

Hepatitis

Acute hepatitis:

It is an acute parenchymal damage can be caused by many agents.



How can I treat HA ?

- It is a self limiting disease
- I V fluid
- Most patients begin to recover from acute illness within 2 months

Diagnosis :

- Liver function test.
- Stool analysis.
- Anti-HA virus antibody.

Prevention:

- Washing hands before and after eating
- By taking the vaccine (havrix) it induce protective titers of anti bodies in greater than 95% and 99% of people after the first& second doses
- Prevent the effected people from working as food handlers or cooker
- Improve your personal hygiene.
- Children have to be toilet trained.

Facts

- Hepatitis A can be prevented with safe and effective vaccine.
- You cannot get hepatitis A from the vaccine.
- Hepatitis A is most common vaccine-preventable disease in international travelers

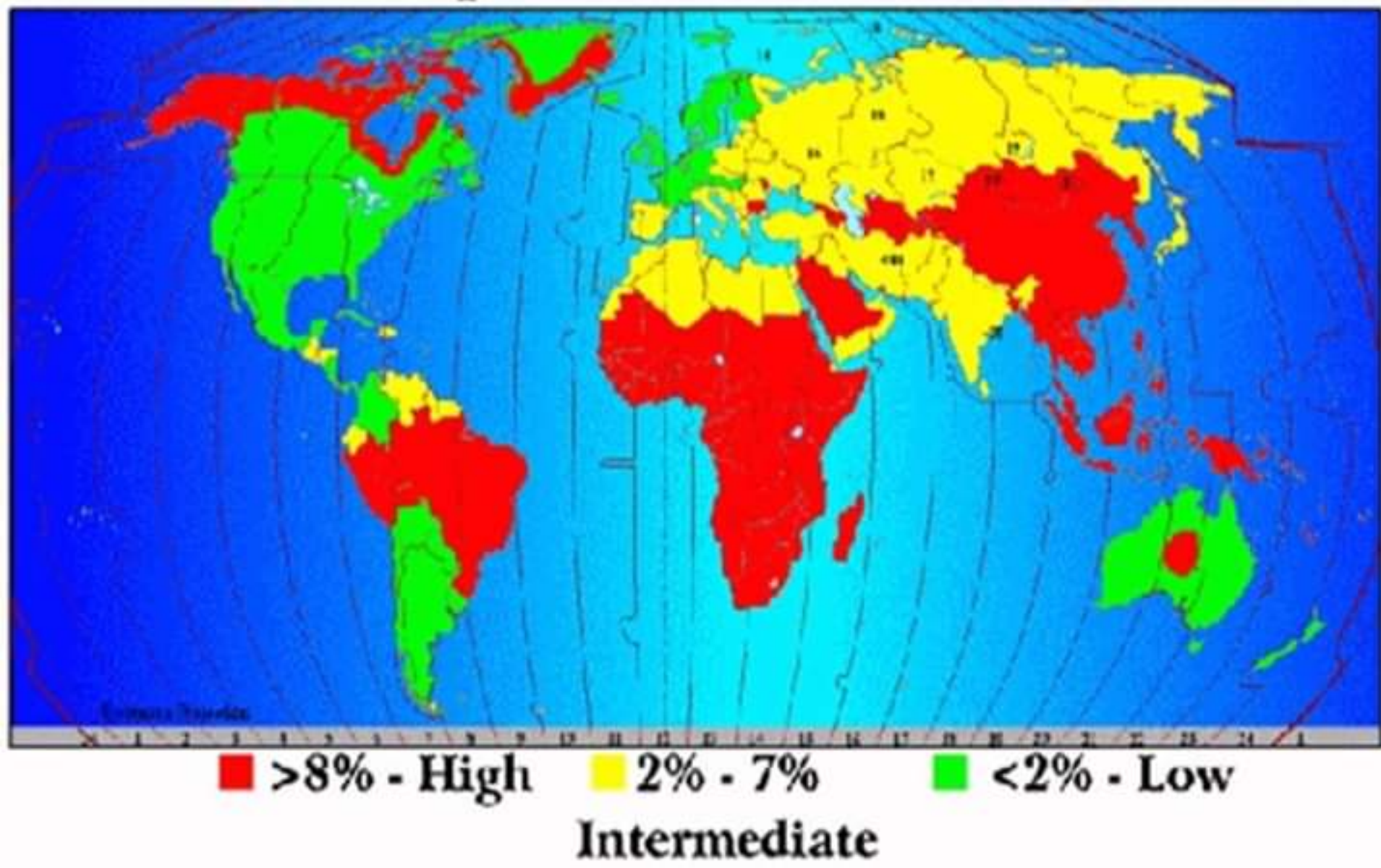
Hepatitis B

- HBV alone is estimated to have infected 400 million people throughout the globe
- It is the most common human pathogen
- Hepatocellular carcinoma, one of the most common cancers afflicting humans, is primarily caused by chronic HBV infection
- There is no cure for individuals already infected
- Incubation period: 30-180 days

Epidemiology of HBV

- HBV is globally distributed among humans
- Though HBs has been found in other primates, humans remain the principal reservoir
- The prevalence of HBV has been decreasing in developed countries, thanks to the availability of the hepatitis B vaccine, increasing knowledge of how the virus is spread as well as screening of donated blood before use

Global Distribution of Chronic Hepatitis B Infection



Higher risk groups for HBV

- Individuals living in close proximity to a known infected individual. This is likely due to the fact that HBV can survive even on a dry surface for over a week
- Users of intravenous drugs, particularly those who share their needles
- Individuals who have multiple sexual partners

Cont.

- Health care workers (doctors, dentists, paramedics, nurses, etc)
- Cleaning staff in health care facilities
- Staff of institutions for people with developmental disabilities
- Firefighters and police officers
- Daycare workers

How can I get HBV?

- Transmission of HBV is done most efficiently via percutaneous introduction (i.e. needle stick injury)
- Sexual transmission is also possible though inefficient
- Children of mothers with active HBV are also at risk
- Uninfected individuals living with an HBV carrier are at greater risk of contracting the disease

