

## Editorial

# Nonalcoholic Fatty Liver Disease: How can we Struggle against the Possible Major Reason for Liver Transplantation in the Near Future?

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## ABBREVIATIONS

NAFLD: Nonalcoholic Fatty Liver Disease; NASH: Nonalcoholic Steatohepatitis; WHO: World Health Organization

The deposition of fat in the hepatic tissue has been recognized long ago, in the early 1900s. In 1907, Hartley made the first accurate description of the fatty liver [1]. First regarded as a consequence of alcohol intake, Ludwig has observed its occurrence among non alcohol consumers in 1980, along with some of its potential harmful effects, especially the nonalcoholic steatohepatitis (NASH). Since then, the knowledge about nonalcoholic fatty liver disease (NAFLD) increased substantially, but up until now, the exact pathways which lead to its variable histological aspects remain largely unknown. There are many underlying features directly linked to its onset, such as insulin resistance, abnormal liver uptake of fatty acids, chronic inflammation, and lipotoxicity. All of these abnormalities are also strongly associated with overweight, obesity, diabetes, hyperlipidemia, and metabolic syndrome [2].

Lately, the world has witnessed an explosion in the prevalence of overweight and obesity. World Health Organization (WHO) reported an estimated prevalence of overweight of more than 1.4 billion adults, of whom over 200 million men and nearly 300 million women were obese. First, it was a concern restricted to developed countries, but recently it has begun a public health issue in middle and even low-income countries. In fact, 65% of the global population lives in countries where overweight and obesity kills more people than underweight [3].

Along with the increasing prevalence of overweight and obesity, NAFLD and its wide spectrum of disease have been observed in a disturbingly rising frequency, as it could be expected. The worldwide estimated prevalence of NAFLD ranges from 6.3% to 33% in the general population. The estimated prevalence of NASH is much lower, and ranges from 3% to 5% [4]. Among

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obese adults, several reports have shown prevalence of fibrosis ranging from 6% to 33.3% and of steatohepatitis from 26% to 55%. In a recent cross-sectional study of liver biopsies carried out during bariatric surgeries, our group detected that only 10% of the subjects had no liver abnormalities related to NAFLD, and the majority presented severe forms [5]. As the disease is asymptomatic and is often incidentally discovered by routine laboratory investigations, its prevalence may be much higher [4]. It is now the third isolated reason for liver transplantation in the United States, accounting for approximately 10% of all cases [6]. Moreover, various studies have revealed that when diagnostic criteria are appropriately used, 2/3 of all cases characterized as cryptogenic cirrhosis are in fact cases of NAFLD/NASH [7]. Some researchers even predict that, by 2030, NAFLD might turn into the major reason for living transplantation in the U.S [6].

But what can be done to prevent this challenging ominous future?

Obesity surgery has led to great improvements in both liver histology and biochemical examinations [8]. However, no matter how great metabolic improvements it may bring, there is a greater obstacle: the epidemiologic barrier. Compared to the presumable prevalence of obesity, the number of surgeries performed should never fill the need for intervention. In fact, only about 350,000 bariatric surgeries are yearly performed worldwide nowadays [9]. Grossly, it represents nearly 0.07% of all supposedly obese population. Also concerning, there is a large number of subjects which do not fulfill the current indications for surgery, but have harmful abnormalities related to fat and glucose metabolism which can lead to and aggravate liver disease.

This way, the only possible effective action which can be carried out toward this whole chain is prevention. Incentive for practice of physical activity and healthy low fat/low calorie diets should be largely included in educational and community

programs as early as possible, since obesity has become a pediatric issue too [10]. Continuing education for healthy professionals about liver disease, its methods of detection, prevention, and treatment must be mandatory. Screening of populations at risk, which could provide early diagnosis and staging of NAFLD, should also be carried out, through simple laboratory examinations and ultrasound scan. The use of NAFLD fibrosis score, a simple and noninvasive method of detecting and estimating advanced liver disease could be used in large scale, even by community physicians, as it enrolls only routine biochemical studies [11]. Early detection of metabolic syndrome and diabetes, as well as prompt management of these illnesses would prevent evolution to liver disease and its ominous severe forms.

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