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Liver disease (also called hepatic disease) is a type of damage to or disease of the liver.[1] Whenever the course of the problem lasts long, chronic liver disease ensues.

Types of Chronic liver diseases

Alcohol induced liver disease

Chronic alcoholic beverage ingestion and abuse can be a cause of chronic liver disease. Alcoholic beverages contain ethanol which is primarily metabolized by the liver. Once the liver processes ethanol, the byproducts of metabolism have the ability to damage the liver. There are three primary types of liver injury caused by alcohol.

Alcoholic fatty liver disease can be caused by chronic excessive alcohol intake. The alcohol causes excess fat to accumulate in the liver, sometimes causing chronic inflammation in the liver that, over time, can damage the liver.

Alcoholic hepatitis is usually an acute inflammation of the liver caused by high levels of alcohol intake. This can cause people to sometimes have jaundice, fevers, and right upper abdominal pain, and when severe enough can require hospitalization.

Alcoholic cirrhosis is the final stage of alcohol induced liver injury whereby normal liver tissue becomes replaced with scarring.

Alcoholic liver disease is preventable and treatable. Due to variations in how alcohol is metabolized, women are more susceptible to alcohol induced liver injury than men. Typical treatment for alcohol induced liver disease is abstinence from alcohol. Liver injury can sometimes be at least partially reversed with cessation of alcohol.

Hepatitis B

Hepatitis B is a blood borne viral infection that affects the liver. Globally, it affects more than 200 million people. In the U.S. there are approximately 2 million people infected with hepatitis B. Once exposed to the virus, acute hepatitis B infection will develop. In some people, the body’s immune system can completely fight off the acute viral infection but in others, the immune system is unable to kill all the virus and then the acute infection

transitions into a chronic infection. Depending on the age that one is acutely infected, there is a variable risk of the infection progressing from an acute, self-resolving infection into a chronic infection that could potentially require treatment. If the infection is acquired at birth, approximately 90% of people will develop a chronic infection, whereas if acquired as an adult, less than 5% will develop a chronic infection.

Transmission of hepatitis B occurs through blood and body fluid exposure.

A history of intravenous or intranasal drug use. A single use at any point in one's lifetime can transmit the virus.

Blood transfusion

Pierced ears or body parts

Tattoos

Sexual transmission by someone infected with hepatitis B

Having been injured with any bloody object (needle stick, motor vehicle accident, etc.)

Transmission at the time of birth ("vertical transmission")

Symptoms of hepatitis B may vary widely. People can be without any symptoms or have symptoms of fatigue, nausea, vomiting, jaundice, rashes, joint pains, or even lead to liver failure and death. Hepatitis B is a treatable infection, most commonly using oral medications taken on a daily basis. Most infants nowadays are vaccinated for hepatitis B at birth to prevent any risk of infection throughout their lifetime. Vaccines became available in the late 1980's to early 1990's. For those who have yet to be vaccinated, the vaccine series can easily be given to adults as well. We are happy to offer this vaccination series in our offices.

Treatment for most people with hepatitis B is focused on oral anti-viral medications. There are several potent anti-viral medications available that can suppress the virus with the goal of bringing virus levels to undetectable levels in the blood.

Hepatitis C

Hepatitis C, a virus that infects the liver, was discovered in 1989. Currently approximately 2.5 to 4 million people in the U.S. are infected with chronic hepatitis C with almost 20,000 new cases annually. It is currently the leading reason for liver transplantation in the U.S. Once the body is exposed to hepatitis C, it unfortunately does not easily fight off infection. Approximately 75 to 80% of people who are exposed to the virus will develop a chronic infection with hepatitis C unless they are specifically treated to eradicate the virus from the liver and bloodstream. Of the people who develop a chronic infection, approximately 20-30% will develop cirrhosis if they are not treated.

Hepatitis C can be acquired through a number of routes:

A history of intravenous or intranasal drug use. A single use at any point in one's lifetime can transmit the virus.

Blood transfusion

Pierced ears or body parts

Tattoos

Sexual transmission by someone infected with hepatitis B

Having been injured with any bloody object (needle stick, motor vehicle accident, etc.)

Transmission at the time of birth ("vertical transmission")

The diagnosis of chronic hepatitis C is made through blood tests that can easily be ordered through your physician. Recent guidelines published in 2014 from the U.S. Preventive Services Task

Force (USPSTF) and the Centers for Disease Control (CDC) have recommended that all people born between 1945-1965 have a one-time blood test to screen for hepatitis C. In addition, all people with the risk factors listed above should undergo testing. This can be accomplished by a single blood test.

Symptoms of chronic hepatitis C are nonspecific and can occur in many other medical conditions and circumstances. Some symptoms include fatigue, nausea/vomiting, loss of appetite, jaundice, rash, and muscle/joint pains.

