Viral Hepatitis

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Objectives

1- Define types of viral hepatitis & their clinical features.

2- Identify the causative agents & the occurrence of the disease.

3- Identify the controlling measures.
I. Viral Hepatitis A ICD-10 B15

Identification

Infection occurs in childhood asymptptomatically or mild illness.

Onset of illness in adults is usually abrupt with fever, malaise, anorexia, nausea and abdominal discomfort, followed within a few days by jaundice.
Viral Hepatitis A

In general, severity increases with age, but complete recovery without sequelae or recurrences is the rule.

Case fatality normally low, 0.1%–0.3%, it can reach 1.8% for adults over 50, persons with chronic liver disease have an elevated risk of death from fulminant hepatitis A.
Viral Hepatitis A

Diagnosis

Demonstration of IgM antibodies against hepatitis A virus. IgM anti-HAV becomes detectable 5–10 days after exposure.

Specific antibodies, detected by EIA (enzyme immunoassay), also establishes the diagnosis.
Viral Hepatitis A

Infectious agent

Hepatitis A virus (HAV), (RNA virus)

Mode of transmission

Person-to-person by the **fecal-oral route**
Viral Hepatitis A

Occurrence

Worldwide, geographic areas can be characterized by high, intermediate, or low levels of endemicity.

Outbreaks due to food contaminated by food handlers & common source outbreaks have been related to contaminated water.
Viral Hepatitis A

Disease transmission is most frequent among household and sexual contacts of acute cases, in day care centers with diapered children, travellers to countries where the disease is endemic, among injecting drug users and among homosexual
Viral Hepatitis A

Incubation period
Average 28–30 days (range 15–50 days).

Period of communicability
Maximum infectivity occurs during the latter half of incubation and continues for a few days after onset of jaundice.

Homologous immunity after infection probably lasts for life.
Viral Hepatitis A

Methods of control

A. Preventive measures:

1) Educate the public about good sanitation and personal hygiene

2) Provide proper water treatment and distribution systems and sewage disposal.
Viral Hepatitis A

3) There are 4 inactivated vaccines and they are not licensed for use in children under 1.

These vaccines are safe, immunogenic and efficacious.
Viral Hepatitis A

Vaccines

Protection may begin as soon as 14–21 days after a single dose of vaccine.

A second dose is felt to be necessary for long-term protection.

The use of hepatitis A vaccine is most successful when vaccination is started early in the course of the outbreak.
Viral Hepatitis A

Close personal contacts (e.g. household, sexual contact of hepatitis A patients)

A patients should be given postexposure prophylaxis with IG within 2 weeks of last exposure, preferably simultaneously with hepatitis A vaccine given at a separate injection site.
B. Control of patient, contacts and the immediate environment

Isolation:

**enteric precautions** during the first 2 weeks of illness, but no more than 1 week after onset of jaundice
Viral Hepatitis A

Immunization of contacts:

**Active immunization** with vaccine should be given as soon as possible, but no later than 2 weeks after exposure.

**Passive immunization** with IG (IM) should be given as soon as possible after exposure, but also within 2 weeks.
II. VIRAL HEPATITIS B ICD-10 B16

Identification

A small proportion of acute hepatitis B virus (HBV) infections may be clinically recognized, less than 10% of children and 30% – 50% of adults, show icteric disease.
VIRAL HEPATITIS B

Clinical symptoms

The onset is usually insidious, with anorexia, vague abdominal discomfort, nausea and vomiting, sometimes arthralgia and rash, often progressing to jaundice. Fever may be absent or mild.
VIRAL HEPATITIS B

Severity ranges from inapparent cases detectable only by liver function tests to fulminating, fatal cases of acute hepatic necrosis.

The case-fatality rate is about 1%, higher in those over 40.

Fulminant HBV infection also occurs in pregnancy and among newborns of infected mothers.
VIRAL HEPATITIS B

After acute HBV infection, the risk of developing chronic infection varies inversely with age,

chronic HBV infection occurs among about 90% of infants infected at birth,

20%–50% of children infected from 1 to 5 years,

and 1%–10% of older children and adults.
VIRAL HEPATITIS B

Chronic HBV infection is common in persons with immunodeficiency.

Persons with chronic infection may or may not have a history of clinical hepatitis.
VIRAL HEPATITIS B

An estimated 15%–25% of persons with chronic HBV infection will die prematurely of either cirrhosis or hepatocellular carcinoma.

HBV may be the cause of up to 80% of all cases of hepatocellular carcinoma worldwide.
Infectious agent

Hepatitis B virus (HBV), partially double-stranded DNA virus composed of core (HBcAg), surrounded by an outer lipoprotein coat containing the surface antigen (HBsAg).
VIRAL HEPATITIS B

Diagnosis

1) hepatitis B surface antigen (HBsAg) and antibody to HBsAg (anti-HBs).

2) hepatitis B core antigen (HBcAg) and antibody to HBcAg (anti-HBc).

3) hepatitis B e antigen (HBeAg) and antibody to HBeAg (anti-HBe).
VIRAL HEPATITIS B

Diagnosis

Demonstration of anti-HBc in serum indicates HBV infection, current or past, high titres of IgM anti-HBc occur during acute infection.
VIRAL HEPATITIS B

Diagnosis

HbsAg is present in serum during acute infections and persists in chronic infections.

