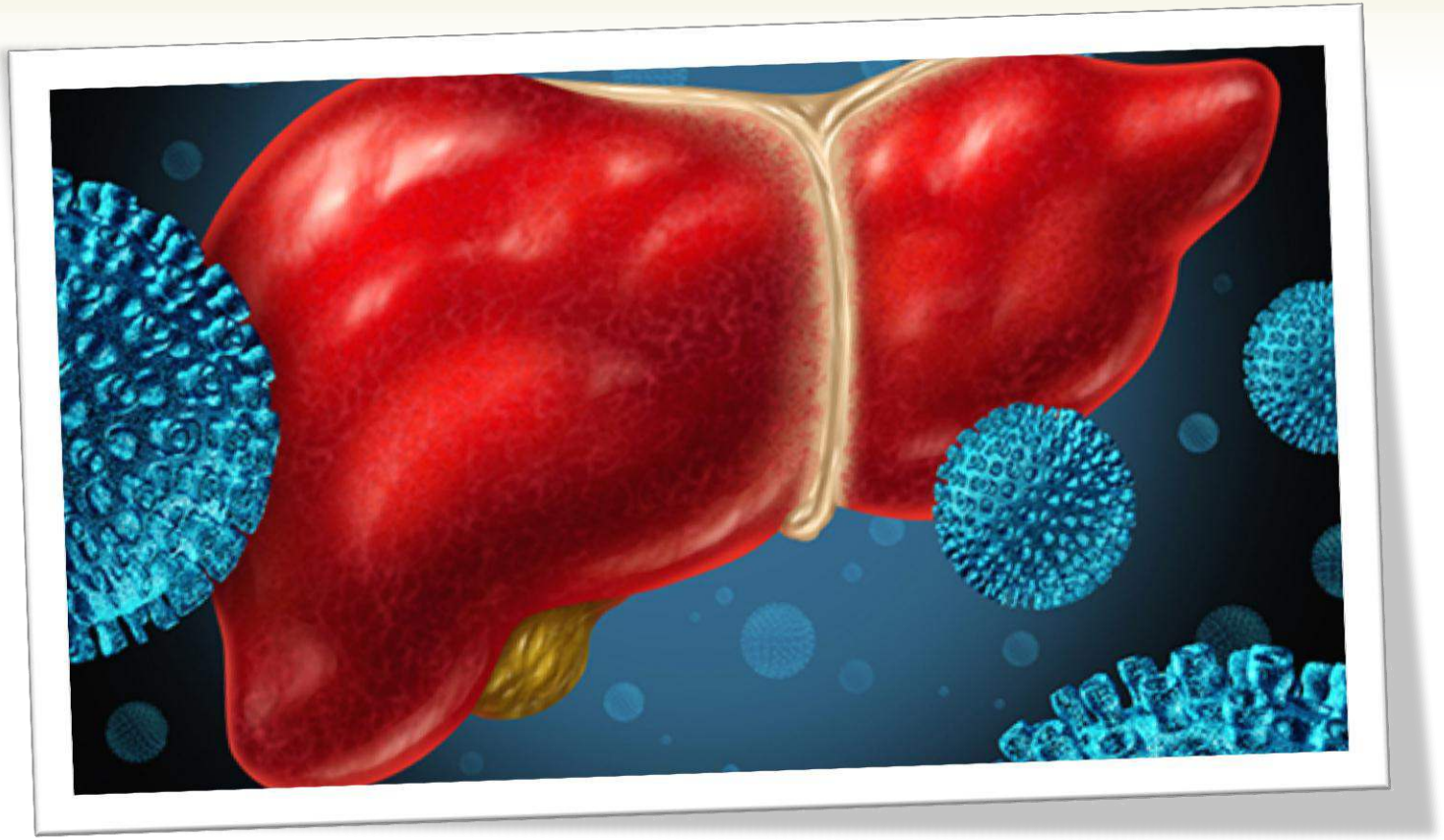
