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Editorial

Prevalence of hepatitis B and C in Spain – further data are needed

Chronic infection with hepatitis B (HBV) and C (HCV) viruses is a public health issue worldwide. The prevalence of HBV infection reported by the World Health Organization (WHO) in its last update of July 2013 is 2 billion, of which over 240 million people (5% of the general population) have chronic hepatitis (1). Overall HCV prevalence is lower, with estimates around 150 to 170 million people (3% of the general population) and an annual incidence of up to 3-4 million new cases (2). Furthermore, WHO reported that the number of deaths associated with liver cirrhosis, liver-cell carcinoma, and liver failure is higher than 600,000 yearly for HBV and over 350,000 yearly for HCV (1-3). Primary transmission routes for both viruses include: a) blood transfusion (before 1992 for HCV); b) parenteral or non-parenteral drug use; c) tattoos and piercings performed with inadequate hygiene conditions; d) perinatal transmission (particularly for HBV in countries with no adequate prophylaxis); e) sexual transmission (less common for HCV); and f) nosocomial transmission.

The geographical distribution of these viral infections is universal, even though their prevalence varies among countries according to controls exerted on transmission mechanisms and extent of HBV immunization. Hepatitis B is considered an endemic condition with prevalences of 10-20% in regions such as Southeast Asia, China, Sub-Saharan Africa, and India, where most infections occur during childhood. In Western Europe and North America the population with chronic HCV infection remains below 1%. The highest rates of chronic infection with HCV are found in Egypt (15%), Pakistan (4.8%) and China (3.2%), the primary risk factor being injections with contaminated material. The prevalence of HCV in the various European countries ranges from 0.1 to 5% (4).

In this issue of *Revista Española de Enfermedades Digestivas*, Calleja Panero et al. (4) discuss the prevalence of HBV- and HCV-related serum markers in a healthy employed population of Murcia and Madrid. This study of 5017 volunteers has three interesting contributions: first, a prevalence lower than described in prior papers (0.7% for HBV and 0.6% for HCV); second, the AgHBs-positive population had normal transaminase values, albeit with a slight increase in AST, whereas the anti-VHC-positive population had transaminase and GGT levels above normal; finally, the predominant infection mechanisms shared by both diseases included prior blood transfusion, presence of tattoos, and living with infected individuals. IV drug use only was a risk factor for HCV infection. Hospitalization was not associated with increased infection rates.

As regards the prevalence of HBV infection, Spain is considered an intermediate-prevalence country by WHO (2-8%), consistent with the rest of Mediterranean countries. However, studies recently reported suggest a considerable reduction, with a prevalence between 0.27% and 1.69% (Table I). For HCV, the prevalence of antibodies

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against this virus oscillates between 1.6% and 2.6% in the general population. Also, the prevalence of serum markers is dependent on age and region under study. The prevalence of HCV infection in children and adolescents falls between 0% and 0.7% (5-7), and ascends to 3.1-5.5% in adults older than 60 years (8,9). Table I includes a view of the geographical distribution of HBV and HCV prevalence in Spain.

In contrast to HBV, no preventive immunization is available for HCV. In Spain, since the late 1990s, all Autonomous Communities systematically immunize newborns against HBV. Interestingly, universal immunization, systematic blood donation control, and serum screening during the third trimester of pregnancy have contributed to a decreased incidence and mortality in Spain during the last few years (1997-2005); however, these parameters have shown an upturn from 2005 onwards, as is also the case in the rest of Europe (10). This event has been attributed to increasing immigrant populations from regions with a high prevalence, changing social behaviours, and refined case reporting and diagnostic techniques. To this also point out the data reported by 'Red Nacional de Vigilancia Epidemiológica', which suggest a gradual reduction in the prevalence of HCV in Spain in the past few years. This reduction may be attributed to a better understanding of the disease and a decrease in some risk factors, including syringe sharing and systematic blood donation control. In contrast with the general consensus on the increasing influence of immigration on HBV prevalence in both Spain and Europe, the study by Calleja Panero et al. does not confirm such association. Similarly, healthcare and public health staff usually in contact with blood is a most relevant group at risk for hepatitis B infection, a circumstance not discussed in the above-mentioned paper. As regards the prevalence of HCV in the immigrant population, it is very low among Latin Americans, relatively low in Eastern Europeans, and high among Asians and Sub-Saharans. Therefore, their influence in the prevalence of the general population depends on their origin and varies considerably from one Spanish region to the next. The above study finds no significant association between HCV prevalence and immigration. While no data are provided on immigration origin, the fact that this is a selected population is highlighted, as most are workers with a residence permit and, perhaps most relevant of all, younger than the general population studied. Lastly, a set of recommendations for improved hepatitis B management in

Table I. Prevalence of HCV and HBV serum markers in Spain

Region	*No. of cases*	*Anti-HCV (%)*	*AgHBs (%)*	*Publication*
Rioja	890	2		1996 (8)
Madrid	1,109	2.5		1997 (15)
Gijón	453	1.76	1.2	1997 (16)
Asturias*	1,170	1.6		2001 (17)
Catalonia	2,194	2.6	1.69	2002 (9)
Zamora	675	0.74		2002 (18)
Granada (pregnant women)	381	0.5	0.8	2005 (12)
Madrid**	651	46		2006 (19)
Castile & Leon	364	1.1	< 0.27; 8.2***	2007 (20)
Catalonia	2,620		0.7; 8.7***	2007 (21)
Andalusia**	1,468	16		2009 (22)
Madrid/Murcia*	5,017	0.6	0.7	2013 (4)

*Healthy employed population; **HIV-positive patients; ***Anti-HBc.

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Spain, published by an expert group, should be underscored. These include immunization program maintenance (with a special focus on the coverage and screening of foreign populations), improved information on HBV prevention, detection and treatment in the general population, and above all among health care professionals, and enhanced research on prevention and innovating therapies (11).

On the other hand a number of interesting studies on viral hepatitis during pregnancy have been carried out. Regarding HBV, the prevalence for pregnant women in our setting is around 0.8% and, as with HCV, vertical transmission (VT) is a most important mechanism of infection (12). In our country, post-exposure prophylaxis is used for children, but this may not suffice at present. In a recent paper on an Asian population, approximately 10% of children born to AgHBe-positive mothers with a high viral load (7-8 $\log_{10}$ copies/ml) had chronic HBV infection despite adequate prophylaxis. This shows the relevance of antiviral use in mothers with a high viral load during the third trimester of pregnancy (13). The prevalence of HCV in pregnant women is similar to that of general population (0.53-1.4%) (12). While HCV VT and chronification rates are low (around 5%), 90% of infected children are known to have acquired this virus through this route (14). Factors involved in HCV VT are unknown in most cases. However, presumed potential risk factors include a high viral load at birth and co-infection with HIV (20-30%). As our knowledge increases regarding HCV and the significance of host-related immunogenetic factors, and most particularly with the development of peg-interferon-free and ribavirin-free (contraindicated during pregnancy) antiviral agents directly targeting the virus, we shall be able to gain a deeper insight on said factors and to prophylactically approach VT.

Finally, further studies are needed to update prevalence data with new social trends, migratory changes, novel treatments, and current prevention strategies in mind. Similarly, studies should focus on the general population, since most data on the prevalence of infection with the aforementioned viruses were obtained from high-risk populations not representative of the prevalence of HBV and HCV infection in Spain.

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