Annals of Hepatology 28 (2023) 101113

Contents lists available at ScienceDirect

Annals of Hepatology

journal homepage: www.elsevier.es/annalsofhepatology

Letters to the editor

Comment on "Type 2 Diabetes Complications are Associated with Liver Fibrosis Independent of Hemoglobin A1c"

Dear Editor

We read with great interest the recently published study "Type 2 diabetes complications are associated with liver fibrosis independent of hemoglobin A1c."[1] As researchers in clinical practice, we appreciate the significant contributions this study [1] makes to our understanding of the relationship between liver fibrosis and complications in patients with type 2 diabetes. The findings of this study underscore the importance of regular liver function tests for diabetic patients to detect and prevent the development of relevant complications. It is also essential to note that the study's focus on liver fibrosis as a maker of complications does not negate the value of hemoglobin A1c testing in diabetes management. Instead, it highlights the need for a comprehensive approach to diabetes care that considers multiple factors that may contribute to diabetes-related health risks. While the study's findings are undoubtedly significant, we believe that some potential concerns should be addressed.

Firstly, it should be emphasized that understanding the impact of commonly prescribed diabetes drugs such as metformin on the development of liver fibrosis and the management of diabetes-related health risks is essential. Given the widespread use of metformin as a first-line therapy for type 2 diabetes and its known effects on liver function and fibrosis, the lack of specific information regarding the potential impact of metformin on the observed relationship between diabetes complications and liver fibrosis is a notable limitation of this study. Previous studies [2,3] suggest that metformin may have therapeutic potential for patients with diabetes and liver fibrosis, particularly showing a significant reduction in liver fat, necroinflammation, and liver fibrosis [4]. Furthermore, there may be other confounding variables that were not accounted for in this study, such as differences in medication adherence, that could have affected the relationship between diabetes complications and liver fibrosis. Therefore, it is essential to clearly describe the drug treatment strategies of the participants.

Secondly, the duration of diabetes and the state of glycemic control are essential factors that could have a significant impact on the development of liver fibrosis in patients with type 2 diabetes. It is well-established that high blood glucose levels over an extended period can lead to complications such as liver fibrosis [5,6]. Therefore, it is informative to know the HbA1c levels of the patients included in the study and how long they had been living with type 2 diabetes. Such information would help establish a better understanding of the relationship between HbA1c, diabetes duration, and liver fibrosis. As described in Table 1 of this study [1], the HbA1c level of the complication group was significantly higher than that of the non-complication group [7.9 (1.5) versus 7.3 (1.5), p = 0.005], suggesting poor long-term blood sugar control. In this case, an underlying hypothesis is that poor glycemic control results in increased liver fibrosis rather than the complications of diabetes. Thus, it is recommended to provide the duration of diabetes and glycemic control status, so as to eliminate the influence of potential confounding factors.

Declaration of Competing Interest

None.

References

[1] Trivedi HD, Lai M. Reply to: Type 2 Diabetes Complications are Associated with Liver Fibrosis Independent of Hemoglobin A1c. Ann Hepatol 2023;28(4):101114. https://doi.org/10.1016/j.aohep.2023.101114.
[2] Zhang X, Harmsen WS, Mettler TA, Kim WR, Roberts RO, Therneau TM, et al. Continuation of metformin use after a diagnosis of cirrhosis significantly improves survival of patients with diabetes. Hepatology 2014;60(6):2008–16. https://doi.org/10.1002/hep.27199.
[3] Kita Y, Takamura T, Misu H, Ota T, Kurita S, Takeshita Y, et al. Metformin prevents and reverses inflammation in a non-diabetic mouse model of nonalcoholic steatohepatitis. PLoS ONE 2012;7(9):e43056. https://doi.org/10.1371/journal.pone.0043056.
[4] Bugianesi E, Gentilcore E, Manini R, Natale S, Vanni E, Villanova N, et al. A randomized controlled trial of metformin versus vitamin E or prescriptive diet in nonalcoholic fatty liver disease. Am J Gastroenterol 2005;100(5):1082–90. https://doi.org/10.1111/j.1572-0241.2005.41583.x.
[5] Alexopoulos AS, Crowley MJ, Wang Y, Moylan CA, Guy CD, Henao R, et al. Glycemic control predicts severity of hepatocyte ballooning and hepatic fibrosis in nonalcoholic fatty liver disease. Hepatology 2021;74(3):1220–33. https://doi.org/10.1002/hep.31806.
[6] Hamaguchi E, Takamura T, Sakurai M, Mizukoshi E, Zen Y, Takeshita Y, et al. Histological course of nonalcoholic fatty liver disease in Japanese patients: tight glycemic control, rather than weight reduction, ameliorates liver fibrosis. Diabetes Care 2010;33(2):284–6. https://doi.org/10.2337/dc09-0148.

Zhenjing Wang
Nai Liu
Caixia Guo*
Henan Provincial Chest Hospital, Zhengzhou University, Zhengzhou, Henan, China

*Corresponding author.
E-mail addresses: hnwjszz0316@163.com, hnxkgcx316@163.com (C. Guo).

https://doi.org/10.1016/j.aohep.2023.101113