Patient information:



About liver tumours

Types of liver tumour can be divided into those that originate in the liver (primary liver cancer) and those that have spread from other parts of the body (secondary liver cancer or liver metastases). Knowing the type of cancer helps doctors to choose the right type of treatment.

Primary liver cancer

How common is primary liver cancer?

Primary liver cancer is rare in the UK, but increasing in incidence. There are currently around 4,000 new cases a year in the UK of primary liver cancer (63% women and 37% men).¹

What causes primary liver cancer?

Increasing age can be a factor with an average of 70% of cases in people aged 65 years and over.¹ Damage to the liver is believed to be one of the main causes, such as from cirrhosis (scaring of the liver tissue). Excessive alcohol consumption or some types of hepatitis infection can cause liver cirrhosis. Indeed, as rates of alcohol consumption and hepatitis infection have increased since the 1970s, so have rates of liver cancer. Obesity is also thought to be a cause due to a build up of fat in the liver cells, also known as non-alcoholic fatty liver disease.

What are the symptoms?

Symptoms often don't appear until the cancer is at a late stage and may then only include general effects such as weight loss, feeling sick, vomiting and tiredness. This is because the liver can still usually function quite well when part or even most of it is affected. As the cancer progresses symptoms can include:

- Yellowing of the skin and eyes (jaundice), often associated with itching
- Abdominal (tummy) pain and swelling

What types of primary liver cancer are there?

1. Hepatocellular carcinoma (HCC), also known as a hepatoma

This is the most common type of primary liver cancer that affects the cells of the liver called hepatocytes that make up the bulk of the liver. It's more common in men and occurs mostly in people with liver cirrhosis (scarring of the liver). Fibrolamellar hepatoma is a rare sub-type of this cancer.

2. Bile duct cancer (cholangiocarcinoma)

The bile ducts are narrow tubes that carry bile (a fluid made in the liver) to the bowel where it helps to digest fats. Bile duct cancer is rare, with around 1,000 new cases each year in the UK². It is more common in women than men.

3. Hepatoblastoma

A very rare liver cancer that is usually seen only in very young children.

4. Angiosarcoma

A very rare liver cancer that develops in the blood vessels of the liver.



5. Benign liver tumours

These are tumours that do not turn into cancer and unless they are causing symptoms, do not need to be removed.

Secondary liver cancer

How common is secondary liver cancer?

Secondary liver cancer is far more common than primary liver cancer in the UK. Most people in the UK diagnosed with tumours in their liver, will have secondary liver cancer.³

What causes secondary liver cancer?

This occurs when cancerous cells break-off from a tumour located somewhere else in the body and spread to the liver. These 'breakaway' cells are called metastases.

What are the symptoms?

The symptoms are similar to those seen in primary liver cancer. However, a diagnosis may be made before symptoms occur during tests for the original source of cancer.

What types are there?

Any cancer can spread to the liver. The most common cancers to spread to the liver are bowel cancer, breast cancer, neuroendocrine cancer, stomach cancer and lung cancer.

Liver cancer that has spread from the bowel

Bowel cancer is the second biggest cancer killer and the fourth most common cancer in the UK.⁴ Over 40,000 people are diagnosed with bowel cancer every year.⁵ It can spread to other parts of the body, but typically spreads to the liver first. About a quarter of people who are diagnosed with bowel cancer will already have cancer that has spread to the liver. A further 25-30% of patients will go onto develop liver cancer.⁶



Patient information:

Diagnosis





Liver tumours can be diagnosed using a combination of tests. They will often show up on an ultrasound scan, but full assessment requires a CT scan and/or MRI scan. If the results from blood tests and CT or MRI scans are not obvious, a biopsy may be required to confirm the diagnosis, where a small piece of tissue from the affected area is removed and assessed. The different types of tests that may be used are described in the following sections.

Physical exam and history

Your doctor will examine your body to check your general health, including any signs of disease (such as lumps or weight loss) or anything else that seems unusual. The doctor will also take a history of your health including past illnesses (especially hepatitis) and will ask about any symptoms you are experiencing.

Liver function tests (LFT)

These blood tests show if the liver is working properly. It is important to realise that normal liver function can be affected by many conditions other than cancer. These tests are also useful to see how well the liver works before, during and after treatment.

Serum tumour marker test

These are blood tests that look for certain substances called tumour markers. If these are present in higher than usual levels then it can mean that there are active cancer cells in the body.

AFP (Alpha-fetoprotein) in the blood may be a sign of primary liver cancer. Other cancers and some non-cancerous conditions, such as cirrhosis (scarring of the liver) and hepatitis (liver inflammation), may also increase AFP levels.

CEA (carcinoembryonic antigen) is very high in patients with liver cancer that has spread from the bowel. It may also be high in people with other cancers of the gut, lung, and breast as well as in some non-cancerous diseases and healthy smokers.

