

Hepatitis B Virus

NUTS AND BOLTS

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Objectives

I will discuss the following:

Transmission of HBV including mother to child and household

Testing for Hepatitis B virus

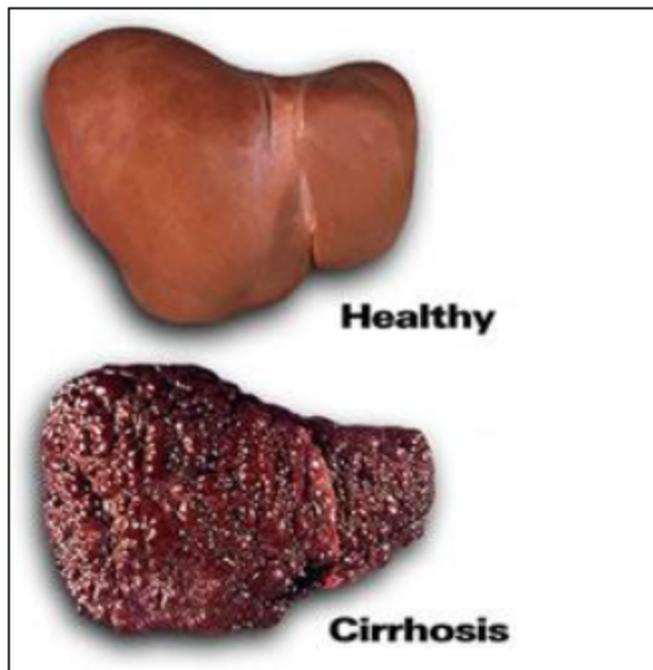
Vaccination Process for Hepatitis B virus

