EDITORIAL

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Understanding the epidemiology of metabolic dysfunction-associated steatotic liver disease is essential for its management: need for attention to accurate diagnostic coding and classification

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See Article on Page 931-944

As global rates of obesity and type 2 diabetes increase, so is the prevalence of metabolic dysfunction-associated steatotic liver disease (MASLD) [1]. While many individuals with MASLD may not progress to advanced liver disease, it remains the leading cause of liver transplants in the U.S., particularly for hepatocellular carcinoma (HCC). Nonetheless, cardiovascular disease (CVD) remains the leading cause of death among MASLD patients. MASLD is also associated with higher risks of developing type 2 diabetes, chronic kidney disease, sarcopenia, and extrahepatic malignancy. Moreover, it increases healthcare use and leads to significant economic costs.

Park et al. [2] contributed significantly to the current understanding of the epidemiology of non-alcoholic fatty liver disease (NAFLD) in South Korea. First, its longitudinal nature over a 12-year period allowed a comprehensive analysis of trends and the evolution of the disease in a well-defined population. Using data from the Korean National Health Insurance Service (NHIS) ensured a large, representative sample size, enhancing the generalizability of the findings. The study provided crucial insights into the increasing incidence and prevalence of NAFLD in South Korea, with prevalence rates increasing from 10.49% in 2012 to 17.13% in 2022.

However, there are concerns about the potential underestimation of NAFLD cases due to a reliance on diagnostic codes rather than imaging or biopsy data. A recent study based on South Korean nationwide health screening data from 2009 reported a 27.5% prevalence of MASLD in adults aged 20–79 [3]. This higher rate is likely due to the use of only diagnostic International Classification of Diseases Tenth Revision (ICD-10) codes submitted to the NHIS to estimate prevalence and incidence rates, unlike Park et al. [2], which defined hepatic steatosis using the Fatty Liver Index based on anthropometric measurements and blood tests. Other studies have also reported higher NAFLD prevalence rates using transient elastography and liver biopsies, suggesting that the reliance on ICD-10 codes may exclude milder or undiagnosed cases [4].

The authors used propensity score matching to control for age and gender to ensure a more accurate comparison between NAFLD and control groups, reducing selection bias, and reported an overall increase in the proportion of associated comorbidities compared to 2012, as well as an increase in the proportion of patients with two or more comorbidities in 2022 [2]. The incorporation of comorbidities, including hypertension, diabetes, and CVD, also provided a holistic view of NAFLD burden, making the study valuable for healthcare policy formulation. However, the findings differ significantly from the results reported in the general adult US population, in which 86.53% (95% confidence interval, 84.66–88.2%) have been found to have at least one cardiometabolic risk factor [5]. Even accounting for national differences, this discrepancy likely stems from the fact that the National Health and Nutrition Examination Survey (NHANES) diagnosed hepatic steatosis using the controlled attenuation parameter (CAP), while the NHIS data in this study [2] relied on diagnostic codes to define the disease.

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In Park et al. [2], the reported incidence rates of comorbid conditions such as malignancy, heart disease, and stroke in NAFLD patients were higher than in the control group, consistent with previous findings [6]. The precise pathophysiological mechanism underlying the interaction between MASLD and CVD remains unclear. However, it is evident that the two conditions share common metabolic abnormalities that may work together, increasing the risks of developing both heart and liver diseases [6]. MASLD carries a higher risk of developing extrahepatic cancers, with the risk surpassing that of liver-related mortality. This is likely due to the chronic inflammatory state associated with MASLD, contributing to the increased likelihood of extrahepatic cancers [7]. Therefore, it is crucial to adhere to current cancer screening guidelines for patients with MASLD to ensure early detection and management of these risks.

Although the progression of NAFLD to more severe liver diseases, including cirrhosis and HCC, is relatively low, the NHIS data demonstrate a progression rate from NAFLD to cirrhosis of approximately 2.22% over 10 years, with an HCC incidence rate of 0.77% in the same period. A meta-analysis indicated that the overall incidence of HCC related to MASLD is 1.25 per 1,000 person-years [8]. However, in individuals with MASLD and advanced fibrosis, the incidence of HCC rises significantly to 14.46 per 1,000 person-years. This highlights the need for surveillance strategies for cirrhosis and HCC in MASLD patients, although current guidelines recommend HCC screening only for those with cirrhosis due to the overall low incidence. There may be HCC patients whose MASLD etiology is not well-identified, underscoring the need for longitudinal studies to refine screening strategies.

The study's findings have important implications for public health policy in South Korea, as the increasing prevalence of NAFLD and related comorbidities highlight its status as a growing public health concern. Park et al. [2] recommend integrated care strategies that include medical and lifestyle interventions. Additionally, implementing national screening programs, especially for high-risk groups such as those with obesity, diabetes, and metabolic syndrome, is crucial. The study also emphasizes the economic burden of NAFLD due to rising healthcare costs, underscoring the need for preventive measures like public health campaigns promoting healthy lifestyles. Policymakers should prioritize early detection, targeted interventions for comorbidities, and preventive strategies to manage NAFLD's impact on healthcare costs and related diseases.

While the study [2] presents comprehensive data, it has several limitations that future research should address. As imaging techniques such as ultrasound and MRI proton-density fat fraction analysis become more accessible, future studies could incorporate these methods for a more accurate assessment of the disease burden. Conversely, the observed increase in prevalence and incidence over time may not reflect the actual progression of the disease but rather increasing awareness, leading to higher rates of diagnostic code registration and insurance claims over time. Another limitation is that the study did not fully integrate the emerging diagnostic criteria for MASLD [9]. Although the authors acknowledge the evolving nomenclature, future research should include these new definitions to ensure consistency with global data. Additionally, the study did not adequately address potential ethnic or genetic factors that may influence NAFLD prevalence and progression in the South Korean population. As NAFLD is strongly linked to genetic factors, particularly in Asian populations, this is an important area for further exploration.

In conclusion, Park et al. [2] provides valuable insights into the evolving epidemiology of NAFLD in South Korea, highlighting its rising prevalence and the associated healthcare implications. Clinicians can contribute to a more accurate understanding of MASLD epidemiology and improve its management by paying closer attention to diagnosing, classifying, and properly registering diagnostic codes for MASLD.

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