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## Significant variables in the etiology of liver cirrhosis<sup>☆</sup>



### Variables significantes en la etiología de la cirrosis hepática

We recently read the article by Roesch-Dietlen et al.<sup>1</sup> that detailed the factors that influence the development of cirrhosis of the liver, and we believe that certain points deserve to be mentioned.

We noted there is a difference between the number of samples included and those utilized (179 and 182)<sup>1</sup> in the study, which could cause confusion at the time of analysis, and thus, should be revised.

In addition, the Pearson coefficient obtained by the authors (0.089) for the B virus, C virus, and educational level variables<sup>1</sup> indicates there is no correlation, but the data utilized indicate the opposite.

Income is one of the variables analyzed by Roesch et al.<sup>1</sup>, referring only to patients with no income, which is not a correct categorization. We believe an income range classification (for example, number of times the minimum wage) would have been more adequate, such as that used in the study by Delfrade et al.<sup>2</sup>, which showed that incidence and mortality rates of alcoholic cirrhosis were higher, the lower the income level.

According to the article, the largest percentage of the population analyzed were men (57.1%) and single individuals (67.6%), and the predominant occupation was housewife, followed by retiree<sup>1</sup>, raising the question: what is the dif-

ference between housewife (35.2%) and unemployed (2.2%), if the study population is predominantly male and single?

A study conducted in Paraguay<sup>3</sup> coincides with the final result of the present study, stating that the predominant sex of the population was male and the main etiology of cirrhosis was chronic alcohol consumption. Diversely, in a study carried out in Colombia, the predominant sex of the population was female and the main cause of cirrhosis was hepatitis C, followed by nonalcoholic fatty liver disease (NAFLD), with alcohol as the fifth cause<sup>4</sup>. In addition, a study conducted in Peru found that male sex was predominant and the main cause of cirrhosis was nonalcoholic steatohepatitis (NASH), followed by chronic alcohol consumption<sup>5</sup>. Those data clearly show the influence of social and cultural factors on the development of cirrhosis.

Therefore, we believe that categorizing the variables and adequately using the statistical tools would make it possible to give the results their due importance, enrich the discussion, and arrive at more accurate conclusions.

### Authorship

The final version of the article was approved by all the authors and they equally participated in the research and/or preparation of the article.

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No financial support was received in relation to this article.

### Conflict of interest

The authors declare that there is no conflict of interest.

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## Regarding the Letter to the Editor from Ávalos-Quispe et al. «Significant variables in the etiology of liver cirrhosis»<sup>☆</sup>



### En relación a la carta al editor de Ávalos-Quispe et al. «Variables significantes en la etiología de la cirrosis hepática»

Dear Editors,

Our comments in response to the Letter to the Editor, titled “Significant variables in the etiology of liver cirrhosis”, from Ávalos et al., follow below.

As those authors noted, there was indeed an error regarding sample size. The correct figure, 182, appears in the abstract, results section, and table 1, but in the materials and methods section, it is erroneously stated as 179<sup>1</sup>.

With respect to their observations on the values described in table 4, the associations of the different etiologic factors, in relation to educational levels, are shown, and the two variables were treated as nominal variables. Thus, the relations between the two variables were analyzed using the Pearson’s chi-square test, obtaining a p value of 0.089. That value is higher than 0.05, and so was not considered statistically significant ( $p > 0.05$ ).

Likewise, Ávalos et al. state that income should have been classified in ranges, given that Delfrade et al.<sup>2</sup> have shown that incidence and mortality rates of alcoholic cirrhosis are higher, the lower the income level. Indeed, we did not include levels of income in our analysis, something that we shall keep in mind for future studies.

Those authors also observed that a cause of confusion was the fact that the highest percentages in the study population were for male sex (57.1%) and singleness (67.6%) and the predominant occupation was that of housewife, followed by retiree. As clarification, the variables expressed in table 1 are absolute and relative values related to the total of the sample studied.

In addition, the authors asked what the difference between housewife (35.2%) and unemployed (2.2%) is, if the study population is predominantly male and single, to which we offer the following response. A housewife is a person that does not receive a weekly or monthly salary for the work performed, and in Mexico, new legal provisions are being worked on so that persons with that occupation receive some amount of economic remuneration and are protected under a legal framework, whereas an unemployed person is someone that, by age, is economically active, but does not have a paying job or has temporarily lost one.

We completely agree that in Mexico, as in Paraguay, Colombia, and Peru<sup>3–5</sup>, socioeconomic and cultural factors have an important influence on the etiology of cirrhosis.

We offer Ávalos et al. our sincere thanks and appreciate their comments on our study.

### Ethical considerations

Neither informed consent nor approval by the Bioethics Committee of the *Universidad Veracruzana* was required for the drafting of the present document, and according to the Declaration of Helsinki and Resolution 008430 of October 4, 1993, the study discussed was considered no risk research.

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