

Summary

- hepatitis C is a virus that causes liver inflammation and liver disease;
- hepatitis C is spread through blood-to-blood contact;
- it is a slow-acting virus, and for most people does not result in serious disease or death;
- approximately 260,000 Australians have been exposed to hepatitis C virus;
- there is a treatment for hepatitis C called Pegylated Interferon and Ribavirin;
- viral genotype is the most important predictor of response to treatment; and
- there is no vaccination currently available for hepatitis C.

About the virus

The hepatitis C virus is a member of the flavivirus family of ribonucleic acid (RNA) viruses. The virus reproduces by making many copies of itself in liver cells. The hepatitis C virus does not kill liver cells directly, but the immune response initiated by the presence of the virus in the liver can cause liver inflammation and cell death.¹

There are six main genotypes (strains) of hepatitis C.

Each genotype contains numerous subtypes, labelled a, b, or c. Genotypes 1a and 1b (55% prevalence) and 3a (36% prevalence) are the most common genotypes in Australia.²

Hepatitis C was discovered by scientists in 1988 and found to be responsible for most of the cases of 'non-A, non-B hepatitis'. Early studies confirmed that hepatitis C was spread through blood-to-blood contact. An accurate test to diagnose hepatitis C became available in Australia in 1990. The test detected antibodies produced in reaction to the hepatitis C virus.

It is estimated that 170 million people worldwide are infected with hepatitis C.³ In Australia, mathematical modelling undertaken in 2006 indicated that approximately 264,000 people had been exposed to the hepatitis C virus and had hepatitis C antibodies, of whom around 197,000 people were living with chronic hepatitis C.

The estimated number of new cases of hepatitis C infection has declined from 16,000 in 2001 to 10,000 in 2005. The majority (65%) of people with hepatitis C are aged between 20 and 39 years, and 35% of national notifications of hepatitis C are in women.⁴

Approximately 83% of hepatitis C infections have resulted from unsafe injecting drug use. Five percent of infections occurred through contaminated blood or blood products transfusions prior to 1990, and the remaining 12% of people with hepatitis C were infected in other ways, including:

- unsterile tattooing or body piercing procedures;
- unsterile medical procedures or vaccinations (particularly in countries with high rates of hepatitis C);
- needle-stick injuries and accidental exposure to infected blood or blood products;
- exposure to blood in the home; and
- some other form of blood-to-blood contact.

Some people with hepatitis C cannot identify how they were infected.

¹ Farrell, G. C. (2002). Hepatitis C, other liver disorders, and liver health: A practical guide. Sydney, Australia: MacLennan and Petty Pty Limited.

² McCaw, R., Moaven, L. D., Locarnini, S. A. & Bowden, D. S. (1997). Hepatitis C virus genotypes in Australia. *Journal of Viral Hepatitis*, 4, 351-357.

³ The World Health Organisation (WHO) Viral Hepatitis Prevention Board (1999).

⁴ National Centre in HIV Epidemiology and Clinical Research (NCHECR) (2006). 'Estimates and projections of the hepatitis C virus epidemic in Australia'.

Disease course of hepatitis C

Research has shown that if 100 people are infected with hepatitis C, about 25 of those will clear the virus completely within two to six months of infection, but will continue to have hepatitis C antibodies in their bodies.

About 75 of the 100 people who do not clear the virus will develop ongoing (or chronic) infection and are at risk of developing cirrhosis of the liver. Of the 75 people who develop chronic hepatitis, about 20 people will not experience any noticeable illness or symptoms. However, they can still transmit the virus to others.

After an average of 15 years, between 40 and 60 of the 75 people with chronic hepatitis C will experience some symptoms and develop some liver damage.

After 20 years, between five and ten people with liver damage will develop cirrhosis. Between two and five of these people will experience liver failure or develop a form of liver cancer known as hepatocellular carcinoma.

Duration of infection is the most likely determinant of the risk of cirrhosis and liver cancer. Other factors which affect the progression of liver disease include:

- age when first infected;
- male gender;
- alcohol use;
- co-infection with hepatitis B virus and/or HIV; and
- obesity.⁵

There is no evidence to confirm whether genotype influences disease progression.

For more information

For further information on hepatitis C please contact the national infoline 1300 HEP ABC (1300 437 222). The infoline diverts to information and support lines at your local state or territory hepatitis council.



Healthy



Cirrhosis

⁵ Poynard, T., Ratziu, V., Charlotte, F., Goodman, Z., McHutchison, J. G. & Albrecht, J. (2001). Rates and risk factors of liver fibrosis progression in patients with chronic hepatitis C. *Journal of Hepatology*, 34(5), 730-739.