

## Conflict of interest

The authors declare that they have no conflict of interest to disclose.

## References

1. Tapia-Sosa R, Hernández-Cabral F, Gabutti A, et al. Carcinoma hepatocelular asociado con el uso de la terapia antiviral de acción directa para virus de hepatitis C: reporte de dos casos. *Rev Gastroenterol Mex.* 2021;86:197–9, <http://dx.doi.org/10.1016/j.rgmx.2020.04.008>.
2. Ma L, Liu J, Wang W, et al. Direct-acting antivirals and interferon-based therapy on hepatocellular carcinoma risk in chronic hepatitis-C patients. *Futur Oncol.* 2020;16:675–86, <http://dx.doi.org/10.2217/fo-2019-0845>.
3. Dash S, Aydin Y, Widmer KE, et al. Hepatocellular carcinoma mechanisms associated with chronic HCV infection and the impact of direct-acting antiviral treatment. *J Hepatocell Carcinoma.* 2020;7:45–76, <http://dx.doi.org/10.2147/jhc.s221187>.
4. Sung PS, Shin E-C. Immunological mechanisms for hepatocellular carcinoma risk after direct-acting antiviral treatment of hepatitis C virus infection. *J Clin Med.* 2021;10:221, <http://dx.doi.org/10.3390/jcm10020221>.

5. Panel AH guidance [Accessed 30 June 2021]. Available from: <https://www.hcvguidelines.org/>, 2021.

M. Servin-Rojas<sup>a</sup>, R. Tapia-Sosa<sup>a</sup>, V.M. Páez-Zayas<sup>b</sup>, M. Dithurbide-Hernández<sup>a</sup>, I. García-Juárez<sup>a,\*</sup>

<sup>a</sup> *Departamento de Gastroenterología, Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Mexico City, Mexico*

<sup>b</sup> *Departamento de Donación y Trasplantes, Hospital General de México Dr. Eduardo Liceaga, Mexico City, Mexico*

\*Corresponding author. Departamento de Gastroenterología, Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Vasco de Quiroga 15, Colonia Belisario Domínguez, Sección XIV, C.P.14080 Mexico City, Mexico. Tel.: 5554870900.

E-mail address: [drinter77@gmail.com](mailto:drinter77@gmail.com) (I. García-Juárez).

2255-534X/ © 2021 Asociación Mexicana de Gastroenterología. Published by Masson Doyma México S.A. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## Determination of socioeconomic and cultural factors and regional etiologic variability in liver cirrhosis<sup>☆</sup>



## Determinación de factores socioeconómicos y culturales y variabilidad etiológica regional de la cirrosis hepática

Dear Editors,

We recently reviewed the original article, “Influence of socioeconomic and cultural factors in the etiology of cirrhosis of the liver” by Roesch et al.<sup>1</sup>. We believe the author should have included the income levels of the population analyzed, given that they are strongly associated with the self-care variable and etiologic variability in Mexico.

Park and Shin evaluated the monthly income of their patients with liver disease, categorizing them into 4 groups, according to income, observing better self-care behavior in patients with higher income ( $\geq 3,000$  won) (33.3%) and poorer self-care behavior in lower-income patients ( $< 1,000$  won) (5%)<sup>2</sup>. Self-care is highly influenced by information sources, such as those provided by healthcare personnel (80.8%), newspapers and magazines (11.6%), and the experiences of other patients with cirrhosis of the liver (7.5%)<sup>2</sup>.

The analysis of the relation of economic factors to the etiology of liver cirrhosis in patients is a key element in all studies with an epidemiologic profile, as shown by Mukher-

jee et al. They conducted a study on a Hindu population that presented with severe forms of liver disease, including cirrhosis of the liver, and their association with poverty levels<sup>3</sup>. Hepatitis C virus (HCV) was the second most frequent etiologic agent in patients with the poorest economic status<sup>3</sup>.

Data on the etiology of liver cirrhosis can show considerable local variability, as was observed in different regions of India. The most frequent viral cause (HCV) was found in the Northern regions, hepatitis B virus (HBV) in the Eastern and Southern regions, and the non-viral etiology (alcohol) was found in the Northeastern region<sup>3</sup>. Likewise, in the Colombian epidemiologic characterization of liver cirrhosis carried out by Escorcia Charris and Marrugo Balceiro, they reported the distribution in 7 departments, finding a majority of patients diagnosed with cirrhosis of the liver in the Atlántico department (70.4%), whereas the other departments accounted for only 29.6%<sup>4</sup>. Unfortunately, their study did not include an analysis of the etiologies that predominated in each department –information that would be very useful for national health strategies.

We believe that the factors in the present study should have been studied further, given that they greatly influence the etiology of cirrhosis of the liver and the increase in the number of cases; cultural and environmental factors modify its etiology, as well.

