

Cirrhosis

The liver removes or neutralizes poisons from the blood, produces immune agents to control infection, and removes germs and bacteria from the blood. It makes proteins that regulate blood clotting and produces bile to help absorb fats and fat-soluble vitamins.

In cirrhosis of the liver, scar tissue replaces normal, healthy tissue, blocking the flow of blood through the organ and preventing it from working as it should. Cirrhosis is the twelfth leading cause of death by disease, killing about 26,000 in the US each year. Cirrhosis is the end result after necrosis of the hepatocytes, with destruction of the normal lobular structure by fibrous septa and regenerative nodules of hepatocytes. The clinical picture includes liver failure and signs of portal hypertension such as esophageal varicose veins and ascites. The terminal stage is hepatic coma. Many people with cirrhosis are asymptomatic and live relatively normal lives.

Causes

Cirrhosis has many causes. In the United States, chronic alcoholism and hepatitis C are the most common ones. Hepatitis C is now the leading cause.

1. **Alcoholic liver disease.** Alcoholic cirrhosis usually develops after more than a decade of heavy drinking. The amount of alcohol that can injure the liver varies greatly from person to person.
2. **Chronic hepatitis C.** Infection with this virus causes inflammation of and low grade damage to the liver that over several decades can lead to cirrhosis.
3. **Chronic hepatitis B and D.** The hepatitis B virus is probably the most common cause of cirrhosis worldwide, but it is less common in the United States and the Western world. Hepatitis B, like hepatitis C, causes liver inflammation and injury that over several decades can lead to cirrhosis. Hepatitis D is another virus that infects the liver, but only in people who already have hepatitis B.
4. **Autoimmune hepatitis.** This disease appears to be caused by the immune system attacking the liver and causing inflammation, damage, and eventually scarring and cirrhosis.
5. **Inherited diseases.**
6. **Nonalcoholic steatohepatitis (NASH).** In NASH, fat builds up in the liver and eventually causes scar tissue. This type of hepatitis appears to be associated with diabetes, protein malnutrition, obesity, coronary artery disease, and treatment with corticosteroid medications.

7. Drugs, toxins, and infections. Severe reactions to prescription drugs, prolonged exposure to environmental toxins, the parasitic infection schistosomiasis, and repeated bouts of heart failure with liver congestion can all lead to cirrhosis.

Symptoms:

exhaustion

fatigue

loss of appetite

nausea

weakness

weight loss

abdominal pain

spider-like blood vessels (spider angiomas) that develop on the skin

As the disease progresses, complications may develop. In some people, these may be the first signs of the disease.

Complications of Cirrhosis

Loss of liver function affects the body in many ways. Following are the common problems, or complications, caused by cirrhosis.

Edema and ascites. When the liver loses its ability to make the protein albumin, water accumulates in the legs (edema) and abdomen (ascites).

Bruising and bleeding. When the liver slows or stops production of the proteins needed for blood clotting, a person will bruise or bleed easily. The palms of the hands may be reddish and blotchy with palmar erythema.

Jaundice. Jaundice is a yellowing of the skin and eyes that occurs when the diseased liver does not absorb enough bilirubin.

Itching. Bile products deposited in the skin may cause intense itching.

Gallstones. If cirrhosis prevents bile from reaching the gallbladder, gallstones may develop.

Toxins in the blood or brain. A damaged liver cannot remove toxins from the blood, causing them to accumulate in the blood and eventually the brain. There, toxins can dull mental functioning and cause personality changes, coma, and even death. Signs of the buildup of toxins in the brain include neglect of personal appearance, unresponsiveness, forgetfulness, trouble concentrating, or changes in sleep habits.

Sensitivity to medication. Cirrhosis slows the liver's ability to filter medications from the

blood. Because the liver does not remove drugs from the blood at the usual rate, they act longer than expected and build up in the body. This causes a person to be more sensitive to medications and their side effects.

Portal hypertension. Normally, blood from the intestines and spleen is carried to the liver through the portal vein. But cirrhosis slows the normal flow of blood through the portal vein, which increases the pressure inside it. This condition is called portal hypertension.

Varices. When blood flow through the portal vein slows, blood from the intestines and spleen backs up into blood vessels in the stomach and esophagus. These blood vessels may become enlarged because they are not meant to carry this much blood. The enlarged blood vessels, called varices, have thin walls and carry high pressure, and thus are more likely to burst. If they do burst, the result is a serious bleeding problem in the upper stomach or esophagus that requires immediate medical attention.

Insulin resistance and type 2 diabetes. Cirrhosis causes resistance to insulin. This hormone, produced by the pancreas, enables blood glucose to be used as energy by the cells of the body. If you have insulin resistance, your muscle, fat, and liver cells do not use insulin properly. The pancreas tries to keep up with the demand for insulin by producing more. Eventually, the pancreas cannot keep up with the body's need for insulin, and type 2 diabetes develops as excess glucose builds up in the bloodstream.

Liver cancer. Hepatocellular carcinoma, a type of liver cancer commonly caused by cirrhosis, starts in the liver tissue itself. It has a high mortality rate.

Problems in other organs. Cirrhosis can cause immune system dysfunction, leading to infection. Fluid in the abdomen (ascites) may become infected with bacteria normally present in the intestines. Cirrhosis can also lead to impotence, kidney dysfunction and failure, and osteoporosis.

Treatment

Liver damage from cirrhosis cannot be reversed, but treatment can stop or delay further progression and reduce complications. Treatment depends on the cause of cirrhosis and any complications a person is experiencing. For example, cirrhosis caused by alcohol abuse is treated by abstaining from alcohol. Treatment for hepatitis-related cirrhosis involves medications used to treat the different types of hepatitis, such as interferon for viral hepatitis and corticosteroids for autoimmune hepatitis.