

Hepatitis C: Information for Health Professionals

COMMUNICABLE DISEASE CONTROL

What is Hepatitis C?

Hepatitis C is a disease of the liver caused by the hepatitis C virus (HCV). HCV was first identified in 1989. Prior to that time, this form of hepatitis was known as “non-A, non-B hepatitis”, as hepatitis A and B were already identifiable disease entities. HCV is spread primarily through direct blood-to-blood contact with an infected individual. Unlike hepatitis A, HCV is not spread through eating or drinking contaminated food or water. Unlike hepatitis B, which can be spread through blood contact with any body fluid of an infected person, the risks of hepatitis C being transmitted sexually, or from mother to child perinatally, or through household contact, are low (probably less than 5%). Needle-stick injuries and exposure of open wounds or mucous membranes to infected blood also poses a risk for HCV transmission. The risk of transmission through needle-stick exposures is estimated at 4-10%. Invasive personal care services, such as body piercing or tattooing, are probably also associated with a slight risk for HCV transmission.

A number of individuals were infected with HCV through exposure to blood products prior to testing becoming available in 1990. The Canadian blood supply is currently very safe, with HCV transmission estimated to occur in fewer than one in 100,000 blood units. In Manitoba, injection drug use (current or in the past) is now the most common risk factor for acquiring HCV. The HCV seroprevalence in the general population is believed to be in the order of 0.5-1%. Among subgroups, such as persons with hemophilia, it may be in the range of 40-70%, and among current or former intravenous drug users, as high as 60-90%. It is estimated that there are approximately 5-10 thousand HCV infected individuals in Manitoba at the present time.

Diagnosis

Hepatitis C is diagnosed primarily by serology. Serologic testing is performed by the Cadham Provincial Laboratory, and consists of an enzyme immunoassay (EIA) screening test, followed by confirmation of EIA positive specimens. Depending upon the quality and characteristics of the serum specimen, the confirmatory test used is either a recombinant immunoblot assay (RIBA) for detection of HCV antibody, or a polymerase chain reaction (PCR) test for viral RNA. Results are reported as positive only if EIA positive specimens are also positive on the confirmatory test. The sensitivity of this diagnostic approach is over 95%. False negative results may occur because some individuals being tested may be in a “window period,” i.e., infected but not yet producing detectable antibodies, or may be immune compromised.

Natural History

Initial infection with HCV is usually asymptomatic, and medical attention is rarely sought. However, the majority of individuals (60-90%) infected with HCV go on to develop chronic infection. At least 20-30% of infected individuals will develop cirrhosis of the liver, and the risk for cirrhosis increases progressively over time. A smaller proportion will develop hepatocellular carcinoma, and individuals with cirrhosis are particularly at risk for hepatocellular carcinoma (in the order of about 5% annual incidence). The course of chronic HCV infection is marked by fluctuations in both clinical symptoms and liver enzyme tests, such as serum transaminases. Symptoms associated with chronic HCV infection are often non-specific, and many patients complain of chronic or intermittent fatigue, which on occasion may be debilitating. The degree of fatigue is often

not correlated with the severity of the disease (as manifested by elevated liver enzymes), nor with physical signs, nor biopsy evidence of liver disease. Excessive alcohol consumption and other exposures that adversely affect the liver have an additive effect on liver damage and progression to cirrhosis.

Treatment

Treatment with anti-viral drugs, primarily the combination of interferon and ribavirin (Rebetron), may be ultimately effective in eradicating infection in about 40% of cases of hepatitis C. Indications for initiating treatment include a serum ALT greater than 1.5 times the normal value on two occasions; or a serum ALT between one and 1.5 times normal, with a liver biopsy showing moderate or severe hepatitis. Treatment is most effective when given early in the course of the disease, prior to the development of liver fibrosis. Rebetron is often associated with significant side effects and is expensive, so it is recommended that HCV-infected patients be referred to the Viral Hepatitis Investigation Unit at Health Sciences Centre or to another specialist for assessment prior to initiation of therapy. The duration of therapy is generally 24-48 weeks, and although the majority of patients may respond initially with normalization of serum ALT activity, many will relapse at the end of treatment. However, in addition to the 40% of individuals who may be cured through treatment, treatment of others may delay disease progression, including the development of cirrhosis and hepatocellular carcinoma.

