Hepatitis B

Exposure risk fact sheet

Background

Hepatitis B is a disease caused by the hepatitis B virus which causes inflammation of the liver. It can cause acute or chronic liver disease. The virus is spread through blood to blood contact with a person who has the virus, such as an injury with a contaminated instrument or needle or via mucous membrane contact with infected blood or body fluids. Half of those with the virus have little or no symptoms and may not know that they are infected with the virus. [1.2.3.]

Prevalence

Hepatitis B prevalence varies widely throughout the world and may even vary greatly within some countries. In Australia rates may vary depending on ethnicity from 0.5% among Caucasians to possibly greater than 10% in those who may have come from other countries.[2.]

Risk of Transmission

The risk of transmission of the virus can vary, depending on the type of exposure (percutaneous or non-percutaneous) and if the virus is actively replicating in the source patient. This can be discovered by blood tests performed on the source patient. Initially the blood tests will look for the presence of the hepatitis B surface antigen (HbsAg). If this result is positive or the person is known to be a carrier of hepatitis B the hepatitis B e antigen (HbeAg) might be tested for, among other things as determined by the healthcare professional managing the exposure. HbeAg is a marker of active viral replication, which if found, also means that the infected person is considered more infectious (see Figure 1).[3.4.5.6.] The risk of transmission is highest when exposure to blood and body fluids is a foreseeable outcome of normal work that is done e.g. a doctor or nurse would expect to have exposure to potentially infected blood and body fluids as part of their normal work. The risk would be lowest when no or very little time is spent in a clinical area or face to face with patients e.g. administration officer not based on a ward. Risk would also be assessed on a case by case basis for any exposure that happens.

Blood	Route	Estimated Risk of transmission
HbsAg positive and HbeAg Negative	Percutaneous	23-37% (1-6% risk of developing clinical hepatitis)
HbsAg positive and HbeAg Positive	Percutaneous	37-62% (22-31% risk of developing clinical hepatitis)

Figure 1 **Estimated risk of transmission following percutaneous blood exposure to hepatitis B infected individual if no post exposure action is taken.[3]**

Management of exposure

Please refer to the Queensland Health Guideline for the management of occupational exposure to blood and body fluids at https://www.health.qld.gov.au/__data/assets/pdf_file/0016/151162/qh-gdl-321-8.pdf

Each healthcare facility will have local procedures to reduce the risk of an exposure and for the process you should follow in the event of an exposure. Please refer to your local facility for more information.

References

1. Queensland Government Health Conditions Fact Sheet – hepatitis B http://conditions.health.qld.gov.au/HealthCondition/condition/8/118/74/Hepatitis-B
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3. Queensland Health Guideline – Management of occupational exposure to blood and body fluids 2017 https://www.health.qld.gov.au/__data/assets/pdf_file/0016/151162/qh-gdl-321-8.pdf
4. Hepatitis B Foundation: Baruch S. Blumberg Institute - Diagnosed with Chronic Hepatitis B? What do the HBe Blood Tests Mean? October 2012. http://www.hepb.org/blog/diagnosed-with-chronic-hepatitis-b-what-do-the-hbe-blood-tests-mean/
5. The Department of Health - Australian National Guidelines for the Management of Health Care Workers known to be Infected with Blood-Borne Viruses http://www.health.gov.au/internet/main/publishing.nsf/content/cda-cdna-bloodborne.htm#HBV
6. Centers for Disease Control and Prevention – Interpretation of hepatitis B serologic test results https://www.cdc.gov/hepatitis/hbv/pdfs/serologicchartv8.pdf