

The Prevalence and Pathobiology of Nonalcoholic Fatty Liver Disease in Patients of Different Races or Ethnicities



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KEYWORDS

• NAFLD • Race • Ethnicity • PNPLA

KEY POINTS

- The prevalence of nonalcoholic fatty liver disease (NAFLD) is higher in Hispanics compared with non-Hispanic whites and African Americans.
- Several components of the metabolic syndrome exist at higher rates when comparing Hispanic with non-Hispanic white patients.
- The increase prevalence of NAFLD in Hispanics is not explained by differences in rates of the metabolic syndrome.
- Genetic polymorphisms in genes that influence lipid metabolism, such as patatin-like phospholipase domain-containing protein-3, may play a role in effecting both the amount of hepatic triglyceride content and injury, and may influence the prevalence of NAFLD in different patient populations.

INTRODUCTION

During the last several decades, nonalcoholic fatty liver disease (NAFLD) has emerged as an important cause of liver dysfunction. It is currently one of the most common causes of liver disease in the United States and is rapidly increasing as an indication for liver transplantation. At present, most data related to NAFLD, including histology, risk factors, and natural history, have been garnered from studies in white subjects. However, it is becoming increasingly apparent that multiple aspects of NAFLD differ

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when analyzing subjects of different races or ethnicities. Several recently published manuscripts demonstrate a nonuniform distribution of NAFLD in different subject populations. This article discusses the prevalence of NAFLD in patients of different races or ethnicities, and examines the pathophysiologic mechanisms that may explain why these differences exist.

DIFFERENCES IN THE METABOLIC SYNDROME BASED ON RACE OR ETHNICITY

It is clear that the metabolic syndrome, which includes insulin resistance (IR), obesity, dyslipidemia, and hypertension, has been identified as a significant risk factor for the development of NAFLD. When analyzing the presence of various components of the metabolic syndrome, it is apparent that its prevalence exists at a higher rate in African American and Hispanic patients. Multiple publications have documented a greater frequency of obesity and diabetes in US African American and Hispanic patient populations.¹⁻³ A recent publication comparing non-Hispanic blacks with Mexican Americans identified overweight and obesity rates of 70% and 73%, respectively, compared with 62% in whites.⁴ An analysis of self-reported rates of obesity in the United States revealed an overall rate of 26.7%; however, 36.8% of non-Hispanic blacks and 30.7% of Hispanics identified themselves as obese.⁵ In addition to obesity, diabetes has been reported to be more prevalent in African Americans and Hispanics compared with non-Hispanic whites.^{6,7} Finally, multiple additional components of the metabolic syndrome, including dyslipidemia, have also been reported to be more prevalent in US minority populations,⁸ with initial presentation when these patients enter adolescence.⁹

Based on the increased rates of the various components of the metabolic syndrome in African American and Hispanic patients, it could be assumed that the prevalence of NAFLD in these patient populations is increased compared with non-Hispanic whites. However, despite increased rates of obesity, diabetes, and other components of the metabolic syndrome in African Americans, data suggest that the incidence of NAFLD is lower than expected in this patient population compared with other patient demographics, specifically non-Hispanic white and Hispanic patients (Fig. 1).

Demographics of Nonalcoholic Fatty Liver Disease in Non-Hispanic White, African American, and Hispanic Patients

Published data assessing NAFLD vary significantly based on how NAFLD is defined. As an example, some studies use either laboratory, radiologic, or histologic criteria,

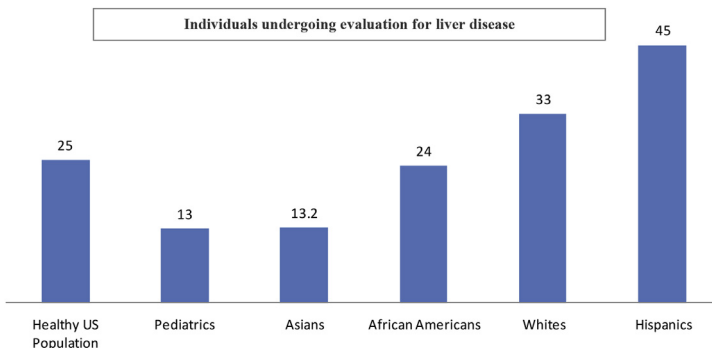


Fig. 1. NAFLD prevalence in the US population (%).

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