Introduction and Objectives: The transmission routes of Hepatitis C Virus (HCV) are categorized as horizontal and vertical. The former includes sexual contact, parenteral exposure, and intrafamilial transmission, while the latter pertains to mother-to-child transmission. Although extensive literature has documented the parenteral route and sexual contact, there is a paucity of studies examining intrafamilial transmission within the Mexican population. This study aims to determine the rate of horizontal viral transmission among first-degree relatives of patients diagnosed with HCV infection who received treatment at Hospital de Especialidades No. 14, Centro Medico Nacional "Adolfo Ruiz Cortines."

Materials and Methods: The study design is observational, descriptive, and retrospective. Patient records from outpatient clinics were scrutinized for the period spanning January 2018 to January 2022. Clinical and epidemiological characteristics, risk factors obtained from medical histories, and laboratory results (including positive HCV viral load and HCV serum PCR test) were evaluated to classify cohorts. Informed consent was obtained from all patients. The research work was registered and approved by the Local Research Committee (R-2022-3001-088).

Results: A total of 129 patients were analyzed, with an average age of 39.56 years. Female gender predominated among 68 patients (52.7%), and 29 patients (22.5%) acquired HCV infection. The primary risk factors identified were Systemic Arterial Hypertension (RR: 7.47, 95% CI: 2.951-18.914, p<0.05), Type 2 Diabetes Mellitus (RR: 16.125, 95% CI: 5.985-43.441, p<0.05), and Chronic Kidney Disease (RR: 10.795, 95% CI: 3.736-31.188, p<0.05) (Table 1). Only two patients (6.89%) were classified as having chronic infection based on measured viral load. All patients received Direct-Acting Antiviral treatment, resulting in sustained viral response at three months post-treatment completion. The primary attack rate was 22.48%, the secondary attack rate was 412.5%, and the R_0 was 1,492,953 (Table 2).

Conclusions: The study demonstrated that first-degree relatives with comorbidities are at a higher risk of contracting HCV infection. The study's findings also revealed that the prevalence of HCV infection is higher than the reported rate in the general population. These results highlight the importance of targeted screening programs, especially in high-risk populations with comorbidities, to identify and treat HCV infections promptly. Such efforts will contribute significantly to the international goals for eradicating this virus and preventing further transmission. Moreover, the study's findings underscore the need for increased awareness and preventive measures to reduce the impact of HCV within the Mexican population.

Ethical statement

The protocol was registered and approved by the Ethics Committee. The identity of the patients is protected. Consent was obtained.

Declaration of interests

None

Table 1

Frequency Distribution of Risk Factors in first-degree relatives diagnosed with Hepatitis C Virus (HCV) infection.

Risk Factors		Hepatitis C Virus Infection		*p*	RR	Lower 95% CI	Upper 95% CI
		No	Yes				
Tobacco Use Disorder	Negative	90	24	0.28	1.875	0.585	6.006
	Positive	10	5				
Alcoholism	Negative	87	22	0.14	2.129	0.759	5.791

(continued)

	Positive	13	7				
Hypertension	Negative	74	8	<0.05	7.471	2.951	18.914
	Positive	26	21				
Diabetes Mellitus, Type 1	Negative	99	29	0.58	0.773	0.704	0.849
	Positive	1	0				
Diabetes Mellitus, Type 2	Negative	86	8	<0.05	16.125	5.985	43.441
	Positive	14	21				
Pulmonary Disease, Chronic Obstructive	Negative	97	26	0.09	3.731	0.711	19.578
	Positive	3	3				
Renal Insufficiency, Chronic	Negative	93	16	<0.05	10.795	3.736	31.188
	Positive	7	13				
Immunocompromised	Negative	100	23	<0.05	0.187	0.129	0.27
	Positive	0	6				

Table 2

Calculation of attack rate, secondary attack rate, and R_0 in first-degree relatives diagnosed with Hepatitis C Virus (HCV) infection.

Rate	%
Attack Rate	22.48
Secondary attack rate	412.50
R_0	1,492,953

Number of new cases of the disease: 29
Number of infectious contacts: 129
Total number of individuals exposed to an infection, outbreak, or epidemic: 29
Number of individuals who have developed the disease: 129
Total number of susceptible individuals exposed: 169
Transmissibility: 161

Association of *IFNL3* gene rs4803217 with spontaneous clearance of Hepatitis C virus in patients from West Mexico

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Introduction and Objectives: Cytokines are crucial in modulating immune responses and the outcome of hepatitis C virus (HCV) infection. Polymorphisms in the IL10 and IFNL3 genes have been associated with spontaneous clearance (SC) in populations worldwide. However, their effect on the Mexican population remains unknown. This study aimed to analyze the association of polymorphisms in the IL10 (rs1800871, rs1800872, and rs1800896) and IFNL3 (rs4803217) genes with SC in HCV patients from West Mexico.

