Liver Transarterial Chemoembolization (TACE)
Cancer treatment

This handout explains what liver transarterial chemoembolization (TACE) is and what to expect with this cancer treatment.

What is transarterial chemoembolization?
Chemoembolization is used to treat tumors. It puts a large dose of chemotherapy (chemo) drugs right into the tumor. This puts more of the drugs right on the cancer cells and lessens their effect on other tissues.

In transarterial chemoembolization (TACE), the small blood vessels that supply blood and nutrients to the tumor are also blocked (embolized). Blocking the blood supply slows tumor growth.

In chemoembolization, chemotherapy drugs are delivered directly to the tumor.
When is TACE used?

TACE is used most often to treat liver cancer. It can also be used to treat cancer that started in another area of the body but has spread to the liver. This spreading of cancer is called metastasis.

How effective is it?

TACE usually makes liver tumors smaller. Sometimes it also reduces metastasis. The goal of this treatment is to keep the tumors under control for months and sometimes years.

A group of experts on liver tumors has determined that TACE is the best treatment for you right now.

This treatment will not cure your cancer by itself. You may also need surgery, radiation therapy, chemotherapy, or radiofrequency ablation (using a heat probe to destroy the rest of the tumor).

How does TACE work on liver tumors?

The liver is unique because it gets blood in 2 ways: from a large portal vein and from the hepatic artery.

Healthy liver tissue:
- Gets most of its blood supply from the portal vein
- Gets a much smaller amount of blood from the hepatic artery

But, a liver tumor:
- Gets most of its blood supply from the hepatic artery
- Gets almost no blood supply from the portal vein

This means that if a chemotherapy drug is injected into the hepatic artery, most of the drug ends up in the tumor. Very little of the drug reaches healthy liver tissue.

How is it done?

TACE is done by an interventional radiologist (a doctor who specializes in procedures that are guided by X-ray images).

- An anesthetic (numbing medicine) will be applied to your skin. It will sting for 5 to 10 seconds. Then the area will be numb and you will not feel pain.
- Your doctor will make a very small incision (less than ¼ inch long) in your groin.
• Your doctor will then thread a catheter (small plastic tube) from an artery in your groin into the artery in your liver that carries blood to the tumor. X-ray images will help your doctor place the catheter in exactly the right place. Chemotherapy is sent through the catheter into the tumor.

• Then, tiny beads are injected into the artery. These beads travel toward the tumor and block its blood supply.

In hepatic artery chemoembolization, a catheter is threaded into an artery in the liver.

**What can I expect?**

You will meet with your doctors to talk about your treatment schedule. This is the most common treatment schedule:

**Week 1: Chemoembolization Round #1**

• The liver has 2 lobes. In the first round of chemoembolization to the liver, TACE is done on 1 lobe.

**Week 3 or 4**

• You will have a clinic visit or phone consult to see how you are feeling and how TACE is affecting you.

**Week 4 or 5: Chemoembolization Round #2 (if needed) or Radiology Studies**

• If there are tumors in both lobes of your liver, TACE is done on the other lobe.
• If the tumor was only in 1 lobe of your liver, you will have radiology exams (MR imaging or a CT scan) and blood tests. These tests will show how your liver is responding to TACE. Your doctors will decide if you need more therapy based on the results of these tests.

Week 8 or 9: Chemoembolization Round #3 (if needed) or Radiology Studies

• If your cancer was very extensive, more TACE will be done to the most affected parts of your liver.

• If you do not need more TACE, you will have radiology exams (MR imaging or a CT scan) to find out how your liver is responding. Your doctors will decide if you need more therapy based on the results of these tests.

What chemotherapy drugs are used?

Many different chemotherapy drugs may be used in your treatment. Most people receive only doxorubicin (Adriamycin).

What are the side effects?

We deliver the chemotherapy drugs in a way that they mostly stay in the liver. This means that your system will absorb the chemotherapy drugs very slowly.

This lessens, but does not get rid of, the short-term side effects that people often have from chemotherapy. The most common side effects are nausea and fatigue. Nausea is more likely when a mixture of 3 drugs is used.

Very rarely, a person receiving TACE will lose some or most of their hair.

Are there any risks?

All medical procedures involve some risk. But, the potential benefits of TACE far outweigh the risks.

In large doses, doxorubicin can damage the heart. It is recommended that a person receive no more than about 500 mg of doxorubicin over their lifetime. Each round of TACE uses 50 mg of doxorubicin.

The most common complications are:

• Bleeding or artery injury where the catheter is inserted in your groin

• Liver function gets worse

• Infections (such as a liver abscess)
The risk of a serious complication is about 5% (5 out of 100 people). One of your doctors will talk with you about your risks before you start TACE. Please be sure to ask all of your questions and talk about any concerns you have.

**Before Your Procedure**

- A nurse coordinator will call you the afternoon before your procedure. If your procedure is on a Monday, the nurse will call you the Friday before. The nurse will give you final instructions and answer any questions you have.

- If you do not understand English well enough to understand these instructions or the details of the procedure, tell us as soon as possible. We will arrange for a hospital interpreter to assist you. **A family member or friend may not interpret for you.**

- You will have blood tests done when you arrive for your procedure.

- If you have had an allergy or bad reaction to contrast (X-ray dye) in the past, please call our nurse coordinators at one of the numbers on the last page of this handout. You may need to take medicine for this allergy before the procedure.

- If your kidney function is not normal and we need to give you X-ray dye, we may prescribe a medicine for you to take before and after your procedure. This medicine will help protect your kidneys.

