Cirrhosis of the liver

Summary

- Cirrhosis is a type of liver damage where healthy cells are replaced by scar tissue.
- Common causes include excessive drinking of alcohol, hepatitis B and C, and fatty liver caused by obesity and diabetes.
- Drinking alcohol if you already have another condition that causes liver damage can increase your risk of cirrhosis.
- Treatment aims to halt liver damage, manage the symptoms and reduce the risk of complications.

Cirrhosis is a type of liver damage where healthy cells are replaced by scar tissue. The liver is unable to perform its vital functions of metabolism, production of proteins, including blood clotting factors, and filtering of drugs and toxins.

Many people think that only drinking excessive amounts of alcohol causes liver cirrhosis, but there are a number of other ways that the liver can be damaged and lead to cirrhosis.

Depending on the cause, cirrhosis can develop over months or years. There is no cure. Treatment aims to halt liver damage, manage the symptoms and reduce the risk of complications, such as diabetes, osteoporosis (brittle bones), liver cancer and liver failure.

Symptoms of liver cirrhosis

Symptoms depend on the severity of the cirrhosis, but may include:
- appetite loss
- nausea
- weight loss
- general tiredness
- spidery red veins on the skin (spider angiomas)
- easily bruised skin
- yellowing of the skin and eyes (jaundice)
- reddened palms (palmar erythema)
- itchy skin
- hair loss
- dark coloured urine
- fluid retention in the abdomen and legs
- internal bleeding presenting as dark-coloured stools or vomiting blood
- hormone disruptions that could cause a range of problems, including testicular atrophy (shrinking) and impotence in males or amenorrhoea (no periods) in women
- cognitive problems such as memory loss, confusion or concentration difficulties.

Causes of liver cirrhosis

Two of the most common causes of cirrhosis of the liver are long-term excessive alcohol consumption and hepatitis.
C, but a number of other conditions also lead to liver damage and cirrhosis. Hepatitis B is an important cause of cirrhosis worldwide and increasingly among migrants from endemic areas in Asia, Africa, Pacific Island and Mediterranean countries.

**Alcoholic liver cirrhosis**

Excessive and chronic alcohol consumption is the most common cause of liver cirrhosis. Cirrhosis from drinking alcohol can develop over many years.

It is important to remember that the amount of alcohol that will damage the liver can vary from person to person. If a healthy woman drinks the same amount of alcohol as a healthy man, she has a higher risk of cirrhosis. Children are particularly susceptible to damage from alcohol. Some people also have a genetic predisposition to alcohol-related liver injury.

People with a medical condition, especially those affecting the liver, may have a higher risk of damage from alcohol. If you already have hepatitis B or C, or cirrhosis of the liver (from any cause), you are at risk of making your condition worse if you drink alcohol.

**Liver cirrhosis and hepatitis**

Hepatitis is a general term meaning inflammation of the liver. Viral hepatitis refers to hepatitis caused by a virus like the hepatitis B or C virus. Chronic hepatitis C is a common cause of liver cirrhosis. Hepatitis B can also cause cirrhosis. With either of these conditions, you increase your risk of developing cirrhosis if you drink alcohol.

**Liver cirrhosis and fatty liver**

Non-alcoholic fatty liver disease (NAFLD) is a condition where fat accumulates in the liver. It now affects about 20 per cent of Australians. It is becoming more common in children who are overweight or obese. Fatty liver does not usually cause pain or nausea.

NAFLD is associated with conditions such as:

- obesity – 20 per cent of people with obesity have fatty liver disease
- high blood cholesterol and triglycerides
- type 2 diabetes.

NAFLD can lead to inflammation of the liver and the formation of scar tissue, a condition called non-alcoholic steatohepatitis (NASH), which can then lead to cirrhosis of the liver. NASH usually occurs in people who are obese, have diabetes or have high blood cholesterol and triglycerides, so controlling these conditions is recommended.

People with NASH have a higher risk of liver damage if they have hepatitis C. The effect of alcohol is debated, but it is probably not recommended if there is significant liver scarring present.

