

Advancing insights into non-alcoholic fatty liver disease: A critical analysis of ultrasonography and beyond

Dear Sir,

We read with great interest the article by Dorostghol *et al.*,^[1] which sheds light on the valuable role of ultrasonography in non-alcoholic fatty liver disease (NAFLD). In the current landscape of epidemiological transition from communicable diseases (CDs) to non-communicable diseases (NCDs) and the escalating burden of metabolic disorders, the study underscores the crucial role that ultrasonography can play.^[2]

We commend the authors for their meticulous case-control study, where apparent efforts were made to match for age and gender, and standard techniques for assessment were diligently employed. Nevertheless, we note a discrepancy in the reported weight and body mass index (BMI) values between the cases and controls. The text and Table 1 highlight that patients had a significantly higher weight (71.87 ± 13.42 kg vs. 80.17 ± 16.41 kg; $P < 0.001$), and the mean BMI (28.90 ± 5.19 kg/m² vs. 25.73 ± 4.0 kg/m²; $P < 0.001$) was higher in cases. We propose a nuanced consideration regarding the categorization of BMI values. Given that, in a normally distributed sample, 95% of values lie within 2 standard deviations from the mean, the reported BMI for cases (18.5–39.3) and controls (17.7–33.7) appears notably non-normal as per Asian BMI standards. Stratifying BMI categories could provide more normative values for liver sizes, offering a nuanced understanding of the results.

Turning our attention to Table 5, which presents the multiple linear regression analysis, we observe that BMI already incorporates both height and weight. Since height was found to be indifferent between cases and controls, it would be beneficial to explore the analysis using either height and weight or BMI alone. This adjustment could potentially offer a clearer interpretation of the factors influencing liver size.

The authors rightly acknowledge that height and age are significant factors affecting liver size, consistent with established evidence.^[3] We recommend further exploration of the clinical data, presenting liver sizes across various BMI categories while adjusting for gender and age. This nuanced approach would

significantly contribute to our understanding of normal liver sizes, particularly as the study population excludes individuals with hepatic infections and alcoholism.

While the study meticulously records basic demographic information such as age, sex, weight, height, and BMI, it appears to underrepresent other potentially relevant factors such as dietary habits and physical activity. Additionally, we urge consideration of Berksonian bias inherent in hospital-based studies, highlighting the need for future population-based investigations.

In the realm of non-invasive techniques, the study emphasizes the utility of ultrasonography, and we concur with this viewpoint. However, it is worth noting that other studies have demonstrated comparable efficacy and agreement between fatty liver index (FLI), measured by surrogate blood markers, and traditional diagnostic methods like abdominal ultrasound and biopsy.^[4] Acknowledging the varying availability and cost constraints of Fibroscan, which is considered the next best alternative to biopsy, we propose a critical emphasis on developing normal values based on age and gender, striking a balance for effective diagnostic purposes.

In conclusion, as we navigate an era of escalating metabolic and non-communicable diseases, the study advocates for the pivotal role of non-invasive screening and diagnostic methods. Beyond regular abdominal ultrasound, we propose considering fatty liver index in conjunction with shear wave elastography measuring the controlled attenuation parameter and liver stiffness. Such an integrated approach could significantly contribute to the early detection of NAFLD and cirrhosis, offering valuable insights into treatment prognosis.

Comments on: Comparison of size of the liver between patients with non-alcoholic fatty liver disease and healthy controls. *Journal of Family Medicine and Primary Care* 13(2):p 425-430, February 2024.

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Conflicts of interest

There are no conflicts of interest.

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