

# General Practitioners and Hepatitis C

*This supplement incorporates recommendations of the National Hepatitis C Testing Policy, May 2007*

## Introduction

Over the past decade the hepatitis C virus (HCV) has been one of Australia's most commonly notified infectious disease. By the end of 2006, it was estimated that 271,000 people living in Australia had been exposed to the virus, of whom 202,400 were living with chronic HCV infection. The number of new HCV infections in 2006 was estimated at 12,526.<sup>1</sup> The virus can cause long-term liver problems, including cirrhosis and hepatocellular carcinoma (HCC). However, there is still widespread misunderstanding about HCV including how it is transmitted, infectivity, who is at risk, management and prognosis.

Before hepatitis C testing was developed in 1989, it became apparent that some people receiving blood transfusions and blood products were contracting hepatitis, despite the fact that blood products were screened for hepatitis B (HBV) and hepatitis A (HAV). The majority of these cases, known as non-A non-B hepatitis or post-transfusion hepatitis, have since been identified as hepatitis C (HCV).

## The virus

Hepatitis C is a ribonucleic acid (RNA) virus, belonging to the flavivirus family.<sup>2</sup> Genetically distinct viral groups have evolved, with nine different genotypes of hepatitis C identified and approximately 40 different subtypes. There are many predictive factors associated with the effectiveness of antiviral treatment. The HCV genotype is the most significant factor.

## Natural History

HCV affects different people in different ways. The vast majority of people with HCV are asymptomatic during the initial (acute) phase of infection. However, for those who are symptomatic, common symptoms include fatigue, nausea, headaches, depression, upper abdominal pain and intolerance to fatty foods and alcohol. During the acute phase, levels of the virus in the blood rise dramatically until the body's immune response starts producing antibodies. Table 1 illustrates the natural history of hepatitis C infection.

## Transmission

Hepatitis C transmission occurs predominantly through blood-to-blood contact.<sup>3</sup> The most common mode of transmission in Australia is injecting drug use (IDU). Hepatitis C can be spread unknowingly, as many people do not know they are infected with the virus.

The provision of needle and syringe programs to injecting drug users is vital. While the largest risk for HCV transmission is associated with the sharing of needles or syringes, there appears to be some evidence for transmission from other shared injecting equipment, such as spoons, filters and tourniquets.

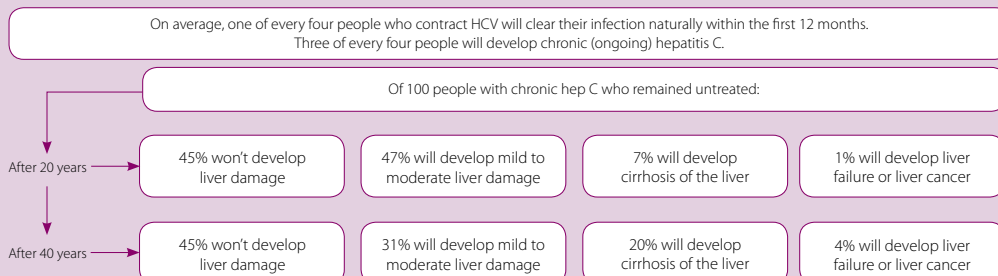
The role of sexual transmission, if any, is still controversial. The evidence at this time suggests a very low rate of transmission through sexual contact.<sup>4</sup> Transmission may still occur if there is blood to blood contact during sexual activity. There is also evidence transmission rates may be higher if the patient is co-infected with HIV or other STIs<sup>5</sup>.

Table 1

## Chronic hepatitis C outcomes chart (natural history)

*Chronic hepatitis C outcomes chart (natural history)  
Factsheet, Hepatitis C Council of NSW June 2007*

This chart shows the different outcomes that may occur with chronic hepatitis C. It does not aim to show individual outcome (prognosis). Personal factors such as alcohol intake, age when HCV was acquired and current level of liver damage may all influence a person's prognosis. Individuals are advised to seek medical advice regarding their own situation.



The risk of perinatal transmission of HCV varies from 0 to 11%.<sup>6</sup> Coinfection with HIV increases the risk two-fold.<sup>7</sup> To date, the National Health and Medical Research Council has not recommended changes to obstetric practice during antenatal care, delivery and post partum care or in management of the neonate. Currently, there is no indication for elective caesarean section in HCV-positive mothers.<sup>8</sup> Despite HCV RNA being detectable in breast milk, breastfeeding has not been directly linked to transmission of HCV.<sup>9</sup> Australian guidelines recommend breastfeeding should not be discouraged.

Household transmission (e.g. via razors or toothbrushes) is considered rare. Nevertheless, where the possibility of blood contact exists, these items should not be shared.

There is no risk of viral transmission of HCV via cups, plates and hugging.

