

# NIH Clinical Center Patient Education Materials

## Interventional Radiology: Transarterial chemoembolization (TACE)

A CT- (computed tomography) guided percutaneous chemoembolization involves injecting an embolic (clot inducing) material into select blood vessels to block the blood flow that is feeding tumors or malformations. Blocking the blood flow causes the tumor or malformation to shrink over time. “Percutaneous” means through the skin. “Chemo” means using a medicine; in this case, it is a medicine used to treat cancer. “Embolization” means to block the flow of blood.

Chemoembolization therapy is a minimally-invasive (non-surgical) treatment that blocks one or more blood vessels “feeding” tumors or malformations. Examples of tumors and malformations are:

- Hypervascularized tumors: abnormal tissue growths that can be benign (non-cancerous) or malignant (cancerous) and that increase in size due to the over-development of blood vessels supplying the area
- Arteriovenous malformations: abnormal connections between arteries and veins that can cause complications

Chemoembolization therapy is carried out by an Interventional Radiologist doctor. Compared to traditional surgery treatments, this therapy has many benefits, such as:

- It is minimally invasive.
- It is highly effective in controlling bleeding.
- It reduces trauma.
- It has faster recovery time.
- It has a minimal risk of infection.
- It includes minimal scarring.

### **Weeks or days before the procedure**

- You can expect that your doctor or health care provider will examine you and ask you to have some blood tests prior to your procedure.
- You will also meet with our anesthesia team members, because you will be given general anesthesia during your procedure.
- You may also need more x-rays or CT scans.

Bleeding is a rare risk in this procedure, so, if you take aspirin, ibuprofen (Motrin), naproxen (Aleve), or any blood-thinning medicines, then notify your NIH CC team, and also ask the prescribing doctor about what to do. If you take Aspirin, ibuprofen, or naproxen for regular aches and pains, please stop at least seven days before your procedure, and use a Tylenol (acetaminophen) product.

### **Day before the procedure**

- You will be admitted to the NIH Clinical Center:
  - You will have an IV catheter placed in your arm so that you can receive intravenous fluids.
  - You will have a physical exam and blood tests.
  - You will not be able to eat or drink anything except sips of water for medicines after midnight.
- Some people may need to have a bowel prep before the procedure. This requires drinking a laxative the night before the procedure and then taking an enema the morning of the procedure.

## The day of the procedure

- The morning of the procedure, you will be taken to the Interventional Radiology Department.
- When you arrive in Interventional Radiology, the radiologist and nurse will discuss the procedure with you and answer your questions.
- You will be asked to sign a consent form giving us permission to perform the procedure. Then, you will change into a hospital gown if you are not already in one.
- After you arrive in the procedure room, the anesthesiologist and staff members will attach monitors to watch your heart and lung function (vital signs) throughout the procedure. These monitors will include EKG, pulse oximetry, blood pressure cuff, and possibly other equipment, depending on your needs.

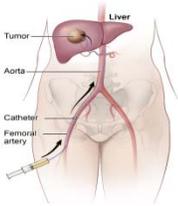


Figure 1: Hoofring, A, NIH Medical Illustration Department

- The anesthesia doctors will give you a sedative to help you fall asleep. Also at this time, you will receive an antibiotic to prevent infection, a steroid medication for inflammation, and an anti-nausea medicine.
- The Interventional Radiology staff members will clean your skin with antiseptic soap to decrease the risk of infection.
- The Interventional Radiology doctor will insert a catheter (a long, thin, hollow, sterile, flexible, plastic tube) into a large artery in your groin. (See Figure 1.)

