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please ask
your physician
or nurse.*

Chemoembolization

Chemoembolization is a treatment for people with liver cancer tumors. A specialized physician does the procedure in the Interventional Radiology (IR) Department. The treatment affects the tumor in 2 ways. Guided by X-ray, the clinician injects chemotherapy medication through an IV (into the vein) line directly into the blood supply of the tumor. This gives the medications more time and contact with the tumor to work and destroy the cancer cells. Then, a blocking agent (embolizer) stops the blood supply to the tumor. Combining the chemotherapy medication with an embolizer has a more powerful effect than if either were given alone. After the treatment, most people leave the hospital the same day. However, some people may need an overnight stay.

Benefits and risks

Injecting the chemotherapy medication directly into the cancer site lessens the side effects because only a small amount of the medication goes into the bloodstream.

There is always some risk with any medical procedure. Most of the risks of chemoembolization are related to the sedation medication given during the procedure and the effects of the chemotherapy to the liver.

After the procedure, some people may have these side effects:

- Fever (short-term)
- Nausea/vomiting
- Fatigue, feeling very tired
- Upper right abdominal pain
- Liver damage

The side effects can be different for each person. The care team can give medications to help prevent or relieve most of these side effects.

Before the procedure

You will have blood tests to check that your liver is working properly. Before the procedure, your physician will talk with you about the benefits and risks of this treatment. You will also get specific instructions about where and when to register for the procedure.

At home on the day of procedure

Do not eat solid food, milk or dairy products for at least 6 hours before the procedure. You may have clear liquids up to 3 hours before the procedure. For example, you can drink water or black coffee with nothing added (no cream, milk or sugar).

If you take routine medications, talk with your physician about instructions. You can usually take these with sips of water.

Day of the procedure

What to bring to the hospital

Be sure to bring your:

- List of allergies
- List of all your current medications (prescription, over-the-counter and herbal)
- Photo ID
- Medical insurance information
- Medicare card (Medicare patients only)

Please leave all valuables (jewelry, credit cards, money) at home. This includes any body piercing jewelry and tongue studs. You may not wear any jewelry during the procedure.

Arrival

Come to the IR Department on the 4th floor of Feinberg Pavilion, 251 East Huron Street, Chicago, 1 hour before your procedure.

You can park in the garage at 222 East Huron Street, across from Feinberg and Galter pavilions. For a discounted rate, bring your parking ticket with you. You can validate your ticket at the IR check-in desk or the Customer Services Desks on the 1st and 2nd floor of Feinberg and Galter pavilions and the 1st floor of Prentice Women's Hospital.

After you check in with the receptionist on the 4th floor, you will meet with staff who will bring you to the pre-procedure area. Here they will review your health history, medications and allergies. They will ask you to change into a hospital gown. Please remove all clothing, including your underwear, pajamas or robe. Remove your glasses, any hairpins and all jewelry (including your watch). If you will be getting general anesthesia, remove your dentures or bridgework. Please give all valuable items to your family or leave them at home.

The care team will ask you to empty your bladder. They will do a short physical exam. The nurse will check your temperature, pulse, breathing and blood pressure. They will answer any questions you may have. They will put an IV into your arm or hand so you can get fluids and medications during the procedure.

The physician from the IR Department will talk with you about the procedure and the risks involved. After the physician has answered your questions, they will ask you to sign the consent for the procedure.

Before the procedure, a physician will do a brief exam and ask you questions about your medical history. Please tell the physician if you have any allergies or if you have ever had an unusual reaction to iodine or contrast solution.

If you are having this procedure while you are a patient in the hospital

The procedure may not be scheduled for an exact time. The care team will tell you as soon as the IR Department calls for you. When the patient escort arrives, they will help you onto a cart, give you a blanket to keep warm and take you to the IR Department.

During the procedure

When the procedure is about to start, the care team will help you move onto the procedure table. They will connect you to heart, blood pressure and oxygen monitors. The nurse may give you medication through your IV to help you relax. This medication will make you feel drowsy and comfortable during the procedure.

In some cases, you may get general anesthesia. This will start with IV medication and will include anesthetic gases mixed with oxygen. The clinician will put a breathing tube into your windpipe to help you breathe during the procedure.

The physician will choose the site to puncture the skin. Most often, they use the femoral artery in the groin. They might use other sites, such as the brachial artery or the radial artery in your arm. The care team will shave the area around the puncture site and clean it with a special antiseptic. The physician will give you a small shot of numbing medication to numb the area. When the area is numb, they will make a small puncture and insert a long, thin, flexible tube (catheter) and guide it to the area of treatment. The catheter placement is not usually painful. You may feel pressure and mild discomfort at the puncture site. If needed, they will give you more numbing medication.

