

#MADEEASY



HEPATITIS MARKERS





HEPATITIS MARKERS

- ***In simple words, hepatitis is the inflammation of the liver caused by viral infections.***
- ***It is 5 types, caused by viruses having the same name.***

Hepatitis A: caused by Hepatitis A virus

Hepatitis B: caused by Hepatitis B virus

Hepatitis C: caused by Hepatitis C virus

Hepatitis D: caused by Hepatitis D virus

Hepatitis E: caused by Hepatitis E virus

Back to ABCDE!

- ***The diagnosis of Hepatitis hugely depends on the presence of certain “markers” in the blood. In this topic, we’re going to learn more about these markers and what they signify.***



Hepatitis Markers



Hepatitis A

- **Only occurs as an acute infection.**
- **Marker: anti- HAV antibodies**
- **IgM Anti-HAV: IgM antibodies against the Hepatitis A virus, signifies acute Hepatitis A infection.**
- **IgG Anti-HAV: IgG antibodies against Hepatitis A virus appears during recovery, signifies immunity against Hepatitis A infection.**
- **Two antibodies can be formed: IgM and IgG both signifying their general function. Antibodies for all except Hep B follow this similar pattern.**

H: hepatitis --> A/C/D/E --> V: virus





Hepatitis B

May occur as an acute or chronic infection.

Markers

- **HBsAg: Hepatitis B surface antigen**
Earliest marker was seen in blood.
- **Anti HBsAg: antibody against Hepatitis B surface antigen**
Denotes immunity/ recovered Hepatitis B/ vaccination.
- **Anti- HBc Antibody: antibody against Hepatitis B core antigen**
 1. ***HBcAg is never seen in blood.***
 2. ***Hence, we look for antibodies.***
 3. ***IgM anti HBc: seen in acute Hepatitis B***
 4. ***IgG anti HBc: seen in chronic Hepatitis B***
- **HBeAg: Hepatitis B e antigen**
Indicates high viral replication and infectivity.
- **Anti-HBe antibody: antibody against Hepatitis B e antigen**
Indicates reduced viral replication and reduced infectivity.





Hepatitis B

	Acute Hep B with high infectivity	Chronic Hep B with high infectivity	Gap period	Recovered	Vaccinated
HBsAg	+	+	-	-	-
Anti-HBsAg	-	-	-	+	+
Anti-HBc	IgM	IgG	IgM	IgG	-
HBeAg	+	+	-	-	-

Let's learn to solve such questions in steps

1. Check HBsAg, if positive: Hepatitis B (acute or chronic) ; if any other marker given like anti HAV positive then it means Hep A infection.

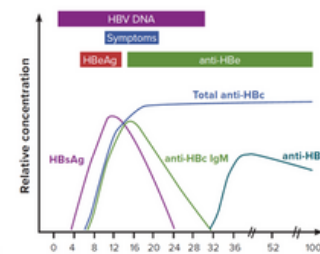
**2. Check IgM or IgG: acute or chronic
Check IgM or IgG: acute or chronic**

3. Check infectivity: Anti HBe positive directly means "high infectivity and replication" so eliminate options without the keywords.

4. Recovery will have anti HBc IgG and anti HBs antibody: so 2 antibodies

5. Only IgM: gap period

6. Only anti HBs: vaccination





Hepatitis C

Hepatitis C

Marker: anti- HCV antibody

Indicates Hepatitis C

Not confirmatory

Investigation of choice: PCR HCV RNA

Hepatitis D

Occurs as a co-infection (along with hepatitis B) or as a superinfection

(superimposed on an ongoing hepatitis B)

Marker: anti- HDV antibody

Indicates Hepatitis D

Hepatitis E

Self-limiting acute infection.

However, hepatitis E can cause fulminant hepatitis in pregnancy.

Marker: anti-HEV antibody

Indicates exposure to Hepatitis E