Liver, biliary tract and pancreatic disease

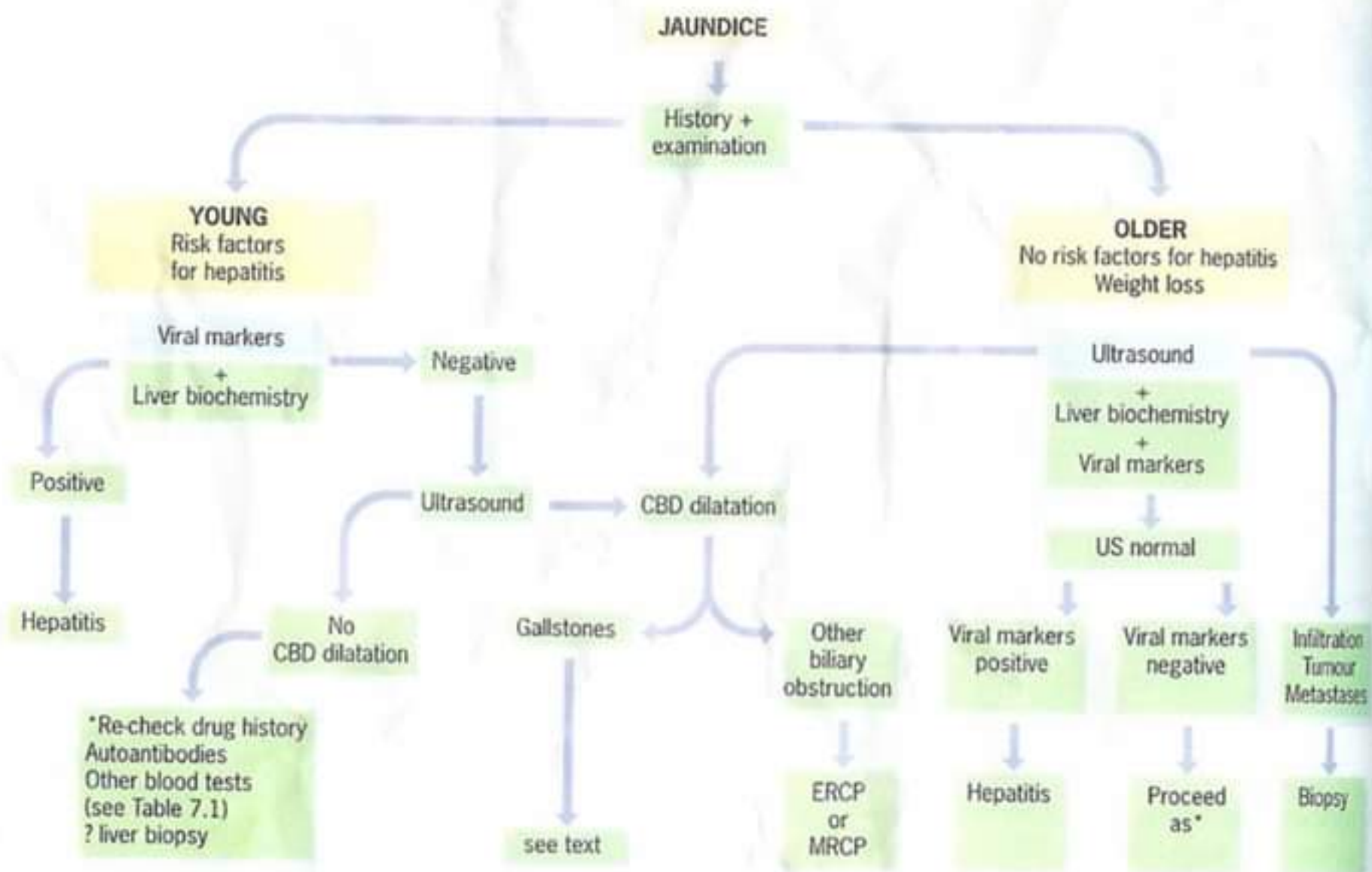


Fig. 7.11 Approach to patient with jaundice. ERCP, endoscopic retrograde cholangiopancreatography; CBD, common bile duct; US, ultrasound; MRCP, magnetic resonance cholangiopancreatography.

Diagnosis

- Antegen and antibody in the blood
- AST / SGOT
- ALT/ SGPT
- Alkaline ohosphatase
- GGT
- LDH
- Albumin
- Bilirubin
- PT

HBV vaccination

- It is the best method to prevent HBV infection
- The vaccination is derived from a recombinant yeast source
- The vaccines are Recombivax and Engerix-B
- Both appear to be quite effective
- The vaccine should not be frozen as this appears to be deleterious to its immunogenicity

Cont.

- There have been some reports of adverse reactions to the yeast-derived vaccines which include skin, rheumatic, vasculitic, ophthalmologic, hematologic and neurologic reactions

Post-Exposure Immunoprophylaxis

- It is given to those who are not vaccinated, but who may have been exposed to live virus through sexual contact, transient exposure to contaminated materials or fetuses/ neonates of infected mothers
- The effectiveness of the prophylaxis diminishes if delivery is delayed more than 3 days post-exposure

Hepatitis D

- It occurs only in people who are infected with HBV
- HDV infection can be acquired either as a co-infection with HBV or as a superinfection of persons with chronic HBV
- Persons with HBV-HDV co-infection may have a more severe acute disease and a higher risk of fulminant hepatitis
- In chronic HBV carriers with HDV superinfection, 70%-80% have developed evidence of chronic liver diseases with cirrhosis

Hepatitis D virus modes of transmission

- Modes of HDV transmission are similar to those for HBV
- Percutaneous exposures are the most efficient
- Sexual transmission is less efficient than for HBV
- Perinatal HDV transmission is rare

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Epidemiology of HDV

- The global pattern of HDV infection corresponds to the prevalence of chronic HBV infection
- In countries with a low prevalence of chronic HBV infection, HDV prevalence is generally low occurring mostly among injecting drug users and persons with hemophilia

Diagnosis of HDV

- In most persons with HBV-HDV co-infection, both IgM and IgG antibody are detectable during the course of infection
- In 15% of patients the only evidence of HDV infection may be the detection of either IgM alone during the early acute phase or IgG alone during the convalescence
- HDAg can be detected in serum in only about 25% of patients with HBV-HDV co-infection

Cont.

- In patients who are superinfected with HDV, several serological features occur including:
- The titer of HBsAg declines at the time HDAg appears in the serum
- HDAg and HDV RNA remain detectable in the serum because chronic HDV infection generally occurs in most patients with HDV superinfection
- High titers of both IgM and IgG are detectable, which persist indefinitely

Cont.