Scans Ultrasound scan

This test uses sound waves that bounce off your internal organs and tissues to create a picture of a part of the body. The scan will show any abnormal growths in your liver. You may be asked not to eat or drink for at least four hours before the scan. The scan takes only a few minutes and is painless. You usually sit or lie near the ultrasound machine. A clear gel is spread on your skin over the area that will be scanned. The gel helps to transmit the sound waves. You can usually go home as soon as the scan is over.

CT (computerised tomography) scan

A CT scan takes many x-rays to create a very detailed

three-dimensional picture of the inside of the body. This type of scan may be used to look for signs of cancer. A CT scan can give a very accurate picture of the location and size of a tumour. It can also show how close major body organs are to the area that needs to be treated or operated on. A dye called a contrast medium may be injected partway through the scan to help show up more detail of your liver and the tumours. A CT scanning machine is large and "doughnut" shaped. You lie on a bed that can slide backwards and forwards through the hole of the machine. The pictures are taken as you move through the machine. An abdominal (tummy) CT scan takes less

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than 10 minutes and is painless. You can usually go home as soon as the scan is over. CT is also called computed axial tomography (CAT).

MRI (magnetic resonance imaging) scan

An MRI scan is similar to a CT scan but uses magnetic fields instead of x-rays to build up a picture of inside the body. An MRI scan will be clearer than a CT scan for some types of tissues. Your doctor will know the best scan for you. The MRI scanner is a large cylinder with a bed that can move backwards and forwards through the cylinder. You will need to remove all metal belongings before going into the room because the scanner is a very powerful magnet. You may have an injection of a dye called a contrast medium just before the scan. This dye helps to show body tissues and organs more clearly on the scan. MRI is painless, but the machine can be noisy. You may be given earplugs or headphones to wear. The test is likely to take less than half an hour, but may be up to an hour. You are usually able to go home as soon as the scan is over. MRI is also called nuclear magnetic resonance imaging (NMRI).





Diagnosis

PET (positron emission tomography) scan

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A PET scan uses an injected mildly radioactive sugar that shows up where cancer cells are active in the body. A CT scan is then performed in a machine called a PET-CT to show where these radioactive `cancer hot-spots' are located.

Biopsy

One way to diagnose cancer is to take a sample of the tumour. This is called a biopsy. The sample is viewed under a microscope. It can show whether the cancer is primary or secondary liver cancer.

You may have a biopsy at the same time as an ultrasound or CT scan, usually through a needle. The skin is numbed with a local anaesthetic and the needle is inserted into the liver through the skin.

A biopsy is usually only done if other tests including blood tests and CT or MRI scan do not have obvious results. A biopsy carries a small risk of bleeding and that the tumour will spread along the needle track, so is not always thought to be necessary by doctors.

Following a liver biopsy, you may have to stay in hospital for

a few hours or overnight. This is because the liver has a very rich blood supply and there is a risk of bleeding afterwards.

Laparoscopy

This involves a small operation that allows a doctor access to the abdomen (tummy) using only a small incision in the skin. This is sometimes referred to as keyhole surgery. A thin fibreoptic telescope with a camera attached (laparoscope) is passed through the hole into the liver where the liver can be examined and a small piece of tissue removed and examined under a microscope (biopsy). A small cut in the abdomen will be made under anaesthetic so the laparoscope can be inserted into the liver. A few stitches will be required afterwards and you may have to stay in hospital for a day or so.

Liver angiogram

This allows doctors to look at the blood supply to the liver and how the tumour may be affecting it. A fine tube is inserted into an artery in your groin and a dye is injected through the tube. The dye circulates around your blood vessels and is shown up using an x-ray.

Treatment

A team of specialists in the hospital called the multidisciplinary team will work together to recommend the best treatment options for you and your circumstances. This team can include:

- Cancer specialists
- Liver specialists
- Surgeons
- Nurses
- Psychologists
- Dieticians
- Physiotherapists
- Occupational therapists
- Counsellors

It is important to remember that the final decision will always be yours and that the team is there to help you make the choice that is right for you.

Treatment for liver cancer depends on the stage the condition is at. For the one in ten people with liver cancer that are diagnosed at an early stage, it may be possible to treat using one of the methods below:

- Resection surgically removing the cancer
- Liver transplant replacing the liver
- Ablation destroying cancer cells directly through heat (e.g. radiofrequency ablation or microwave ablation), cold (cryotherapy) or chemicals (ethanol injections)



In most people, liver cancer is diagnosed at a much more advanced stage when a cure is not usually possible. As a result, only one in five people live for a least a year after being diagnosed with primary liver cancer with only one in 20 people living for at least five years. Chemotherapy, radiotherapy and drugs called "biological agents" can be used at this stage to slow progression, relieve symptoms and prolong life.⁷ At a very advanced stage, the focus is on relieving pain and discomfort as it is can be too late to slow down the spread of the cancer.

Patient information:



Diagnosis

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