Treatment for liver cancer

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Your treatment will depend on whether you have primary liver cancer or secondary cancer in the liver; the size and spread of the cancer; and whether any other disease, such as cirrhosis, affects your liver.

Your doctor will also consider your age and general health as well as the options available at your hospital.

Primary liver cancer
Surgery - including a transplant - is used where possible for primary liver cancer but it isn't always an option. The most common treatments are tumour ablation using heat (radiofrequency ablation) and chemotherapy delivered directly into the cancer, known as transarterial chemoembolisation (TACE).

Secondary cancer in the liver
The main treatments for secondary cancer in the liver are chemotherapy or a combination of surgery and chemotherapy.

Surgery

Surgery for liver cancer is called a liver resection. It removes the part of the liver that contains the cancer. Usually only part of the liver is removed but occasionally the whole liver can be replaced in a transplant.

Only a small number of people who are diagnosed with primary liver cancer are suitable for surgery. This depends on the size, number and position of the tumours, how much of the liver is affected and whether cirrhosis is present. Operating on patients with cirrhosis is complicated because the liver may not function well afterwards. Some people with a small hepatocellular carcinoma may be considered for a transplant. This depends on their age and health, and the availability of a donor.

For those people diagnosed with secondary cancer in the liver surgery may be possible if there is enough healthy liver and the cancer hasn’t spread to other parts of the body where it can’t be removed (such as the bones). Some people need surgery for both the secondary cancer in the liver and the primary cancer. These operations may be done separately or at the same time.
**Partial hepatectomy**

Surgery to remove part of the liver is called a partial hepatectomy.

How much of the liver is removed depends on your circumstances. In some cases the surgeons will remove one side of your liver. In other cases they will only need to cut out a small section (segmentectomy).

The gall bladder is also taken out during a partial hepatectomy as it is attached to the liver. Occasionally part of the diaphragm – located above the liver – may be removed.

The liver can repair itself easily if it is not damaged. It will start to re-grow quickly, even if up to three-quarters of it is removed. It will usually grow back to normal size within a few months.

**Two-stage surgery (two-stage hepatectomy)**

People with tumours in both sides of the liver may have two operations, with the surgery done in two stages. After the tumours are removed from one side of the liver, the patient is given time to recover and the liver time to re-grow. Sometimes the first partial hepatectomy is combined with tumour ablation or removal of the primary tumour.

Before the second operation the size of the liver will be checked. If enough of the liver has regrown the tumours in the second side will be removed in another partial hepatectomy. These operations occur about two months apart.

**Laparoscopic liver surgery**

If tumours are small and near the surface of the liver the surgeon may do a laparoscopy to remove or destroy (ablate) the tumour. Your surgeon will make small cuts in your abdomen and use a camera to view your organs. While recovery is faster after this type of surgery you will still be in hospital for at least one night.

**Tumour ablation**

Tumour ablation is treatment that destroys a tumour without removing it from the body. Ablation works best when there are only one or two small tumours (less than three centimetres in size) but surgery isn’t possible. It is used most commonly for primary liver cancer and rarely for secondary cancer in the liver.

The most common ablation treatments use radio waves or microwaves to heat and destroy cancer cells. This can be done with a needle inserted through the skin (percutaneously) or with a surgical cut. Less common types of tumour ablation include alcohol injection and cryotherapy.

**Percutaneous ablation**

The procedure is done in the x-ray department or operating theatre while you are under local or general anaesthetic. It takes one to three hours. A CT or ultrasound scan is used to guide a fine needle through the skin and into the tumour. Radio waves or microwaves are then passed through the needle and into the tumour to destroy it.

**Ablation with surgery**

If the tumours are close to the surface of the liver you may have an operation to avoid damage to the diaphragm or nearby organs. A cut is made in the skin to access the liver and probes are inserted to do the ablation.
Chemotherapy

Chemotherapy is the use of drugs to kill, shrink or slow the growth of tumours. Depending on the type of cancer you have you will have chemotherapy that either spreads throughout your body (systemically) or goes directly into the tumour (locally). If given systemically you may have intravenous chemotherapy (through a drip) or tablets over weeks or months. If given locally this is called transarterial chemoembolisation (TACE).

Systemic chemotherapy

Primary liver cancer

Systemic chemotherapy is not used in primary liver cancer unless it has spread. In this case it is used to reduce pain and discomfort.

Chemotherapy may also be given following other treatment, such as cryotherapy or surgery, to get rid of any remaining cancer cells. This is called adjuvant chemotherapy.

Systemic chemotherapy can cause side effects because the drugs circulate through the whole body and affect normal, healthy cells. These side effects are usually temporary.

Secondary liver cancer

Systemic chemotherapy is used by itself or in conjunction with surgery for secondary cancer in the liver. If surgery is not possible, chemotherapy can help slow down cancer growth and reduce pain. Occasionally the chemotherapy is able to shrink a secondary cancer enough so that it can be operated on later.

Side effects

The side effects of systemic chemotherapy vary according to the drugs used. They can include:

- nausea and loss of appetite
- tiredness
- hair loss and skin changes
- tingling or numbness in fingers and toes
- mouth sores
- increased risk of developing infections.