**Liver cirrhosis from inherited conditions**

Some inherited conditions damage the liver and this leads to the scarring that can contribute to cirrhosis. These conditions include:

- haemochromatosis – the body accumulates iron, which can damage many organs, including the liver
- Wilson’s disease – the tissues of the body accumulate copper
- galactosaemia – the body is unable to process galactose (a sugar) so it accumulates in the blood and can result in liver damage
- cystic fibrosis – mainly affects the lungs, but can also cause scarring of the liver
- alpha-1 antitrypsin deficiency – can affect breathing, but can also affect liver function and lead to cirrhosis and liver failure.

**Other causes of liver cirrhosis**

A number of other medical conditions that result in liver damage can cause cirrhosis, including:

- some autoimmune diseases – cause immune cells to attack and damage the liver. The rare conditions that can cause liver cirrhosis include autoimmune hepatitis, primary biliary cirrhosis and primary sclerosing cholangitis (inflammation and scarring of the bile ducts).
- exposure to poisons – can damage the liver because one of the liver’s main roles is to remove toxins from the blood. Prolonged exposure to environmental toxins such as arsenic can damage the liver and lead to cirrhosis.
- schistosomiasis – a tropical disease caused by a parasitic worm called *Schistosoma*. The worm is passed to humans from snails, and the disease is also known as bilharziasis. Chronic schistosomiasis causes damage to internal organs including the liver
- certain medication (such as those used to manage heart arrhythmias) – in rare cases, may cause cirrhosis in susceptible people
- unknown conditions – cause cirrhosis in about one third of cases (called ‘cryptogenic cirrhosis’. Some of these are due to non-alcoholic fatty liver disease).

**Complications of liver cirrhosis**

Without medical treatment, cirrhosis of the liver can lead to a range of potentially life-threatening complications including:

- insulin resistance and type 2 diabetes – a poorly functioning liver stops the body from properly using insulin, the hormone that moves sugar from the blood into the cells
- osteoporosis (brittle bones) caused by changes to metabolism of calcium and vitamin D
- primary liver cancer – the most common type of cancer caused by cirrhosis is hepatocellular carcinoma
- liver failure – scar tissue can impair the functioning of normal liver tissue bleeding from blood vessels in the oesophagus or upper stomach (oesophageal varices)
- increased blood pressure in veins that take blood to the liver (portal hypertension)
- build-up of fluid within the abdominal cavity (ascites)
- infection of the fluid found within the abdominal cavity (spontaneous bacterial peritonitis)
- damage to the brain and nervous system caused by toxins that the liver has failed to remove (hepatic encephalopathy).

**Diagnosis of liver cirrhosis**

Tests used to diagnose liver cirrhosis may include:

- medical history
- physical examination
- blood tests, including liver function tests
- urine tests
- imaging studies, including ultrasound, computed tomography (CT scan) or magnetic resonance imaging (MRI)
- fibro-scan – also known as transient elastography, this test uses an ultrasound-based technique that can accurately and non-invasively detect liver cirrhosis. It may replace the need for liver biopsy in some cases. The test takes about ten minutes, is usually performed by a specialist hepatologist and causes no discomfort. It is less accurate in people with obesity issues unless specially designed XL probes are used.
- Liver biopsy, obtaining liver tissue for laboratory examination.

**Treatment of liver cirrhosis**

- Cirrhosis of the liver is incurable but, in some cases, treatment can help to reduce the likelihood that the
condition will become worse. Options include:

- treating the underlying cause of liver damage — for example, treating the underlying hepatitis (B or C) virus infection, removal of blood to lower iron levels in haemochromatosis
- making dietary and lifestyle changes — a nutritious low-fat diet, high-protein diet and exercise can help people to avoid malnutrition
- avoiding alcohol — alcohol damages the liver and harms remaining healthy tissue
- Taking certain medication — such as beta-blockers to reduce blood pressure and lower the risk of bleeding, diuretics to remove excess fluid
- avoiding certain medication that can make the symptoms worse — such as non-steroidal anti-inflammatory drugs (NSAIDs), opiates or sedatives
- having regular medical check-ups — including scans to check for liver cancer
- having regular endoscopic procedures to check whether there are varicose veins within the oesophagus or stomach
- having a liver transplant — an option that may be considered in severe cases.

**Where to get help**

- Your doctor
- Gastroenterologist
- Dietitian

**Things to remember**

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