## Hepatitis C Testing

### Pre- and post-test discussion

General practitioners and other primary health care professionals play an important role in providing pre and post-test discussion as part of diagnostic testing for HCV. Provision of thorough test discussion in a primary health care setting utilises a valuable educational opportunity to help minimise HCV transmission in the community.

#### Pre-test discussion<sup>10</sup>

This discussion should include:

- risk assessment and discussion of the reason for testing;
- how to reduce the risk of becoming infected or infecting others- for example information about safer injecting when this is relevant;
- possible need for other BBV testing and/or STI testing;
- information about confidentiality and privacy;
- information about the testing process including how results are to be provided, and the window period;
- information about what happens to test results (ie the notification process);
- seeking informed consent for the test to be conducted;
- assessment of the person's preparedness to be tested;
- information about what a negative and positive result means including basic printed information about HCV; and
- assessment of support mechanisms while waiting for the test result and/or if the result is positive.

Test results should always be given in person. Patients may benefit from the supply of written material and contact details for relevant support services.

Patients may benefit from the supply of written material and contact details for support services when receiving a positive test result. The Hep C in Brief patient fact sheet is available for download from the ASHM website (available in eight community languages) at <http://www.ashm.org.au/hepc-factsheet/>.

If the result is negative, the discussion should reinforce harm reduction strategies, education and information messages about safer behaviours.

If the test result is positive, discussion should include (at appropriate time intervals), issues such as:

- immediate needs and support including written referral information;
- safer behaviours – education, information and support including needle and syringe programs if appropriate;
- legal requirements for disclosure and how to disclose to family and friends;
- managing or understanding strong emotions, feelings, reactions and changes;
- options in drug treatments and medical management;
- ongoing counselling or therapy if required;
- complementary/alternative management options;
- ways to deal with loss and grief, depression, anger and anxiety;
- strategies for managing HCV which are flexible and appropriate to the person's needs; and
- legislative requirements (notification, contact tracing, storage and coding)

### Initial assessment

When assessing someone with possible HCV infection, an HCV antibody test should be performed. A positive test indicates exposure to HCV, but does not prove active infection. A HCV RNA test, such as a PCR (polymerase chain reaction) test, documents viraemia, and thus active infection. HCV PCR tests can either be qualitative (result being positive or negative) or quantitative (result providing viral load). The presence of a positive antibody test and an elevated ALT (alanine aminotransferase) level, particularly in the setting of risk factors for transmission, is highly suggestive of active HCV infection.

HCV Ab test	If positive, shows evidence of previous exposure to the virus. Importantly, does NOT provide immunity against reinfection with the HCV virus. Remains positive following treatment.
HCV PCR test	If positive, shows active infection (i.e. viraemia)
ALT	If elevated in the context of HCV Ab, generally shows some level of liver disease from HCV virus. High levels are associated with disease progression.

### Cleared infection

Approximately 25% of people with acute HCV infection spontaneously clear the infection without treatment, generally within 3-6 months. Qualitative HCV RNA testing should be a standard component of the diagnostic work-up of all individuals who are anti-HCV reactive.<sup>11</sup>

*A patient can be considered to have cleared HCV infection if they have two negative PCR tests, carried out at least 3 months apart.*

A qualitative HCV PCR test in these conditions is rebatable under Medicare. Patients found to be HCV RNA negative should be reassured that while they have been exposed to HCV in the past, they have cleared the infection.

It is recommended that patients with normal liver function and no detectable HCV RNA have repeat PCR testing for detection of HCV reinfection on an annual basis if there is ongoing risk behaviour such as injecting drug use. Repeated antibody testing will not reveal a new infection in this group of patients, as their existing HCV antibody will remain positive, despite having cleared infection. Neither does their positive antibody confer any protection towards subsequent

infection with hepatitis C. Although there are no specific guidelines for screening in this setting, an annual qualitative PCR test, regardless of ALT level, should be performed to detect any subsequent HCV infection.

## Chronic infection

Approximately 75% of people exposed to HCV progress to have chronic infection.

*A patient can be considered to have chronic HCV infection if they have documented active infection for more than six months. This means a positive PCR test 6 months or more after initial infection.*

The outcomes for people with chronic HCV are variable. There are particular factors which are significantly associated with a greater likelihood of progression to liver damage/fibrosis and ultimately cirrhosis. These are heavy alcohol consumption, long duration of infection, coinfection with HIV or HBV, stage of fibrosis, and obesity/insulin resistance. In addition, individuals with elevated ALT levels have a higher risk of disease progression than those consistently normal ALT levels, although the latter group may still develop fibrosis.

After 20 years of infection, on average about 7% of people with chronic HCV infection will have developed liver cirrhosis with this figure increasing to 20% after 40 years. After 40 years of infection, about 4% will have developed liver failure or liver cancer.