Prevention and Early Detection

As indicated above, there is currently little transmission of HCV through the blood supply, because of blood donor screening. As the most important risk factor for HCV infection is injection drug use, the identification of drug users and provision of harm reduction counselling is a critical prevention strategy. It is important in this regard to implement street-based and prison-based programs to identify individuals at particularly high risk. In addition, procedures such as tattooing and body piercing should be discouraged or performed safely,

with sterile equipment. In the health care setting, universal precautions will minimize the risk of exposure for health workers. As is the case for sexually transmitted diseases, multiple sex partners can increase the risk of sexual transmission of HCV, so reduction in numbers of partners and the use of condoms are important risk reduction measures in this context. Of course, counselling on safer sex practices is important for sexually transmitted disease prevention in general.

Early detection of HCV infection is important so that infected individuals are given the opportunity to initiate lifestyle changes to reduce other exposures that might lead to liver damage, as well as so that they can be evaluated for initiation of antiviral therapy. In addition, response to treatment is probably enhanced in individuals with shorter durations of infection. Therefore, any individual with a risk factor, especially a history of injection drug use, a history of blood transfusion prior to 1990, or multiple blood product exposure due to hemophilia or another hematological disorder, should be screened for anti-HCV.

Counselling Patients

As indicated above, HCV is not highly contagious, and transmission is unlikely except through blood-to-blood contact. To avoid such transmission, infected individuals should not donate blood or share injection drug-using equipment or devices used to inhale cocaine, and personal hygiene instruments, such as toothbrushes, razors and nail files, should not be shared. HCV discordant couples in long-term relationships may wish to consider regular condom use to minimize the risk of sexual transmission to the uninfected partner, or at least in the case of female carriers, avoiding unprotected sexual intercourse during menses. Alcohol intake should be minimized because of the potentiating effect of alcohol in causing liver damage. Immunization against hepatitis B and hepatitis A is recommended for HCV-infected individuals who are susceptible to HBV or HAV, i.e., who are negative for hepatitis B core antibody (anti-HBc), or negative for both hepatitis B surface antigen (HBsAg) and antibody (anti-HBs), or negative for hepatitis A antibody (HAV).

Public Health Management of Cases and Contacts

When positive HCV test results are reported to Manitoba Health by the Cadham Provincial Laboratory, as required by the regulations of the Public Health Act, Manitoba Health will refer cases for follow-up investigation to the relevant regional health authority. The purpose of this follow-up is to ensure optimal patient care and management. Educational resources will be made available to health professionals and clients, and support provided for client interviewing, education and contact follow-up. A public health nurse from the health authority will make efforts to liaise with the physician of record. The purposes of this liaison are:

1. Confirmation of receipt of the positive HCV test result.
2. Determination of the reason for the test and the scope for public health investigation.
3. Provision of educational resources for the physician and/or client.

4. Recommendation for referral to the Viral Hepatitis Investigation Unit (VHIU), Health Sciences Centre, or to another specialist, for detailed evaluation regarding management, including consideration for treatment.
5. Offer of provision of follow-up and counselling for clients and possibly needle-sharing partners, if applicable.

Injection drug users will be given priority for follow-up by public health. This will involve where possible a face-to-face meeting, for the purposes of education, interviewing for possible contacts, and making recommendations about future management. In general, sex partners will not be followed by public health, but this does not preclude them from opting to be tested by their physician.

For surveillance purposes, a Viral Hepatitis Case Investigation Form should be completed for all hepatitis C cases. These forms are available from Manitoba Health.