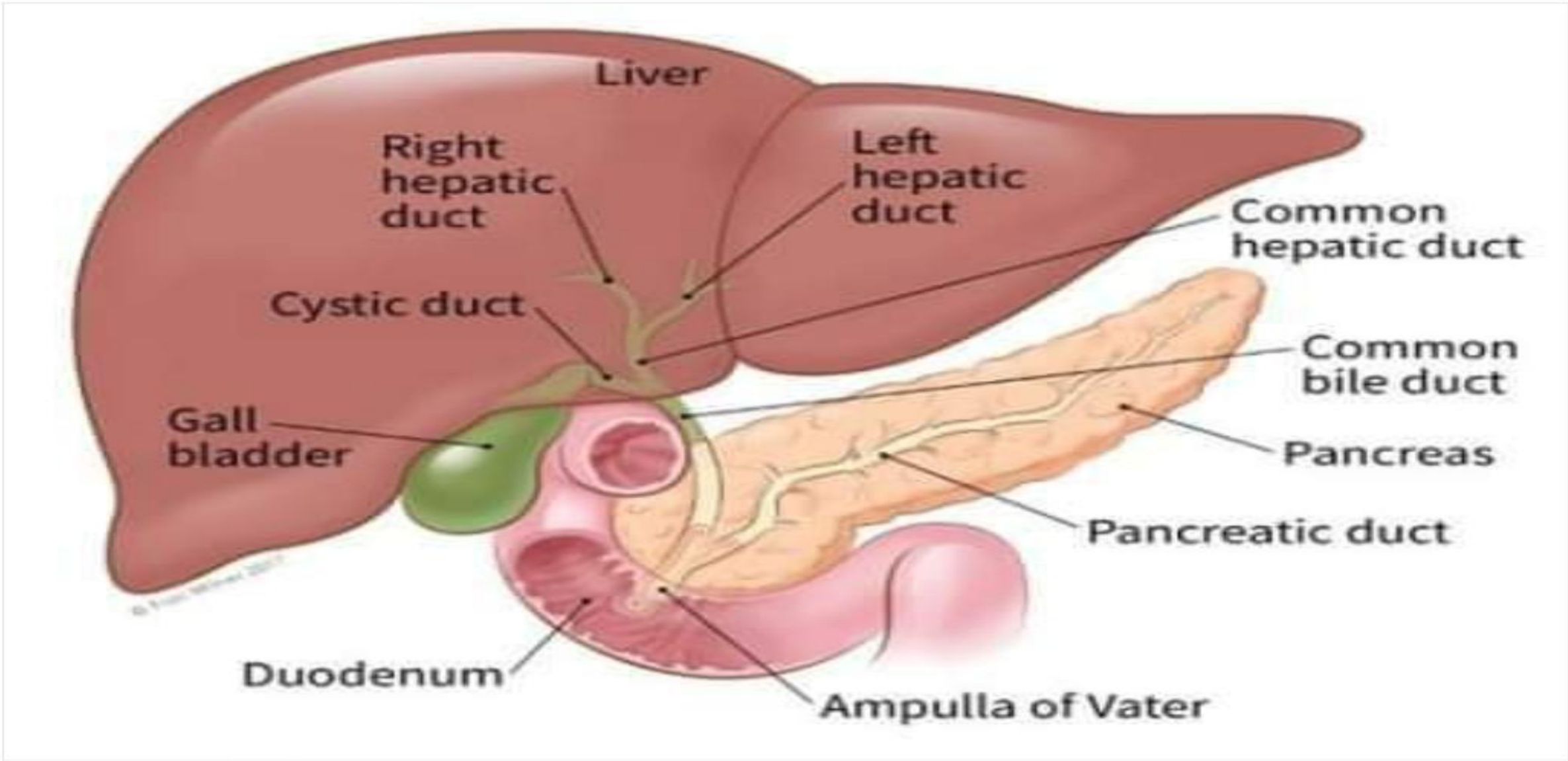


