

VIRAL INFECTIONS OF LIVER

Lecture by

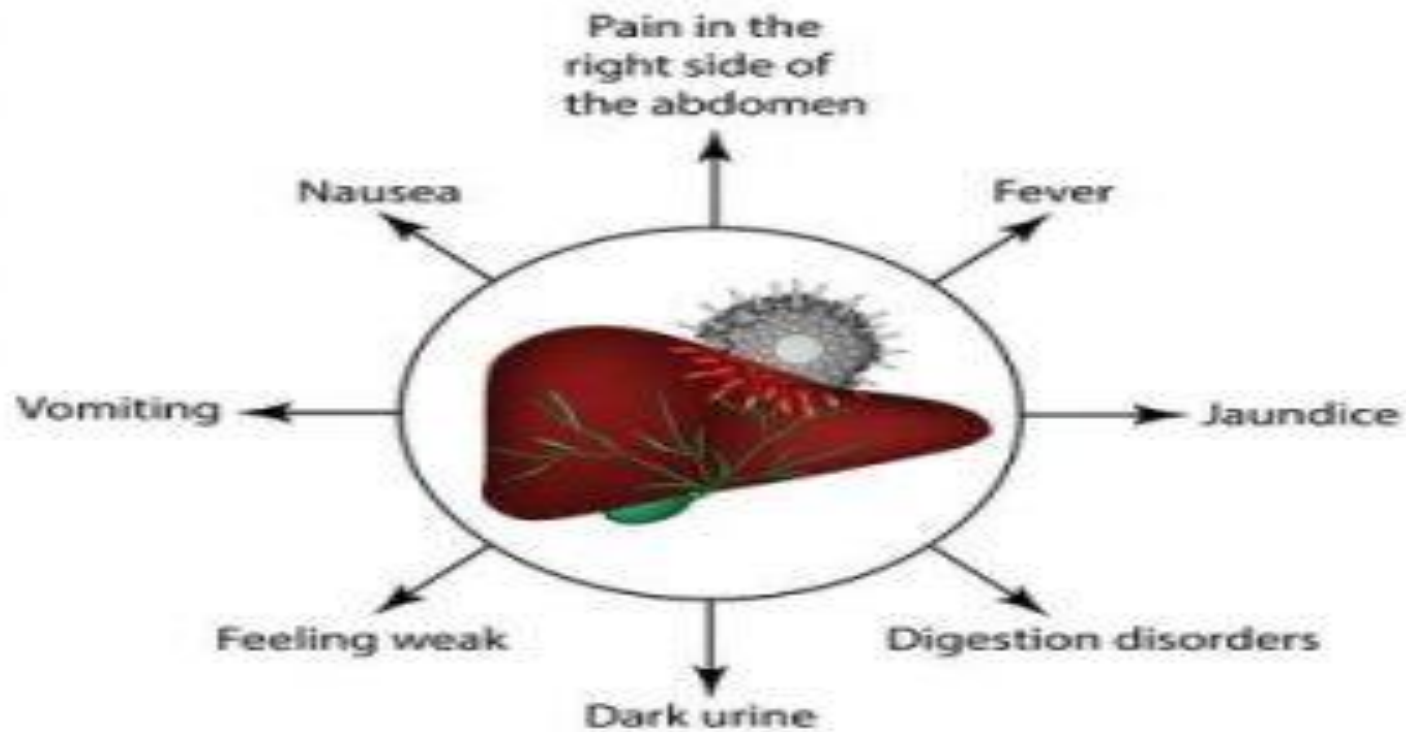
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- In children ,an immunosuppressed patient , the liver is affected.
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- Hepatic infection is caused by group of virus known as hepatotropic virus (A,B,C,D and E)

HEPATITIS A VIRUS

- It does not cause chronic hepatitis or a carrier stage
- It is common in countries with substandard hygiene and sanitation
- **Hepatovirus**
- it is isohedral capsid 27nm in diameter and can be cultured in vitro, receptor for it is HAVcr-1

SYMPTOMS OF HEPATITIS A



Symptoms

- Affected people have nonspecific symptoms such as fatigue and loss of appetite, and often develop jaundice
- It spreads by the ingestion of contaminated water and food .
- HAV virus can also be detected in serum and saliva