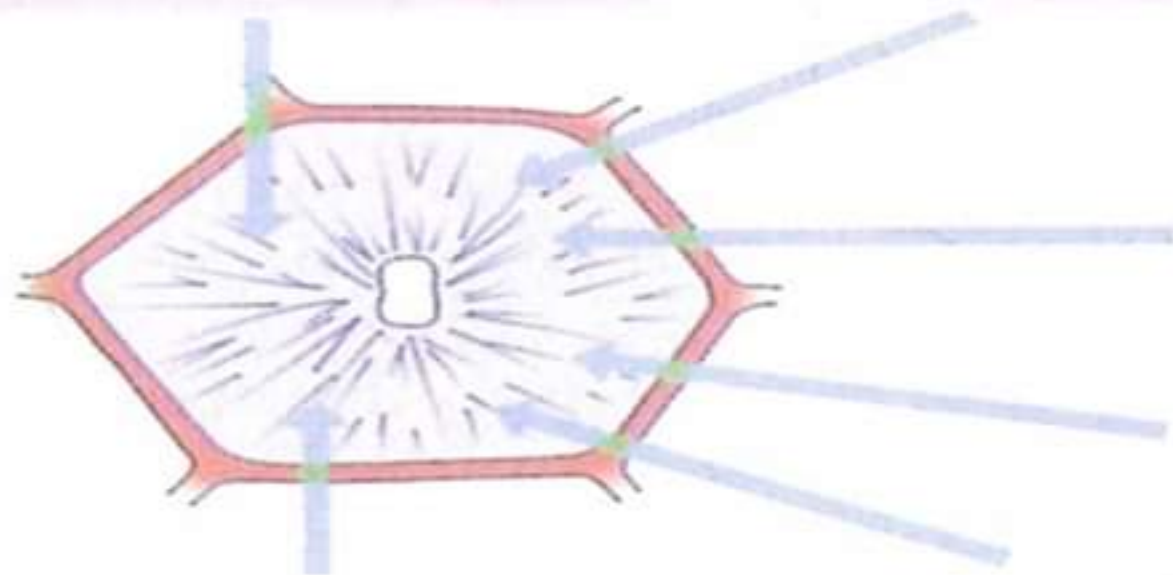
- In countries with moderate levels of HBV infection as in northern Italy, Spain, Turkey and Egypt, the prevalence of HDV infection is moderate among asymptomatic HBV carriers (10%-19%) and among patients with chronic HBV-related liver disease (30%-50%)

Non-viral infections

Toxoplasma gondii
Leptospira
icterohaemorrhagiae
Coxiella burnetii
(Q fever)

Viral infections

Virus A, B, (D), C, E
Epstein-Barr virus
Cytomegalovirus
Yellow fever virus
Others-rare



Drugs

e.g. Paracetamol
Halogenated
anaesthetics

Alcohol

Poisons

e.g. *Amanita phalloides*
(mushrooms)
Aflatoxin
Carbon tetrachloride

Other

e.g. Pregnancy
Circulatory
insufficiency
Wilson's disease

Fig. 7.12 Some causes of acute parenchymal damage.

Cont.

- In countries with high levels of HBV as in southern Italy and parts of Russia and Romania, the prevalence of HDV infection is very high among asymptomatic HBV carriers (>20%) and among patients with HBV-related chronic liver disease HBV (>60%)
- In most of Southeast Asia and China, where the prevalence of chronic HBV infection is very high, HDV infection is uncommon

Prevention of HDV infection

- For HBV-HDV coinfection
pre or postexposure prophylaxis
- HBV-HDV superinfection
education to reduce risk behaviors among
persons with chronic HBV infection
- There are no products to prevent HDV
superinfection

Hepatitis E - Epidemiology


- Most outbreaks are associated with fecally contaminated drinking water
- There is minimal person-to-person transmission unlike HAV
- U.S. cases usually have a history of travelling to HEV-endemic areas such as Mexico and parts of Africa and Asia
- It can be very serious in some cases, causing death in 15%-20% in expectant women
- The highest rates of clinically evident disease have been in young to middle-age adults
- No evidence of chronic infection
- Both IgM and IgG antibody to HEV are elicited following HEV infection