Viral Hepatitis

Anatomy & physiology

- **Liver** is the largest gland in the body .
- **Located** behind the ribs in the right upper portion of the abdominal cavity .
- That manufactures, stores, alters, and excretes a large number of substances involved in metabolism.
- It removes the waste products from the blood stream and secretes them into the **Bile**.

Liver Anatomy demonstrate liver ducts and it,s relation with gallbladder ducts...



Function	Actions
Digestion	➢ Bile salts for digestion/emulsification of fats ➢ Processing and storage of fats, carbohydrates and proteins absorbed by the intestine and sent to the liver via the portal circulation ➢ Processing and storage of vitamins and minerals ➢ Vitamin B 12, A, D, E ,K
Endocrine	➢ Metabolism of glucocorticoids, mineralocorticoids and sex hormones ➢ Regulation of fat, carbohydrate and protein metabolism ➢ Glucose stored as glycogen ➢ Main source of body heat
Hematologic	➢ Temporary storage of blood ➢ Synthesis of bilirubin from breakdown of RBCs ➢ Hematopoiesis in certain disease states ➢ Synthesis of blood clotting factors (fibrinogen, thrombin, prothrombin) ➢ synthesis of albumin, prealbumin,
Excretion	➢ Excretion of bile pigment ➢ Excretion of cholesterol via bile ➢ Urea synthesis as the final step in the excretion of ammonia (protein breakdown) ➢ Detoxification of drugs, poisons and other foreign substances

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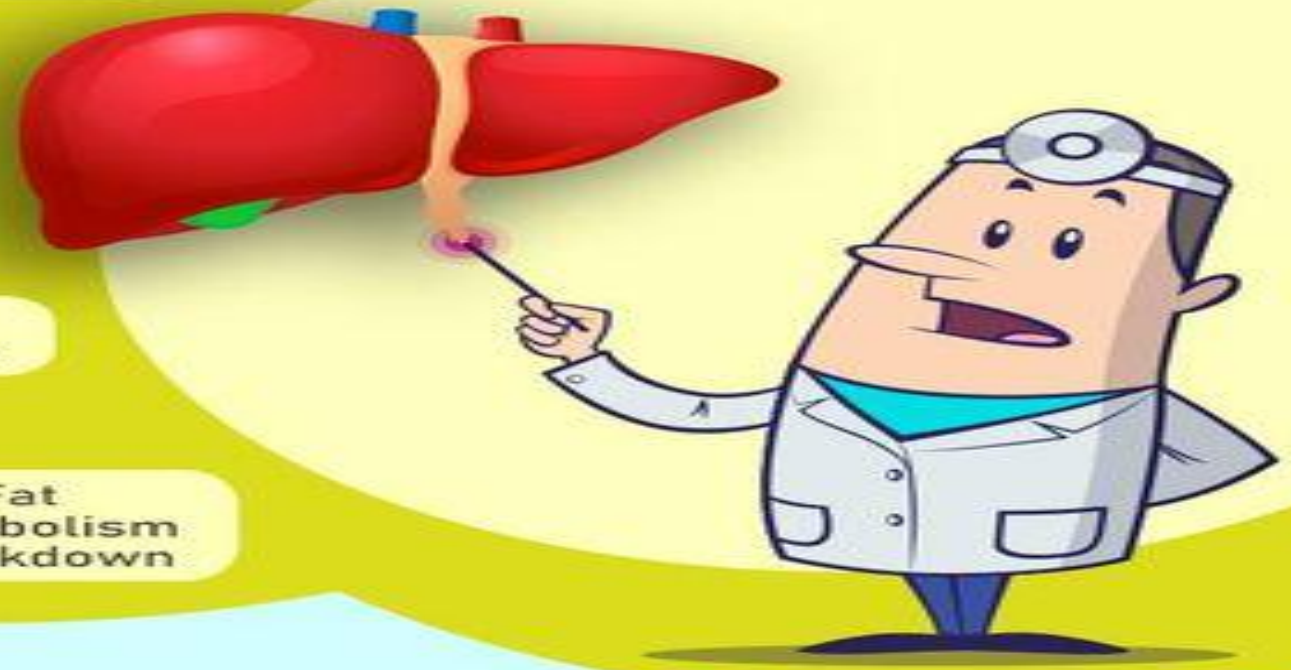
FUNCTIONS OF LIVER