After treatment most side effects gradually go away.

Transarterial chemoembolisation (TACE)

Chemoembolisation is a way of delivering chemotherapy directly into a primary cancer; it is rarely used with secondary liver cancer. By targeting the tumour directly, stronger drugs can be used without causing many of the side effects of systemic chemotherapy. Usually treatment is given only once or once every few months. It is done in the x-ray department of a hospital.

Whether or not you have chemotherapy depends on factors such as your overall health, liver function and if you have advanced cirrhosis.

TACE involves injecting chemotherapy drugs through a thin tube (catheter) that has been inserted into the hepatic artery. Tiny plastic beads or soft gelatine sponges are then placed in the smaller arteries that lead to the tumour. This blocks the arteries, keeping the chemotherapy in the tumour and starving the cancer of oxygen.
Before the treatment you will be given a local anaesthetic and possibly medication to help you relax. Afterwards you will need to remain lying down for about four hours. Depending on your recovery you may also need to stay in hospital overnight or for a few days.

Side effects

Following chemoembolisation it is common to develop a fever but this usually passes quickly. Other side effects such as pain are less common but sometimes more severe. You can be given medication to help control any side effects. Always talk to your doctor if you have any concerns.

Radiotherapy

External beam radiation therapy

External beam radiation therapy focuses radiation, delivered from outside the body, on the cancer. This can sometimes be used to shrink liver tumours or to relieve symptoms such as pain but it is not used as often as other local treatments such as ablation or embolisation.

Although liver cancer cells are sensitive to radiation, this treatment can’t be used at very high doses because normal liver tissue is also easily damaged by radiation.

Selective internal radiation therapy

Selective internal radiation therapy (SIRT) is a type of treatment that targets liver tumours directly with high doses of internal radiation placed in tiny radioactive pellets. SIRT is used for both primary and secondary cancers in the liver when the tumours can’t be removed with surgery. Typically there may be many small tumours spread throughout the liver.

Before treatment

If SIRT is an option, you will have a number of tests, including an angiogram and a simulation of the treatment. An angiogram shows up the blood vessels in the liver and helps to map where the radioactive pellets need to go.

The tests take about 90 minutes and you will be observed for three to four hours afterwards. If the results are good you will have treatment about a week later.

During treatment

For the treatment, you will need another angiogram. Afterwards, the tiny radioactive pellets, which are known as SIR-Spheres®, are inserted through a catheter leading from your groin to your liver. The procedure takes about 60 minutes and you will be monitored closely for three to four hours before being taken to a general ward where you will recover overnight.

Side effects can include flu-like symptoms, nausea, pain and fever. These can be treated with medication, and you usually can go home within 24 hours.

SIRT is not available at all hospitals and in most states you will need to fund the treatment yourself if you don’t have private health insurance. Talk to your doctor about this option and what is involved.

Other treatments

Alcohol injection

Alcohol injection is a procedure that injects pure alcohol directly into a tumour to destroy the cancer cells. It is not available at all hospitals but it is occasionally used if other forms of ablation aren’t possible.
The treatment is given under local anaesthetic and an ultrasound is used to guide the needle into the tumour. You may be given more than one injection over several treatment sessions.

**Cryotherapy**

Cryotherapy (or cryosurgery) is a procedure to freeze and kill cancer cells but it is not widely available.

If you have cryotherapy you will have a general anaesthetic and a cut will be made in your abdomen. A probe is inserted into the centre of the tumour through the cut. The probe releases liquid nitrogen which freezes and kills the cancer cells.

**Endoscopic stent**

Sometimes cancer in the liver can obstruct the bile ducts particularly if it started in the ducts. If this happens bile builds up in the liver and can cause symptoms of jaundice, such as yellowish skin, itchiness, pale stools or dark urine.

Your doctor may recommend that a thin tube (stent) is placed in your liver to drain the bile and ease your symptoms. The earlier the stent is inserted the less severe the symptoms.

**Endoscopic stent placement**

Endoscopic stent placement is done as a day procedure. You will have a local anaesthetic and possibly a sedative to reduce any discomfort.

A gastroenterologist or a surgeon inserts a long, flexible tube with a camera and light on the end (endoscope) through your mouth, stomach and small bowel into the bile duct. Pictures of the area show up on a screen so the doctor can see where to place the stent. The stent is put in via the endoscope which is then removed.

Recovery is fairly fast. Your throat may feel slightly sore for a short time and you may be kept in hospital overnight. Infection of the bile duct and inflammation of the pancreas can also occur after this procedure; your doctor will talk to you about these risks.

**Biological therapies**

Biological therapies (also called biotherapies) may be used after or in conjunction with other treatments for primary liver cancer or secondary cancer in the liver.

They are a range of treatments derived from natural substances in the body that are concentrated and purified for use as drugs. The therapies work against cancer cells by either stopping their growth and the way they function or by helping the body’s immune system destroy them.

Side effects of biological therapies depend on the types used. Your doctor will discuss any possible side effects with you.

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