

## **CHEMOEMBOLIZATION**

### **What is Chemoembolization?**

Chemoembolization is the administration of a chemotherapeutic agent directly into the blood vessels of the liver with the intent to kill cancer cells and shrink tumors. Chemoembolization places anti-cancer drugs directly into the blood vessel feeding the cancer, rather than the entire blood system, as in traditional chemotherapy. This is a beneficial treatment for patients whose cancer is predominately limited to the liver, whether it began in the liver or spread from another part of the body.

In Chemoembolization tiny beads called micro spheres are coated with a chemotherapy agent. They are injected into the arteries that feed the liver tumors. Once lodged in place, these microspheres block the supply of blood to the cancer cells and administer a dose of chemotherapy.

### **How is the procedure performed?**

The procedure to deliver the chemoembolization will be performed in the radiology department. It will take about 90 minutes.

Using X-ray imaging and contrast, or X-ray dye, to visualize the blood vessels, the interventional radiologist inserts a long thin plastic tube called a catheter through the femoral artery, which is in the crease of the leg, and advances it to the blood vessels in the liver. The chemotherapy covered microspheres are placed through the catheter into the blood vessels supplying the liver tumor. You will need to lie still for about 2-4 hours after the procedure for your femoral artery to heal. During the procedure, you will be given a sedative during procedure so that you are comfortable.

### **How does the procedure work?**

Chemoembolization treats the cancer in two ways. First, it delivers a very high concentration of chemotherapy, an anti-cancer drug, directly in to the tumor, without exposing the entire body to the effects of those drugs. Second, the procedure cuts off blood supply to the tumor, depriving it of the oxygen and nutrients it needs to grow.

There are 2 primary blood vessels that provide blood to the liver. Normal liver tissue receives approximately 75% of the blood supply from the portal vein and about 25% from the hepatic artery and its branches. When a tumor grows in the liver, it receives almost all of its blood supply from the hepatic artery. The chemoembolization is delivered through the hepatic artery, which will treat the cancer tissue, while the healthy tissue will continue to get the majority of its blood supply from the portal vein.

Once delivered, the microspheres will remain in place and will not move or migrate to other parts of the body. The chemotherapy is administered in two doses, or "fractions". The first fraction will be given to the half of the liver with the largest tumor burden. The 2nd fraction will be given to the other half of the liver approximately 4 weeks later. If the tumor is only present in one half of the liver, you may only require one dose of chemoembolization.

### **What happens after the procedure?**

Most patients will stay in the hospital one night following chemoembolization so that any side effects can be treated with medications. When you leave the hospital, you will be given medications to help prevent nausea and pain, and sometimes an antibiotic to help prevent infection.

We will arrange for blood work and see you in clinic 2-3 weeks following each chemoembolization. During this visit we will address any concerns and evaluate your tolerance of the treatment.

We assess your response to treatment approximately two months following your last Y-90 dose. This will allow for any post-procedure inflammation to subside and the chemoembolization to treat the cancer. We will continue to monitor your response to treatment every 2-3 months as needed.

**What are the benefits and risks of the procedure?**

**Benefits:**

- For patients with inoperable tumors chemoembolization can extend lives from months to years and improve quality of life. In some cases, it may allow for more curative options such as surgery or liver transplantation.
- Chemoembolization often produces fewer side-effects compared to other treatments like radiation therapy. No surgical incision or general anesthesia is needed. You will go home with a Band-Aid on your femoral artery.
- Chemoembolization can be repeated if the cancer starts to grow again.

**Risks:**

- There is a risk of infection or bleeding any time the skin is broken.
- There is a slight risk of allergic reaction to the contrast or sedation used during the procedure.
- There are rare risks of injury to the blood vessels, or bruising at the puncture site.
- There is a rare risk of kidney injury with contrast use. This is more likely if you do not have normal kidney function.
- There is a risk of infection, injury or scarring, called cirrhosis in the liver after chemoembolization.
- There is a very rare risk of liver failure with chemoembolization.