- Blood Detoxification & Purification
- Glucose Regulation
- Waste elimination
- Fat Metabolism Breakdown



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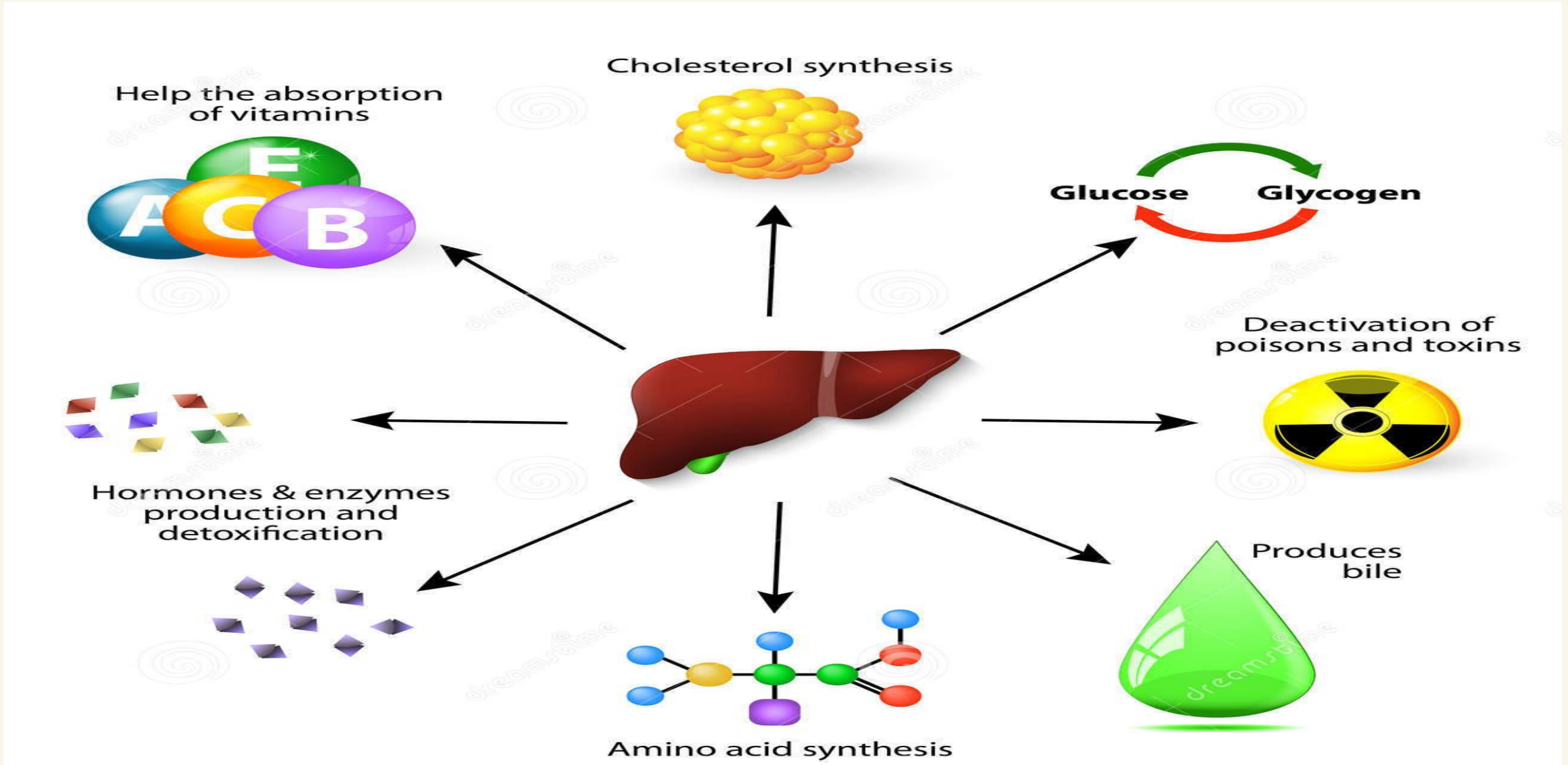