## Monitoring someone with chronic HCV

It is recommended that a patient with chronic HCV is seen every 6 to 12 months. The main aims for general practitioners seeing a patient in this setting are to:

- Educate against behaviours that risk re-infection and transmission to others;
- Identify and address any modifiable risk factors (e.g. excessive alcohol consumption);
- Identify those most at risk of chronic HCV infection complications and decide which patients are appropriate for antiviral therapy;
- Educate about treatment and assess the patient's desire for treatment;
- Ensure referral to a specialist for HCV treatment assessment is made at appropriate time;
- Ensure monitoring for cirrhosis and advanced liver disease complications (such as liver failure, liver cancer) occurs where appropriate;
- Determine their need for support services;
- Evaluate and recommend shared-care responsibility.

### Identifying those most at risk

One of the most important things to establish in monitoring a patient with chronic HCV infection is whether or not they are likely to develop any serious liver damage. The following factors must be documented; as there is very good evidence that they are associated with higher risk of cirrhosis:

- Heavy alcohol intake (more than 4 standard drinks/day);
- Duration of infection (over 20 years);
- Coinfection with HIV or HBV;
- Obesity/insulin resistance

### Alcohol intake

This is discussed further in the subsequent section, 'General management'. Broadly speaking, increased alcohol intake is associated with increased risk of liver damage. Any patient with excessive alcohol consumption (more than 4 standard drinks per day) should be advised of their increased risk of disease progression and supported wherever possible to reduce their alcohol intake. General advice about alcohol intake should be guided by your assessment of their stage of disease and risk of progression.

### Duration of infection

It is not always possible to determine the exact duration of infection in many patients. It is important not to assume date of first HCV Ab test is the date of infection. A good rule of thumb is to determine the year of first injection and assume infection occurred two to three years subsequent to that. Given that HCV Ab testing was not available until 1990, some patients will have been diagnosed with non A non B hepatitis, when in fact they were infected with hepatitis C. Other patients, given the often asymptomatic nature of the disease, will not have been aware of their infection and so have not been tested for some time following exposure. A patient's age alone is often a very good indicator of duration of infection. Most patients who have acquired HCV through injecting drug use and are over the age of 40 years in Australia are likely to have been infected for more than 15 or 20 years. It is good practice to be thinking about HCV treatment assessment for any patient over 40 years and on methadone that you may see in your practice.

### Coinfection with HIV/HBV

Any patient coinfecting with HCV and HIV or HBV (HBsAg positive) is at increased risk of disease progression. They should be closely monitored and treatment should be considered.

### Obesity/Insulin resistance

There is increasing evidence of an association between obesity and insulin resistance/diabetes and HCV liver disease progression. Patients with chronic HCV and obesity should be supported to lose weight and have regular exercise. This is discussed further in the section 'General management'.

### ALT level

Too often ALT testing is used as a primary tool to determine prognosis. Although people with elevated ALT levels have a higher risk of liver disease progression than those with consistently normal levels, the latter group may develop significant fibrosis. In addition, among those with elevated ALT levels, the extent of elevation correlates poorly with disease progression risk. Despite these limitations, regular ALT testing (every 6-12 months) is recommended to determine the extent of liver inflammation and assess synthetic function - albumin and bilirubin are important markers of advanced liver disease.

Factors associated with progression of liver disease

- Heavy alcohol intake (more than 4 standard drinks per day)
- Long duration of infection (20 years or more)
- Coinfection with HIV or HBV
- Stage of fibrosis as shown on biopsy
- Obesity / insulin resistance

NB: Most patients over 40 years of age with chronic HCV in Australia are likely to have been infected for more than 15 or 20 years. They should be considered more closely for HCV treatment assessment.

*At each visit for HCV monitoring, a clinical examination of the patient as well as pathology tests should be performed. These will allow you to evaluate current disease severity and estimate the patient's risk of progression to fibrosis and cirrhosis.*

### **Clinical examination**

Clinical examination will focus on determining any evidence of chronic liver disease. The following should be looked for:

- palmar erythema
- spider naevi
- scleral icterus
- jaundice
- ascites
- encephalopathy
- asterixis

### **Pathology tests**

Regular monitoring should include full blood count and liver enzymes.

### **Liver function tests**

Liver function tests (every 6-12 months) can provide information about extent of liver inflammation and stage of liver disease. A reduced albumin, particularly if combined with low platelet count suggests underlying cirrhosis. Other indicators of cirrhosis are prolonged prothrombin time (PT), elevated bilirubin (although if isolated may indicate Gilbert's syndrome), an AST/ALT ratio of  $>1.0$ , and an AST/platelet ratio of  $>1.5$ . However, cirrhosis may be present in the setting of normal makers of synthetic function such as albumin, bilirubin, platelet count and PT.

