

CLINICAL ASPECTS

Contribution of Alcoholic and Nonalcoholic Fatty Liver Disease to the Burden of Liver-Related Morbidity and Mortality

Zobair Younossi^{1,2}Linda Henry³

CLINICAL ASPECTS

¹Center for Liver Diseases, Department of Medicine, Inova Fairfax Hospital, Falls Church, Virginia; ²Beatty Liver and Obesity Program, Betty and Guy Beatty Center for Integrated Research, Inova Health System, Falls Church, Virginia; ³Center for Outcomes Research in Liver Diseases, Washington, District of Columbia

Nonalcoholic fatty liver disease (NAFLD) and alcoholic liver disease (ALD) are common causes of chronic liver disease. NAFLD is associated with obesity and metabolic syndrome whereas ALD is associated with excessive alcohol consumption. Both diseases can progress to cirrhosis, hepatocellular carcinoma, and liver-related death. A higher proportion of patients with NAFLD die from cardiovascular disorders than patients with ALD, whereas a higher proportion of patients with ALD die from liver disease. NAFLD and ALD each are associated with significant morbidity, impairment to health-related quality of life, and economic costs to society.

Keywords: NAFLD; ALD; Mortality.

Nonalcoholic fatty liver disease (NAFLD) and alcoholic fatty liver disease (ALD) are among the most common causes of chronic liver disease, cirrhosis, hepatocellular carcinoma (HCC), and liver-related death.^{1–11} NAFLD and ALD not only contribute to the clinical burden of liver disease, but also can lead to significant morbidity and have a negative impact on patients' quality of life.^{12–17} Furthermore, ALD and NAFLD have been associated with a large economic burden and use of health care resources.^{4,12,18–23} In this article, we review the epidemiology and progression of NAFLD and ALD, as well as mortality, patient-reported outcomes, and health economic data.

Epidemiology

NAFLD

The prevalence of NAFLD appears to be increasing with time. An analysis of National Health and Nutrition Examination Survey (NHANES) data assessed the prevalence of different types of chronic liver diseases in the United States. During 2 decades, the prevalence rates for chronic hepatitis B, hepatitis C, and ALD remained relatively stable. On the other hand, the prevalence of NAFLD (defined by increased levels of liver enzymes and the absence of other causes of

chronic liver disease) doubled. Visceral obesity, type 2 diabetes, insulin resistance, and hypertension were independent predictors of NAFLD.²⁴

However, defining NAFLD based on increases in liver enzyme levels underestimates the true prevalence of NAFLD. NAFLD is identified more accurately using radiologic analyses such as ultrasound. In North America, 24.13% of the general population is estimated to have NAFLD based on diagnosis by ultrasound or other radiologic modality (Figure 1).²⁵ In an analysis of the National Veterans Administration databases, the prevalence NAFLD also was found to have increased, from 6.3% in 2003 to 17.6% in 2011.²⁶ In parallel to these reports on the increasing prevalence of NAFLD, the number of research articles published on NAFLD also has increased, indicating greater emphasis on NAFLD as an important liver disease captured by peer-reviewed literature.²⁷

Obesity is the main risk factor for NAFLD. The increasing incidence of obesity appears to be the main contributor to the increase in the prevalence of NAFLD. Globally, the prevalence of being overweight and obese, defined as a body mass index (BMI) greater than 25, has increased from 28% in 1980 to 39% in 2013.²⁸ In parallel, the global prevalence of NAFLD is estimated to be 25.2%.²⁵ Furthermore, the prevalence of NAFLD is higher in specific populations, such as in people with components of the metabolic syndrome. In fact, the prevalence of NAFLD in patients with type 2 diabetes has been estimated to be 65%, with 7.1% of the patients having advanced fibrosis, detected by magnetic resonance elastography.²⁹ If these data are extrapolated to the US population, approximately 15.5 million diabetic

Abbreviations used in this paper: AAH, acute alcoholic hepatitis; ALD, alcoholic fatty liver disease; BMI, body mass index; HCC, hepatocellular carcinoma; HRQL, health-related quality of life; NAFLD, nonalcoholic fatty liver disease; NHANES, National Health and Nutrition Examination Survey; SEER, Surveillance, Epidemiology, and End Results.