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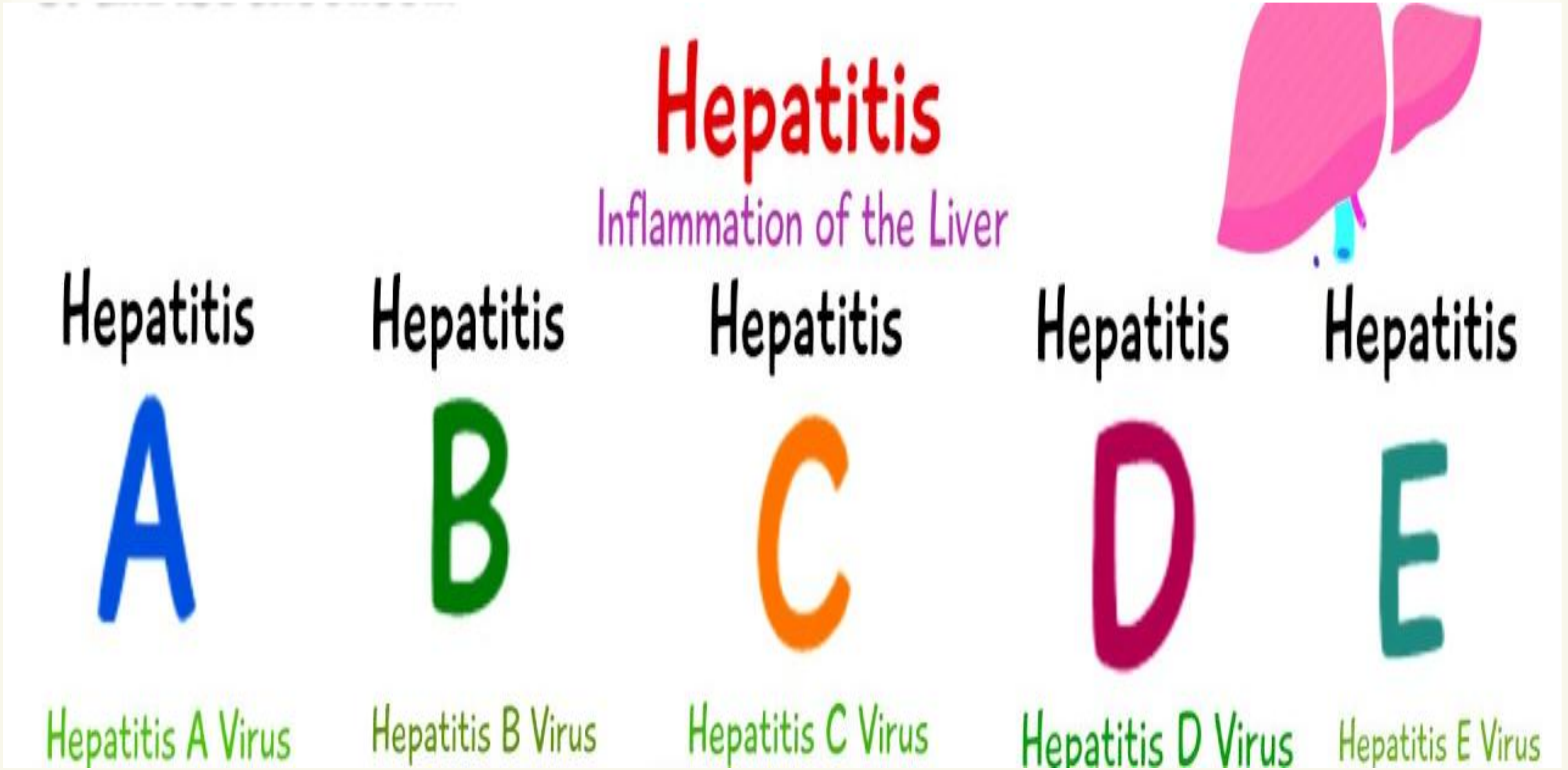
is a systemic, viral infection in which necrosis and inflammation of liver cells produce a characteristic cluster of Clinical biochemical, and cellular changes.

