Hepatitis C virus: its prevalence, implications and management

**AUTHOR** Gillian Rogers, PGCE, BSc, RGN, is hepatitis nurse specialist, Chelsea and Westminster Hospital, London, Louise Campbell, RN, RMN, former hepatitis nurse specialist, Chelsea and Westminster Hospital, London, now works in Australia.


The estimated prevalence of hepatitis C in the UK is alarming. Many people are unaware of their condition and the associated implications of the disease. The aims of this article are to provide an evidence-based update on the implications of being HCV positive and the role of the hepatitis nurse specialist in the management of patients with this virus. This article also reviews the service offered to patients with hepatitis by the Chelsea and Westminster Healthcare NHS Trust.

An estimated 200,000 people are infected with the hepatitis C virus (HCV) in England (Department of Health, 2002). Approximately 20 per cent of patients with chronic hepatitis C will develop cirrhosis within 20 years (Lawrence, 2000) and hepatitis C cirrhosis is now the leading reason for liver transplantation in the UK and the USA (Poynard, 2002). To optimise the clinical management of patients with hepatitis C, the National Institute for Clinical Excellence has just published updated management guidelines (NICE, 2003).

The hepatitis C virus

There is a general lack of knowledge regarding HCV and health care professionals need to ensure patients go away from a first diagnosis with an accurate understanding of the disease. Patients must be given sufficient time to ensure that they have taken in what has been said to them and to allow for any misconceptions to be addressed.

HCV infection results in the development of chronic liver disease in 80 per cent of patients (National Institute of Health Consensus Development Programme (NIHCDP), 1997), although this can vary from mild liver disease to cirrhosis with the possibility of hepatocellular carcinoma. Certain lifestyles can increase the risk of developing cirrhosis, such as excessive alcohol intake (Poynard, 2002). Therefore health promotion is an important part of patient management.

Current treatments can have extremely unpleasant side-effects, some of which have serious implications for the patient’s quality of life during this period. It is important that consistent care is provided by a specialist team to monitor for adverse events and to help the patient cope and comply with treatment.

**Identifying the condition**

HCV was first identified in 1989. Prior to this it had accounted for most cases of non-A non-B hepatitis. There are six major genotypes or groups of HCV and within each genotype there are various subtypes (Shiftman, 1998). Approximately 40–50 per cent of patients in the UK have genotype one and about 40–50 per cent of patients have genotypes two or three (NICE, 2003). Patients are most commonly infected with only one genotype. In 1991 blood donation services introduced a screening programme, which has significantly reduced the risk of transmission via this route.

**Signs and symptoms**

The most common route for transmission of HCV is intravenous drug use and transfusion of blood products (before 1991), although 20 per cent of patients are unable to identify a transmission route (Shiftman, 1998).

During the acute infection phase of the disease approximately one-quarter of patients experience vague, flu-like symptoms and fatigue with some developing jaundice. The remainder have no symptoms (Shiftman, 1998). Eighty per cent of those with HCV will develop chronic hepatitis C (NIHCDP, 1997).

The ability to predict the speed of disease progression remains limited. Liver function tests can be misleading and do not reflect the severity of liver disease. Poynard (2002) found that 15 per cent of patients with normal liver function tests had moderate to high fibrosis progression rates. It is therefore recommended that patients undergo a liver biopsy to identify the extent of liver disease and to determine whether they meet the criteria for treatment (NICE, 2000).

Cirrhosis results in more serious symptoms and complications. It is estimated that 10 per cent of those with

<table>
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<tr>
<th>TABLE 1. RISK FACTORS IN THE PROGRESSION OF HEPATITIS C INFECTION TO CIRRHOSIS</th>
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<tbody>
<tr>
<td>● Transmission via blood transfusion or multiple blood transfusions</td>
</tr>
<tr>
<td>● Age of infection &gt; 40</td>
</tr>
<tr>
<td>● Duration of infection</td>
</tr>
<tr>
<td>● Gender: male</td>
</tr>
<tr>
<td>● Presence of other infections: HBV, HAV and HIV</td>
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<tr>
<td>● Alcohol intake</td>
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(References: Poynard, 2002; Tibbs and Smith, 2001)
cirrhosis will go on to develop hepatocellular carcinoma (Lawrence, 2000). In decompensated cirrhosis the patient will die without liver transplantation (Lawrence, 2000). However, a third of HCV positive patients will not progress to cirrhosis for at least 50 years (NICE, 2000). Several factors influence this (Table 1).