- Drink plenty of fluids the day before your procedure.

- If you take any blood-thinning medicines (such as Coumadin, Lovenox, Fragmin, or Plavix), you may need to stop taking the medicine for 3 to 9 days before the procedure. You will receive instructions about this.

- If you have diabetes and take insulin or metformin (Glucophage), you will receive instructions about holding or adjusting your dose for the day of your TACE procedure.

**Sedation**

- For this treatment, you will be given a sedative medicine (similar to Valium and morphine) through your IV. This medicine will make you sleepy, help you relax, and lessen your discomfort. You will stay awake. This is called **conscious sedation**. You will still be sleepy for a while after the procedure.

- For some people, using conscious sedation is not safe. If this is true for you, you will need **anesthesia** (medicine to make you sleep during the procedure).
Let us know **right away** if you:
- Have needed anesthesia for basic procedures in the past
- Have *sleep apnea* or chronic breathing problems (you might use a CPAP or BiPAP device while sleeping)
- Use high doses of narcotic painkiller
- Have severe heart, lung, or kidney disease
- Cannot lie flat for about 1 hour because of back or breathing problems
- Have a hard time lying still during medical procedures
- Weigh more than 300 pounds (136 kilograms)

**Day Before Your Procedure**

To prepare for sedation, follow these instructions closely:

- The day before your procedure, you may eat as usual.
- Starting **6 hours** before your procedure, you may only have **clear liquids** (liquid you can see through such as water, Sprite, cranberry juice, or weak tea).
- Starting **2 hours** before your procedure:
  - Take **nothing** at all by mouth.
  - If you must take medicines, take them with **only** a sip of water.
  - Do not take vitamins or other supplements. They can upset an empty stomach.

**On the Day of Your Procedure**

- Take all of your other usual medicines on the day of the procedure. **Do not** skip them unless your doctor or nurse tells you to.
- Bring a list of all the medicines you take with you.
- Unless the nurse coordinator tells you otherwise, check in at Admitting on the 3rd (main) floor of the hospital. Admitting is to the right and behind the Information Desk in the lobby.
- If there is a delay in getting your procedure started, it is usually because we need to treat other people with unexpected and urgent problems. Thank you for your patience if this occurs.
- A medical assistant will give you a hospital gown to put on and a bag for your belongings. You may use the restroom at that time.
- A staff member will take you to a pre-procedure area. There, a nurse will do a health assessment. Your family or friend can be with you there.
• An *intravenous* (IV) line will be started. You will be given fluids and medicines through the IV.

• An interventional radiology doctor will talk with you about the procedure and ask you to sign a consent form if that has not already been done. You will be able to ask questions at that time.

**Your Procedure**

• The nurse will take you to the radiology suite. This nurse will be with you for the entire procedure.

• If needed, an interpreter will be in the room or will be able to talk with you and hear you through an intercom.

• You will lie on a flat X-ray table for the procedure.

• Wires will be placed on your body to help us monitor your heart rate.

• You will have a cuff around your arm. It will inflate from time to time to check your blood pressure.

• A radiology technologist will clean your skin around your groin with a special soap. Tell this person if you have any allergies. The technologist may need to shave some hair from the area where the doctor will be working.

• The entire medical team will ask you to confirm your name and will tell you what we plan to do. This is for your safety.

• Then, your nurse will give you medicine to make you feel drowsy and relaxed before we begin.

**After Your Procedure**

• You will stay overnight in the hospital after your procedure so that we can monitor you.

• You will need to rest in bed for 2 to 6 hours. **You must keep the leg below where the catheter was inserted very still for that time.** This will help lower the risk of bleeding. After that you can move around and use the restroom.

• You will most likely be able to eat and drink, and your family may visit you.

• Some people have a *computed tomography* (CT) scan the day after their TACE. This scan will show how well the chemotherapy drug has spread through the tumor (or tumors).

• Most people can go home the day after their procedure. Complications are rare. If they occur, we may need to keep you in the hospital longer so that we can keep watching you or treat you.
Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC clinic staff are also available to help.

Radiology/Imaging Services: 206-598-6200

When You Get Home

Side Effects

Most people have some side effects after chemoembolization. This is called *post-embolization syndrome*. These side effects include:

- Fatigue
- Pain
- Nausea
- Slight fever or chills that can last about a week

Pain is a common side effect. It occurs because the blood supply to the tumor is blocked. This pain can usually be treated with pain medicines.

Activity

- You may shower or bathe as soon as you wish after your procedure.
- For about 2 to 3 days, avoid strenuous activity and do not lift anything that weighs more than 20 pounds.
- You will most likely have fatigue and a loss of appetite for 2 weeks or longer. These are normal after TACE.
- Most people can return to their normal activities within 1 week.

When to Call

You will leave the hospital with prescriptions for pain and nausea medicines. Call your doctor *right away* if you have:

- Pain that suddenly gets worse or changes in any other way
- A fever higher than 101°F (38.3°C) or chills
- Bleeding or swelling at the groin puncture site
- Severe abdominal pain
- Any other changes that concern you

Who to Call

Interventional Radiology nurse coordinator ......................... 206-598-6897
Procedure Scheduling .......................................................... 206-598-6209
After hours (between 5 p.m. and 7 a.m.), and on weekends and holidays *Ask for the Interventional Radiology Fellow on call* ............ 206-598-6190

If You Have an Emergency

Go directly to the nearest Emergency Room or call 9-1-1. Do not wait to contact one of our staff.