➢ 5 Types for Viral Hepatitis



Virus Name	Incubation Period	Mode of transmission	Source of infection and spread of disease
Hepatitis A virus (HAV)	15-50 days (average 30 days)	Fecal-oral route; poor sanitation, person to person contact. Waterborne; food borne.	Contaminated food, milk, water and selfish; person's with sub clinical infections infected food handler, poor personal hygiene, poor sanitation.
Hepatitis B virus (HBV)	28-160 days (average 70-80 days)	▪ Percutaneous (parenteral)/ per mucosal exposure to blood or blood products ▪ Sexual contact. ▪ Perinatal transmission	▪ Contaminated needles, syringes, and blood products. ▪ Sexual activity with infected partners. ▪ Oral-oral contact. ▪ Tattoo / body piercing, bites. ▪ Occupational hazards for health care personnel, hemodialysis staff, chemotherapy nurses, operating room nurses, dentists, persons at risk needle sticks.
Hepatitis C virus (HCV) (non A –non-B) Called post transfusion H.	15-160 days (average 50 days)	▪ Transfusion of blood and blood products ▪ Exposure to contaminated blood or blood products through equipment ▪ High risk sexual contact. ▪ Perinatal contact.	▪ Blood and blood products, needles and syringes. ▪ Sexual activity with infected partners. ▪ Increased with sexual transmitted disease. ▪ Chronic treatment with hemodialysis.
Hepatitis D virus (HDV)	21-140 days (average 35days) ▪ HBV must precede HDV; ▪ Chronic carriers of HBV are always at risk.	▪ Can cause infection only together with HBV. ▪ Rotes of transmission same as for HBV. ▪ HBV surface antigen necessary for replication.	▪ Same as HBV.
Hepatitis E virus (HEV) Similar to HAV	15-65days (average 42 days)	▪ Fecal-oral. ▪ Outbreaks associated with contaminated water supply in developing countries	▪ Contaminated water; poor sanitation

Clinical Manifestation of the Phases of Hepatitis:

Preicteric It lasts 1-21 days	Icteric It lasts 2-4 weeks	Post Icteric It persist several months
1. Anorexia. 2. Nausea, vomiting. 3. Right upper quadrant discomfort. 4. Decrease sense of taste and smell. 5. Malaise. 6. Headache. 7. Fever. 8. Arthralgias. 9. Urticaria, rash. 10. Hepatomegaly & tenderness of the liver. 11. Splenomegaly. 12. Weight loss.	1. Jaundice. 2. Pruritus due to accumulation of bile salts under skin. 3. Dark urine. 4. Bilirubinuria. 5. Light or clay colored stool. 6. Fatigue. 7. Continued hepatomegaly with tenderness. 8. Weight loss.	1- Malaise. 2- Easy fatigability. 3- Hepatomegaly.