### **HCV genotype**

HCV genotype impacts on the length of treatment and likely response. Genotypes 2 and 3 require shorter (24 weeks) treatment and have a higher likelihood of success (~70-80%), whereas genotypes 1 and 4 require longer (48 weeks) treatment and have a lower likelihood of success (~50%). HCV genotype testing is Medicare funded for anyone considering treatment. HCV genotype testing may assist both patients with HCV and their clinicians in relation to treatment decision-making and need not be delayed until specialist review. In particular, patients with HCV genotype 2 or 3 can be counselled in regards to their high chance of eradicating the virus with just six months of treatment. Patients with HCV genotype 1 infection can also be informed of their likelihood of eradicating the infection. While the possibility of treatment success is lower for this genotype, it should not dissuade patients from attempting treatment and remains an important discussion point. The HCV viral load also provides important information in relation to treatment success, particularly for those with HCV genotype 1. If the HCV viral load is  $<400,000$  IU/ml in a person with HCV genotype 1, treatment success approaches that for HCV genotype 2 and 3. However, the HCV viral load does not correlate with liver disease progression risk.

### **Decision making about treatment**

In determining whether a patient is appropriate for antiviral treatment, the general practitioner is in a good position to also consider the patient's social situation, their living arrangements and availability of support, their mental health and current income/work situation, as well as current drug use. All of these may impact on how well the patient may manage any HCV treatment. Of note, a recent review of the literature (Novick D, Kreek MJ *Addiction* 2008) supports the effectiveness of treating HCV among people on methadone. Specifically, it shows that outcomes in terms of successfully completing treatment and viral eradication are comparable between people on methadone and those not. Five of the six studies reviewed show excellent rates of adherence to treatment for this population (72-100%).

Any patient with chronic HCV infection at risk of liver disease progression should be advised of the potential benefits of antiviral therapy. Where treatment is appropriate, much of the assessment should be related to identifying the opportune timing of therapy. Patients at highest risk of progression (based on associated factors listed) should be encouraged to consider therapy as soon as practicable. For other patients, the timing of treatment can be based on other lifestyle issues such as work, social circumstance, control of substance use, and desire for pregnancy.

While most treatment is based in public hospitals at present, there is an important trend towards making treatment available in the community. This will involve primary care clinicians taking on a greater role in the support and monitoring of patients on HCV treatment. Many hospitals have put together shared-care packages with specific information and guidelines about patient management during HCV treatment. In addition, a small number of GPs in NSW and ACT and Victoria have been approved to prescribe combination therapy as part of a Section 100 (PBS) community prescribing pilot project.

Liver clinics usually offer additional services that may be of benefit to patients. Such services include clinical nurse consultants, psychologists, psychiatrists, social workers and dieticians. Referral to a liver clinic or hepatologist, which can be made at any time, is necessary for specialist pre-treatment assessment.

Local Hepatitis C Councils or drug user groups may provide information and peer support for people considering treatment (Refer to the 'Contacts' section)

## **Liver biopsy**

A liver biopsy may be performed to determine the severity of inflammation and fibrosis, and guide treatment decisions in those with evidence of chronic HCV infection. There are several systems in use for recording the degree of fibrosis in a liver biopsy. Most of these systems use a scoring system ranging from 0 (no fibrosis) to 4 (definite cirrhosis). Liver biopsy remains a very useful procedure for confirming or excluding significant fibrosis, but is not required to access government-funded antiviral treatment. A number of non-invasive fibrosis tests are currently under evaluation and may eventually replace liver biopsy in the majority of patients.

## **Antiviral treatment for HCV**

Previously in Australia, antiviral therapy was funded only for patients with significant liver fibrosis. However, with increasing data to support the efficacy of antiviral therapy, it is now available free of charge to any previously untreated patient 18 years or older with chronic HCV infection and compensated liver disease and agrees to effective contraception.

*A liver biopsy is no longer a specific requirement for treatment. Active IDU is no longer an exclusion criterion.*

Antiviral therapy is available in Australia under Section 100 of the Pharmaceutical Benefits Scheme (PBS) for any patient who fulfils all the following criteria:

- 18 years or older
- Has documented chronic HCV infection (repeatedly positive HCV Ab and HCV PCR positive)
- Has compensated liver disease;
- Has had no prior treatment with interferon alpha or pegylated interferon alfa;
- Agrees to effective contraception.

The major aim of treatment is to achieve viral eradication. In HCV, viral eradication is defined by the achievement of a sustained virological response (SVR); that is, negative HCV RNA by a sensitive qualitative test six months after the completion of therapy.

The most effective therapy for HCV is a combination of once-weekly subcutaneously administered pegylated interferon plus twice-daily oral ribavirin. The combination of pegylated interferon and ribavirin produces an overall sustained virological response of greater than 50%.<sup>12,13</sup> This is a significant improvement over the SVR rates achieved with interferon monotherapy (10%) or standard interferon (given three times a week) plus ribavirin (40%).

The likelihood of response is much higher in patients infected with HCV genotype 2 or 3 (70 - 80% SVR rate after six months of combination pegylated interferon and ribavirin) than genotype 1 or 4 (50% SVR rate after 12 months of therapy). While HCV genotype is the most powerful predictor of response, other predictors of SVR include low viral load, minimal hepatic fibrosis, female gender and age (younger than 40 years). Recently, the rapidity of on-treatment response has emerged as a major factor in predicting sustained virological response.