The presence of HBsAg indicates that the person is potentially infectious.

The presence of HBeAg is associated with relatively high infectivity.
VIRAL HEPATITIS B

**Occurrence** Worldwide

WHO estimates that more than 2 billion persons have been infected with HBV (including 350 million chronically infected).

most infections occur during infancy
VIRAL HEPATITIS B

High-risk groups: including injecting drug users, heterosexuals with multiple partners, homosexual, household contacts and sex partners of HBV-infected persons, health care and public safety workers who have exposure to blood in the workplace, hemodialysis patients.
VIRAL HEPATITIS B

Mode of transmission

blood and blood products, saliva, cerebrospinal fluid, peritoneal, pleural, pericardial and synovial fluid, amniotic fluid, semen and vaginal secretions

Transmission occurs by percutaneous (IV, IM, SC, intradermal) and permucosal exposure to infective body fluids.
VIRAL HEPATITIS B

Incubation period

Usually 45–180 days, average 60–90 days.

Period of communicability

Infectivity starts weeks before the onset of first symptoms and remain infective through the acute clinical course of the disease.

Susceptibility is general.
VIRAL HEPATITIS B

Methods of control

A. Preventive measures:

1) Two types of effective hepatitis B vaccines have been licensed and shown to be safe and highly protective.

Routine infant immunization eliminates transmission (chronic infections are acquired among young children).
VIRAL HEPATITIS B

Vaccines licensed administered in 3 IM doses:

for infants, the first dose is given at birth with subsequent doses 1 to 2 and 6 to 18 months later.
VIRAL HEPATITIS B

Vaccine

Infants born to HBsAg positive women, should receive HBIG.

Pregnancy is not a contraindication for receiving hepatitis B vaccine.
2) In blood banks, all donated blood should be tested for HBsAg by sensitive tests. Maintain surveillance for all cases of post transfusion hepatitis.
B. Control of patient, contacts and the immediate environment:

1) Report to local health authority: Class 2

2) Isolation: Universal precautions to prevent exposures to blood and body fluids.
3) Immunization of contacts:
for post exposure prophylaxis include HBIG and hepatitis B vaccine.
VIRAL HEPATITIS B

For previously unimmunized persons exposed to blood from an HBsAg positive source, a single dose of HBIG should be given at least within 24 hours of high-risk needle stick exposure, and the hepatitis B vaccine series should be started.
VIRAL HEPATITIS B

4) Specific treatment: No specific treatment available for acute hepatitis B.

Alpha interferon, lamivudine and adefovir have been licensed for treatment of chronic hepatitis B.
Identification

Onset is usually insidious, with anorexia, vague abdominal discomfort, nausea and vomiting, progression to jaundice less frequent than with hepatitis B.
VIRAL HEPATITIS C

Although initial infection may be asymptomatic (more than 90% of cases) or mild, a high percentage (50%–80%) develop a chronic infection.

Of chronically infected persons, about half will eventually develop cirrhosis or cancer of the liver.
VIRAL HEPATITIS C

Diagnosis

Tests detecting antibody to the hepatitis C virus (anti-HCV) include:

  Enzyme immunoassay (EIA) and the Recombinant immunoblot assay.

These tests do not distinguish between acute, chronic, or resolved infection.
Acute or chronic HCV infection should be confirmed by a sensitive HCV RNA assay.

Infectious agent

The hepatitis C virus is an enveloped RNA virus
VIRAL HEPATITIS C

Occurrence: Worldwide.

WHO estimates that some 130–170 million people are chronically infected with HCV.

HCV is one of the most common global causes of chronic hepatitis, cirrhosis, and liver cancer.
VIRAL HEPATITIS C

Mode of transmission

HCV is primarily transmitted parenterally. Sexual and mother-to-child have been documented but less frequent than the parenteral route.
VIRAL HEPATITIS C

Incubation period

Ranges from 2 weeks to 6 months; commonly 6–9 weeks.

Susceptibility

Susceptibility is general. The degree of immunity following infection is not known.
VIRAL HEPATITIS C

Methods of control

A. Preventive measures:
Prophylactic IG is not effective.

B. Control of patient, contacts and the immediate environment:
Combination therapy of ribavirin and slow-release interferons
IV. DELTA HEPATITIS ICD-10 B17.0

Identification

Signs and symptoms resembling those of hepatitis B, always associated with a coexistent hepatitis B virus (HBV) infection.

HDV is unable to infect a cell by itself and requires co-infection with the HBV to undergo a complete replication cycle.
DELTA HEPATITIS

Infectious agent

HDV is a virus-like particle consisting of a coat of HBsAg and a unique internal antigen, the delta antigen, a single-stranded RNA.
Identification

Clinical course similar to hepatitis A

The case-fatality rate is similar to hepatitis A except in pregnant women, where it may reach 20% among those infected during the third trimester of pregnancy.
VIRAL HEPATITIS E

Infectious agent

The hepatitis E virus (HEV), single-stranded RNA virus.

Outbreaks often occur as waterborne epidemics
Thank you
&
Good Luck