Research letter

The seroprevalence of hepatitis A and B in people testing positive for hepatitis C

Lori A. Kiefer, Agnes Honish, Gerry Predy, James A. Talbot

Hepatitis C is a potentially serious disease. Infection becomes chronic in 50% to 90% of those infected with the hepatitis C virus (HCV)[1] and may lead to cirrhosis, hepatocellular carcinoma and death. A recent study found that people with chronic HCV infection have a substantial risk of fulminant liver failure (41%) and death (35%) if they become infected with the hepatitis A virus (HAV).[2] Worldwide, major public health organizations recommend that people with liver disease caused by HCV be immunized against HAV.[3–6] This research letter describes the prevalence of antibodies to HAV and hepatitis B virus (HBV) among patients infected with HCV.

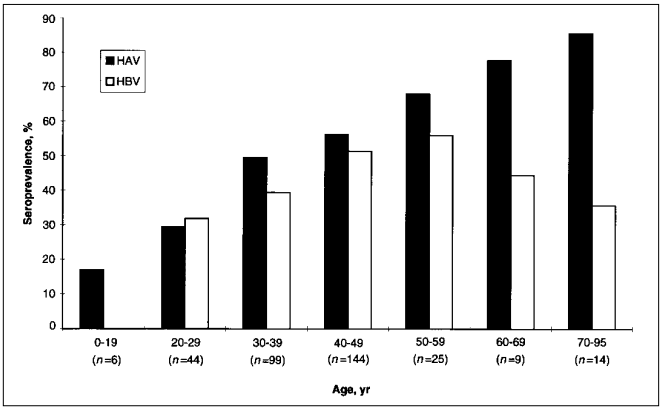

Fig. 1: Age-specific proportion of 341 subjects testing positive for hepatitis C virus (HCV) between June 1 and Sept. 30, 1997, who were seropositive for antibodies to hepatitis A and B virus (HAV and HBV respectively).

The Provincial Laboratory of Northern Alberta in Edmonton maintains records of all serology results and stores blood samples for 1 year after submission. One blood sample from each person who tested positive for HCV infection between June 1 and Sept. 30, 1997, was retrieved and tested for HAV and HBV. Provincial laboratory staff tested the specimens using assays for total anti-HAV antibody and total anti-HB-core antibody. Data on age and sex were obtained from laboratory requisitions and follow-up records of the public health department. The study received ethical approval from the Health Research Ethics Board of the Capital Health Authority.

Three hundred and forty-three subjects, ranging in age from newborn to 95 years (median 40 years), tested positive for HCV during the study period. Almost 61% (209) of these subjects were male. There were more than twice as many men as women in the 36- to 50-year-old age group (136 v. 51). The prevalence of antibody was 53.1% (95% confidence interval [CI] 47.6% to 58.5%; 182 subjects) for HAV and 44.3% (95% CI 38.9% to 49.7%; 152 subjects) for HBV. Eighty-nine (25.9%) of the subjects had antibodies to both HAV and HBV, and 98 (28.6%) had antibodies to neither. HAV-seropositive subjects were older than those who were HAV-seronegative (44.2 v. 37.5 years, $p < 0.001$); there was a similar age difference between HBV-seropositive and HBV-seronegative subjects (42.8 v. 39.6 years, $p = 0.016$). Fig. 1 shows the seroprevalence of HAV and HBV antibodies according to age at time of testing. The seroprevalence of HAV increased linearly with age, from 17% (1 subject) among those 0 to 19 years of age to 85.7% (12

subjects) among those 70 to 95 years of age. The seroprevalence of HBV increased with age up to 56% (14 subjects) in those aged 50 to 59 years and then declined. The seroprevalence of HBV in patients with HCV infection reported here is lower than values reported previously (66% in British Columbia prisoners[7] and 75% in California heroin addicts[8]).

These results have several implications for an immunization program for this population. First, the seroprevalence of HAV and HBV antibodies is substantial in this population. However, it is low enough that a considerable proportion of nonimmune people remain at risk of infection. Second, because the prevalence of immunity to HAV and HBV is substantial, most people with HCV infection should be screened for evidence of prior infection with HAV and HBV before immunization. Third, because the prevalence of markers increases with age, HAV and HBV immunization should be offered early, before natural infection occurs.

Dr. Kiefer is with the University of Toronto and Toronto Public Health, Toronto, Ont.; Ms. Honish is with the Capital Health Authority and Alberta Health, Edmonton, Alta.; Dr. Predy is with the University of Alberta and the Capital Health Authority, Edmonton, Alta., and the University of Calgary, Calgary, Alta.; and Dr. Talbot is with the University of Alberta and the Provincial Laboratory of Northern Alberta, Edmonton, Alta.

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Reprint requests to: *Dr. Lori Kiefer, 277 Victoria St., 4th floor, Toronto ON M5B 1W2*