By monitoring on-treatment response, people can be counselled as to their likelihood of a sustained virological response (SVR). Those who have a greater than 2 log (100-fold) reduction in viral load by week 12 (termed an early virological response) have an approximately 70% chance of sustained virological response.<sup>14</sup> Conversely, those who fail to achieve a greater than 2 log drop in viral load at week 12 should have their treatment ceased as there is a negligible (1-2%) chance of SVR. Additionally, those with genotype 1 who achieve undetectable HCV RNA at week 4 of therapy (termed a rapid virological response) have a 80 - 90% chance of viral eradication and may be able to shorten their treatment duration.<sup>15</sup>

There is currently a significant effort being directed at determining whether measurement of early on treatment virological responses may allow some patients to have treatment duration shortened and whether other patients may benefit from longer duration of therapy.

The benefits of achieving an SVR include a reduced risk of liver disease progression for people at all stages of disease. In addition, there have been reports of significant regression of fibrosis, even in people with cirrhosis. People who have failed to respond to either interferon monotherapy or combination interferon plus ribavirin may soon be eligible for further treatment under current Section 100 guidelines and currently there is some access to treatment through compassionate-use protocols. Therapy may be for six or 12 months duration, depending on HCV genotype.<sup>15</sup>

Not all people will be appropriate for treatment or will be interested in treatment. For these people, regular clinical monitoring must continue, with a focus on those most at risk of progression.

Genotype	Duration of treatment	Likely success rate of treatment
1	48 weeks	~50%
2	24 weeks	~70 - 80%
3	24 weeks	~70 - 80%
4	48 weeks	~50 - 60%

## Side effects

Side effects are common but, importantly, **do not usually require discontinuation of treatment**. However, patients on treatment

do require significant support and encouragement throughout treatment. Adverse effects of therapy include flu-like symptoms, irritability, weight loss, insomnia, vomiting, depression and anxiety, mild hair loss, rash, cough, myelosuppression and the development of certain autoimmune conditions, most notably thyroid disease.

Ribavirin treatment always induces a degree of intravascular haemolysis, which results in a fall in haemoglobin in many people. This anaemia may result in tiredness, shortness of breath and precipitation of myocardial ischaemia in those at risk. Ribavirin dosage may be reduced, depending on degree of haemolysis, or erythropoietin prescribed.

Interferon causes serotonin depletion which may result in depression and Selective Serotonin Reuptake Inhibitors (SSRIs) may be considered for management or prophylaxis. It is the interferon which also commonly causes flu like symptoms, which tend to peak early in the course of treatment. Interferon may also lower platelet count (a concern among people injecting) and white blood cell count

Given the wide range and potential seriousness of side effects, patients must be closely monitored during therapy. Currently, most treatment is provided through public hospitals and patients have ready access to nurse specialists to advise and support them through therapy. In general, patients on therapy are seen once a week for the first month, and then each month until the end of treatment, with blood counts and biochemistry evaluated at each visit. Dose modification guidelines are followed when side-effects or laboratory changes require intervention.

*The majority of patients DO complete a full course of treatment for HCV once they have begun. Only a small minority actually cease their treatment early because of side effects.*

## Contraindications to treatment

The major contraindications to therapy include:

- Decompensated liver disease;
- Major psychiatric conditions, particularly severe depression;
- Autoimmune disease;
- Significant cardiac disease;
- Pregnancy (ribavirin is a teratogen – patients and their partners must avoid pregnancy during therapy and for six months after cessation of treatment due to the possibility of birth defects).

Although interferon is contraindicated in people with depression, it may be used safely in patients with controlled depression and anxiety disorders or controlled seizure disorders. If the patient is being treated by a psychiatrist or neurologist, discussion with the specialist is recommended before the initiation of interferon therapy.

## Monitoring for complications, including cirrhosis

Not all people will be appropriate for treatment or will be interested in treatment. Regular clinical monitoring must continue, with a focus on those most at risk of progression.

Thrombocytopenia, prolonged PT or hypoalbuminaemia all suggest the presence of cirrhosis with some degree of hepatic decompensation and portal hypertension. However, patients with well-compensated cirrhosis due to chronic HCV may have a completely normal platelet count, PT and serum albumin level for many years. Hepatic ultrasound may show features of cirrhosis or fatty infiltration but is commonly normal.

Markers of cirrhosis include:

- Prolonged PT or international normalised ratio (INR);
- Low albumin;
- Low platelet count (thrombocytopenia);
- AST / ALT ratio >1
- AST/platelet ratio (APRI) > 1.5

Patients with HCV-associated cirrhosis should be monitored for deteriorating liver function and for the development of hepatocellular carcinoma (HCC). Often a specialist is involved in the care of a patient with cirrhosis but the patient may attend his or her general practitioner when new symptoms develop.