**Treatment options**

Until the late 1990s the only treatment licensed for hepatitis C was a thrice-weekly injection of alpha interferon. Treatment can be considered successful when a sustained viral response (SVR) is recorded. Alpha interferon results in an SVR in only 10–20 per cent of patients (Shiffman, 1998). When combined with ribavirin this is improved to about 40 per cent of patients (NICE, 2000).

The new pegylated interferons, however, have proven superior response rates (Table 2) and the new NICE guidelines (NICE, 2003) are expected to recommend their use in all patients suitable for treatment. New treatment options have given hope for improved quality of life, normalisation of liver function and the reduction in hepatocellular cancer as a result of the reduced risk of cirrhosis. The additional benefits of the pegylated interferons include weekly injections (rather than thrice-weekly) and a reduction in the intensity of some side-effects.

The length of treatment and response rates depend upon the genotype with which the patient is infected (Table 2). The dose of pegylated interferon and ribavirin may be manipulated if necessary in response to anaemia, thrombocytopenia and neutropenia. Although the side-effects can be significant, successful treatment can prevent multiple hospital admissions, liver transplant and early mortality. By measuring response rates after 12 weeks, treatment can be discontinued where patients are showing minimal success.

**The role of the specialist nurse**

All patients referred to the hepatitis service at the Chelsea and Westminster Hospital are given an initial appointment to see the nurse within four weeks. This early intervention aims to reduce the anxiety associated with diagnosis and offer immediate health promotion.

Referrals are received from GPs, drug and alcohol treatment centres, and other hospital departments, especially obstetrics, rheumatology and dermatology. Patients are often referred with a positive hepatitis C antibody test only. This indicates exposure to the virus but to confirm chronic infection a polymerase chain reaction (PCR) is required at least six months after the initial test.

At the first appointment the nurse performs a range of tests and arranges a liver ultrasound if appropriate. A detailed medical, drug and alcohol history is taken, which provides an opportunity to offer individualised advice and support. Patients are informed of transmission routes to reduce the risk of further infection. Details of possible disease progression, influencing factors and individualised management are discussed. An information leaflet, a contact number for the nurse specialists and details of a support group are given if required.

<table>
<thead>
<tr>
<th>GENOTYPE</th>
<th>TREATMENT LENGTH</th>
<th>RESPONSE RATES</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>48 weeks</td>
<td>50–55%</td>
</tr>
<tr>
<td>2</td>
<td>24 weeks</td>
<td>75–85%</td>
</tr>
<tr>
<td>3</td>
<td>24 weeks</td>
<td>75–85%</td>
</tr>
<tr>
<td>4</td>
<td>48 weeks</td>
<td>65–70%</td>
</tr>
</tbody>
</table>

(Hadziyannis and Papatheodoris, 2003; Fried et al, 2002; Manns et al, 2001)

The aim of the specialist nurse service is to empower patients to take an active role in their care. There is a 24-hour helpline with an answeringphone, which the nurses respond to throughout the day. If a liver biopsy is required after medical review, this will be arranged by the nurse specialist as a day case.

The NICE guidelines (NICE, 2003) are expected to recommend that health care staff spend a considerable amount of time with patients to ensure they make an informed decision regarding the start of treatment. They are carefully screened to identify any contraindications and an optimal time to begin treatment.

Preparation is considered vital for the completion of and compliance with treatment. In recent studies the drop-out rate from treatment due to intolerance of side-effects was 18 per cent (NICE, 2003). In the past three years no patient has withdrawn from treatment for intolerance at Chelsea and Westminster Hospital, although the team has withdrawn patients who have experienced serious adverse events.

Patients are taught to self-administer pegylated interferon via subcutaneous injection. During treatment the specialist nurses see patients weekly for the first five weeks, then every fortnight for a month, and monthly thereafter for the duration of treatment, with intermittent appointments with the doctor as required.

Some patients require extra appointments to monitor their blood count or for support with physical or psychological side-effects. On each visit, the nurse provides information, advice and support regarding any individual side-effects and the results of blood tests.

**Conclusion**

The NICE guidelines (NICE, 2003) will outline the treatments available for hepatitis C. They also provide information on eligibility for such treatments.

With specialist nursing support it is possible to optimise the use of available resources and to have a beneficial impact on the patient’s experience before, during and after treatment. With 200,000 people infected in England and Wales and 170 million infected worldwide, hepatitis C is a virus that health care professionals cannot afford to disregard.

**REFERENCES**


National Institute for Clinical Excellence (2003) **Interferon Alpha (Pegylated and Non-pegylated) and Ribavirin in the Treatment of Chronic Hepatitis C.** London: NICE.


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