

Seroprevalence of Hepatitis E Virus in Healthy Blood Donors at the Blood Bank of the Regional General Hospital Number 45 of the Mexican Institute of Social Security

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Introduction

- Hepatitis E is considered one of the main agents of acute hepatitis in the setting of fecal oral transmission route; worrisome for developing countries. This virus is also a blood borne pathogen.
- Immunosuppressed patients as well as pregnant patients are at high risk of infection
- In Mexico, Hepatitis E is endemic and the seroprevalence of the virus last checked in 1999 was 10.5%
- It is unknown what is the seroprevalence currently in healthy patients and what is the risk for patients with transmission of the virus when needing a blood product transfusion.

Methods

- A retrospective study was conducted on 757 serum samples available in the blood bank between August and September of 2019. This in compliance with the protocol of the blood bank.
- Along with blood, a data collection sheet was filled by each participant that included the risk factors associated to the virus.
- Serum samples were obtained and storage following the protocol and with ELISA determination of IgM anti-VHE and IgG anti-VHE were processed.
- Of the total samples, 66 were discarded due to being hemolyzed.
- Data analysis was performed along with the ELISA results as well from the data obtained in the data collection.

Results

- From the 691 analyzed serum, 65 resulted positive using the ELISA method.
- Of the 65 positive serum, 19 patients (2.7%) were positive for IgM anti-VHE and 49 patients (7.1%) had a IgG anti-VHE, 3 patients (0.4%) had positive IgM and IgG anti-VHE.
- Patients confirmed positive with ELISA were living in a Metropolitan area and consumed purified water. About 50 patients (76.9%) had pets at home (p=0.05), 63 patients (93.8%) referred that at least twice per week pork derived products.
- None of the positive cases had a previous medical history of hepatitis or any liver disease.
- The median age was 38.9 (p=0.05) with a median BMI of 27.7.
- Only 1 patient (1.5%) had a previous history of blood product transfusion.

Conclusion

- The seroprevalence in this group of patients was 9.4%, this is relatively similar to the last data published in 1999; showing that there is still plenty to be done to further crease the rate as well as increase the screening of this disease specially when more susceptible patients are about to receive a blood product transfusion.
- The risk of seroprevalence increases with age and with contact with domestic animals, we encourage based on our findings to include these variables on every blood bank to further avoid the transmission of this devastating pathogen.

Figure 1. Instrument for Data collection

DATOS DE IDENTIFICACIÓN

Nombre:

Edad:

Sexo:

Fecha de nacimiento

Lugar de nacimiento:

Domicilio actual:

¿Cuáles?

evolución

CRÓNICAS

VACUNA HEPATITIS A

VACUNA HEPATITIS B

NO DE EMBARAZOS

CONTACTO CON PACIENTES

Parentesco

CON HEPATITIS

CONSUMO DE AGUA:

MARCA:

VIVIENDA:

RURAL

URBANA

AGUA POTABLE:

SI

NO

EXCRETAS:

DRENAJE

FOSA SÉPTICA

MASCOTAS:

TIPO:

HACE CUANTO

TIEMPO:

TRABAJO CON ANIMALES:

TIPO:

HACE CUANTO

TIEMPO:

CONSUMO DE CARNE DE CERDO:

PROMEDIO DE VECES POR SEMANA:

CONSUMO DE LECHE PASTEURIZADA:

PROMEDIO DE VECES POR SEMANA:

CONSUMO DE EMBUTIDOS:

PROMEDIO DE VECES POR SEMANA:

OCUPACIÓN

SEGUIMIENTO (exclusivo personal responsable del proyecto)

IgM anti VHE

IgG anti VHE

PCR

Resultado

Resultado

Resultado

Fecha

Fecha

Fecha

Figure 2. Results

Characteristic	Non reactive to anti-HEV n=626	Reactive to anti-HEV* n=65	
Age	34.7 ± 10.7	38.9 ± 11.7	<0.05*
>40 years	197 (31.5)	35 (53.8)	<0.05*
Male (%)	395 (63.1)	37 (56.9)	0.46
Housing in the Urban Area (%)	598 (95.5)	65 (100)	0.08
Size	1.69 ± 0.1	1.67 ± 0.1	0.16
Body mass index	27.4 ± 4.3	27.7 ± 3.7	0.6
Consumption of Pasteurized milk (%)	522 (83.4)	52 (80)	0.49
Pork consumption (%)	580 (92.7)	61 (93.8)	0.72
Pets in the house (%)	336 (53.7)	50 (76.9)	<0.05*
Average years with pets in the home	2.2 ± 3.9	3.6 ± 6.6	<0.05*
Work with animals (%)	28 (4.5)	0 (0)	0.08
Average years working with animals	0.3 ± 2.3	0	
Personal history of hepatitis (%)	13 (2.1)	0 (0)	0.24
Close contact with relatives with hepatitis (%)	18 (2.9)	1 (1.5)	0.53
Personal history of transfusions (%)	7 (1.1)	1 (1.5)	0.76