Concerning features include:

- Falling serum albumin levels;
- Prolongation of prothrombin time;
- Development of jaundice;
- Development of other clinical signs (e.g. peripheral oedema, ascites, muscle wasting).

Patients with these features should be referred to a specialist hepatologist. Hepatocellular carcinoma is becoming a major clinical problem in patients with HCV-associated cirrhosis. The current recommendations regarding screening for hepatocellular carcinoma include ultrasound and AFP levels every six months for those patients with chronic HCV infection and determined or suspected underlying cirrhosis, to detect small lesions that may be amenable to curative treatment.

## General management

### Vaccination

Coinfection with more than one hepatitis virus may be associated with more severe liver disease. Super infection with hepatitis A infection in a patient with chronic HBV or HCV, or acute HBV in a patient with chronic HCV may precipitate the development of acute liver failure. In the long term, patients with HBV and HCV coinfection tend to be more likely to progress to cirrhosis and to develop hepatocellular carcinoma.

*HAV and HBV vaccination should be offered to all patients with chronic HCV infection.*

### Lifestyle issues

The possibility of lifestyle modification needs to be discussed with the patient, particularly in relation to alcohol consumption and drug use.

Alcohol intake ideally should be minimal. Excessive alcohol consumption (>40 g/day) is associated with a higher risk of disease progression and a poorer response to treatment. Advice to your patient about alcohol intake should be tailored to your assessment of their stage of disease and risk of progression. For example, someone with early liver disease, no risk factors for progression, a consistently normal ALT, and normal clinical examination could be advised to drink alcohol in accordance with the safety advice given to the general population. In contrast, a patient with significant fibrosis will have an increased need for moderation of alcohol intake. People with cirrhosis should be certainly be encouraged to stop drinking alcohol altogether.<sup>16</sup>

*Advice to your patient about alcohol intake should be tailored to your assessment of their stage of disease and risk of progression.*

There will be individuals who continue to inject drugs and who require ongoing care and monitoring. They are not only at risk of superinfection with other HCV genotypes, but may be putting others at risk through their injecting practices. General practitioners play an important role in identifying those most at risk and educating against behaviours that risk re-infection and transmission to others. General practitioners should counsel patients about the risks of HCV and the benefits of treatment, assist in preparation for HCV treatment, and discuss other aspects of a person's medical care, including options such as opiate substitution therapy.

### Nutrition

For most people with hepatitis C, dietary recommendations are the same as for the general population. These include encouraging:

- Grilled rather than fried food;
- Lean meats and fish;
- Reduced-fat products;
- Wholemeal bread and pasta;
- Vegetables and fruit;
- Minimisation of fat for spreading and cooking.

Overweight or obese patients should be advised of a gradual weight reduction program, particularly as there is increasing evidence of interaction between HCV, obesity and type 2 diabetes in accelerating the progression to fibrosis. Those who may have fatty liver need to avoid a precipitous fall in weight as this can induce deterioration in liver function.

### Fatigue and other symptoms

People with chronic hepatitis C may report fatigue, malaise, headache, rash, and aching muscles and joints. Consideration should be given to specific food and drinks that may be triggering symptoms, as well as work, family or other commitments, which may exacerbate stress and fatigue. Patients may benefit from planning rest periods during the day or incorporating light to moderate exercise into their routines to reduce fatigue.

### Complementary therapies

There is little evidence that herbal medicines have a profound antiviral effect despite many patients reporting some symptomatic improvement and the ability of some agents to induce a fall in ALT.

Most herbal medicines are safe but some have reported hepatotoxicity and should be avoided (e.g. mistletoe, valerian, heliotropium, kombucha tea and Kava kava). Close monitoring of liver biochemistry is recommended at the commencement of any herbal medicine. Hepatitis Councils have further information regarding complementary therapies.

### HCV and HIV

HCV is found in 10% of people living with HIV/AIDS, which means hepatitis C is a significant cause of co-morbidity in HIV. On the other hand, only about 1% of people living with hepatitis C have HIV. The viruses are, however, very different. Hepatitis C is an RNA virus, while HIV is a retrovirus, which affects reverse transcriptase. In Australia, the majority of HIV infections are among homosexually active and bisexual men, while the majority of hepatitis C is among current and past IDUs. It is important for general practitioners to understand these differences so they can advise their patients appropriately. Patients often confuse the viruses and this can lead to undue concern, risk taking and uncertainty.

## HIV/HCV coinfection

HIV/HCV coinfection is associated with higher HCV viral load and an accelerated rate of liver disease progression.<sup>17</sup> There is no fundamental difference in the management of HCV in the presence of HIV. Patients with HIV/HCV coinfection who have stable CD4 cell counts on antiretroviral therapy with ongoing evidence of active HCV may be considered for combination pegylated interferon plus ribavirin. Such management is difficult, particularly in patients already taking multiple medications, as side-effects, drug interactions, toxicity and poor tolerability are common.<sup>18</sup>

## Discrimination

Australian Commonwealth law prohibits discrimination against someone with an infectious disease, unless the discrimination can be shown to be necessary to protect public health. In addition, most states and territories have laws in the same terms as the Commonwealth law.