Past health history:

- Previous liver disease, hepatitis immunization.
- Hemophilia.(An inherited bleeding disease)
- Exposure to infected persons.
- Ingestion of contaminated food and water.
- Sexual promiscuity.
- Exposure to toxins.
- Exposure to contaminated needles.
- Recent travel.
- Organ transplant recipient.
- Exposure to new drug regimen.

• Present History



- Fatigue.
- Weight loss.
- Digestive disturbance.
- Skin changes.
- Feeling of fullness in right upper quadrant.

• Objective Data:

- Vital signs: Hypertension, tachypnea, low grade fever.
- Skin: Dryness, scratches, jaundice, bruises

Angioedema :(Sever form of urticaria which involve skin, face, hands and genital organ)

- Eyes: Icteric sclera.
- Thorax: Spider angiomas.
- Abdomen: Distention, prominent veins, hepatomegaly, Splenomegaly.

• Possible findings(Diagnostic tests):

- Abnormal liver enzyme studies.
- Elevated serum bilirubin.
- Hypoalbuminemia.
- Anemia.
- Bilirubin in urine and increased urobilinogen.
- Prolonged prothrombin time.
- Serologic test positive for hepatitis, including anti-HAV IgM, anti-HBc IgM, anti-HCV, anti-HDV.
- Abnormal liver scan.
- Positive liver biopsy.

Preventive Measures of Viral Hepatitis

Hepatitis A	Hepatitis B and C
General Measures: ▪ Hand washing. ▪ Proper personal hygiene. ▪ Environmental sanitation. ▪ Safe practice for preparing and dispensing food ▪ Control and screening (signs and symptoms of food handlers). ▪ Serologic screening while carrying virus. ▪ Active immunization. ▪ Community health education program. Use of immune globulin: ▪ Early administration (1-2 weeks after exposure to those exposed). ▪ Use of prophylaxis for travelers to areas where hepatitis A is common.	Percutaneous Transmission: ▪ Screening of donated blood. ▪ Use of disposable needles and syringes Sexual Transmission: ▪ Acute exposure: HBIG administration to sexual partner of HbsAg-positive person. ▪ Use condom for sexual intercourse. General Measures: ▪ Hand washing. ▪ Avoid sharing tooth brushes and razors ▪ HBIG administration for one-time exposure (needle stick, contact of mucous membranes with infectious material). ▪ Active immunization: HBV vaccine.

What is the most common treatment for viral hepatitis?

There is no cure for hepatitis B, which resolves on its own in 95% of cases. Supportive care can help manage symptoms. In cases of chronic illness, a doctor may prescribe an **antiviral medication**, and they will monitor the liver regularly to check for damage over time.