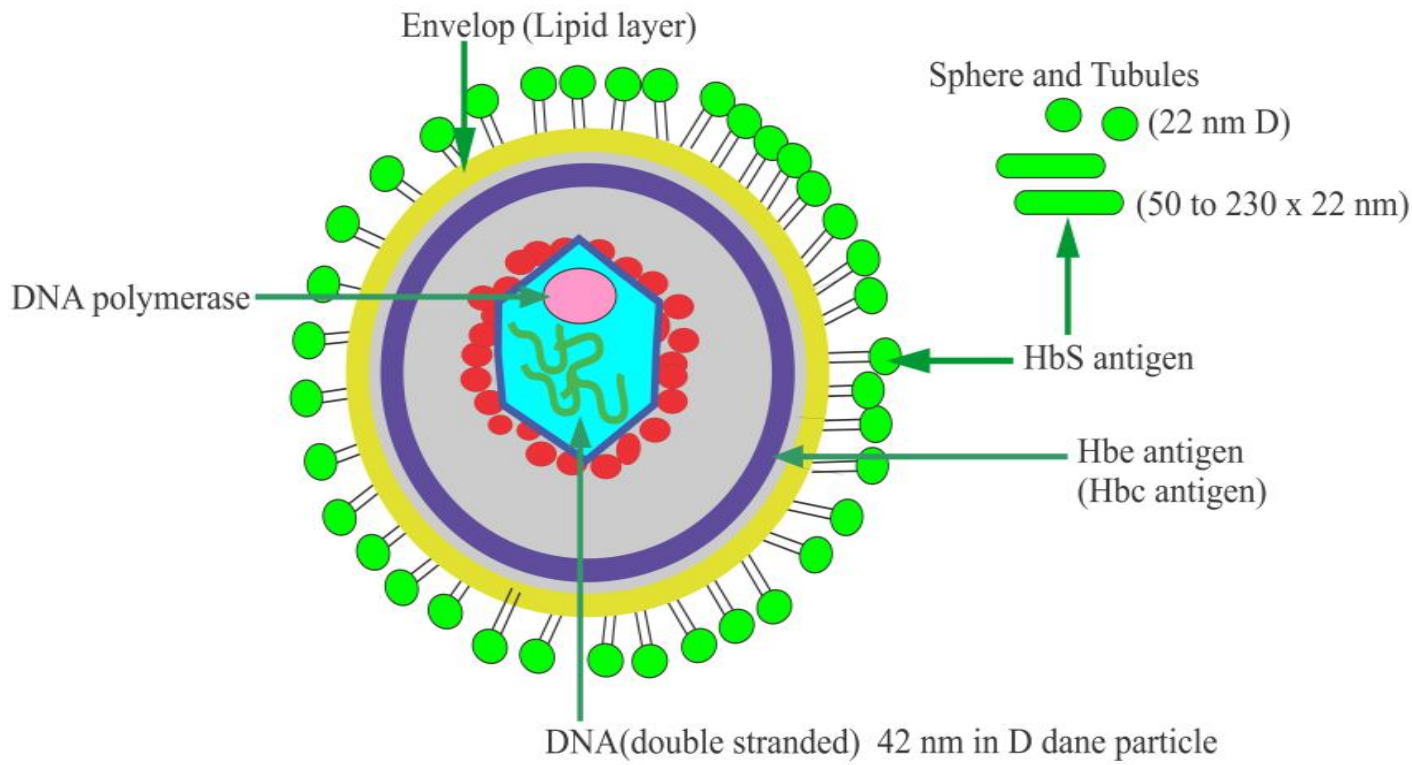
CAUSATIVE AGENT

- Infected workers in the food industries may also a cause hepatitis
- IgM antibody against HAV appear in blood at the onset of symptoms
- IgM later persist for year and provide immunity

HEPATITIS B

- Hepatitis B is an acute systemic infection of liver
- The acute illness causes liver inflammation vomiting jaundice and rarely death
- Hepatitis B is endemic throughout world but common is developing countries
- **AGENT FACTOR**
- It is a complex ,42 nm double shelled DNA virus originally known as Dane particle
- It replicates in liver

Hepatitis B Virus



- **INFECTED MATERIAL**

- Contaminated blood is the only source of hepatitis
- Virus can also be found in secretion such as saliva, vaginal secretion and semen in infected individual

- **HIGH RISK GROUP**

- People from endemic region
- Babies of mother with HBV
- Intravenous drug abuser
- People with multiple sex partner

- **INCUBATION PERIOD**

- 45-80 usually

- **Diagnosis**

- Serology
- Liver chemistry test
- Histology –immunoperoxidase staining
- Liver biopsy

- **Prevention**

- vaccination
- Hepatitis B immunoglobulin
- Screening of blood donor and other body fluid

HEPATITIS C

- About approximate 170 million people are
- Important part of type C hepatitis is chronic illness
- About 50 to 80% people lead to chronic hepatitis

HEPATITIS C VIRUS

- It is 50 to 60nm virus with single strand RNA genome enclosed in a core surrounded by envelope
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- in addition to replication in liver It may be replicate in lymphocytes
- Its half life in serum in about 3 hours

DIAGNOSIS

- HCV -antibody ; ELISA is used to diagnose the infection
- HCV- RNA; technique are available like PCR

• RISK FACTOR

- Intravenous drug abuse
- Multiple sex partner
- Needle stick injury
- Multiple contacts with HCV Infected person
- Employment in medical and dental fields

TREATMENT

Interferon are used for the diagnose of hepatitis
Ribavirin

HEPATITIS D

- hepatitis D virus , is a unique RNA virus
- It depend upon HBV for its life cycle
- **Coinfection** of HBV and HDV result in acute hepatitis , elimination of hepatitis B lead to elimination of HDV
- Chronic hepatitis D occur in 80% to 90% of patient
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- hepatitis D has the highest fatality rate of all the hepatitis infections, at 20%.
- Acute phase with active HDV replication
- Chronic phase with decrease HDV replication

Complications include a greater likelihood of experiencing liver failure in acute infections.

A rapid progression to liver cirrhosis.

Increased risk of developing liver cancer in chronic infections.

Incubation time

- 2 to 12 week

Mode of transmission

- As of HBV ,but it is not thought to transmitted sexually

DIAGNOSIS

- HDV RNA is delectable in blood and liver just before and in early of acute symptomatic disease
- IgM anti HDV is most reliable indicator of recent HDV exposure

Hepatitis E VIRUS

- A water borne disease
- It bears a high risk of developing chronic hepatitis in immunocompromised patient
- it occasionally develop in chronic liver inflammation
- HEV is zoonotic disease with animal reservoir such as monkey cats pigs dogs
- In pregnant women high mortality rate because of HEV
- **HEV** is a unenveloped ,positive stranded RNA virus,32 to 34nm in diameter ,RNA genome is 7.3kb in size