Seroprevalence of hepatitis E virus among blood donors in a district of Southern Italy

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Dear Sir,

Hepatitis E virus (HEV) is a single-stranded RNA virus that is the major aetiological agent of enteric non-A hepatitis. Once thought to be confined to developing countries, where it is associated with large epidemic outbreaks, this form of hepatitis is now recognised to be a disease with a widespread geographical distribution, sometimes related, in industrialised countries, to an asymptomatic zoonotic infection or parenteral transmission and, on rare occasions, presents as a chronic infection in immunocompromised patients. Anti-HEV positivity is more common than expected in areas in which the virus is not endemic (Western Europe and USA) but cases of clinical hepatitis E are rarely reported (1-5%)[1]; however, serological tests for HEV are not systematically performed in cases of acute hepatitis, even when infection with other hepatotropic viruses is ruled out. In the Mediterranean European countries (Italy, Spain and Greece) sporadic HEV infections have been reported, indicating that the virus is present in these populations; the estimated prevalence is approximately 3%[2]. A previous study of ours, concerning the prevalence of HEV infection in categories of population at risk living in the province of Foggia (Apulia, Southern Italy), showed a prevalence of 19.7% among immigrants and of 8.6% among haemodialysis patients. The purpose of this study was to determine whether hepatitis E is a frequent infection in the general population of this same province; for this purpose, we first used sera from blood donors.

Sera from 151 consecutive volunteer blood donors at the blood bank of Foggia Hospital were studied. All donors had previously completed the national medical questionnaire to verify that they fulfilled the criteria for blood donation and had given informed consent. The samples were investigated for the presence of anti-HEV immunoglobulins (IgG and IgM) using a commercial enzyme immunoassay (HEV IgG/IgM; DIA.PRO, Diagnostic BioProbes, Milan, Italy). Repeatedly positive results were confirmed with a western blot assay (HEV IgG/IgM Recomblot, Nuclear Laser Medicine, Milan, Italy).

The mean age of the enrolled donors was 37.3±4.7 years (range: 18-45 years). Over three-quarters (n=116, 76.9%) were men. The median alanine transferase value was 21 IU/L (normal value: 0-40 IU/L). Among the blood samples tested, only 2/151 (1.3%) were positive for anti-HEV/IgG, Western blotting confirmed the positive result of the enzyme-linked immunosorbent assay; both the patients were negative for anti-HEV/IgM. Sixteen subjects (10.6%) were positive for anti-HAV/IgG, but there were no cases of co-infection. The 1.3% seroprevalence of anti-HEV/IgG observed in blood donors of our province is lower than that reported in other recent studies in industrialised countries (Brazil 2.3%[3], France 3.2%[4], Switzerland 4.9%[5]) and is consistent with data on the seroprevalence of HEV in the USA (1.2%)[1]. A higher rate of HEV infection was present in two different, distant countries: China (32.6%) and Denmark (20.6%). It is possible that poor sanitation could play a prominent role in the high rate of infection in urban and rural areas in the Asiatic country. In Denmark, since there is a high rate among farmers in this country, the main hypothesis is that HEV infection, among blood donors, is a zoonotic infection transmitted from domestic animals. We do not have data on work activities of all our donors, but neither of the anti-HEV positive subjects had occupations related to animals.

Although hepatitis A virus and HEV are both transmitted by the faecal-oral route, no association

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was found between these two infections in this study. This finding could reflect different patterns of transmission in these patients. Neither of the two positive donors had a recent history of travel in HEV endemic countries, but travel in regions of endemicity a long time ago and possible exposure to HEV cannot be excluded.

In conclusion, our data indicate a low prevalence of HEV infection among blood donors and, therefore, a low risk of transmission by blood. Nevertheless, the findings, together with those of another study in which we found HEV positivity in 3.1% of the general population, demonstrate that HEV is circulating in the province of Foggia. This epidemiological information may have implications for public health in general and blood product screening in particular. These issues deserve further study.

The Authors declare no conflicts of interest.

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