Characteristics of and Current Treatment Options for Hepatitis B and Hepatitis C

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Patients with hepatitis B and hepatitis C pose risks to health care workers, including dental professionals. This article provides information about the natural history, current treatment options and future directions of therapy for these 2 forms of hepatitis.

Hepatitis B

Not all patients who test positive for hepatitis B surface antigen (HBsAg) require antiviral therapy. Many people have circulating HBsAg without evidence of significant hepatitis. These people are called chronic carriers and account for the majority of hepatitis B cases. The terms "chronic carriers" and "hepatitis patients" are thus somewhat misleading, given that there is a spectrum of disease.

Appropriate clinical assessment includes history and physical examination, blood tests, abdominal ultrasonography, and often liver biopsy. A typical patient for whom treatment would be considered appropriate tests positive for HBsAg and hepatitis B e antigen (HBeAg), has detectable levels of hepatitis B viral DNA and has elevated levels of alanine aminotransferase (ALT).

Treatment options include alpha interferon (30-35 million units subcutaneous/week for 16 weeks) or oral lamivudine therapy (100 mg/day). The goals of therapy are conversion from HBeAg-positive status to HBeAg-negative status and development of anti-HBeAg antibody. Unfortunately, these aims are achieved in only approximately 20% of cases with either therapy.

For lamivudine, the optimal duration of therapy has not been established. Therapy extended beyond one year improves the response rate but also leads to development of viral resistance.

Future directions for hepatitis B therapy include multidrug therapies, similar to those for HIV. Family contacts should undergo vaccination against hepatitis B virus.

Hepatitis C

Hepatitis C is a common condition affecting approximately 2% of Canadians. Parenteral transmission usually occurs through blood transfusion or sharing of needles for the injection of illicit drugs. In about two-thirds of cases, chronic hepatitis develops, often in asymptomatic form with only slight elevations in liver enzyme levels. Of patients with chronic hepatitis C, approximately 20% experience serious liver complications — cirrhosis, need for liver transplantation, hepatocellular carcinoma or death — over the 20-year period after infection.

The natural history of hepatitis C has been controversial. Some studies have demonstrated cirrhosis in only 2% of cases at 20 years, yet cirrhosis is the most common indication for liver transplantation in North America. Factors associated with a worse prognosis include concomitant alcohol abuse, acquisition of the hepatitis C virus (HCV) by blood transfusion in those over 40 years of age and (possibly) infection with the type 1 genotype of HCV.

Appropriate clinical assessment includes history and physical examination, blood tests, abdominal ultrasonography, and often liver biopsy. The typical patient tests positive for anti-HCV antibody and has elevated levels of both HCV RNA and ALT. Standard treatment is alpha interferon (9 million units subcutaneous/week) and ribavirin (800-1200 mg daily, given orally for one year). Sustained remission occurs in approximately 40% of cases. The best results are obtained in patients with the noncirrhotic form of hepatitis C, low levels of HCV RNA and HCV genotype other than type 1.

Future directions for hepatitis C therapy include the use of a long-acting pegylated interferon in combination with ribavirin. Preliminary studies have claimed enhanced remission rates with pegylated interferon, but the major advantage will likely be the convenience of once-weekly injections.

Guidelines for the treatment of hepatitis can be found on the Web site of the Canadian Association for the Study of the Liver (http://www.lhsc.on.ca/casl/summ.htm). ◆

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