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Opinions

Simultaneous Metabolic and Alcohol-associated Fatty Liver Disease (SMAFLD) and Simultaneous Metabolic and Alcohol-associated Steatohepatitis (SMASH)

Nizar H. Senussi, MD*, Denis M. McCarthy, MD, PhD, FACP, AGAF

Division of Gastroenterology and Hepatology, Department of Medicine, University of New Mexico School of Medicine, Albuquerque, NM, 87131, United States.

Seventy percent of adults in the United States are either overweight or obese [1]. Obesity is associated with a metabolic syndrome of co-related risk factors, including insulin resistance, atherogenic dyslipidemia, and hypertension [2]. Patients with metabolic syndrome are at increased risk of developing the nonalcoholic fatty liver disease (NAFLD) or nonalcoholic steatohepatitis (NASH) [3]. NAFLD is one of the leading worldwide causes of liver disease, affecting up to 25% of the global population [4]. In Western countries, the prevalence in the general population is estimated to be up to 30 percent [5]. NASH, a progressive subtype with hepatic neuroinflammatory manifestations in the setting of steatosis, is estimated to be prevalent in 3-6 percent of the population and carries an increased risk of developing advanced fibrosis, cirrhosis, cardiovascular complications and hepatocellular carcinoma [6]. Direct medical costs attributed to NAFLD and its sequalae are estimated to be $1.3 billion annually and are projected to continue rising [7].

Alcohol is an equally important and common cause of chronic liver disease. Among adults in the United States, alcohol use disorder has an estimated lifetime prevalence of 18% and is strongly associated with alcoholic liver disease (ALD). This latter comprises a spectrum of diseases ranging from alcoholic fatty liver disease (AFLD) to more advanced forms, including alcohol associated hepatitis (AH), alcohol associated steatohepatitis (ASH), alcohol associated cirrhosis (as well as its inherent complications). The prevalence of AFLD among adults in the United States is ~ 4.7 percent [8].

Fatty liver disease and steatohepatitis are similarly to occur in individuals who also have both metabolic syndrome and an excessive alcohol intake, suggesting concurrent causes of the liver condition and a distinct phenotype of disease with a prevalence of 0.84 percent, corresponding to an estimated 1.24 million Americans being affected [9]. When compared to those with NAFLD alone, patients who had concurrent alcohol use had higher aminotransferases, lower platelet counts and more advanced fibrosis [9]. The nomenclature initially suggested describing this subset of the population was an acronym of both alcoholic and NAFLD (BAFLD) [9]. We agree with recent papers suggesting that the current terminology using the acronym NAFLD does not accurately reflect the pathogenesis or current knowledge associated with the disease state and that metabolic (dysfunction) associated fatty liver disease (MAFLD) should be used [10,11].

Here we propose a more descriptive and more accurate nomenclature that better describes the overlapping spectrum of NAFLD and AFLD, namely simultaneous metabolic and alcohol associated fatty liver disease (SMAFLD) (Fig. 1). Similarly, we recommend a name that recognizes the concurrent presence of both NASH (or MASH) and ASH as simultaneous metabolic, and alcohol associated steatohepatitis (SMASH) (Fig. 1).

We submit that these acronyms could stimulate clinicians to consider that in many cases, several distinct important processes concur to cause a fatty liver and addressing only one of them is unlikely to arrest or cure the patient's disease. Awareness of the complex nature of the various factors involved, with appropriate classification, should bring more clarity and precision to both clinical diagnosis and research classification and enhance the nation's health.

Abbreviations: NAFLD, nonalcoholic liver disease; NASH, nonalcoholic steatohepatitis; ALD, alcohol associated liver disease; AH, alcohol-associated hepatitis; AFLD, alcohol-associated fatty liver disease; ASH, alcohol-associated steatohepatitis; MAFLD, metabolic (dysfunction) associated fatty liver disease; SMAFLD, simultaneous metabolic and alcohol-associated fatty liver disease; SMASH, simultaneous metabolic- and alcohol-associated steatohepatitis

* Address correspondence to: Nizar H. Senussi, M.D., University of New Mexico, MSC10 5550, Albuquerque, NM, 87131-1466; Phone: (773) 654-0464

E-mail address: nsenussi@salud.unm.edu (N.H. Senussi).

