Hepatitis B

Introduction

Hepatitis B virus is one of the most prevalent viruses worldwide and is a major cause of chronic liver disease and hepatocellular carcinoma. It is a hepadnavirus, consisting of a core antigen surrounded by a surface antigen that is the basis of the hepatitis B vaccine.

Epidemiology (To be added soon)

Data from the Travel Health Surveillance Section of the Health Protection Agency Communicable Disease Surveillance Centre

Risk for Travellers

The risk of hepatitis B for tourists is considered to be low. However, this risk will increase with certain activities, for example unprotected sexual intercourse, receiving blood transfusions in countries that do not screen donated blood and sharing needles by injecting drug users. Working in medical settings and receiving injections or body piercings may also increase the risk.

The risk among long-term travellers is higher, with estimates of acquiring symptomatic hepatitis B ranging from 0.2 per 1,000 travellers per month in Africa and Latin America, to 0.6 per 1,000 in Asia.

Transmission

The virus can be found in bodily fluids and is transmitted percutaneously or by close sexual contact.

The percutaneous route of transmission includes the use of contaminated medical, dental or other instruments and transfusion of infected blood products.

Sexual transmission is a particularly high risk amongst men who have sex with men.

The virus can also be passed vertically from a mother to child. This is the most common mode of transmission world-wide.

There is no evidence that insect borne transmission occurs.

Signs and Symptoms

In the majority of cases, hepatitis B is a sub-clinical illness, with less than 10% of children and between 30-50% of adults suffering symptomatic disease.

Symptomatic patients will experience, following an incubation period of 6 weeks to 2 months, anorexia, nausea and vomiting and sometimes rash. They will then become jaundiced. The case fatality rate is about 1% and occurs in persons with fulminant hepatitis. This increases with age.

Following acute infection approximately 1-10% of adults will develop chronic hepatitis B. 15-25% of those with chronic hepatitis B infection will progress to cirrhosis or hepatocellular carcinoma and die. It is also possible to become an asymptomatic carrier of hepatitis B.

Treatment

There is no specific treatment for acute hepatitis B, but rather supportive intervention.

Antiviral agents can be used in some patients to treat chronic hepatitis B. The response rate is variable and long term therapy is often required.

Prevention

Effective vaccination is available for those considered to be at risk.
In addition all travellers should receive the following advice to reduce their risk.

- Refrain from unprotected sexual intercourse.
- Avoid tattooing, piercing and acupuncture unless it is certain that sterile needles are being used.
- Take out adequate travel insurance that will provide repatriation if necessary.
- Never share unsterilised needles.
- Exercise body fluid precautions if working in a medical setting
- Carry a sterile medical kit for use by medical staff if necessary.

Travellers should be aware that using precautions against hepatitis B will prevent other blood and bodily fluid borne viruses, such as HIV and hepatitis C, for which there are no vaccines available.

Hepatitis B Vaccine Information

Indications for use of vaccine

Hepatitis B vaccine is recommended for

- Those who may be exposed to blood or blood products through their occupation e.g. health care workers, ambulance crews
- Travellers who intend to stay for long periods in high prevalence areas.
- Those considered to be at risk of hepatitis B through their planned activities, e.g. volunteers undertaking manual work, contact sports, casual sex
- Young children who may be in close contact with the local population and therefore at risk of cuts and scratches.
- Travellers with pre-existing medical conditions who may be at higher risk of requiring medical procedures abroad, e.g. pregnancy

For other specific recommendations, see Immunisation against Infectious Disease

Availability of vaccine

There are two brands of hepatitis B vaccine licensed in the UK, both of which are inactivated and use a recombinant surface antigen of the hepatitis B virus.

Details of these and manufacturers can be found in the summary table below.

There are also combined hepatitis A and B vaccines.

Vaccine schedules

Vaccine	Manufacturer	Schedule	Length of protection	Age range
Engerix B	GlaxoSmithKline	3 doses. 0, 1 and 6 months	See note below	Neonates to adults Note different dosage for children up to and including 15 years of age.
		Accelerated schedule of 3 doses. 0, 1 and 2 months	A 4th dose should be given after 12 months	
		For adults only, (18 years and above) a schedule of 0, 7 and 21 days can be used when rapid protection is required.	A 4th dose should be given 12 months after the first.	
		In children aged 10-15 years, 2 doses of the adult dose will illicit an antibody response if it is felt they will be non-compliers.		
HBVaxPro 5mcg	Aventis Pasteur MSD	3 doses. 0, 1 and 6 months	See note below	From birth to 15 years
		Accelerated schedule of 3 doses. 0, 1 and 2 months	A 4th dose should be given 12 months after the first.	
HBVaxPro 10mcg	Aventis Pasteur MSD	3 doses. 0, 1 and 6 months	See note below	16 years and older
		Accelerated schedule of 3 doses. 0, 1 and 2 months	A 4th dose should be given 12 months after the first.	

We strongly advise that the vaccine SPC is consulted prior to administration of any vaccine.

It is good practice to continue a course of hepatitis B with the same brand of vaccine. However, should this not be possible the vaccines may be used interchangeably.

Length of Protection

The need for serological testing and reinforcing doses has not been fully established. A recent study suggests that lifelong immunity may be conferred following a full primary course of vaccine given to healthy persons.[1] Many health care workers are, however, advised to receive reinforcing doses every five years according to local policy.
European Consensus Guidelines have recently concluded that repeated serological testing is unnecessary if the initial hepatitis B antibody level is of a satisfactory level.[1]
Those who develop titres greater than 10IU/ml are virtually 100% protected against clinical illness and chronic infection. [2]

Interrupted courses

It is unnecessary to repeat doses if the hepatitis B course has been interrupted. Longer than recommended intervals between doses do not appear to reduce the final antibody level or efficacy.[3]

Contraindications

- Known hypersensitivity to any components of the vaccine, or to a previous dose
- Acute febrile illness

Adverse events

Adverse reactions following hepatitis B vaccine tend to be mild and transient. They include soreness, erythema and induration at the vaccine site. Less commonly fatigue, fever, malaise and influenza-like symptoms have been reported.

References

1. European Consensus Group on Hepatitis B Immunity. Are booster immunisations needed for lifelong hepatitis B immunity? The Lancet 2000;355:9203:561
2. Plotkin S, Orenstein Vaccines 3rd edition 2001 WB Saunders co Philadelphia
3. Centres for Disease Control and Prevention. Immunisation of adolescents; Hepatitis B vaccine. MMWR 1996;NoRR-13, vol 45 (nov22); 2-4

Reading List

Department of Health. Immunisation against Infectious Disease. 1996; HMSO London

Kumar P, Clark M. Clinical Medicine, fifth edition. 2002

Chin, J. Control of Communicable Diseases Manual, 17th edition. 2000