Treatment and referral process to the liver clinic

Prevention of Hepatitis B Virus

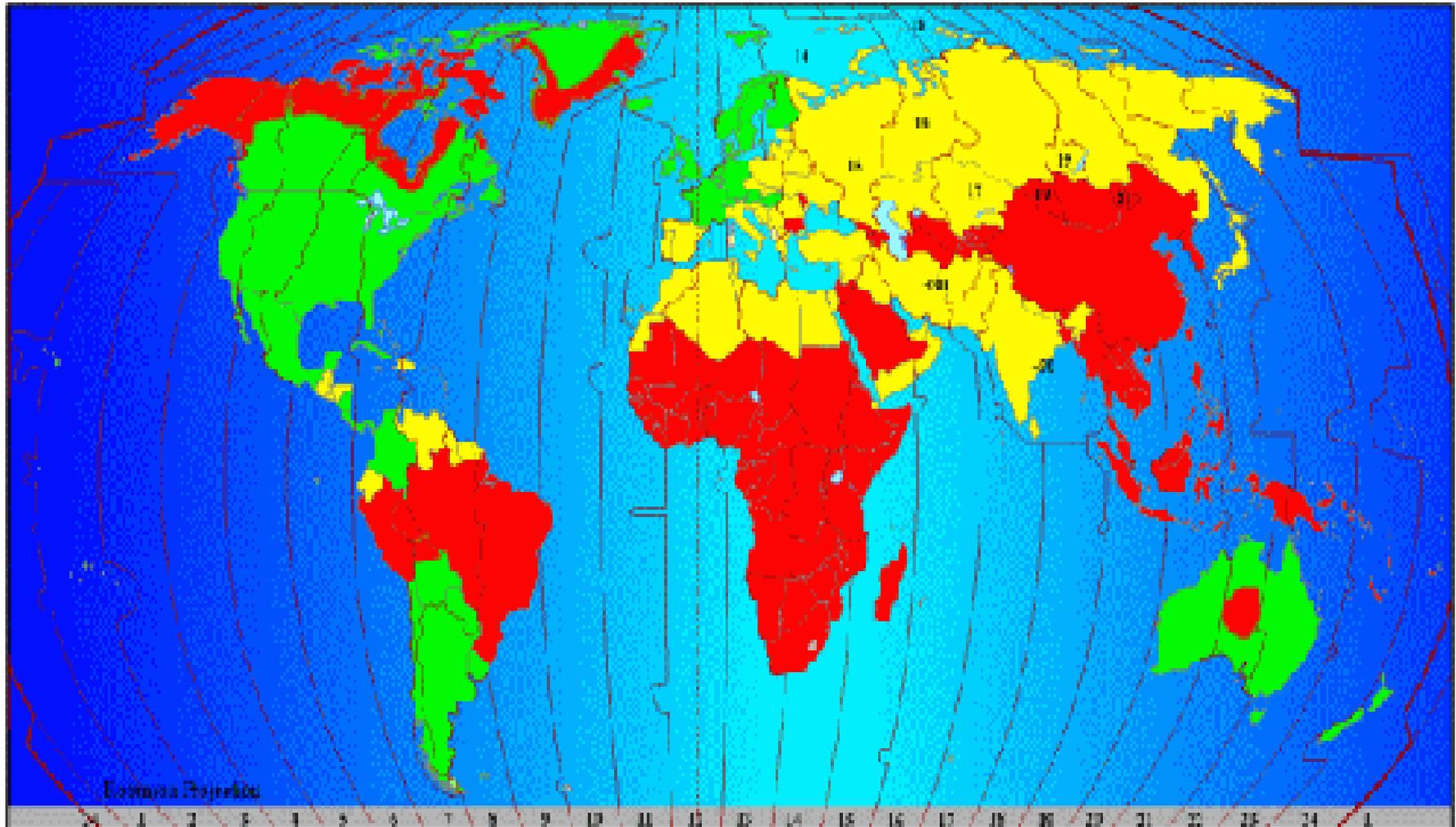
Case studies

Impact of hepatitis



- When the liver is inflamed, scar tissue can develop
 - Impairs liver functioning
- Scar tissue is known as **fibrosis**
- Extensive scarring is known as **cirrhosis**

Global Distribution of Chronic Hepatitis B Infection



■ >8% - High ■ 2% - 7% ■ <2% - Low

Intermediate

Hepatitis B - Transmission

- HBV Positive mother to baby (vertical)
- Intravenous drug use
- Sexual contact
- Blood transfusion
- Close family contact (sharing razors and toothbrushes)
- Accidental inoculation (Needle stick)

Hep B – Transmission cont'd...

- Persons born in countries with a high rate of Hepatitis C (Immunisation related) e.g. Romania, Italy

How you Do Not get Hepatitis B

- Mosquitoes
- Sharing food, drinks and cigarettes.
- Breastfeeding
- Touching, kissing and hugging
- Coughing and sneezing
- Sharing plates, cups, forks, spoons and chopsticks
- Sex using a condom

MOTHER-CHILD TRANSMISSION

Screening of all pregnant women occurs in Australia.

The Hepatitis B virus is often found at this time.

Women whom are Hepatitis B positive are then referred to the Liver Clinic of one of the major teaching hospitals.

Almost 90% of newborns will contract Hepatitis B virus from an Hepatitis B positive mother during childbirth **if they are not given Hepatitis B vaccination and HBig immunoglobulins.**

Pregnancy and HBV

- Worldwide the majority of people with HBV infection acquired it at birth or in early childhood.
- 90% of neonatal infections go on to develop Chronic HBV.
- Prophylaxis for peri-natal HBV exposure is:
- HBig (Hep B immunoglobulin) 100 IU IM single dose.
- Hepatitis B vaccination at 0,2,4 and 6 or 12 months.

Pregnancy and HBV

- Treatment with anti-viral medications (Tenofovir) in the last 3 months of pregnancy is recommended for HBV positive women with high viral load and abnormal ALT's.
- This greatly reduces the risk of peri-natal transmission of Hepatitis Virus.
- Regular monitoring of Liver function tests is recommended during pregnancy and after delivery.
- Flares of HBV after birth are as high as 28% in recent studies.

Testing for the Hepatitis B Virus

- Hepatitis B surface antigen (current) infection
- Hepatitis B e-antigen (ascertains whether the virus is continuing to multiply in the liver)
- Hepatitis B surface antibody (this test is positive if a person has successfully cleared the virus)
- Hepatitis B viral DNA (if high the person has actively replicating Hepatitis B virus and may need treatment)

Testing - Hepatitis B virus cont'd...

- Other tests to monitor the progress of the virus include:
- Liver function tests e.g. ALT (Alanine Aminotransferase)
- Liver U/Sound / Triphasic CT
- Fibroscan (looking at density of liver tissue)
- Alpha-fetoprotein (Can be a marker for liver cancer)

Treatment of Hepatitis B

- Hepatitis B carriers without liver damage do not require treatment.
- However if liver damage and active viral replication is occurring treatment with Interferon, Entecavir or Tenofovir is indicated.
- Drinking alcohol should be avoided.

Goals and Benefits of Hepatitis B Treatment

Aim of treatment

- Suppress viral replication
 - Reduce inflammation developing  reduce the risk of cirrhosis and/or HCC
- (control of disease rather than a cure)**

Decision to begin treatment depends on several factors including:

- Amount of fibrosis
- Degree of inflammatory activity
- Predicted risk of future liver damage for the individual

