



The Unfiltered Truth

The risks, symptoms and treatments for Liver Cancer

The liver is the largest internal organ in the body. It is located in the right upper corner of the abdomen under the rib cage. The liver has several functions. It collects and filters blood from the intestines and removes toxic wastes from the body. It also converts food into substances needed for life and growth and helps maintain proper sugar levels in the body.

Primary liver cancer is cancer that begins in the liver. It is known as hepatocellular carcinoma (HCC) or malignant hepatoma, and arises from liver cells. Another cancer that can begin in the liver is intrahepatic cholangiocarcinoma (IHCC). This arises from bile duct cells found in the liver. It is not commonly referred to as liver cancer.

Cancer can also spread or metastasize from the colon, lungs, breasts, pancreas or other parts of the body to the liver. This is not liver cancer. Instead, it is named after the organ from which it originated (eg. colorectal cancer liver metastasis).

Liver cancer is the fifth most common cancer in the world and is the second most frequent cause of cancer death. About three quarters of all cases of liver cancer in the world are found in East Asia. In Singapore, it is the fourth most common cancer among men and the third highest cause of cancer death in men. The annual incidence is 17.6 cases per 100,000 population.

RISK FACTORS FOR LIVER CANCER

Liver cancer in Singapore is predominantly found in Chinese males of older age groups and linked to chronic Hepatitis B infection. In general, the risk for liver cancer increases after 40 years of age and males have a 2-3 times higher risk than females. However, certain risk factors increase the risk of developing liver cancer. These are chronic Hepatitis B or Hepatitis C infection, heavy alcohol intake, non-alcoholic steatohepatitis (NASH) and exposure to Aflatoxin. All these factors result in the development of liver cirrhosis.

Liver cirrhosis is the result of repeated or continuous inflammation of the liver. The liver cells are damaged and replaced with scar tissue. It is the main risk factor for liver cancer and increases the risk of developing it by more than 40 times.

Chronic Hepatitis B infection is the main risk factor for liver cirrhosis and, in turn, liver cancer in Singapore. A person with chronic Hepatitis B infection has a 100-fold increased risk for liver cancer. It is the strongest risk factor for liver cancer in Asia accounting for about 70% of cases. It is spread from person to person through blood or sexual contact. The majority of cases are from mother-to-child vertical transmission during childbirth.

Chronic Hepatitis C infection is less common, accounting for 6.9% of liver cirrhosis cases in Singapore. Nevertheless it has a strong association with liver cancer with a 20-fold increased risk. Co-infection with Hepatitis B increases the risk further.

Heavy alcohol intake also leads to cirrhosis and, consequently, liver cancer. It is defined as consuming more than 21 units per week for men and more than 14 units per week for women. A glass of wine, a double shot of spirits or a pint of beer contains 2 units of alcohol. The risk of liver cancer increases with the amount of alcohol a person drinks.

NASH is part of the spectrum of non-alcoholic fatty liver disease (NAFLD) where excess fat builds up in the liver. NAFLD is closely linked to obesity, diabetes and high cholesterol, and is believed to be the manifestation of



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metabolic syndrome in the liver. When the excess fat causes liver inflammation, the condition is known as NASH. 10-25% of patients with NASH will go on to develop liver cirrhosis and be at risk of liver cancer.

Aflatoxin is a harmful substance made by a certain type of mould called *Aspergillus flavus*. It can form on peanuts, corn, rice, soybeans, wheats, and other nuts and grains. Exposure to Aflatoxin increases liver cancer risk by five fold.

REDUCING THE RISK OF LIVER CANCER

There are several ways one can reduce the risk of liver cancer. Hepatitis B vaccination protects against Hepatitis B infection and has been proven to reduce liver cancer rates. For those who already carry chronic Hepatitis B or C infection, treatment with antiviral medication against Hepatitis B or C can reduce inflammatory damage to the liver and lower the risk of progression to cirrhosis. They should also have regular medical check-ups so that liver cirrhosis or cancer can be detected early.

Dietary and lifestyle measures can be adopted to reduce liver cancer. Avoiding excess alcohol consumption is important in this aspect. As for NAFLD and NASH, one should take a healthy diet without excessive sugar and fat

to reduce the risk of developing obesity, diabetes and high cholesterol. In addition, regular exercise and weight loss are important.

SYMPTOMS AND TESTS FOR LIVER CANCER

Early liver cancer often does not cause symptoms. It is like a silent killer. This is because the liver is a large organ and can continue its functions even when part of it is damaged. When the liver cancer grows larger, then the patient may develop symptoms like pain or feeling a lump or heaviness in the upper abdomen. There may also be loss of appetite and weight, and bloating of the abdomen. Nausea and vomiting are other manifestations, as well as jaundice, which is yellowing of the skin and eyes.

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TREATMENT OF LIVER CANCER

There are several options for the treatment of liver cancer. These range from surgical approaches, in the form of liver resection or liver transplantation, to non-surgical approaches like local ablation, transarterial chemoembolization (TACE), selective internal radiation therapy (SIRT) and systemic therapy. Occasionally, a combination of treatments may be required to treat the liver cancer completely.

The choice of treatment depends on these factors:

The number, size and location of the cancerous tumours in the liver; whether the cancer has spread outside the liver; and how well the liver is functioning.

In addition, the general health of the patient plays a role as some treatments are more challenging on the body than others.

Surgical treatment for liver cancer offers the best chance of long-term survival and cure. It can be in the form of liver resection, where part of the liver with the cancerous tumour is removed, or liver transplantation where the whole liver is replaced. The feasibility of liver resection is determined by the amount of liver that will be left behind after the resection and its underlying function. Liver transplantation has the benefit of removing the underlying risk factor of cirrhosis as well but is limited by the availability of donor livers and the need for long-term immunosuppression.

Where a surgical approach is not feasible, non-surgical approaches can be deployed. However, these generally offer lower long-term survival rates. Local ablation is a treatment where the cancerous tumour is directly destroyed by extreme heat or cold. This is done by inserting a long needle or probe through the skin into the substance of the liver. It can be done under sedation and involves a short hospital stay. It is good for small tumours up to 3cm in size.

TACE involves injecting chemotherapy drugs straight into the part of the liver with cancerous tumours via its artery. This is combined with small particles that also block the flow of blood to that part of the liver. SIRT is a similar approach but instead of chemotherapy drugs, tiny radioactive spheres are injected instead.

Systemic therapy is for patients where the liver cancer has spread to other parts of the body. The options are targeted therapy, with Sorafenib or newer immunotherapy agents.

In summary, liver cancer is common and there are several risk factors for it. There are ways to protect against liver cirrhosis and liver cancer by reducing its risk factors. Those with risk factors should discuss with their doctors regarding the need for regular screening to detect liver cancer early. Several treatment options are available for liver cancer. **PRIME**



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