Prevention and Control

- Avoid drinking water (and beverages with ice) of unknown purity, uncooked shellfish, and uncooked fruits/ vegetables not peeled
- IG prepared from donors in Western countries does not prevent infection
- Unknown efficacy of IG prepared from donors in endemic areas
- There is no vaccine for HEV

Hepatitis C Epidemiology

- In the U.S., the annual number of acute HCV infection has declined during the past decade from 180.000 to 35.000
- An estimated 3.9 million Americans are currently infected with HCV
- 8.000-10.000 deaths each year result from HCV-associated chronic liver disease

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- It is found more among young adults
 - The highest incidence and prevalence rates are among nonwhite racial/ ethnic groups

High risk groups

- Who inject illegal drugs, even only once or a few times many years ago
- Had a tattoo or body piercing with tools that may not have been sterile
- Who shared "straws" used to inhale drugs nasally with anyone
- Who were treated for clotting problems with blood products before 1987
- Who received a blood transfusion or solid organ transplant before July 1992

Cont.

- Who are long term hemodialysis patients
- Who are health care workers and have been exposed to HCV-infected blood
- A child born to an HCV-positive woman
- Who have a positive blood test for the presence of HCV antibodies
- HCV can spread by sex but not very often

Hepatitis C is not spread through

- Shaking hands with an infected person
- Hugging or Kissing an infected person
- Sitting next to an infected person
- Breastfeeding (unless nipples are cracked or chapped)
- Food or water

- No reliable tests are available that can determine infectivity
- Postexposure prophylaxis with immune globulin does not appear to be effective in preventing HCV
- No vaccine is available for hepatitis C
- Being infected with HCV does not provide protection from another infection with HCV

Table 7.4
Some features of hepatitis viruses

	A	B	D	C	E
Virus	RNA 27 nm	DNA 42 nm	RNA 36 nm (with HBsAg coat)	RNA 30–60 nm	RNA 27 nm
Spread	Picornia	Hepadna	Unclassified	Flavi	Calici
Faecal	Yes	No	No	No	Yes
Blood	Rare	Yes	Yes	Yes	No
Vertical	No	Yes	Rare	Occasional	No
Saliva	Yes	Yes	Yes	? No	?
Sexual	Rare	Yes	Yes (rare)	Occasional	No
Incubation	Short (2–3 weeks)	Long (1–5 months)	Long	Intermediate	Short
Age	Young	Any	Any	Any	Any
Carrier state	No	Yes	Yes	?	No
Chronic liver disease	No	Yes	Yes	Yes	No
Liver cancer	No	Yes	Rare	Yes	No
Mortality (acute)	< 0.5%	< 1%		< 1%	1–2% (pregnant women 10–20%)
Immunization:					
Passive	Normal immunoglobulin serum i.m. (0.04–0.06 mL/kg)	Hepatitis B immunoglobulin (HB Ig)	–	–	–
Active	Vaccine	Vaccine	HBV vaccine	–	–

Treatment of HCV

- The goals of treatment are elimination of the virus and improvement in the amount of inflammation and scarring of the liver
- Early treatment is recommended to reduce the viral load

Epidemiology of hepatitis A :

- It occurs world wide
- It is prevalent in areas of poor sanitation and hygiene.
- More common in children.
- There was an outbreak in Mexico
- 10,616 acute cases were reported in 2001 in United states.

Incidence

- 60,000 to 140,000 reported cases per year (national center for infectious disease)
- 1.4 million people worldwide are infected each year (unreported)
- The overall incidence of HA infection has declined by 4.4% per year during this century
- 35% to 65% of cases occur in children between the age of 0 to 4 years
- Hepatitis A is 1,000 times more common than cholera and 100 times more common than typhoid among international travelers.

Endemic regions :

- Mexico
- Part of Caribbean
- South America
- Central America
- Africa
- Asia (except Japan)
- Middle east
- Eastern Europe
- Mediterranean

Who are the people that are at high risk ?

- Travelers
- Certain population that experience cyclic HA epidemics
- Residents of a community experiencing an outbreak of HA
- Employees of child daycare center

How can I get hepatitis A ?

- By ingestion of contaminated water or ice, uncooked fruits or vegetables or washed in contaminated water
- In day care center (toilet)
- Infected food handlers
- By household contact among familial or roommates.
- Ingestion of raw or undercooked shellfish (oysters).