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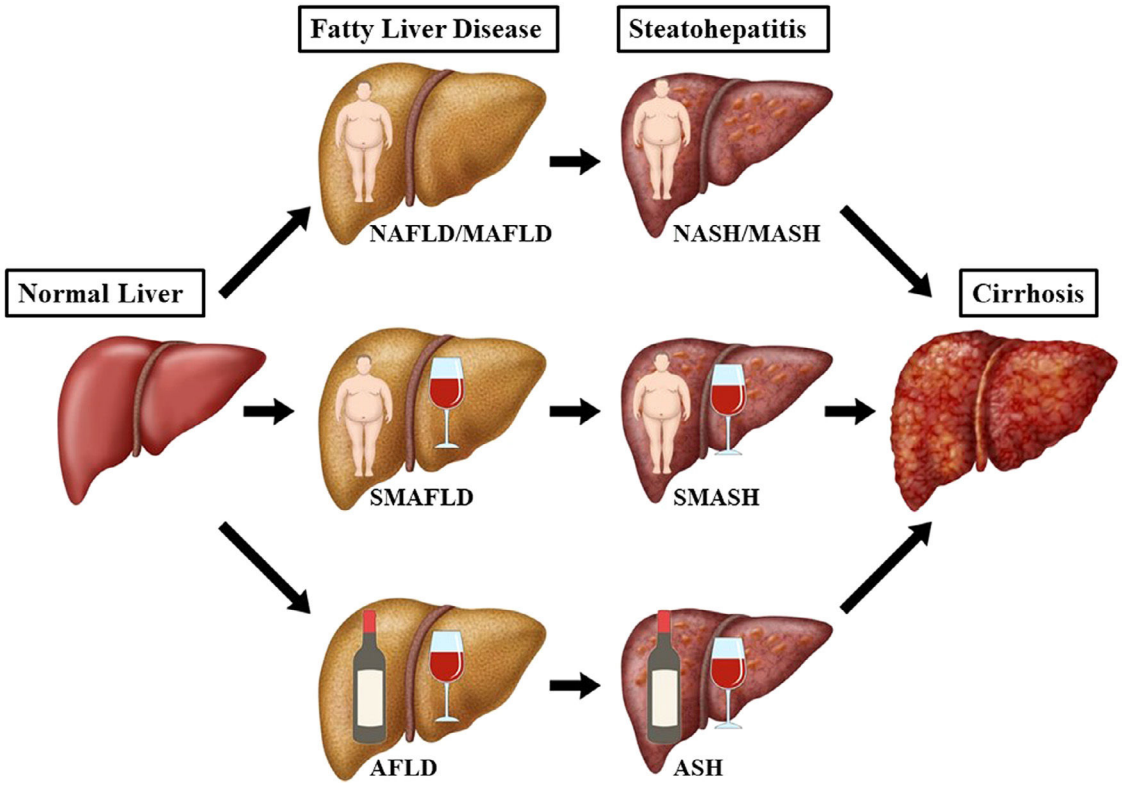

Figure. Interaction of various factors in the etiology of fatty liver diseases and steatohepatitis.Abbreviations: NAFLD, nonalcoholic liver disease; NASH, nonalcoholic steatohepatitis; AFLD, alcohol associated fatty liver disease; ASH, alcohol associated steatohepatitis; MAFLD, metabolic (dysfunction) associated fatty liver disease; MASH, metabolic (dysfunction) associated fatty liver disease; SMAFLD, simultaneous metabolic and alcohol associated fatty liver disease; SMASH, simultaneous metabolic and alcohol associated steatohepatitis.

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