As previously mentioned, once one develops a chronic infection with hepatitis C, the viral infection will continue to injure the liver unless it is treated. Over the past year, there have been remarkable and exciting advances in the treatment of hepatitis C. Current treatment regimens have dramatically fewer side effects, shorter treatment courses, and cure rates as high as 95-99% for some people.

Fatty liver disease

Fatty liver disease is comprised of two primary subtypes - alcoholic fatty liver disease and non-alcoholic fatty liver disease. Alcoholic fatty liver disease as discussed in the section on alcoholic liver diseases is due to the accumulation of fat in the liver as a result of chronic alcohol intake. The second subtype, non-alcoholic fatty liver disease (NAFLD) results in the accumulation of fat in the liver in the absence of significant alcohol intake (less than 2 drinks per day).

NAFLD is further divided into simple steatosis (steatosis is the medical term for fat) and steatohepatitis. In simple steatosis , also called non-alcoholic fatty liver (NAFL), the fat that accumulates in the liver does not cause any chronic damage or inflammation in the liver. NAFL affects between 10-45% of adults in the United States.

In contrast, some people with NAFLD have a more serious condition called non-alcoholic steatohepatitis (NASH) which is characterized by the fact that the fat that accumulates in the liver is associated with inflammation, elevated liver tests, and sometimes scarring. It is estimated that approximately 2-5% of adults in the United States may be affected by NASH and that in up to 10-15% of people affected with NASH, that scarring can potentially progress to cirrhosis of the liver. Given the increasing prevalence of obesity in the U.S., more and more people are at risk of developing NAFL/ NASH.

Patients who have a history of metabolic syndrome or obesity, diabetes, high blood pressure, and high cholesterol are at higher risk of developing both NAFL and NASH. Metabolic syndrome is defined as having any 3 of the following: central obesity, high triglycerides, low high-density lipoprotein (HDL), high low-density lipoprotein (LDL), high blood pressure, or insulin resistance. In addition, a minority of patients who have NAFLD do not have obesity and have a normal BMI.

The diagnosis of NAFLD is usually made by taking a detailed history and exam, blood tests to exclude other underlying chronic liver diseases, and sometimes an ultrasound of the liver. Less commonly, a liver biopsy is obtained to either establish a diagnosis of NAFLD or to assess the degree of scarring in the liver tissue.

Treatment of NAFLD is primarily geared towards lifestyle management. At this time, there are no specific pharmacological treatments that are available for the treatment of this condition. Studies show that lifestyle management including diet, weight loss, and exercise with a reduction weight of ~10% of your body weight can improvement NAFLD. Management of blood sugar levels and cholesterol are also important interventions.

Autoimmune liver disease

Autoimmune liver diseases are chronic autoimmune medical conditions whereby one's immune system erroneously begins to attack the liver. Typically, our immune systems are designed to attack things that are "foreign" such as bacteria or viruses or parasites, and not attack ourselves. In autoimmune diseases, the immune system attacks our own bodies. There are two primary types of autoimmune diseases of the liver – Autoimmune Hepatitis (AIH) and Primary Biliary Cirrhosis (PBC). In AIH, the immune system attacks the liver cells and if untreated, can cause inflammation, scarring, and potentially cirrhosis. In PBC, the immune system attacks the bile ducts within the liver and similarly, if untreated, can eventually lead to cirrhosis.

If you have a history of other autoimmune diseases (thyroid disease, diabetes, other rheumatologic diseases, etc.) you may be at higher risk of having autoimmune liver disease. Women appear to be affected at a high rate than men. Symptoms of autoimmune liver disease may include fatigue, jaundice (when your skin of the white part of the eyes turn yellow), joint pains, itching.

There are effective medical treatments for autoimmune liver diseases. While these conditions are not curable, long term treatment with oral medications can help control and reduce injury to the liver.

Metabolic and inherited liver diseases

The two most common metabolic and inherited liver diseases are Hereditary Hemochromatosis and Wilsons' Disease. Both of these conditions are associated with deposition of metals into the liver. Over time, the metal infiltrates into the liver and causes injury to the liver.

Hereditary Hemochromatosis is a genetically inheritable condition in which our body is unable to appropriately regulate the amount of iron in our bodies. There are certain genes and proteins that regulate transport of iron throughout our bodies and are also responsible for excreting excess iron. In hemochromatosis, these mechanisms are not functioning appropriately and can result in excess accumulation of iron in the liver and in other organs throughout the body. This accumulation of iron within the liver can cause liver injury over time, potentially leading to cirrhosis.

In Wilson's Disease there is an abnormal deposition of copper in the liver, brain and eyes. It is due to a genetic abnormality affecting a copper transporting protein which leads to

over accumulation of copper in the liver. This can result in liver injury, manifested by abnormal liver function test, acute hepatitis, or acute liver failure.