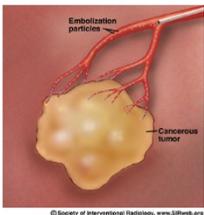


Figure 2: Tumor before chemoembolization

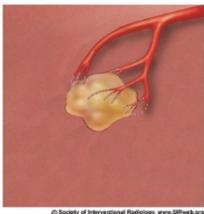


Figure 3: Tumor after chemoembolization

Photos used with permission from the Society for International Radiology

- The doctor will advance the catheter to get into the blood vessel that is feeding the tumor. (See Figures 2 and 3.) Using the special imaging equipment, the interventional radiologist advances the catheter to the correct location.
- The doctor may inject a special liquid, call 'I.V. contrast dye', into your artery to get a better view of your tumor. If you know that you are allergic to I.V. contrast dye, then you may need to take some medications before the procedure. These medications will enable you to receive the I.V. contrast dye safely.

- One end of the catheter always remains outside the body. The contrast medium is then injected through the catheter and detailed images are taken so that the doctor has a very clear picture of the area to be treated and the position and shape of the vessels feeding the tumor.

The radiologist, radiology nurses, technologists, and the anesthesia team stay with you throughout your procedure to check your health condition constantly.

### **After the procedure**

- You will have small dressings or bandages placed over the puncture site(s).
- You will have a catheter in your bladder.
- You will go to the PACU (post anesthesia care unit, also known as the recovery room) while you wake up from anesthesia. When you are awake, you will return to your room.
- You will remain on bed rest for several hours.
- If you feel pain, then let your nurse know. You will have medication prescribed as needed.
- You may feel drowsy or sleepy for several hours after the procedure.

### **Note for patients with diabetes:**

If you take a medication for diabetes made with metformin, you must stop this medication for 48 hours (two days) after the procedure, and have a BUN/creatinine (blood work) to assess your kidney function before restarting this medicine.

### **After you return to your room**

- If you note any drainage or feel like you might be bleeding under the bandage, then call your nurse.
- You will remain on bed rest for several hours.
- Slowly resume your regular diet, unless your primary team tells you otherwise.
- You will receive IV antibiotics for at least 2 days, and you may go home on oral antibiotics.
- You will have a patient-controlled analgesia pack with a button that you can push to receive pain medication.
- You will receive IV anti-nausea and anti-inflammation medicine.
- Limit your physical activity as directed by the radiologist or your NIH CC primary care team.
- Lift nothing heavier than 10 pounds for a week, or as directed by your primary care team.
- You may remove your dressings/bandages after 24 hours.
- You may shower in 24 hours, but do not soak the site for 48 hours, unless your NIH CC primary care team tells you otherwise.
- Ask your primary care team or cardiologist when you can resume taking aspirin, ibuprofen (Motrin), naproxen (Aleve), or blood-thinning medications.

### **Note for patients who have no history of heart failure or kidney problems**

Drink 8 to 10, 8-ounce cups of fluid per day for several days to help your body rid itself of the I.V. contrast that you received for your procedure.

### **When you are at home**

Your doctor wants to make sure you are comfortable before you leave the hospital.

- The most common side-effect of chemoembolization is a condition called “postembolization syndrome” or PES:
  - Fatigue is common and can last up to a month.
  - You may feel nauseated.
  - You may feel some degree of pain in the area that was “embolized,” and this is normal.
  - Nausea and pain are managed by oral medication that you swallow.
  - PES may last up to two weeks after the procedure.

- Call your NIH CC primary care team and your local doctor if you have these symptoms
  - Temperature greater than 101 degrees Fahrenheit or chills
  - Redness, swelling, bleeding, or drainage at the puncture site(s)
  - Unrelieved or increasing pain
  - Shortness of breath/difficulty breathing

When we review this information with you, we will give you the names and phone numbers for your team contacts:

Team Contact:

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Phone Number:

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Interventional Radiology Contact:

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Phone Number:

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**If you have symptoms that you feel are significant or severe, and you cannot contact your primary care team or local doctor, call 911, or go to your nearest Emergency Room. If possible, bring this sheet with you, and give it to the Emergency Room staff.**

This information is prepared specifically for persons taking part in clinical research at the National Institutes of Health Clinical Center and may not apply to patients elsewhere. If you have questions about the information presented here, talk to a member of your health care team.

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