Materials and Patients: A total of 203 treatment-naïve, anti-HCV-positive patients were included in the study. Among them, 60 had undetectable viral load, and 143 had a detectable viral load. Genotyping was performed using Real-Time PCR. Biochemical and serological analyses were conducted. Comparative statistical analysis was performed using SPSSv24 software. Written informed consent was obtained from all participants. The Institutional Review Board approved this study.

Results: The CC genotype of the *IFNL3* rs4803217 gene was associated with SC (OR=2.046, p=0.026). In SC patients, the CC genotype increased total cholesterol (TChol) compared to AA+AC genotypes (209.76 vs. 176.86 mg/dL, p=0.061). The IL10 rs1800871, rs1800872, and rs1800896 polymorphisms were not associated with SC. In SC patients, the CC+CT genotypes of IL10 rs1800871 and CC+CA genotypes of IL10 rs1800872 were associated with higher TChol levels

compared to the TT genotype (198.68 vs. 177.85 mg/dL, p=0.010) and the AA genotype (196.81 vs. 178.58 mg/dL, p=0.006), respectively. In chronic patients, the GG+GA genotypes of *IL10* rs1800896 were associated with high insulin levels compared to the AA genotype (17.22 vs. 12.04 IU/mL, p=0.021).

Conclusions: The CC genotype of the *IFNL3* rs4803217 gene was associated with SC in patients from West Mexico. *IL10* and *IFNL3* polymorphisms increased TChol in SC patients. These results suggest an interaction between metabolic and immune factors in the outcome of HCV infection.

Ethical statement

Declaration of interests

Funding

25-hydroxyvitamin D deficiency as a factor associated with the development of Hepatic Encephalopathy in the Mexican population.

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Introduction and Objectives: Hepatic Encephalopathy (HE) is a common complication in patients with Chronic Liver Disease (CLD), and the development of this decompensation is multifactorial, including ammonia levels, inflammatory status, and sepsis, among others. A poorly studied factor in our population is the serum levels of 25-hydroxyvitamin D (25-OHD), which could act as a co-factor in HE. To assess if serum 25-hydroxyvitamin D (25-OHD) deficiency acts as a cofactor in the development of HE.

Materials and Patients: Observational, retrospective, analytical, case-control study; included subjects of both sexes, 18 years old and over, diagnosed with Chronic Liver Disease of different etiologies. Complete blood count, liver and kidney function, serum electrolytes, coagulation profile, and serum levels of 25-hydroxyvitamin D were recorded. They were evaluated using the West-Haven Criteria (WH).

Results: Independent samples T-test was used to compare differences between 25-hydroxyvitamin D levels in patients with and without HE. The association between 25-OHD deficiency and HE was assessed using a chi-square test, with a significance level set at alpha=0.05. Out of a total of 96 patients, 36.5% had HE. The mean 25-OHD level in the HE group was 18.78 ± 8.56, compared to 22.77 ± 9.94 in the group without HE. The T-test was significant: T (1=2.072), p =0.041. Among patients with deficiency, 20/35 (57.1%) had EH, while 22/61 (36.1%) did not have HE. The chi-square test for the association between deficiency and HE was positive, with a value of (1) =4.015, p =0.045.

Conclusions: A causal relationship between 25-hydroxyvitamin D (25-OHD) deficiency and the development of HE cannot be attributed, as this is multifactorial. However, 25-OHD deficiency is common in patients with Chronic liver disease, and our study demonstrates that this deficiency acts as a cofactor, as there is a significant difference between the groups. It is necessary to validate these findings in the future through multivariate analysis to confirm our results.
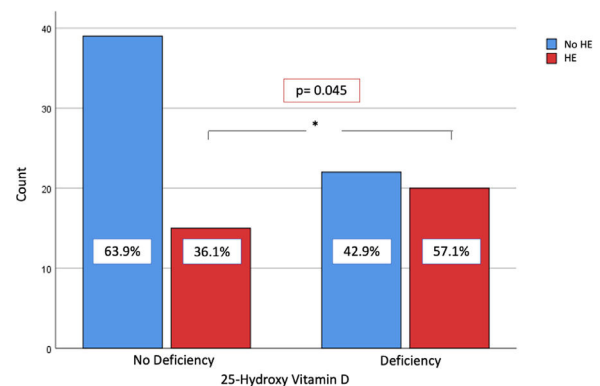
Ethical statement

Declaration of interests

Funding

Figure 1. Percentage of patients with 25-OHD deficiency and HE

Incidence and Associated factors to development of hyponatremia in a cohort of ambulatory patients with compensated liver cirrhosis

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Introduction and Objectives: Hyponatremia is associated with ascites, hepatic encephalopathy, primary bacterial peritonitis, and increased mortality. However, the information about incidence and factors associated with hyponatremia in ambulatory patients with compensated cirrhosis is scarce. The aim of the study was to estimate the incidence and associated factors to the development of hypervolemic hyponatremia.

Materials and Patients: Ambulatory patients with compensated cirrhosis seen at Medical Center Siglo XXI were selected. All variables included in Child-Pugh Index and in the MELD Score and the types of treatment diet were analyzed. Hyponatremia was considered when