NASH: Non-Alcoholic Steatohepatitis

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Early, asymptomatic Diagnosis made based on Late, general lifestyle changes such as diet, exercise, hepatic steatosis lays in excessive forms. alcohol Steatosis inflammation of the liver can occur. progresses, with NAFLD (Nseiri, Mograbi, & Ghali, diabetes mellitus), and hyperlipidemia nonthreatening to liver fibrosis, cirrhosis and even alcohol. Non NAFLD If symptoms of both types of NAFLD further testing related. NAFLD has become more fatty liver disease. NAFLD is rapidly becoming the most common liver disease worldwide. Twenty to thirty percent of the general population in Western countries has NAFLD (Gitti, Viale, Vila, & Andreu, 2015), about 2% to 5% of the general population has non-alcoholic steatohepatitis (NASH), which may progress to liver cirrhosis and hepatocellular carcinoma (HCV) (Nouri, Mograbi, & Ghali, 2014). In recent research the role of both adipose tissue and immune cells play a promising future of pharmacologic treatments in this disorder. Although NASH has become more common, its underlying cause is still not clear. The progression of Non-alcoholic fatty liver disease develops in a variety of forms, with non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH) as the end result. The disease is thought to progress to liver fibrosis, cirrhosis and even hepatocellular carcinoma (Mells et al., 2014). NAFLD is thought to be a chronic disease with progression over several years could lead to NASH. To date, there is no specific testing for NAFLD has been shown in addition to obesity, insulin resistance (type II diabetes mellitus), and hyperlipidemia all components of metabolic syndrome, is frequently associated with NAFLD (Nouri, Mograbi, & Ghali, 2014). If NAFLD goes undiagnosed and progresses, serious long-term inflammation of the liver can occur. Symptoms in a term used to describe any condition that allows fat to deposit within the intracellular spaces of an organ. This can lead to steatosis as a form, alcohol-related and non- alcohol-related. The disposition of hepatic steatosis in excess alcohol consumption versus little to no alcohol consumption.

Vonghia, Michielson, & Francois, 2015, *A key role in the development of insulin resistance is played by altered lipid metabolism that generates lipid transport, which in turn are able to activate different kinases, such as the mammalian target of rapamycin (mTOR), the insulin receptor (IR), and the Akt protein kinase (AKT), with the activation of these has a negative feedback on insulin signaling, contributing to resistance insulin and to a hyperinsulinemic state that further accentuates the resistance to insulin, hepatic lipid accumulation and disease progression.*

The “second hit” developed in this hypothesis is related to the abundance of oxidative stress found in the liver with NAFLD, improper clearance of pro-oxidative species manifest as reactive oxidative stress (ROS), Pro-oxidative stress is known to interfere with nucleic acid, protein, and cell membrane function (Vonghia et al., 2013). More importantly the role of ROS, Targ, Green, & Hoshom (2014), these species can initiate lipid peroxidation by targeting polyunsaturated fatty acids (FAs), resulting in the formation of highly reactive aldehyde products, such as 4-hydroxy-2-nonenal (4-HNE) and malondialdehyde (MDA). These reactive lipid derivatives have the potential to amplify oxidative stress by a cascade of events from ROS into the extracellular space thus causing tissue damage. (p. 181).

Over the past several years, the incidence of NASH has been on a steady rise. The rise of detected cases is directly related to the increase incidence of obesity. NASH is rapidly becoming the most common liver disease worldwide. Twenty to thirty percent of the general population in Western countries has NAFLD (Gitti, Viale, Vila, & Andreu, 2015), about 2% to 5% of the general population has non-alcoholic steatohepatitis (NASH), which may progress to liver cirrhosis and hepatocellular carcinoma (HCV) (Nouri, Mograbi, & Ghali, 2014). In recent research the role of both adipose tissue and immune cells play a promising future of pharmacologic treatments in this disorder.

Nurse practitioners have the ability to reach the general population, and teach community members preventive methods in decreasing his/her risk for developing NASH. An important part of health care today is screening and surveillance by way of patient education. Nurse practitioners are at the forefront of prevention and promoting healthy lifestyle changes. There is not one specific test to diagnosis a patient with NASH. Through a history and review of associated health risk must be assessed. Whom patients are obese with insulin resistance (type II diabetes), high cholesterol (triglycerides), and metabolic syndrome are at risk for developing NASH. If risk factors are identified additional testing such as blood test including liver function test, abdominal ultrasound, CT scan, and liver biopsy my be indicated for a definitive diagnosis. When further evaluation shows no apparent reason for liver disease (such as medications, viral hepatitis, or excess use of alcohol) and when x-rays or imaging studies of the liver show fat, NASH is suspected. NASH is almost always a chronic condition and associated with obesity, and type 2 diabetes. Currently no specific therapies for NASH exist. Prevention and management consist of decrease in alcohol consumption, diet, weight loss and exercise programs. Improved glycemic control, along with weight management has shown marked improvements in aminotransferase levels (Perashov, 2013). In addition to improved liver function, tight glucose control will decrease the effects of hyperlipidemia, and hypertension.

**References**: 


House, M. J., Gan, E. K., Adams, L. A., Ayonrinde, O. T., Bangert, M. C., & Tatarro, E. A. (2013). Inpatient Costs associated with NASH: A History and review of associated health risk must be assessed. Of these patients who are obese with insulin resistance (type II diabetes), high cholesterol (triglycerides), and metabolic syndrome are at risk for developing NASH. If risk factors are identified additional testing such as blood test including liver function test, abdominal ultrasound, CT scan, and liver biopsy my be indicated for a definitive diagnosis. When further evaluation shows no apparent reason for liver disease (such as medications, viral hepatitis, or excess use of alcohol) and when x-rays or imaging studies of the liver show fat, NASH is suspected. NASH is almost always a chronic condition and associated with obesity, and type 2 diabetes. Currently no specific therapies for NASH exist. Prevention and management consist of decrease in alcohol consumption, diet, weight loss and exercise programs. Improved glycemic control, along with weight management has shown marked improvements in aminotransferase levels (Perashov, 2013). In addition to improved liver function, tight glucose control will decrease the effects of hyperlipidemia, and hypertension.

**Conclusion**: NASH affects a considerable number of the general population and is closely associated with metabolic syndrome. Although simple fatty liver disease is seen in about one-third of the population, it is a relatively benign disease, but is associated with an increased mortality rate (House et al., 2013). Of these individuals NASH seems to occur at a frequency of 3% of the US population but may be found in more than 25% of obese persons (House et al., 2013). Due to the consequences of the disease in a manner of prevention and screening for associated risk factors should be followed. Ongoing research and large clinical control trials are being investigated to provide healthcare professionals with new strategies to prevent and treat these complications. Finally, studies on the multifaceted pathogenesis of NASH may not only improve our understanding of the disease, but also may lead to innovative therapeutic strategies to treat this condition. Prevention is key to reducing the harmful outcomes of NASH to patients.