Introduction

Hepatitis is responsible for a significant burden of ill-health for Aboriginal and Torres Strait Islander people. Hepatitis is an inflammation of the liver and has numerous causes, including viral infection, alcohol or drug abuse, and the body's immune system attacking itself. It can be a short-term, acute illness or a persistent, chronic disease.

There is little systematic information about non-viral hepatitis, but reasonable information is available for some jurisdictions for three of the types of hepatitis virus - hepatitis A, B and C - which are notifiable diseases. (There are a number of other types, including D and E, which are also notifiable diseases, and G, but detailed information is not available for infection with these viruses). Each virus causes a different manifestation of disease and each is transmitted in different ways.

Hepatitis A and B have traditionally been larger problems for the Indigenous community than for the non-Indigenous population of Australia [1]. Past studies have found infection rates to reach intermediate to high levels throughout Australia for both hepatitis A virus (HAV) and hepatitis B virus (HBV), according to World Health Organization (WHO) standards. Less is known about hepatitis C virus (HCV) infection, though it is not likely to be associated with Indigenous status per se, and is more closely correlated with injecting drug use.
National surveillance of viral hepatitis is coordinated by the National Centre in HIV Epidemiology and Clinical Research (NCHECR), based on information collected by state and territory health authorities [2]. Provision is made for the identification of Indigenous people in notifications of hepatitis A, B and C, but the levels of identification are generally quite poor. Western Australia (WA), South Australia (SA) and the Northern Territory (NT) are the only jurisdictions with consistently reasonable levels of identification, so the information presented here is restricted to those jurisdictions. (The results from a major recent review of bloodborne viruses, including HBV and HCV, among Indigenous people include notifications from all jurisdictions except the Australian Capital Territory, so are not comparable with the results presented here [3]).

It is difficult to determine the level of HCV infection among Indigenous Australians as Indigenous status is not stated in a high proportion of notifications from various states and territories [2]. However, evidence suggests that illicit drug use among Indigenous Australians is higher than among non-Indigenous Australians [4] and the Australian Hepatitis C Surveillance Strategy has identified Indigenous Australians as at higher risk of HCV transmission than the general population [5].

Hepatitis A

Hepatitis A virus (HAV) presents a significant problem for many Indigenous communities as transmission is facilitated by environments with poor sanitation and inadequate water supply (problems for many Indigenous communities), and is exacerbated by the overcrowding (also common in many Indigenous communities) [6] [7].

Indigenous people, in urban communities as well as in rural areas, are at much greater risk of HAV infection than are non-Indigenous people [7] and become infected at much younger ages [8].

Hepatitis A is often asymptomatic, so the numbers of cases notified to health authorities underestimate its true extent [9]. Many of the cases notified are quite severe, and the virus has caused the death of six Indigenous children in North Queensland and Western Australia in recent years.

Based on the success of HAV vaccination program that began in North Queensland in February 1999 [10], the Australian Government has provided funding for HAV vaccination for Indigenous children in Queensland, WA and NT since 2005 [11]. Of course, preventive measures must not be limited to vaccination, but should include improvement of the environmental quality of Indigenous communities to reduce transmission rates [12].

Notifications of HAV

Of the 314 notifications of hepatitis A for people living in WA, SA, and the NT in 2004-2006, 105 (33%) were identified as being Indigenous (Indigenous status was not stated in 1% of cases) [2] [5] [13]. The crude notification rate of 22 per 100,000 for Indigenous people was 11.5 times the rate of 1.9 per 100,000 for non-Indigenous people. The real incidence of hepatitis A among Indigenous people is probably much higher than these figures suggest, however, as the disease is endemic in many rural and remote communities [14].

A detailed study of clinically significant HAV infection found that the disease was much more common among Indigenous children than non-Indigenous children, particularly those living in the Northern Territory, Western Australia, South Australia and north Queensland [9]. Children aged 0-4 years are at greatest risk from HAV infection.

Hepatitis B virus

Historical as well as more recent studies have consistently shown a higher prevalence of hepatitis B virus (HBV) infection in the Indigenous community than in the general population [15] [16]. Overall, Australia has a low prevalence of hepatitis B, but, prior to the introduction of HBV vaccination, the Indigenous population had levels comparable with countries with the highest prevalence of HBV infection [17].

