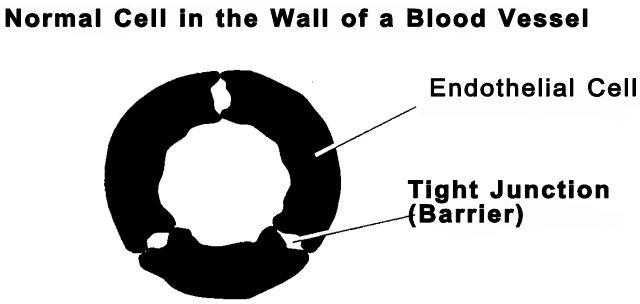
Intra-arterial Chemotherapy Given with Blood Brain Barrier Disruption

What is blood brain barrier disruption?

The blood brain barrier is a group of special cells that limit entry of large molecules into the brain. This barrier can also limit antibiotics and chemotherapy from getting into the brain to treat certain diseases.



Brain tumors partially open or break down this barrier. That is why brain tumors can be easily seen on a MRI or CT scans. This partial opening only allows a small amount of medicine into the brain. The goal of chemotherapy with blood brain barrier disruption is to give more chemotherapy into the brain to treat your brain tumor.

How is the blood brain barrier opened?

The blood brain barrier is opened by giving a solution called **Mannitol** into the artery that feeds blood to the brain tumor. This is done in the x-ray department during a procedure called an angiogram. During this procedure:

- You are put to sleep with general anesthesia.
- A small area on your groin is cleaned then the doctor inserts a small tube called a catheter into the artery in your groin.

More on next page ➔

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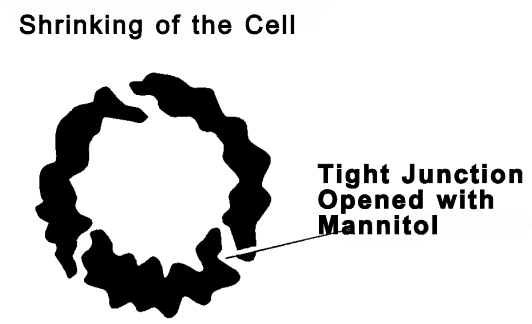
- The catheter is guided into the blood vessel that supplies the side of the brain where the tumor is located. When the catheter is in the right position, the Mannitol is injected. Mannitol shrinks the special cells and opens the barrier.
- Chemotherapy is given through an IV (intravenous) into the vein before the barrier is opened and into the artery after the Mannitol is given.
- When the barrier is open, all the chemotherapy can get into the brain to treat the brain tumor.



What will happen after the procedure?

A CT scan is done at the end of the procedure to measure the degree of blood brain barrier disruption. You will recover in the post procedure recovery unit for about 2 hours and then return to your hospital room. The same procedure will be repeated the next day. Likely, you will go home the day after the second treatment. The course of chemotherapy, which includes two blood brain barrier disruption treatments, will be repeated every 4-6 weeks for 1 year.

Are there side effects from this procedure?

Side affects include those that can occur with having a general anesthetic and an angiogram. Side effects that may occur because of the open blood brain barrier may include:

- Seizures
- Changes in your level of alertness
- Weakness in your arms and legs
- Fluid and electrolyte abnormalities

- **Talk to your doctor or others on your health care team if you have questions. You may request more written information from the Library for Health Information at (614) 293-3707 or email: health-info@osu.edu.**