Indirect insulin resistance markers in relation to nonalcoholic fatty liver disease among patients with type 1 diabetes mellitus

Chun-Chieh Chen, Po-Hui Wang, Chin-Feng Tsai, Yuan-Ti Lee, Shiuan-Chih Chen

To the editor We read with interest a recently published article by Grzelka-Woźniak et al,[1] in which they investigated the relationship between indirect insulin resistance markers and nonalcoholic fatty liver disease (NAFLD) in individuals with type 1 diabetes mellitus (T1DM). The authors showed that indirect insulin resistance markers, including visceral adiposity index, estimated glucose distribution rate, and the ratio of triglycerides to high-density lipoprotein cholesterol, were associated with NAFLD in patients with T1DM. Although the presented results are promising, we would like to share our perspective on this study.

Firstly, type 2 diabetes mellitus, central obesity, dyslipidemia, and metabolic syndrome are considered important risk factors for NAFLD.[2,3] The authors used single-time measurements of blood pressure as well as relevant laboratory and anthropometric parameters rather than focused on the presence of comorbidities in the study patients, and these measures could be affected by medications (eg, antihypertensive or lipid--lowering agents) used for the treatment of the comorbid conditions. As a consequence, it is possible that the logistic regression analysis could not be adjusted for the major covariates and the confounding effect on the results would remain.

Secondly, because the duration of comorbidities (eg, hypertension, hyperlipidemia) and information regarding other significant factors (eg, the intensity of tobacco smoking and alcohol consumption) are routinely recorded in patient medical records, these data would be easily accessible. In the present study, only the duration of T1DM was evaluated, whereas the duration of other conditions, in particular those closely related to NAFLD, was not, which seems illogical. Furthermore, some medications / supplements or dietary components (eg, vitamin E, ω-3 fatty acids, caffeine, polyphenols, or the Mediterranean diet)[2-5] that can ameliorate or decrease the risk of NAFLD were also not considered in the study. These unmeasured covariates could affect the research results, and the lack of their inclusion in the analysis requires clarification by the authors.

Finally, we appreciate the impressive research by Grzelka-Woźniak et al.[1] However, we would like to draw the readers' attention to the probable limitations when interpreting the important findings of this study. We also look forward to the authors' reply.

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