Hepatitis C is a highly stigmatised condition and many people living with the disease experience discrimination. The Anti-Discrimination Board of NSW found that discrimination in health care settings may take many forms and results in unfair treatment of patients.<sup>19</sup>

Discriminatory behaviours in this setting may include:

- Refusal of care or treatment;
- Lack of pre- and post-test counselling;
- Giving a lower standard of treatment.

Behaviours which reflect stigmatisation towards a patient can also reduce the standard of health care received and lower the quality of life for people with hepatitis C and should be avoided. Such behaviours include:

- Breaches of confidentiality and disclosure related to hepatitis C, even among health care workers;
- Assumptions about how people acquired hepatitis C;
- Assumptions about people's past or present drug use.

## Avoiding discrimination

Health care workers should respect the rights of people with hepatitis C regardless of how they were infected. Everyone living with hepatitis C should have access to care and services regardless of transmission route, gender, race, culture, sexual orientation or lifestyle issues (such as drug use).

Discrimination and stigmatising behaviours can be avoided by:

- Ongoing health care worker education and continuing medical education;
- Ensuring standard infection control procedures are followed, thus reducing the need for disclosure or differential treatment;
- Ensuring people's privacy and confidentiality are protected.

As stated in A Model of Care for the Management of Hepatitis C Infection in Adults, the suggested items below may limit and prevent discrimination:

- Take a holistic approach, such as treating the client as a whole person with many potential interacting aspects rather than a person with one disease;
- Be non-judgmental and have a respectful attitude towards the client's needs, treatment preferences and lifestyle;
- Provide advice and information on the full range of medical and non-medical approaches to managing hepatitis C;
- Empower clients with sufficient information to make informed decisions that best suit their lifestyle, occupational and social responsibilities, personal needs and preferences;
- Develop rapport and mutual trust.

## Needlestick injury

The risk of HCV transmission through a needlestick injury depends on the viral load of the source patient, the first aid administered and the instrument involved, for example a hollow bore needle. In the event of a needlestick or other blood accident, the source (if known) should be approached regarding consent for HBV, HCV or HIV antibody testing.<sup>20</sup>

All general practitioners and other health care workers should have access to infection control guidelines that advise about the management of an occupational injury, including clear written instructions on the appropriate action to take in the event of a needlestick injury and other blood or body substance exposure. They should indicate the need to report occupational exposures immediately and all testing procedures and follow-up treatment should be fully documented. Confidentiality should be maintained.

In general, if an injury or incident occurs where blood or body substances come into contact with non-intact skin or membranes, the following action should be taken:<sup>21</sup>

- Wash exposed membrane or injury with soap and water (an antiseptic could also be used on the skin)
- If eyes have been exposed, thoroughly rinse the eyes with tap water or saline while open
- If mouth has been exposed, thoroughly rinse the mouth with water and spit out
- Seek medical advice immediately for medical evaluation and assessment of the nature of the exposure, the risk of transmission of blood-borne viruses and the need for HIV or HBV post-exposure prophylaxis (PEP) – not available for HCV and other testing
- If the exposure is significant and the source patient is known, his or her consent for HIV antibody, HCV antibody and HBsAg testing should be sought

## Health care workers with HCV

All health care workers who perform exposure-prone procedures have an ongoing responsibility to know their HBV, HCV and HIV status, and should not perform exposure-prone procedures if there is evidence of current/active HBV, HCV or HIV infection, as there is a risk of transmission of infection.

An exposure-prone procedure is any in which there is a potentially high risk of BBV transmission from a health care worker to a patient during a medical procedure, such as any procedure with sharp hand-held instruments beneath the mucous membrane, or any procedure dealing with sharp pathology or bone spicules in a confined space or where visibility is poor. Exposure-prone procedures do not include non-invasive examinations or procedures, intact skin palpation, injections or venepuncture.<sup>22</sup>

For more information regarding the rights and responsibilities of health care workers with HBV, HCV or HIV, contact your state or territory's health department, your local Hepatitis C Council or AIDS Council, or your state or territory's Anti-Discrimination Board or Equal Opportunity Commission (refer to Contacts)..

## Glossary of Terms

**Antibody test** – an initial screening blood test that looks for antibodies to the virus and not for the virus itself.

**Cirrhosis** – extensive and permanent scarring of the liver. Cirrhosis interferes with the normal functioning of the liver.

**Combination therapy** – the use of two or more types of antiviral and antiretroviral drugs in combination to achieve optimum results.

**Exposure-prone procedure** – any situation where there is a potentially high risk of blood-borne virus transmission from a health care worker to a patient during a medical or dental procedure. Any submucosal invasion with sharp hand-held instruments, or procedure dealing with sharp pathology/bone spicules, usually in a confined space or where visibility is poor.

