

HEPATITIS C UPDATE

NEARLY 4 MILLION Americans are infected with hepatitis C virus (HCV), making it the most common chronic bloodborne infection in the United States.¹ Survey data indicate that the prevalence of infection in the West is 2.1%. Anecdotal reports suggest that public awareness of HCV in Oregon is on the rise. This *CD Summary* discusses what is currently known about the natural history and epidemiology of HCV and provides prevention strategies for your patients. An upcoming issue will address HCV testing and treatment.

NATURAL HISTORY

Persons with acute HCV infection are generally asymptomatic. Only 20–30% develop jaundice, and clinical illness in persons with acute HCV is indistinguishable from other forms of viral hepatitis.² Following acute infection, 15–25% resolve their infection, as defined by sustained absence of HCV RNA and normalization of alanine aminotransferase (ALT) levels. Of those 75–85% with chronic infection, 60–70% develop active liver disease, as manifested by elevated or fluctuating ALTs. Patients can have prolonged periods of normal ALT activity coincident with histologically-confirmed chronic hepatitis, so a single, normal ALT does not rule out ongoing hepatic injury. Given that the disease may be asymptomatic for decades, true prospective cohort studies are exceedingly rare; most reports of long-term sequelae rely on follow-up of persons already diagnosed with chronic liver disease or recognized through blood-donor screening.³ These studies report that cirrhosis develops in 10–20% of persons with chronic HCV infection over a period of 20–30 years and hepatocellular carcinoma in 1–5%. In contrast, follow-up of over 300 women chronically infected with HCV after receiving contaminated anti-D immune globulin found that, although most had evidence of slight or moderate inflammation on liver biopsy 17 years later, only 2% had probable or definite cirrhosis.⁴ The difference in risk of

progression to fibrosis is likely due to differences in the population under study; data indicate that increased alcohol intake, age at infection older than 40 years, and male sex are associated with an increased risk of fibrosis.

RISK FACTORS

The highest prevalence of infection is found among those with large or repeated direct percutaneous exposures to blood (e.g., injecting drug users, persons with hemophilia who were treated with clotting factor concentrates produced before 1987, and recipients of transfusions from HCV-positive donors). Since the advent of sensitive screening tests for HCV in 1992, transfusion-associated cases of HCV have fallen dramatically, and injecting-drug use now accounts for ~40% of HCV transmission in the US. Moderate prevalence is found among those with frequent but smaller direct percutaneous exposures, such as hemodialysis patients, who have an average prevalence of HCV infection of 10% in the US. Low prevalence of HCV infection is found in those with inapparent or sporadic percutaneous or mucosal exposures, such as those with high risk sexual practices or health care workers. The prevalence of HCV in HCWs averages 1–2%—no different than the 2% seen in the general population. Although several studies have found an association between hepatitis C and tattoos in the US, the association rarely holds up after adjusting for other risk factors. However, studies both in the US and Canada have found tattoos to be an independent risk factor, and the plausibility of tattoos as a mode of transmission suggest that this is a rare but possible risk for hepatitis C.

The role of sexual transmission is still controversial. Case-control studies have reported associations between sexual contact with someone with hepatitis or exposure to multiple sexual partners and the acquisition of HCV, and 15–20% of

patients with acute HCV reported to CDC's sentinel counties surveillance system have reported a history of sexual exposure in the absence of parenteral risk factors.⁵ Among persons with a history of STDs, the prevalence of infection is about 6%. However, multiple studies looking at the long-term monogamous partners of patients with chronic HCV infection have found the prevalence to be quite low, ranging from 0–4.5%. Co-infection with HIV may facilitate heterosexual and homosexual transmission of HCV.

PREVENTION MESSAGES

Reducing the burden of HCV infection and HCV-related disease requires implementation of primary prevention activities that reduce risk for contracting HCV infection and secondary prevention activities that reduce both risk of transmission and risk for liver and other chronic disease in HCV-infected persons.