Most current article

© 2016 by the AGA Institute
0016-5085/\$36.00

<http://dx.doi.org/10.1053/j.gastro.2016.03.005>

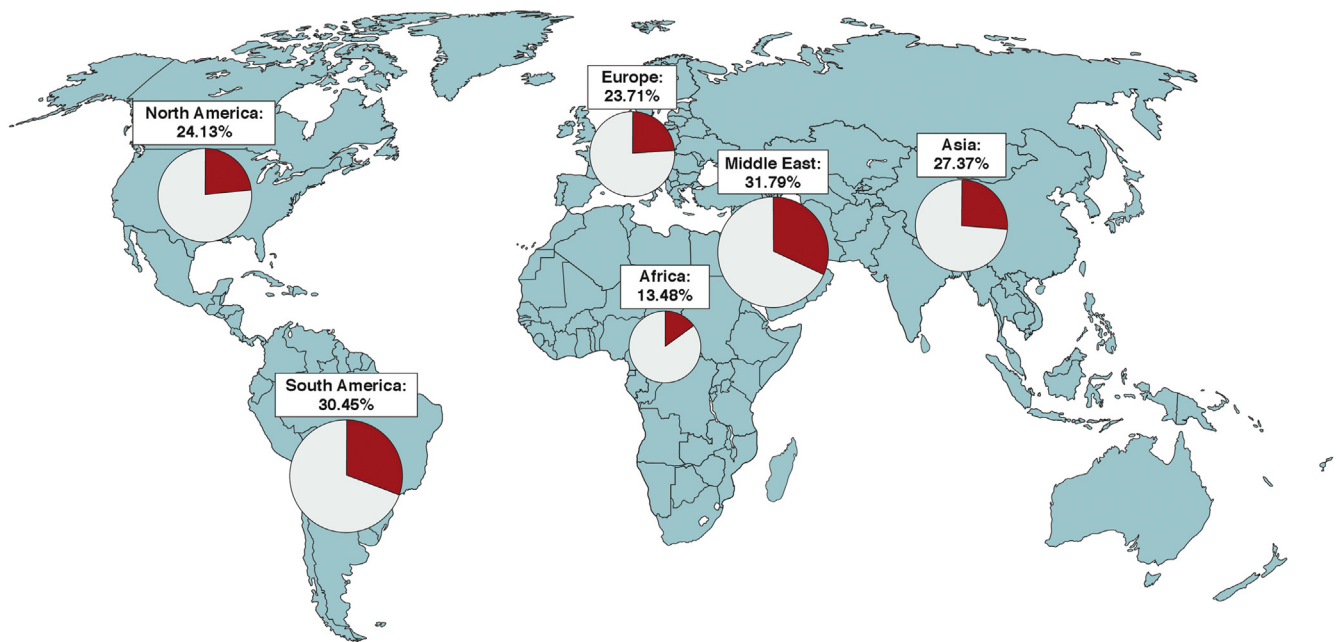


Figure 1. Global prevalence of NAFLD.

individuals in the United States have NAFLD and approximately 1.8 million of these patients may have significant fibrosis related to NAFLD.²⁹ Because the prevalence of diabetes is increasing, these rates probably underestimate the true burden of NAFLD and NAFLD-related fibrosis in diabetics. Nevertheless, these data are alarming and indicate that the burden of NAFLD is substantial and growing, especially among individuals with diabetes.

Finally, the prevalence of NAFLD in individuals who undergo weight-reduction surgery is very high. In one study, 93% of patients undergoing weight-reduction surgery had NAFLD and 26% had histologic NASH, with 9% having advanced fibrosis.³⁰ Similarly, the prevalence of hepatic steatosis in another study of morbidly obese patients was reported to be approximately 80%.³¹ In contrast, 2 prospective studies of morbidly obese patients undergoing weight reduction surgery have reported that the prevalence of NASH is approximately 8% and 11%.^{32,33} Despite the differences in their study designs, these data suggest that approximately 80%–90% of morbidly obese patients have NAFLD and 8%–26% have underlying NASH.

Although most patients with NAFLD are overweight or obese, some are lean. The prevalence of NAFLD in lean individuals in the United States has been estimated to be approximately 7%.³⁴ The presence of NAFLD in lean individuals has been associated independently with younger age, female sex, and less likelihood of having insulin resistance and hypercholesterolemia.³⁴ Lean NAFLD has been reported predominantly from Asian countries. In a study from China, the prevalence of NAFLD in individuals with a BMI less than 25 was reported to be 7.27%. In this study, of the 5562 subjects who did not have NAFLD at baseline, over 5 years of follow-up evaluation there were 494 subjects (8.88%) who developed NAFLD.³⁵ The risk factors associated with the development of NAFLD in this study were similar to those reported from North America and Europe.³²

In contrast to prevalence data, data on the incidence of NAFLD are relatively scarce. Nevertheless, the incidence rates for NAFLD reported from Asia (China and Japan) and Israel have been estimated to be approximately 52.34 and 28.01 per 1000 person-years, respectively.²⁵ Given the growing rates of obesity and metabolic syndrome worldwide, the global burden of NAFLD likely will increase.

ALD

ALD is caused by the ingestion of excessive alcohol: more than 14 drinks per week for men and 7 drinks per week for women. One alcoholic drink (1 oz liquor, 5 oz wine, or 12 oz of beer) has approximately 12–14 g of alcohol.^{36,37}

The prevalence of ALD in the US population is estimated to be 2.0%–2.5%.³⁶ Data from the NHANES indicate that the prevalence of ALD increased from 1.38% during the period from 1988 to 1994 to 2.21% during the period from 1999 to 2004, but then remained stable, at 2.05%, during the period from 2005 to 2008.²⁴

Although general population data can provide information about the overall prevalence of ALD, only biopsy studies of selected populations can provide data on the specific subtypes of ALD. A large study from France reported the histopathology findings from 1604 biopsy specimens collected from patients admitted with ALD from 1982 through 1995. The results of liver biopsy data showed that 12% of these patients had normal liver histology, 25% had steatosis without fibrosis, 18% had fibrosis with or without steatosis, 7% had acute alcoholic hepatitis (AAH) without cirrhosis, 15% had cirrhosis without AAH, and 11% had cirrhosis with AAH. The risk factors associated with the presence of alcoholic cirrhosis were age, sex, duration of drinking, total amount of alcohol in the prior 5 years, and excess weight (BMI \geq 25 for women and BMI \geq 27 for

Download English Version:

<https://daneshyari.com/en/article/3291956>

Download Persian Version:

<https://daneshyari.com/article/3291956>

[Daneshyari.com](https://daneshyari.com)