**Fibrosis** – formation of scar tissue on the surface of the liver to replace normal tissue lost through injury or infection.

**Non occupational post-exposure prophylaxis (NPEP)** – PEP (see below) given to a person following an exposure outside of an occupational setting, e.g. sexual exposure, sexual assault or reuse of injecting equipment.

**Polymerase chain reaction (PCR)** – a laboratory technique that amplifies the genetic material of a virus to a level that can be detected. The presence or absence of the virus can then be determined.

**Post-exposure prophylaxis (PEP)** – drugs and/or vaccination given as soon as possible within 72 hours of exposure to HIV or HBV as an attempt to prevent infection.

**Window period** – the period immediately after a person is infected with an agent, during which the infection is not detectable by laboratory tests, although the person may be infectious.

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## Contacts- Hepatitis C and related organisations/groups can be contacted for further resources and support information

### AUSTRALIA – Hepatitis C Councils

#### Hepatitis Australia

**National**  
Tel: 61 2 6232 4257  
Fax: 61 2 6232 4318  
Web: [www.hepatitisaustralia.com](http://www.hepatitisaustralia.com)

#### Australian Capital Territory

Tel: 02 6257 2911  
1300 301 383 (Hepline)  
Fax: 02 6257 1611  
Web: [www.acthepc.org](http://www.acthepc.org)

#### New South Wales

Tel: 02 9332 1599  
1800 803 990 (Freecall country)  
Fax: 02 9332 1730  
Web: [www.hepatitisc.org.au](http://www.hepatitisc.org.au)

#### Northern Territory

NT AIDS and Hepatitis Council  
Tel: 08 8941 1711  
1800 880 899 (Freecall)  
Fax: 08 8941 2590  
Web: [www.ntahc.org.au](http://www.ntahc.org.au)

#### Queensland

Tel: 07 3236 0610  
1800 648 491 (Freecall country)  
Fax: 07 3236 0614  
Email: [admin@hepatitisc.asn.au](mailto:admin@hepatitisc.asn.au)  
Web: [www.hepqld.asn.au](http://www.hepqld.asn.au)

#### South Australia

Tel: 08 8362 8443  
1300 437 222 (cost of a local call)  
Fax: 08 8362 8559  
Web: [www.hepcouncilsa.asn.au](http://www.hepcouncilsa.asn.au)

#### Tasmanian Council on AIDS, Hepatitis and Related Diseases

Tel: 03 6234 1242  
1800 005 900 (Freecall country)  
Fax: 03 6234 1630  
Web: [www.tascahrd.org.au](http://www.tascahrd.org.au)

#### Victoria

Tel: 03 9380 4644  
1800 703 003 (Freecall country)  
Fax: 03 9380 4688  
Web: [www.hepcvic.org.au](http://www.hepcvic.org.au)

#### Western Australia

Tel: 08 9227 9800  
08 9328 8538 (Infoline)  
1800 800 070 (Freecall country)  
Fax: 08 9227 6545  
Web: [www.hepatitiswa.com.au](http://www.hepatitiswa.com.au)

#### NEW ZEALAND – HCV

Hepatitis C Support Group (NZ)  
Tel: 64 9 377 8500

#### The Hepatitis Foundation

Tel: 64 7 307 1259  
0800 332 010 (Freecall in NZ)  
Fax: 64 7 307 1266  
Email: [hepteam@hepfoundation.org.nz](mailto:hepteam@hepfoundation.org.nz)  
Web: [www.hepfoundation.org.nz](http://www.hepfoundation.org.nz)

#### AUSTRALIA – RELATED

**Australasian Society for HIV Medicine (ASHM)**  
Tel: 02 8204 0700  
Email: [ashm@ashm.org.au](mailto:ashm@ashm.org.au)  
Web: [www.ashm.org.au](http://www.ashm.org.au)

**Australian Injecting and Illicit Drug Users League (AIVL)**  
Tel: 02 6279 1600  
Email: [info@aivl.org.au](mailto:info@aivl.org.au)  
Web: [www.aivl.org.au](http://www.aivl.org.au)

#### Australian Drug Foundation

Tel: 03 9278 8100  
Email: [adf@adf.org.au](mailto:adf@adf.org.au)  
Web: [www.adf.org.au](http://www.adf.org.au)

#### Gastroenterological Society of Australia

Tel: 02 9256 5454  
Email: [feedback@gesa.org.au](mailto:feedback@gesa.org.au)  
Web: [www.gesa.org.au](http://www.gesa.org.au)

#### National Centre for Education and Training on Addictions

Tel: 08 8201 7535  
Email: [nceta@flinders.edu.au](mailto:nceta@flinders.edu.au)  
Web: [www.nceta.flinders.edu.au](http://www.nceta.flinders.edu.au)



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