Transmission of HBV occurs due to contact with blood and other body fluids (semen, vaginal fluids, and saliva) from an infected individual, commonly through sexual contact or use of contaminated injecting equipment [18]. A mother may also transmit HBV to the foetus during pregnancy. Only one-third of people acutely infected with HBV will experience obvious symptoms, including jaundice, loss of appetite and mild flu-like symptoms, but the virus can cause a more prolonged illness in which a person may look and feel well, but slowly develop severe liver damage. The risk of developing cancer of the liver is also increased in people with chronic HBV infection.

A universal vaccination program started in the Indigenous community in 1988 has had considerable success [19], but some studies suggest that Indigenous children had a sub-optimal response to the HBV vaccine more often than their non-Indigenous counterparts [20]. Possible explanations for the inefficiency of the vaccine include a failure in the cold-chain, genetic differences (specifically in the major histocompatibility complex, or MHC), or extrinsic environmental factors, such as heavy smoking among pregnant women. HBV vaccination programs are nevertheless cost-effective and relatively successful and help reduce the levels of hepatitis B infection in the Indigenous community.
Notifications of HBV

Of the 157 notifications of hepatitis B for people living in WA, SA, and the NT in 2004-2006, 30 (19%) were identified as being Indigenous (Indigenous status was not stated in 23% of cases) [2] [5] [13]. The crude notification rate of 6.3 per 100,000 for Indigenous people was 5.5 times the rate of 1.1 per 100,000 for non-Indigenous people.

Hepatitis C virus

Transmission of hepatitis C virus (HCV) typically occurs via blood-to-blood contact [21]. Injecting drug use (IDU) is the most common method of contracting the virus and is responsible for the vast majority of cases.

Many people who are infected with HCV do not have symptoms with the virus frequently being detected through a blood test for some reason [21]. Persistence of HCV in the body, which occurs in about 80% of cases, can cause cirrhosis (permanent scarring of the liver). Chronic HCV infection is generally asymptomatic until cirrhosis has developed.

There is no vaccine or cure for HCV, but some people with HCV benefit from treatment with interferon alpha or a combination of interferon alpha and ribavirin [21].

Notifications of HCV

Of the 6012 notifications of hepatitis C for people living in WA, SA, and the NT in 2004-2006, 658 (11%) were identified as being Indigenous (in 23% of notifications, Indigenous status was not stated) [2] [5] [13]. The crude notification rate of 138 per 100,000 for Indigenous people was 3.6 times the rate of 38 per 100,000 for Indigenous people.

Conclusion

Infection with hepatitis virus is much more common among Indigenous people than among non-Indigenous people. ‘Closing the gap’ between Indigenous and non-Indigenous rates will require concerted efforts to increase HAV and HBV vaccination among susceptible Indigenous populations, and ensuring physical environments that do not facilitate spread of the disease. Culturally appropriate initiatives to decrease injecting drug use rates among Indigenous people will help to lessen infection with HCV.

References


The Australian Indigenous HealthInfoNet is an innovative Internet resource that contributes to ‘closing the gap’ in health between Indigenous and other Australians by informing practice and policy in Indigenous health.

Two concepts underpin the HealthInfoNet’s work. The first is evidence-informed decision-making, whereby practitioners and policy-makers have access to the best available research and other information. This concept is linked with that of translational research (TR), which involves making research and other information available in a form that has immediate, practical utility. Implementation of these two concepts involves synthesis, exchange and ethical application of knowledge through ongoing interaction with key stakeholders.

The HealthInfoNet’s work in TR at a population-health level, in which it is at the forefront internationally, addresses the knowledge needs of a wide range of potential users, including policy-makers, health service providers, program managers, clinicians, Indigenous health workers, and other health professionals. The HealthInfoNet also provides easy-to-read and summarised material for students and the general community.

The HealthInfoNet encourages and supports information-sharing among practitioners, policy-makers and others working to improve Indigenous health – its free on line yarning places enable people across the country to share information, knowledge and experience. The HealthInfoNet is funded mainly by the Australian Department of Health and Ageing. Its award-winning web resource (www.healthinfonet.ecu.edu.au) is free and available to everyone.