TREATMENT IS USUALLY LONG TERM OR LIFELONG

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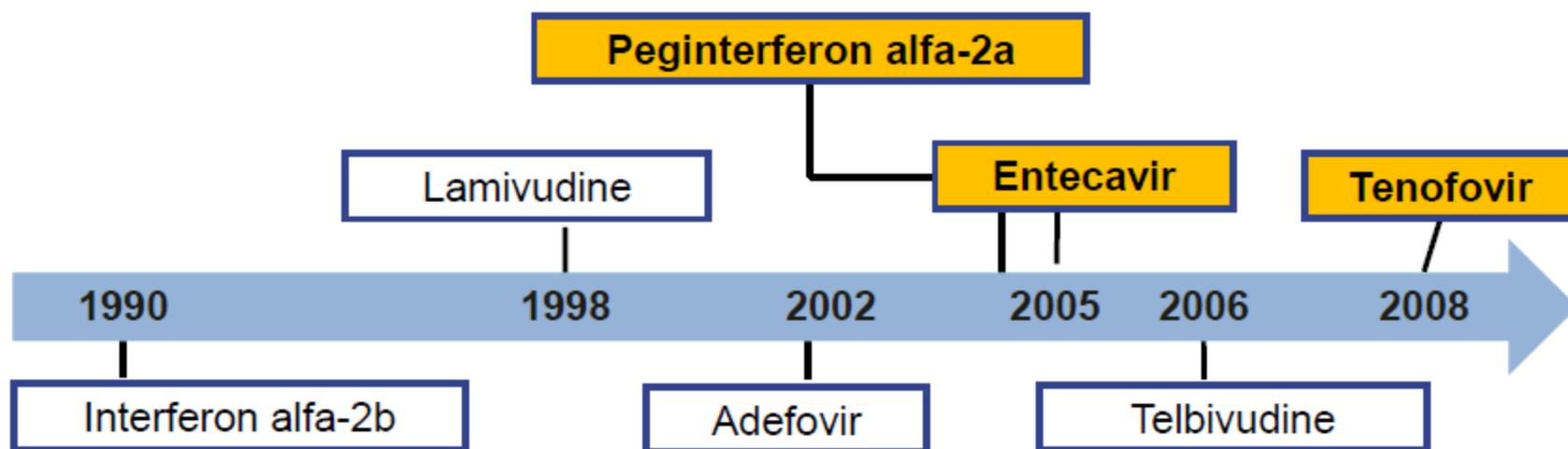
Testing - Hepatitis B virus cont'd...

- Other tests to monitor the progress of the virus include:
- Liver function tests e.g. ALT (Alanine Aminotransferase)
- Liver U/Sound / Triphasic CT
- Liver Biopsy.
- Alpha-fetoprotein (Can be a marker for liver cancer)

Treatment of Hepatitis B

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HBV Treatment Landscape in 2013



| | | |
|-------|-----------------------|------------------------|
| S/C: | Peginterferon alfa-2a | → weekly for 12 months |
| Oral: | Entecavir/Tenofovir | → daily for life |

Prevention of Hepatitis B virus

- Vaccination with Hepatitis B vaccine is the best protection.
- Utilise universal precautions.
- Promote safe sexual practices.
- Avoid IVDU.
- Do not share razors or toothbrushes.
- Avoid tattoos or body piercing.
- Health care and public safety workers should be vaccinated.

Summary points

1 IN 4 PEOPLE WITH CHB DIE FROM THEIR CHB

- Approximately **44%** of people with **CHB** in Australia are **undiagnosed**
- CHB is the **leading cause of cirrhosis and Hepatocellular cancer (HCC)** worldwide
- HBV and its related liver complications are a **major health problem in Australia and an increasing health burden**
- The **incidence of liver cancer in Australia is rising**
- **5 year survival for HCC is 16%**
- **5 year survival for decompensated cirrhosis is 35%**

Summary points

- **ALL** people from **high risk groups**, in particular from high prevalence countries should be **tested** and know their hepatitis B status
- Chronic hepatitis B is a **dynamic disease** that can change over time
- **ALL** people with chronic hepatitis B should have **6-12 MONTHLY regular monitoring** by a doctor to assess for **treatment eligibility** and **HCC surveillance**
- The term '**Healthy Carrier**' is a **misnomer**
- **Treatment** can reduce the risk of liver cancer and/or cirrhosis
- Treatment is usually a **long term prospect** and not all HBV infected patients will require treatment

**THERE IS A VACCINE TO PREVENT
HEPATITIS B**

Conclusion

- Hepatitis B virus is a largely preventable disease.
- Immigration from Asia and Africa is increasing the prevalence of HBV in Australia.
- Vaccination is the best way to control the disease.
- Pregnant women with Hepatitis B should be monitored and treated if indicated.
- All newborns need Hepatitis B vaccination and HBV Immunoglobulins if the mother is HBV positive
- Regular Liver U/Sounds of those people with HBV is indicated to screen for Hepatocellular carcinoma.
- Treatment with anti-viral medications prevents liver damage and HCC.

CASE STUDY 1

27 year old Vietnamese pregnant woman presents at your community sponsored education event and tells you quietly that she has recently been diagnosed with Hepatitis B and does not know much about the disease.

What would you advise her to do?

What education would you give her regarding household transmission?

What support services could you suggest for her?

CASE STUDY 2

- **A 35 year old woman with Hepatitis B has recently relocated from a country area and taken her 5 year old daughter with her to reside in Perth. She has left her partner whom was abusive towards her. She secures a job as a cleaner in a large teaching hospital .She is very concerned that the hospital might find out that she has Hepatitis B and she may not be able to work in the hospital theatres anymore.**
- **How would you counsel this woman?**
- **What supports would be available to her?**

CASE STUDY 3

- **22 year old Malaysian nursing student who has recently been diagnosed with Hepatitis B attends a community education session. She is feeling anxious about choosing a speciality area of nursing as she is not sure if she can work in certain areas.**
- How would you advise this woman?
- What other supports would you recommend for her?
- Whom else could this nurse speak to regarding her concerns?