

Managing the Silent Epidemic of Nonalcoholic Fatty Liver Disease

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For many years, viral hepatitis and particularly hepatitis C have been the bread and butter for clinicians dealing with chronic liver diseases. Over the past few years the Veterans Health Administration (VHA) has been incredibly successful in identifying, treating, and curing a significant proportion of veterans of this viral disease. However, nonalcoholic fatty liver disease (NAFLD) has become the most common cause of chronic liver disease worldwide and will soon overtake hepatitis C virus as the leading cause of liver transplantation. NAFLD covers a disease spectrum ranging from nonalcoholic fatty liver (NAFL) progressing to nonalcoholic steatohepatitis (NASH) to liver cirrhosis and liver cancer or liver failure. In the absence of effective treatment approaches, it is not surprising that NAFLD will create financial challenges for the VHA and US health care budgets. It is thus appropriate that *Federal Practitioner* has decided to publish a series of articles highlighting NAFLD and how it affects millions of Americans on its way to reaching quietly epidemic proportions within the VHA and across the globe.

Although NAFLD seems to have quietly and quickly reached epidemic proportions, its obscurity should not be surprising. NAFLD does not cause obvious symptoms in most patients, there is no simple test available for diagnosis of NASH, and disease-specific medications have not yet been approved for treatment. Primary care providers (PCPs) are the first point of medical contact for a majority of patients with or at risk for NAFLD; shockingly, NAFLD is greatly underrecognized, resulting in delayed diagnoses, which impact both health-related and quality-of-life outcomes in these patients. As emphasized in “Identifying and Treating Nonalcoholic Fatty Liver Disease” by Hunt and colleagues (page 20), PCPs should focus on 4 main aspects re-

lated to NAFLD: (1) Does my patient have NAFL? (2) Is my patient at risk for NASH and its ensuing manifestations? (3) Do simple noninvasive serum liver fibrosis markers suggest presence of clinically relevant liver fibrosis? and (4) Does my patient benefit from being referred to a specialist. The PCP is integral in optimally managing medical comorbidities and metabolic abnormalities as well as coordinating intense lifestyle and exercise interventions.

“Health and Economic Burden of Nonalcoholic Fatty Liver Disease in the United States and Its Impact on Veterans” by Shetty and Syn (page 14) discusses the epidemiology and economic burden of NAFLD in the US and how it will affect the health of veterans. Chronic liver disease is a major cause of mortality, morbidity, and health care resource utilization worldwide. Over the past 3 decades, NAFLD has gone from obscure liver diseases to the most common cause of chronic liver disease affecting 25% of the world’s population. Patients with NAFL who have advanced to NASH have an increased risk of liver-specific death. NASH is among the top etiologies for hepatocellular cancer and the fastest growing indication for liver transplantation, projected to overtake hepatitis C virus as the leading cause of liver transplantation. Most disturbing though is the fact that patients with NASH are the least likely to be surveyed for hepatocellular cancer development and the most likely to die while awaiting liver transplantation. Recent modeling estimates a 178% increase in liver deaths related to NASH by 2030.

The clinical burden of all stages of NAFLD is related to its prevalence, incidence, and progressiveness and has to be coupled with its tremendous economic burden based on inpatient, outpatient, professional services, emergency department, and pharmacy costs. It is thus not surprising that we are heading toward a serious health

care crisis in the next few decades with the cost of managing NAFLD complications alone approaching an estimated 10-year economic burden of nearly \$1 trillion.

The third article by Glass and colleagues (In press) puts the spectrum of NAFLD in the context of a disrupted systemic metabolic environment related to overnutrition alongside reduced physical activity. It is not surprising that type 2 diabetes mellitus (T2DM), obesity, and cardiovascular disease are frequent comorbidities present in a high proportion of patients with NAFLD. The prevalence of NAFLD among people with T2DM exceeds 60%. Importantly, convincing evidence has accumulated supporting the concept that interactions between these metabolic syndrome components and NAFLD are complex and bidirectional. Evidence from cross-sectional and longitudinal studies favors the presence of NAFLD and its severity preceding and/or promoting the development of metabolic comorbidities such as T2DM. Concomitantly, the presence of T2DM seems to accelerate the clinical course of NAFLD and is a predictor of advanced liver fibrosis and mortality. Compared with diseases that have a single etiology, such as viral hepatitis, NAFLD is a very complex disease with multiple interacting metabolic pathways that operate in an individual, leading to the clinical manifestation. Clearly, our present understanding of NAFLD/NASH as a single conglomerate disease is overly simplistic, and further study is warranted.

NAFLD and its variations comprise an increasing number and proportion of referral to hepatologists or providers with experience treating patients with chronic liver disease for the management of advanced disease stages; similarly, PCPs face the challenge to manage early stages of NAFLD. Given the magnitude of the problem of NAFLD, it is imperative that dedicated control efforts at the population level must intensify. As is emphasized in the fourth article of this series (In press), Puri and Fuchs call for a replacement of the traditional health care model of office visits with individual specialist work-

ing in silos. To overcome the narrow focus of a subspecialty outpatient clinic, time constraints, and gaps in NAFLD awareness, a patient-centered multidisciplinary approach to the treatment and coordination of care for the medically complex NAFLD patients is needed. The VHA is the largest integrated health care system in the US and is well positioned to implement an organizational strategy to facilitate standardized NAFLD care. The proposed model is centered on a broad assessment of the patient, involving the input from several disciplines; on completion of the assessment, a multidisciplinary team will formulate a personalized intervention plan.

The composition of this multidisciplinary team will vary based on expertise and resources available in each clinical setting. Once an intervention has been started, tracking and monitoring of intermediate and long-term functional outcomes will be helpful to modify the intervention in case outcomes are not achieved. Patient education, from the initial assessment until the intervention phase, plays a critical element to ensure that the patient has sufficient knowledge and skills to achieve the treatment goals set with their health care team.

Ultimately, integration of health care services will lead to better quality of care, increased patient satisfaction, and importantly to improved health care service utilization that will reduce health care resources and costs. Although such a proposal may seem ambitious, it is now the time for innovative thinking that will create sustainable solutions for the silent epidemic of NAFLD. Without advancing a proactive vision, the VA and the world will soon become saddled with an unmanageable economic and health care burden.

Author disclosures

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