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NASH: Non-Alcoholic Steatohepatitis

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NASH: Non-Alcoholic Steatohepatitis

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Non-alcoholic fatty liver disease (NAFLD) is a chronic liver disease which refers to the presence of hepatic steatosis (fat accumulation) without significant intake of alcohol. Non-alcoholic fatty liver disease develops in a variety of forms, including non-alcoholic steatohepatitis (NASH), which progresses to liver fibrosis, cirrhosis, and even hepatocellular carcinoma (Michielsen et al., 2014).

NAFLD is thought to be the result of a lifetime progression over several years; thus, more than 80% of patients with NASH have been shown in addition to obesity, insulin resistance (type II diabetes mellitus), and hyperlipidemia all common components of metabolic syndrome, is frequency associated with NAFLD (Naout, Moghaddam, & Ghali, 2012). If NAFLD goes undiagnosed and progresses, steatohepatitis a serious inflammation of the liver can occur. Steatohepatitis is a term used to describe any condition that allows fat to deposit within the interstitial spaces of an organ, often in the liver. This includes forms, alcohol-related and non-alcoholic related. The donation of hepatic steatosis in excess alcohol consumption versus little to no alcohol consumption.

Signs & Symptoms
The symptoms of both types of liver disease can be similar for each are very different. In NASH treatment consist of focus on other health related issues such as diet, exercise, and weight control. In NAFLD the treatment is focused on lifestyle changes such as diet, exercise, and weight control.

NASH Pathogenesis

• Insulin resistance / hepatic insulin resistance
• Resistance of insulin
• Resistance to insulin
• Resistance to insulin
• Resistance to insulin
• Resistance to insulin
• Resistance to insulin
• Resistance to insulin

Vonghia, Michielsen, & Francois (2013). A key role in the development of insulin resistance is played by altered lipoprotein metabolism that generates lipid intermediates, which in turn are able to activate different kinases, such as the mammalian target of rapamycin (mTOR), the inhibitor of cell kinase (IKK), the -kinase (JNK) and the novel protein kinase C (fAPPC). The activation of these kinases has a negative feedback on proximal insulin signaling, contributing to resistance insulin and to a hyperinsulinemic state that further causes the release of inflammatory, hepatic insulin resistance and lipid accumulation disease progression.

The “second hit” developed in this hypothesis is related to the abundance of oxidative stress found in the liver with NAFLD. Insufficient clearance of pro-oxidant species manifest as reactive oxidative stress (ROS). Pre-oxidative stress is known to interfere with cellular acid, protein, and cell membrane function (Vonghia et al., 2013). More importantly the role of ROS, Targr, Green, & Hudson (2014) these species can initiate lipid peroxidation by targeting polyunsaturated fatty acids (PUFAs), resulting in the formation of highly reactive aldehydes products, such as hydroxyl-2-monenal (HNE) and malondialdehyde (MDA). These reactive lipid derivates have the potential to amplify intracellular damage by a cascade of events that progress from ROS into the intracellular space thus causing tissue damage. (p.181)

Implications for Nursing Care

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 selection. Nurse practitioners are at the forefront of prevention and promoting healthy lifestyle changes.

There is not one specific test for NASH. A through E: Liver International, 34, 180–190. doi: http://dx.doi.org/10.1111/liv.12523

References


Naout, Moghaddam, & Ghali, 2012). The progression of NAFLD to NASH is thought to involve the diabetogenic effect of insulin resistance as “first hit” that leads to hepatic steatosis and is followed by a series of metabolic changes in the liver. (Vonghia et al., 2013). As the progression of NAFLD to NASH, which may progress to liver cirrhosis and hepatocellular carcinoma (HCC) (Nusori et al., 2012). In recent research the role of both ischemic and non-ischemic may play a prominent future of pharmacologic treatments in this disorder.

Pathological Significance


| Normal liver tissue | Normal liver tissue | Normal liver tissue |

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 is affected by NASH. NASH is a condition that allows fat to deposit within the interstitial spaces of an organ, often in the liver. This includes forms, alcohol-related and non-alcoholic related. The donation of hepatic steatosis in excess alcohol consumption versus little to no alcohol consumption.