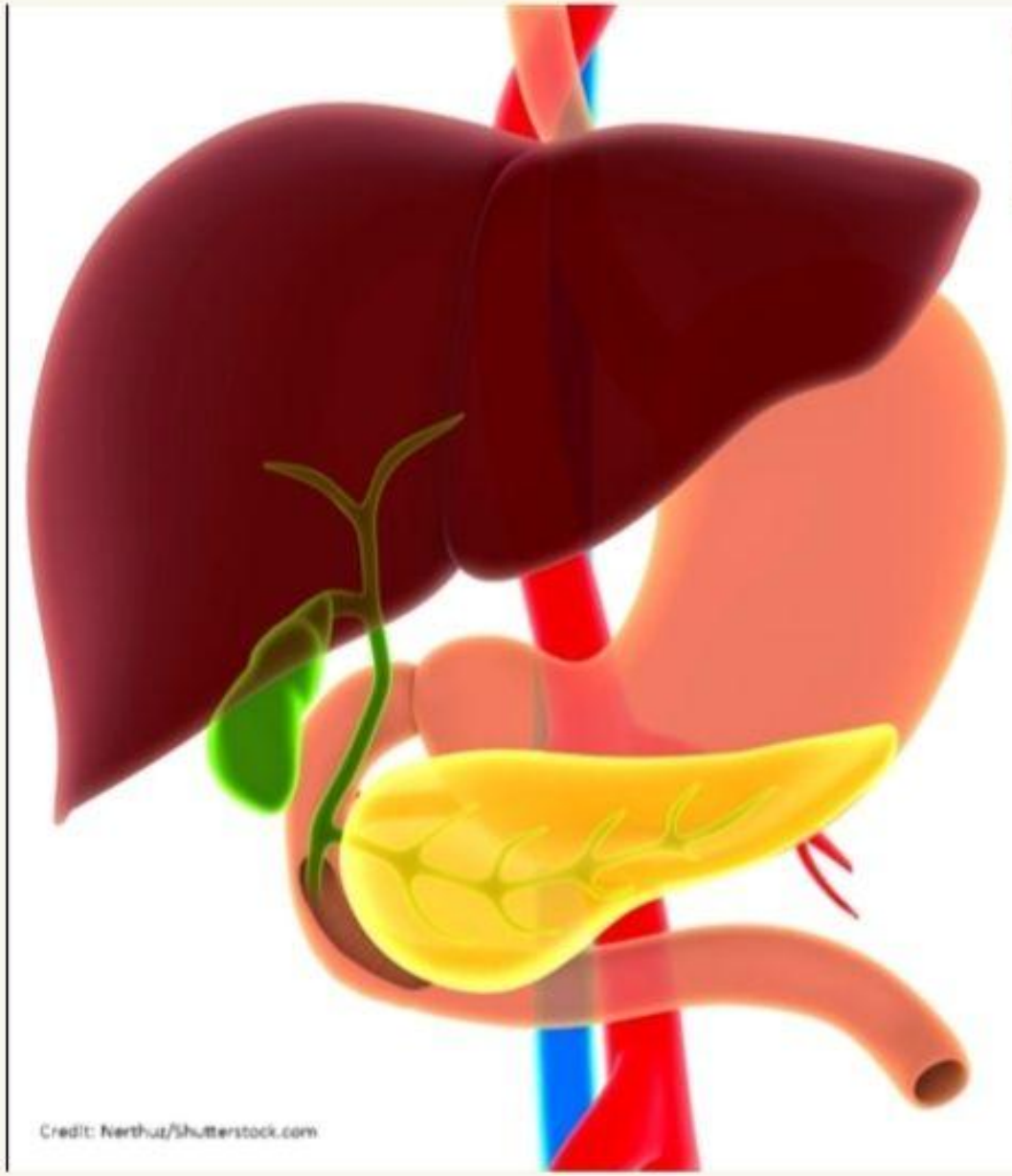
Measures to Prevent Transmission of Hepatitis Viruses From Patients to health Care Personnel:

Hepatitis A	Hepatitis B	Hepatitis C
▪ Always maintain good personal hygiene. ▪ Wash hands after contact with a patient or removal of gloves. ▪ Use infection control precautions.	▪ Use infection control precautions. ▪ Wash hands. ▪ Reduce contact with blood or blood-containing secretions. ▪ Handle the blood of patients as potentially infective. ▪ Dispose of needles properly. ▪ Administer HBV vaccine to all health care personnel. ▪ Use needles IV access devices when available.	▪ Use infection control precaution. ▪ Wash hands. ▪ Reduce contact with blood or blood contaminated secretions. ▪ Handle the blood of patient as potentially infective. ▪ Dispose needles properly. ▪ Use needlesless IV access devices when available.



Nursing Diagnosis

- Altered Nutrition: Less Than Body Requirements related to anorexia as manifested by inadequate food intake.
- Fluid Volume Deficit related to nausea and/or vomiting



Hepatitis

Handwashing (strict)

eat LOW fat & HIGH carbs

personal hygiene products NOT shared

activity conservation (REST!!)

toxic substances avoided
-alcohol, sedatives, aspirin, acetaminophen etc.

individual bathroom

testing results

interferon (subcutaneous)

Small but frequents meals