Primary Prevention Activities

Health care providers in all patient care settings routinely should ask about use of illegal drugs and high-risk sexual practices. Persons who use or inject illegal drugs should be advised: 1) to stop using and injecting drugs; and 2) to enter and complete substance-abuse treatment, including relapse-prevention programs. Persons continuing to inject drugs should be advised: 1) to never reuse or “share” syringes, needles, water, or drug preparation equipment; 2) to use a new sterile syringe to prepare and inject drugs; 3) if possible, to use sterile water to prepare drugs; otherwise to use clean water from a reliable source; 4) to use a new or disinfected container (“cooker”) and a new filter (“cotton”) to prepare drugs; and 5) to clean the injection site before injection with a new alcohol swab. Injection drug users should be vaccinated against hepatitis B and A.

Persons who are at risk for sexually transmitted diseases should be advised that: 1) the surest way to prevent the spread of human immunodeficiency virus infection and other sexually transmitted disease is to have sex with only one uninfected partner

In a future issue: Advances in HCV testing and treatment

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or not to have sex at all; 2) to use latex condoms correctly and every time to protect themselves and their partners from diseases spread through sexual activity; and 3) to get vaccinated against hepatitis B and, for men who have sex with men, hepatitis A.

Secondary Prevention Activities

Persons who test positive should be provided with information regarding the need for: 1) preventing further harm to their liver; 2) reducing risks for transmitting HCV to others; and 3) medical evaluation for chronic liver disease and possible treatment. To protect their liver from further harm, HCV-positive persons should be advised to: 1) not drink alcohol; 2) not start any new medicines, including over-the-counter and herbal medicines, without checking with their doctor; and 3) get vaccinated against hepatitis A if liver disease is found to be present (persons with HCV infection only need hepatitis B vaccine if they have another risk factor for acquiring hepatitis B). To reduce the risk for transmission to others, HCV-positive persons should be advised to 1) not donate blood, body organs, other tissue, or semen, 2) not share toothbrushes, dental appliances, razors, or other personal-care articles that might have blood on them, 3) cover cuts and sores on the skin to keep from spreading infectious blood or secretions.

HCV-positive persons with one long-term steady sex partner do not need to change their sexual practices. They should discuss the risk, which is low but not absent, with their partner, consider the use of barrier precautions (i.e. latex condoms) to further reduce the limited chance of spreading HCV, and discuss

with their partner the need for counseling and testing.

And what your patients don't need to worry about—HCV is *not* spread by sneezing, hugging, coughing, food or water, sharing eating utensils or drinking glasses, or casual contact. Persons should not be excluded from work, school, play, child-care or other settings on the basis of their HCV infection.

CDC recommends HCV testing for the following groups:

- Persons who were notified that they received blood from a donor who later tested positive for hepatitis C;
- Persons who ever injected illegal drugs (even once);
- Persons who received a transfusion of blood, blood components or a solid organ transplant before July, 1992;
- Persons who received clotting factor concentrates produced before 1987;
- Persons who were ever on chronic (long-term) kidney dialysis;
- Persons with persistently abnormal alanine aminotransferase (ALT) levels.

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Bud Johnson, 1950-2000

EDWARD (“Bud”) James Johnson II, the Oregon State Registrar, died on February 27, 2000 from injuries sustained in a fall. Born January 16, 1950 in Portland, Bud served in the US Air Force, earned his undergraduate degree at Willamette University and a Master’s Degree from Troy State University. Bud worked at the Health Division for 22 years. In 1988 he became the State Registrar and manager of the Center for Health Statistics in the Center for Disease Prevention and Epidemiology. He helped shape Oregon’s vital statistics system, which records thousands of births, deaths, marriages, and divorces every month, and took pride in his work as a public servant.

Dedicated to his family, Bud was also an avid sportsman and enjoyed music. He had an amazing intellect, talent, love, and compassionate concern for others. His untimely death is an immeasurable loss to family, friends and co-workers. He is survived by his wife, Maria; his three children, Allison, Carlina, and Edward; his mother, Erma Caroline Johnson, and three sisters.