

Chemo-embolisation

Transcatheter **chemoembolisation** is a way of delivering cancer treatment directly to a tumour through minimally-invasive means. It is used for some patients with liver cancer or other types of cancer that have spread to the liver. Although the procedure is not a cure for liver cancer, studies have shown that patients may experience improvement and possibly, in some instances, live longer. Chemoembolisation also may relieve pain and other symptoms, make patients more comfortable and improve the quality of their lives. Another advantage is that the procedure may be repeated multiple times.

Explaining the procedure

An angiogram, a real-time X-ray that highlights where blood flows, is performed to help the interventional radiologist look in the liver at the tumour without the need for an open incision. The interventional radiologist uses the x-ray images on the TV monitors to insert the catheter (which is a soft, thin, long plastic tube) through a small nick in the skin at the groin and guide it through to the artery that feeds the tumour. A combination of chemotherapy drugs and tiny particles, as small as grains of sand, are then injected directly into the tumour.

At the end of the procedure, the catheter is removed and pressure is applied to the entry point to prevent bleeding and a dressing is applied. Patients remain in bed for six to eight hours and leave the hospital usually within two-three days.

Chemoembolisation can be performed repeatedly on a patient. Typically, patients wait ten to twelve weeks, or even longer, between treatments. This procedure can also be used in conjunction with other cancer therapies.

Chemoembolisation may not be appropriate for patients who have blockages of the veins that supply blood to the liver, cirrhosis of the liver or blockage of the bile ducts.

How chemoembolisation works

The liver has two blood supplies. The portal vein provides 75% of the liver's blood supply and the hepatic artery supplies the remaining 25%. Tumours that grow in the liver typically receive their blood supply from the hepatic artery, making chemoembolisation possible. The drugs can be injected into the artery feeding the tumour while sparing most of the healthy liver tissue that feeds from the portal vein.

As the chemotherapy is delivered directly to the tumour and doesn't spread throughout the body, stronger doses of cancer-killing drugs can be administered compared to the doses used for standard systemic chemotherapy which is injected through a vein in the arm. Secondly, the tiny particles embolise, or block, the artery and decrease the flow of blood to the tumour causing it to shrink. Finally, by blocking the artery, the particles help contain the chemotherapy keeping it in direct contact of the tumour for a longer period of time.

This technique also may reduce some of the side effects of standard chemotherapy because the drugs are trapped in the liver instead of circulating throughout the body.

What you can expect afterwards

After the procedure, you will receive prescriptions for oral antibiotics, pain-killers, and medications to control nausea. Once home, you may experience a fever for the first few days. For the first two weeks, fatigue and loss of appetite are common. These are all normal. However, if your fever suddenly becomes higher or your pain changes in intensity or character, contact your physician. A majority of patients can resume their normal activities within a week, and most are back to their usual state of health in about one month.

Eventually, you will get a follow-up CT or MRI scan, as well as blood tests, to determine the size of the treated tumour and how well the chemoembolisation has worked. CT and MRI scans will continue every few months thereafter to determine how much the tumour ultimately shrunk.

What are the risks and benefits?

Benefits:

Chemoembolisation can help slow down the growth of a tumour, and even make it shrink in some cases, while preserving liver function and a relatively normal quality of life.

Chemoembolisation can be used in conjunction with other cancer treatments including tumour ablation, radiation and chemotherapy.

Risks:

Emboli (tiny particles) can lodge in the wrong place and deprive normal tissue of its blood supply.

Even if antibiotics are given, there is always a risk of infection after embolisation.

There is a risk of an allergic reaction to the dye used in the x-ray and occasionally kidney damage in patients with diabetes or other pre-existing kidney disease.

Nausea, hair loss, decreases in white blood cells and platelets, and anaemia may occur due to the chemotherapy drug.

Very rarely, serious complications occur and these typically include damage to the liver. Liver failure is usually the cause of the 1 in 100 deaths related to this procedure.