Prevalence of Antihepatitis C Antibodies in Patients Treated with Continuous Ambulatory Peritoneal Dialysis and Hemodialysis

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Dear Sir,

The identification of the hepatitis C virus (HCV) and the development of assays to detect specific antibodies (Ab) against it [1, 2] have enhanced our understanding of the non-A, non-B forms of viral hepatitis responsible for most posttransfusional hepatitis [3]. However the prevalence of anti-HCV Ab among patients with non-A, non-B hepatitis differs among studies [4–7]. Such differences may be explained if viruses other than HCV cause non-A, non-B hepatitis. In addition, Ab determinations may yield false-negative results, especially if they are performed too early or too late in the course of the infection [4]. Finally, a group of investigators have reported a high incidence of false-positive results in patients with autoimmune hepatitis, which they attributed to nonspecific binding of circulating IgG to the ELISA plates [8]. More recently, another group of investigators have suggested that the presence of low-titer autoantibodies represents an epiphenomenon and does not invalidate the serologic diagnosis of HCV infection in patients with chronic hepatitis [7]. The incidence of false-positive tests in other forms of liver disease is not well established [5, 7].

Non-A, non-B hepatitis is the most frequent form of posttransfusional hepatitis in patients on dialysis [9]. The prevalence of anti-HCV Ab in patients on hemodialysis is about 20% in our country [5, 10]. More than 70% of patients with chronic non-A, non-B hepatitis and only 2–3% of those without hepatitis are seropositive for HCV [5, 10]. In March 1990, we measured serum levels of anti-HCV Ab (Ortho HCV ELISA) in 167 patients undergoing dialysis at our institution. All were seronegative for HIV and HBsAg. Fifty-two were treated with continuous ambulatory peritoneal dialysis (CAPD) and 115 with hemodialysis. The spectrum of underlying diseases was the habitual in patients on dialysis. Patients were divided into three groups (table 1): group 1 included patients with non-A, non-B chronic hepatitis (alanine transferase exceeding twice the upper limit of normal for at least 6 months), group 2 included patients with a history of previous acute hepatitis, and group 3 included patients without a history of viral hepatitis, 8 of whom had nonvi-

Table 1. Patient data

* $p < 0.05$ between group 1 and group 3.

a Since diagnosis of hepatitis.

b Since normalization of alaine aminotransferase.

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ral chronic hepatopathy (3 alcoholic, 2 hemosiderosis, 1 amyloidosis, 1 Caroli's disease and 1 stasis hepatopathy).

The prevalence of anti-HCV Ab was 71% in group 1, 62% in group 2, and only 7% in group 3 ($p < 0.001$ when compared with groups 1 and 2 by chi-square analysis). All patients of group 3 with nonviral hepatopathy ($n = 8$) were seronegative for HCV. The prevalence of anti-HCV Ab was 30% for patients on hemodialysis vs. 15% for patients on CAPD ($p < 0.05$), and it was 43% for previously transplanted patients. The main risk factor for HCV seropositivity was the number of previous blood transfusions. We found anti-HCV Ab in 13% of nontransfused patients, in 21% of those who had received 1–9 blood units (NS), and in 45% of those who had received 10 or more blood units ($p < 0.01$ for differences with groups 1 and 2). Dialysis treatment for more than 3 years, hemodialysis (rather than CAPD), and a history of previous renal transplant acted as nonindependent risk factors because each was associated with a higher transfusional rate.

In group 1, 33% of HCV-seropositive and 64% of HCV-seronegative patients presented Ab against hepatitis B virus, either as isolated HBcAb (13% of HCV-seropositive and 37% of HCV-seronegative) or as HBcAb + HBsAb (20% of HCV-seropositive and 27% of HCV-seronegative).

In summary, we found a high prevalence of HCV seropositivity in a large population of patients undergoing both hemodialysis and CAPD. In this population, the number of blood transfusions appeared to be the main risk factor for HCV seropositivity. Four nontransfused patients (13%) were HCV-positive; these patients, however, had either undergone major surgery previously or had been treated with dialysis for more than 4 years, and conceivably had received uncontrolled blood transfusions. Our results suggest that there is a strong association between HCV seropositivity and the presence of a history of acute or chronic non-A, non-B hepatitis.

Unfortunately, the high prevalence of hepatitis B infection markers, the possibility for coexistence of hepatitis B and C, and the potential for false-positive and false-negative results make it difficult to establish the real prevalence of HCV infection in our patient population.

Assuming that the appearance of HBsAb implies healing of hepatitis B (a concept disputed in patients on dialysis [11]) and that an isolated HBcAb may indicate persistent B virus infection [12], we estimate that 66% of chronic non-A, non-B hepatitis are type C hepatitis. Based on the same assumptions, 19% are either non-A, non-B, non-C hepatitis or false-negative results, and 15% are unclassifiable using sero-logic methods (hepatitis B and/or hepatitis C).

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