

PROJECT PRAKASH

KEY LEARNING POINTS

Training: Hepatitis Induction Program

Topic: Overview & Laboratory Diagnosis of Viral Hepatitis

Faculty: Dr. Reshu Agarwal, Assistant Professor, Clinical Virology, ILBS

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Period: 2018 – 2020

Attendees: In-service Nurses

Viral hepatitis means inflammation (swelled or enlarged) of liver due to hepatitis viruses.

Classification of Viral Hepatitis (A – E)

	HAV	HBV	HCV	HDV	HEV
Family	Picornaviridae	Hepadnaviridae	Flaviviridae	Delta agent (satellite virus)	Hepeviridae
Nucleic Acid	ssRNA	ssDNA	ssRNA	ssRNA	ssRNA
Routes of transmission	Fecal-oral	Parenteral	Parenteral	Parenteral	Fecal-oral
Chronic	No	Yes	Yes	Yes	No Yes – for genotype 3
Oncogenic potential (HCC)	No	Yes	Yes	-	No
Vaccine	Yes	Yes	No	HBV vaccine is protective	Recently finished trials

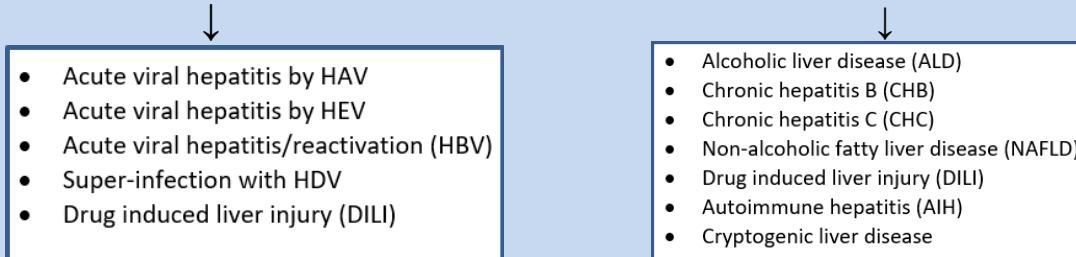
Transmission of Viral Hepatitis

HAV	HBV	HCV	HDV	HEV
Feco-oral route - Food handlers, Raw food	Percutaneous/ mucosal contact - infectious blood or body fluids	Parenteral transmission - infected needles & unsafe injections	Can become established only in persons with HBV infection:	Feco-oral
Close personal contact - Household contact, sexual contact, child care centres	Routes: Vertical - Mother to child Transmission Horizontal - • Parenteral • Sexual • Contact with blood or open sores of an infected person • Sharing razors, toothbrushes	Blood and blood products transfusions (before 2001) Other modes like sexual, vertical and intra-familial are infrequent.	Coinfection - simultaneous HBV + HDV infection (in a healthy individual) Superinfection - HBV infected host is now infected with HDV	Through contaminated water - Outbreaks are more likely due to contaminated water than foodborne infection

	with an infected person			
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Clinical presentation of viral hepatitis

- Acute viral hepatitis (AVH)
- Chronic viral hepatitis - Chronic hepatitis B (CHB)
- Chronic hepatitis C (CHC)
- Acute liver failure (ALF)
- Acute-on-chronic liver failure (ACLF)
 - acute (precipitating) event on an underlying chronic liver disease (CLD)



Testing in Viral Hepatitis

HAV	HBV	HCV	HDV	HEV
<p>Acute infection: detection of anti-HAV IgM through EIA</p> <p>Past Infection: detection of IgG anti-HAV</p>	<p>Three types of antigens are seen in serum:</p> <ul style="list-style-type: none"> • HBsAg • Surface antigen • HBcAg • Core antigen • HBeAg • antigen 	<p>No marker to distinguish between acute and chronic infections</p> <p>Anti-HCV screening</p> <p>HCV RNA (Qual)</p> <p>HCV RNA (Quan)</p> <p>HCV viral load is a very important parameter in disease staging and response to antiviral therapy</p>	<p>Serology (antibody detection)- anti-HDV-total and IgM anti-HDV</p> <p>NAAT –RT-PCR</p>	<p>Detection of IgM-anti-HEV by ELISA</p> <p>In very early acute cases, IgM antibodies may not be detectable</p> <p>HEV RNA: method of choice</p>