When the catheter is in the right position, they will inject a contrast solution into the catheter. It will travel through the blood vessels. You may feel a sudden warm or hot sensation as the contrast goes in. This will only last a few seconds. Once the contrast is in your bloodstream, they will take a series of X-ray images to see the blood supply in your liver. They may ask you to hold your breath for a few seconds as they take the pictures. Once they see the blood supply of the tumor, they will inject the chemoembolization materials into the catheter.

The procedure time varies, but usually takes 1 to 2 hours. The care team will closely monitor your blood pressure, pulse and oxygen levels during and after the procedure.

The care team will remove the catheter when they have all images they need and have given the chemoembolization materials. They may use a closure device to seal the puncture site. In some cases, they may hold firm pressure over the puncture site for at least 10 to 15 minutes to seal the it. This will complete the procedure.

After the procedure

The care team will ask you to lie still and flat for 2 to 6 hours. It is very important to keep the leg that was used to insert the catheter straight. This prevents bleeding from the femoral artery and lets the puncture site to heal. During this time, you must use a urinal or bedpan if you need to use the restroom. The nurse will help you if needed.

The nurse will check your blood pressure, temperature and pulse, along with the puncture site and pulse in the leg or arm used for the procedure often. You may have an ice pack over the puncture site to prevent swelling and relieve discomfort.

Do not eat solid foods until your care team tells you it is OK to do so. You may start to eat regular meals and raise the head of the bed 30 degrees after the recovery period is over. During the first 12 hours, it is best to slowly increase your fluid and food intake. You should drink plenty of liquids. You may get fluids through your IV, if needed. This will help to flush out the contrast used during the procedure.

You might have nausea. The nurse can give you medication to relieve the nausea. After 2 to 6 hours, the nurse will let you know if it is OK for you to get out of bed and walk.

You may get pain medication through your IV for the first several hours. When you can eat, you may switch to pain pills. You will have blood tests to check your liver function after the treatment.

Tell the nurse right away if you notice any of the following symptoms.

- Pain or swelling at the puncture site
- Bleeding or bruising at the puncture site
- Numbness, tingling, pain or any change in normal feeling in your arm or leg
- Coolness or discoloration of your hand or foot
- Changes in vision
- Difficulty speaking or slurred speech
- Difficulty moving your fingers, hands, feet or legs

If you have any questions or concerns, please ask your physician or nurse.

Care at home

Diet

Unless instructed otherwise, you can go back to eating your regular diet when you leave the hospital. You should drink at least 6 glasses of water (8 ounces each) over the next 24 hours. Water helps clear the dye used during the procedure from your body. **Do not drink alcohol for 24 hours.**

Medication

Take your antibiotics as directed.

It is normal to have some discomfort. Take your pain medicine as directed. If it does not manage your discomfort, contact your physician.

Activity

Complete recovery usually takes 1 to 2 weeks. Follow these instructions when you get home:

- Check your temperature 2 times a day for 5 days.
- Do not drive for 24 hours after the procedure.
- For the next 3 days, do not do physical exercise or lift anything heavier than 10 pounds. Ask your physician before you do strenuous physical activity.
- You may shower 24 hours after the procedure, but do not let water directly hit the puncture site. Do not scrub the area.
- Do not take a tub bath for 7 days.
- You may go back to all other daily activities the day after you leave the hospital. This includes normal social activities.

Bleeding from the wound

You may notice a small bruise. If you notice any bleeding from the puncture site, please do the following:

1. **Lie flat right away.**
2. **Put firm pressure over the site for 15 minutes. You may use a clean cloth or tissue to apply pressure. If possible, have another person apply pressure.**
3. **After 15 minutes, slowly remove pressure. The wound should be dry and flat without bleeding.**
4. **Cover the wound with an adhesive bandage.**
5. **Call your physician right away.**

The following signs could mean that the puncture of the artery has reopened and that there is active bleeding from the artery:

- Sudden increase in swelling of the area around the puncture site
- Blood streaming from the site that will not stop

If the bleeding and/or swelling continues as you keep applying pressure, it is a medical emergency!

- **Continue to apply firm pressure over the puncture wound**
- **Call 911**

When to call the physician

Call your physician if you have any of the following symptoms:

- A temperature more than 101.5 degrees F for more than 1 day
- Pain or cramping in your abdomen not managed by pain medication
- Very bad nausea or vomiting that does not go away
- Bleeding or drainage oozing from the puncture site

- Swelling at the puncture site
- A bruise that gets bigger with discoloration spreading past the initial puncture site
- Numbness or tingling in your arm or leg
- Difficulty moving your fingers, toes, feet or legs
- Discoloration and/or coolness of your hand or foot

Follow-up care

Before your discharge from the hospital, we will schedule an appointment with your oncologist and order a blood test to check your liver function in 2 to 4 weeks.