## Ethical considerations

Informed consent was not required for the drafting of the present document, given that it was written based on studies that included informed consent before participating in the research.

We declare that our article does not require authorization by the Research Ethics Committee of the Universidad Privada

<sup>☆</sup> Please cite this article as: Marca-Ventocilla MB, Huanca-Morales MP, Llanco-Albornoz LA. Determinación de factores socioeconómicos y culturales y variabilidad etiológica regional de la cirrosis hepática. *Rev Gastroenterol Méx.* 2022;87:127–128.

San Juan Bautista, because according to the Declaration of Helsinki and Resolution 008430 of October 4, 1993, the study under discussion was considered no risk research.

The authors declare that the present document contains no personal information that could identify patients.

### Financial disclosure

No specific grants were received from public sector agencies, the business sector, or non-profit organizations in relation to this article.

### Conflict of interest

The authors declare they have no economic interest or known personal relationships that could have influenced the content of the present document.

### References

1. Roesch-Dietlen F, González-Santes M, Sánchez-Maza YJ, et al. Influencia de los factores socioeconómicos y culturales en la etiología de la cirrosis hepática. *Rev Gastroenterol Mex.* 2021;86:28–35, <http://dx.doi.org/10.1016/j.rgmx.2020.01.002>.
2. Park H, Shin Y. Factors related self-care behavior among liver cirrhosis patients: focusing on disease knowledge and family support. *J Korea Acad Industr Coop Soc.* 2017;18:647–56, <http://dx.doi.org/10.5762/KAIS.2017.18.5.647>.
3. Mukherjee PS, Vishnubhatla S, Amarapurkar DN, et al. Etiology and mode of presentation of chronic liver diseases in India: a multi centric study. *PLoS One.* 2017;12:e0187033, <http://dx.doi.org/10.1371/journal.pone.0187033>.
4. Escorcia-Charris EJ, Marrugo-Balceiro WR. Caracterización epidemiológica y clínica de la cirrosis hepática en un centro regional del Caribe Colombiano: clínica general del norte. *Enero 2012 a marzo 2017. Biociencias.* 2018;13:17–30.

M.B. Marca-Ventocilla\*, M.P. Huanca-Morales, L.A. Llanco-Albornoz

*Escuela Profesional de Medicina Humana, Universidad Privada San Juan Bautista-Sede Chorrillos, Lima, Peru*

\* Corresponding author at: Ex Hacienda Villa, Av. José Antonio Lavalle, s/n, Chorrillos, Lima, 15067, Peru. Tel.: (01) 254-5302.

E-mail address: [marcos.marca@upsjb.edu.pe](mailto:marcos.marca@upsjb.edu.pe) (M.B. Marca-Ventocilla).

2255-534X/ © 2021 Asociación Mexicana de Gastroenterología. Published by Masson Doyma México S.A. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## Response to the Letter to the Editor on the study «Influence of socioeconomic and cultural factors in the etiology of cirrhosis of the liver»<sup>☆</sup>



### A propósito de la carta editorial sobre el estudio «Influencia de los factores socioeconómicos y culturales en la etiología de la cirrosis hepática»

We completely agree with the comments by Marca et al. on our article<sup>1</sup>, with respect to the importance that economic factors have on the etiologic variability of cirrhosis of the liver. Different publications have shown that greater purchasing power has influenced the modification of the epidemiologic panorama of the disease, showing that the number of cases due to chronic alcohol use or obesity has increased in the higher-income countries, whereas the increase in cases is due to the hepatitis B and C viruses in lower-income countries<sup>2–5</sup>.

They also believe that the economic factors in our study were not duly analyzed and that we should have included the incomes of the population group. In that regard, we would

like to emphasize the following: in Mexico, as in the countries of Central America and South America, the mean wage of the population is low, which can be applied to all the etiologic factors of cirrhosis<sup>6</sup>. However, we entirely agree with the fact that knowing the income of patients in each of the different etiologies is important, and it will be taken into account in the follow-up of our present study, which we consider a preliminary analysis, and should be corroborated with a higher number of cases, as well.

### Ethical considerations

The present document did not require informed consent or authorization by the Bioethics Committee of the *Universidad Veracruzana*, because according to the Declaration of Helsinki and Resolution 008430 of October 4, 1993, the study under discussion was considered no risk research.

### Financial disclosure

No specific grants were received from public sector agencies, the business sector, or non-profit organizations in relation to this study.

### Conflict of interest

The authors declare that there is no conflict of interest.

### References

<sup>☆</sup> Please cite this article as: Roesch-Dietlen F, González-Santes M. A propósito de la carta editorial sobre el estudio «Influencia de los factores socioeconómicos y culturales en la etiología de la cirrosis hepática». *Rev Gastroenterol Méx.* 2022;87:128–129.