



Metabolic abnormalities play a crucial role in non-obese people suffering from non-alcoholic fatty liver disease (NAFLD)

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We read the article entitled “*The presence of NAFLD in nonobese subjects increased the risk of metabolic abnormalities than obese subjects without NAFLD: A population-based cross-sectional study*” by Hu *et al.* (1), which was published in the latest issue of *Hepatobiliary Surgery Nutrition*, with great pleasure. As the authors described, due to rapid urbanization and sedentary lifestyles, the prevalence of non-alcoholic fatty liver disease (NAFLD) has increased. In this population-based, cross-sectional health survey study, in which the data were obtained from community health centers, the investigators reported that the prevalence of NAFLD in Shanghai, China grew from 15% in 2005 to 32.7% in 2017 (1). To gain a better understanding of the prevalence of metabolic features in relation to NAFLD status, gender, and age, the authors quantified the risks of having different metabolic conditions between the following 4 groups: (I) the non-obese NAFLD group; (II) the non-obese non-NAFLD group; (III) the obese non-NAFLD group; and (IV) the obese NAFLD group (1).

We applaud the authors for their work in confirming the findings of previous studies (2-5) for their cohort in China. Additionally, their results that identified gender differences based on age and obesity are important in understanding how to better risk stratify persons for follow-up care and interventions. As most persons with NAFLD are treated in a community setting, guidelines have been developed to help identify both patients who are at risk of having NAFLD and those who should be referred to a specialist due to the potential presence of a more advanced disease

(2,3). To this point, it would have been helpful to know how many persons were at risk for advanced disease and how the completion of the risk stratification would inform future practices, especially for the group with the highest risk of mortality (4). This is especially important given that better non-invasive tests for diagnosing advanced disease and fibrosis are coming to market (5,6).

However, we disagree with the authors' conclusions that the presence of NAFLD in non-obese subjects significantly increases the risk for metabolic diseases. The exact pathophysiologic mechanisms of NAFLD disease development are still under study, but most researchers agree that NAFLD is not the cause of metabolic comorbidities and that those with certain metabolic comorbidities are at a higher risk for developing or finding NAFLD on examination (7). We know that non-obese NAFLD is not uncommon, and that the prognosis of such individuals may be worse (8). In general, as the prevalence of non-obese NAFLD increases with age (9), it is clear that the increase in metabolic complications with age is strongly related to the development of NAFLD.

Again, we would like to thank the authors for their thoughtful study. As NAFLD continues to increase, the characterization of those with NAFLD has gained much attention, which is important if appropriate interventions are to be developed; however, to reverse the course of the disease, a better understanding of how to increase awareness of this disease is also needed (10,11) as are interventions that are both successful and accessible.

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Ethical Statement: The authors are accountable for all aspects of the work, including ensuring that any questions related to the accuracy or integrity of any part of the work have been appropriately investigated and resolved.

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