Seroprevalence of Hepatitis E in Hemodialysis Patients in Turkey

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Dear Sir,

Hepatitis E virus (HEV) and hepatitis C virus (HCV) seem to be the major causes of what was previously known as nonA, nonB hepatitis [1, 2]. HEV is mainly transmitted by the fecal-oral route and HCV by transfusion of blood products [3]. While chronic disease is common in HCV infection, HEV causes epidemic and sporadic hepatitis without the development of chronic liver disease. Cases of hepatitis E seem to occur in many developing countries. Possibly, HEV causes sporadic and silent cases of hepatitis E in industrialized countries. In this study, we investigated the prevalence of HEV antibodies in 72 patients with end-stage chronic renal failure on a maintenance hemodialysis program.

These patients (30 women and 42 men, mean age 45.5 ± 1.8 years, range 17-70) were screened for hepatitis C virus antibody by third-generation enzyme-linked immunosorbent assay (micro-ELISA) (Organon Technica) and hepatitis E virus by macro-ELISA (Abbott). Their renal failure was due to chronic glomerulonephritis (25%), diabetes (19.5%), pyelonephritis (10%), amyloidosis (14%), polycystic kidney disease (12.5%) and other etiologies (19%). The mean duration of time on hemodialysis was 4.7 ± 0.4 years (range 1-16). None of them had a history of acute hepatitis after the hemodialysis program. Their serum alanine aminotransferase levels were less than 1.5 times the upper normal limit (40 U/l). The control group consisted of 54 healthy volunteers (38 women and 16 men, mean age 46.5 ± 0.5 years, range 22-74). None of the healthy subjects showed HCV antibody and hepatitis B surface antigen. Thirty-five of 72 patients (48.6%) were anti-HCV-positive and 12 of 72 patients (16.7%) were Hbs Ag-positive.

For the detection of IgG HEV antibodies, an ELISA test (Abbott, rDNA-antigen) was used. Ten of 72 patients (13.9%) were found to have positive IgG antibodies. This frequency was 5.5% in the control group. Among our HEV antibody-positive patients, 7 of 10 (70%) were also anti-HCV-positive and 3 of 10 (30%) were Hbs Ag-positive (2 patients were anti-HCV, anti-HEV IgG and Hbs Ag-positive). The prevalence of HEV antibody in patients on a maintenance hemodialysis program was higher than the control group (odds ratio 2.63; $p < 0.01$). The frequency in the control group was similar to the frequency of 5.9% reported in the Turkish population [4]. Our results in hemodialysis patients were similar to the 10.8% prevalence reported in 147 French hemodialysis patients [5].

Our results suggest that fecal-oral transmission may not be the only route of transmission of HEV. HEV was shown in the serum [6], and virus transmission in these patients may be related to previous blood transmission or directly to hemodialysis facilities, similar to HCV [7]. The strong correlation between HEV and HCV antibodies positivity may also support this possibility. HEV is more prevalent in Turkey compared to the 3% prevalence in industrialized countries [8], and it may be useful to screen donor blood and hemodialysis patients for HEV antibodies. Further studies in larger patient populations will clarify the issue.

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