

BACKGROUND MEDIA INFORMATION

Non-alcoholic fatty liver disease and non-alcoholic steatohepatitis: A major public health problem

Non-alcoholic fatty liver disease (NAFLD) is a condition in which fat builds up in the liver. In some cases this accumulation of fat can cause inflammation of the liver and eventually lead to permanent scarring (cirrhosis), which can seriously impair the liver's ability to function.

Unlike alcoholic fatty liver disease (alcoholic steatohepatitis), NAFLD can occur in people who drink no alcohol or drink only in moderation. NAFLD is, however, closely associated with obesity and diabetes. The consequences of the condition can be grave and NAFLD represents a major global public health problem.¹

Diagnosing NAFLD

A healthy liver contains very little or no fat. NAFLD occurs in people who do not drink a significant amount of alcohol (20 grams per day for men and 10 grams per day for women) and who do not have a viral infection or other specific cause of liver disease.² NAFLD is diagnosed when accumulation of fat in the organ exceeds 5% of hepatocytes (the cells that make up the majority of the liver).

NAFLD is sometimes called a 'silent disease' as even in its late stages it may have no symptoms and may only be diagnosed after liver function tests have revealed an abnormality.

The stages of NAFLD: From simple fatty liver to irreversible cirrhosis

NAFLD can progress from steatosis, to non-alcoholic steatohepatitis (NASH), to fibrosis and then to cirrhosis.² In its early stages, NAFLD can be treated through diet and lifestyle changes, such as losing weight.

Cirrhosis, the most severe stage of NAFLD, usually only occurs after years of liver inflammation and can lead to a range of complications, including liver failure and hepatocellular carcinoma (HCC). Between 10 and 30% of patients with NAFLD have NASH that can progress to cirrhosis.³ HCC develops in 70 to 90% of all patients with chronic liver disease.⁴

Risk factors

NAFLD is usually seen in people who are overweight or obese. Those with insulin resistance, type 2 diabetes, high blood pressure or high blood lipids (cholesterol and triglycerides) are also more likely to develop NAFLD. Two large European studies reported NAFLD prevalence rates of between approximately 43 and 70% in adults with type 2 diabetes.²

Obesity and diabetes are on the rise around the world. The World Health Organisation estimates that in 2014 more than 1.9 billion adults (18 years and older) were overweight and, of these, over 600 million were obese.⁵ Furthermore, in 2013, 42 million children under the age of five were overweight or obese.⁵ Obesity has more than doubled since 1980 and is expected to continue to rise.⁵ Meanwhile, the total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030.⁶ This has led to a concern that countries such as the USA could be facing an epidemic of NAFLD.

Obesity triggers inflammatory pathways in the brain and adipose tissue, resulting in the disruption of insulin levels.⁷ Over time, fats accumulate in the liver (as well as muscles and blood vessels), which exacerbates systemic insulin resistance.⁷

Guidelines on NAFLD and NASH published in 2012 by the World Gastroenterology Organisation suggest that the prevalence of NAFLD has doubled over the last 20 years, making NAFLD and NASH the leading cause of liver disease in Western countries.¹ NAFLD affects more than 20% of the population worldwide.⁸

- The prevalence of NAFLD in Europe is estimated to be between 26 and 33% of the general population²
- The estimated prevalence of NAFLD in the Middle East is between 20 and 30%¹
- Up to 25% of Americans may have NAFLD⁹
- In Europe, prevalence of NASH is estimated to be up to 5%¹⁰
- Approximately six million people in the USA are estimated to have NASH¹

The heavy toll of NAFLD

NAFLD increases the risk of overall mortality and of mortality related to cardiovascular disease and liver disease.² Effective treatment options in NAFLD include; weight reduction, dietary changes and physical activity.

NAFLD may also place significant strain on healthcare services. A study carried out in Germany found that annual overall self-reported healthcare costs were significantly higher for individuals with evidence of NAFLD. For example, when controlling comorbid conditions, patients with NAFLD and liver damage (indicated by high levels of aminotransferase) had 26% higher overall healthcare costs at five year follow-up.²

References

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