

Has the prevalence of hepatitis E infection changed among pregnant women in Spain?

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INTRODUCTION

Hepatitis E virus (HEV) is the major etiologic agent of enterically transmitted non-A hepatitis and the leading cause of **acute viral hepatitis**, especially in developing countries (1). Recently some autochthonous cases of hepatitis E, not related with travelers, have been reported in developed countries suggesting a new clinic-epidemiological entity (2).

Although HEV has only **one serotype**, **four genotypes** with different virulence, reservoirs and distribution, have been described to date. **Genotype 1** is regularly found in endemic areas such Africa and Asia; **genotype 2** in Mexico and West Africa; **genotype 3** is prevalent in swine population worldwide, and has recently emerged as a significant pathogen in developed countries and **genotype 4** is present in Asia (1,3).

The main source of transmission in epidemics is **fecally contaminated water**, nevertheless **food-borne** and **environmental** transmission has been considered the most important routes in industrialized countries (4)

Acute infection by HEV generally causes mild and self-limited hepatitis but it can also produce fulminant hepatic failure in pregnant women and is associated with very high mortality particularly in the third trimester of pregnancy.

The **purpose** of this study was to analyze the **seroprevalence of HEV antibodies in pregnant women** and the clinical features related to its detection in blood samples.

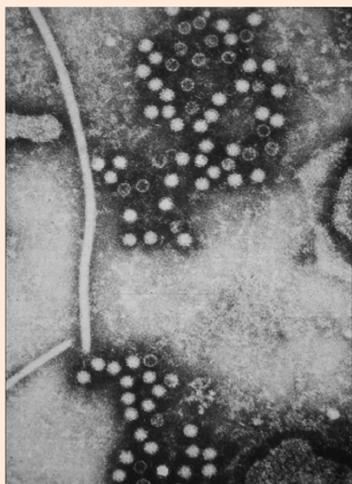
MATERIAL and METHODS

1364 pregnant women (mean age 30 years, 15-45) who attended the Obstetric Department for routine screening, were included in this study. 181 women were screened in 2007, 588 in 2009, 271 in 2010 and 324 in 2011.

None of the patients presented clinical symptoms related with hepatitis at the time of blood sample collection.

For the **IgG anti-HEV** antibodies detection in serum, a commercial immunoenzymatic method was employed and all positive samples were further studied for the presence of **IgM anti-HEV antibodies** (HEV Ab and HEV IgM, Dia.Pro Diagnostic Bioprobes, Milan, Italia). A result was considered positive in both tests when the ratio of the sample optical density and the cut off value was higher than 2. Positive results by the immunoenzymatic method were confirmed by **Western Blot analysis** (RecomBlot HEV IgG/IgM, Mikrogen, Martinsried, Germany). In those patients presenting positive results, transaminases ALT/AST levels and clinical symptoms were assessed.

In addition, **HEV RNA** was amplified by reverse transcriptase (**RT-nested PCR**) in all serum samples with IgM and IgG anti-HEV positive results.



Electronic picture of the hepatitis E virus.



Comercial kit employed for the IgG immunoenzimatic detection in serum. (Dia Pro. Diagnostic Bioprobes)

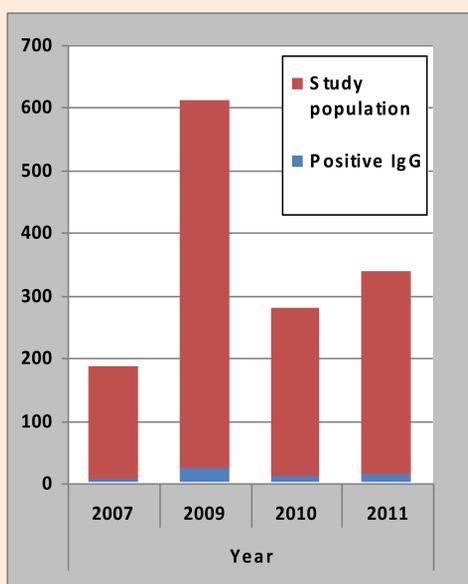
RESULTS

❖ The prevalence of **anti-HEV IgG** among the pregnant women population in Madrid was **2,1%** (5/181) in 2007, **4,08%** (24/588) in 2009, **3,3%** (9/271) in 2010 and **3,09%** (10/324) in 2011, with an overall prevalence of **3,51%** (48/1364).

❖ **IgM anti-HEV antibodies** were detected in **0,65%** (9/1364) of all serum samples, suggesting acute or recent infection.

❖ **ARN HEV** was **negative** in all samples tested positive for IgM anti-HEV.

❖ None of the women with a positive result for IgM or IgG, presented symptoms related with hepatitis. Transaminases (ALT and AST) values were found normal in this group of pregnant women.



PERIOD	STUDIED GROUP	POSITIVE anti IgM/IgG	Anti-HEV Ig G PREVALENCE
2007	181	2/5	2,1%
2009	588	2/24	4,08%
2010	271	3/9	3,3%
2011	324	2/10	3,09%
TOTAL	1364	9/48	3,51%

CONCLUSIONS

❖ **Seroprevalence** of IgG HEV antibodies in pregnant women in Spain is **low** (3,51%) and had **remained unchanged** in recent years.

❖ This low prevalence rate may be due to **good hygienic measures** and **public health conditions** currently present in Spain.

❖ **Asymptomatic hepatitis E** occurs in pregnant women in non-endemic countries like Spain at a very low rate (0,65%).

❖ The HEV **genotypes** circulating in various geographical areas could be responsible for the different morbidity and mortality rates in pregnant women.

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