



# Primary Liver Cancer

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**Hepatocellular Cancer** is commonly called 'HCC' and is a 'primary' cancer of hepatocytes. Hepatocytes are the major cell type in the liver. HCC is sometimes called 'primary liver cancer'. HCC is very different from 'secondary liver cancer'. Secondary liver cancer is one that has started in a different organ, such as the bowel or breast, and has then spread to the liver.

## **The causes of HCC**

Over 80% of HCC occur in people that have chronic liver disease or cirrhosis. Chronic liver injury leads to inflammation and scarring of the liver as part of a healing process. Cirrhosis describes the combination of regenerating nodules of liver cells and a lot of scarring. In a disorganised scarred and injured liver, mistakes in cell repair are more likely to occur. This is how cancers start. The common risk factors for HCC are below:

- Worldwide, Hepatitis B and Hepatitis C are the commonest causes of HCC.
- In the UK, cirrhosis caused by alcohol is the commonest cause of HCC.
- In the UK, obesity causing cirrhosis is an increasingly common cause of HCC.
- Autoimmune diseases such as chronic active hepatitis and Primary Biliary Cirrhosis can also cause cirrhosis and liver cancer.
- Diabetes and smoking are additional risks, especially those who are obese or who drink excessive alcohol.

## **The Symptoms of HCC**

Symptoms usually reflect a disruption of normal liver function, either as a result of the cancer damaging the liver cells, or from its location close to or pressing on blood vessels or ducts in the liver. Small liver cancers do not usually cause any symptoms at all, which is why they are difficult to detect. Unfortunately, symptoms often occur only with later stages of disease. They may include pain in the upper abdomen or around the right side, unexplained weight loss and jaundice. Loss of appetite and increasing tiredness are also common.

## **The Diagnosis of HCC**

HCC may be discovered on routine scans performed every 6-12 months in people known to have cirrhosis.

Sometimes HCC is discovered incidentally by feeling lumps in the abdomen or on scans organised for another reason. To confirm HCC, doctors use a combination of blood tests, ultrasound (USS), computer tomography (CT) and magnetic resonance (MRI) scans. In the blood, a protein called alpha fetoprotein or AFP may be raised in up to 50% of people with HCC. The scans look for lumps in the liver that have a rich blood supply and that are increasing in size. If there is any doubt about the diagnosis of HCC, it may be necessary to remove a small sample of liver tissue which can be examined under the microscope for cancer cells. This is called a liver biopsy and it is often performed under ultrasound control in order to be sure the correct bit of liver is sampled.

## **The Treatment of HCC**

If the diagnosis of cancer is confirmed, which treatment is best depends on a number of factors:

- The general health of the person with HCC
- The size and numbers of HCC
- Any spread of HCC outside the liver.
- The severity of any underlying liver cirrhosis.

For every person with HCC, each of these factors is very carefully considered by an expert team of liver physicians, surgeons, radiologists and cancer specialists to be sure that the best treatment is chosen. Some treatments are curative, while others are palliative. Palliative treatments may lengthen life, but do not completely remove or kill the cancer cells.

## **The treatment options include:**

**Surgery:** If the cancer is found early, it may be possible to remove the piece of liver with the tumour in it. This is called a liver resection. This is only possible if the liver is otherwise healthy or has an early stage of cirrhosis.

**Liver Transplant:** If the cancer is found early but the liver has advanced cirrhosis surgical resection can cause liver failure. In these cases, it is best to replace the whole liver. This is only possible if the person is otherwise fit and a suitable liver can be found soon enough.

**Ablation:** Small tumours can be destroyed by a process called 'ablation'. This involves placing a needle into the

tumour under ultrasound control and destroying it by heating (radio frequency waves passed into the tumour) or by injecting ethanol (a form of alcohol).

**Transarterial Chemoembolisation (TACE):** HCC often have a very rich blood supply all of their own. TACE involves placing a fine tube into the cancer artery and injecting chemotherapy followed by 'embolic particles' into the tumour. The particles block off the blood supply to the cancer. TACE can slow down the growth of HCC. It can be given to people with more advanced cancers, but only if their liver function is quite good.

**Radiation Treatment:** Radiation is often a good way to reduce the size of cancers, but can sometimes destroy healthy liver tissue and make things worse. Researchers are developing safer ways to deliver radiotherapy.

**Systemic Chemotherapy:** Courses of chemotherapies injected into peoples' veins are rarely helpful for HCC. It is sometimes considered if a person is fit enough and other treatments have failed, but is regarded as experimental. There are new drugs in development stages that may help people with HCC.

## **The outlook for those with HCC**

Successful removal by surgery or transplant is a cure, but is only an option for a small percentage of people.

Ablation techniques may also be curative for small cancers, but the HCC often recur. TACE can significantly improve survival in up to 50% of people fit enough to have it, and is sometimes very effective in combination with radiofrequency ablation.

Experimental therapies are promising and will likely prolong survival of people with HCC in the near future.

## **Key Points:**

- If you have cirrhosis, you are at an increased risk of developing HCC.
- If you have cirrhosis, some causes are hereditary or passed on by infection. There is usually no risk to your family, but check with your doctor.
- If you have cirrhosis, you may reduce your risk of HCC if you are not overweight, do not smoke, and have no diabetes or good diabetic control.
- If you have cirrhosis, you will have blood tests and scans every 6-12 months to try to identify HCC at

- an early stage.
- If you have cirrhosis, or risk factors for cirrhosis, and develop any of the signs or symptoms of HCC, tell your doctor immediately.
- Treatment options and prognosis are much better for HCC detected at an early stage, in fitter people, with good liver function.
- The most appropriate treatment for those with HCC will be carefully considered by a team of liver cancer specialists.
- Diagnostic methods as well as treatments for HCC are improving all the time.

Further information can be obtained from:

<http://www.livernorth.org.uk>

<http://www.britishlivertrust.org.uk>

<http://www.cancerresearchuk.org>

### **Acknowledgement:**

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