Memorial Sloan Kettering Cancer Center

PATIENT & CAREGIVER EDUCATION

About Ablative Radiation Therapy for Liver and Pancreatic Cancers

This information explains ablative radiation therapy for liver and pancreatic cancers.

About Radiation Therapy

Radiation therapy uses high-energy radiation to treat cancer. It works by damaging cancer cells and making it hard for them to multiply. Your body can then naturally get rid of the damaged cancer cells. Radiation therapy also affects normal cells, but your normal cells can repair themselves in a way that cancer cells can't.

You can have radiation therapy before or after other treatments such as chemotherapy or surgery.

About ablative radiation

Sometimes, the goal of radiation therapy is to make a tumor smaller. Other times, the goal is to destroy the tumor. Ablative radiation is radiation that's meant to destroy a tumor.

Ablative radiation therapy can be used to treat liver and pancreatic cancers if the tumor(s) can't be completely removed during a surgery. But ablative radiation therapy isn't safe for everyone. For example, if the tumor is too close to your stomach or duodenum (the part of your small intestine closest to your stomach), ablative radiation therapy could damage these important organs. Your radiation oncologist will recommend a different treatment plan.

About stereotactic body radiation therapy (SBRT)

SBRT is a type of radiation therapy. Before you start SBRT, you'll have imaging scans to map the exact 3-dimensional (3D) position of the tumor in your body. During your radiation treatments, beams of radiation will be aimed at the tumor from different angles. This means the tumor gets a high dose (amount) of radiation and your nearby healthy tissue and organs get a very small dose.

It's normal for your organs to shift slightly as you move and breathe. During your SBRT, you'll have imaging scans to check the position of the tumor and your organs in your body. If their position changes, your radiation oncologist will adjust your treatment plan as needed. This is called image-guided radiation therapy (IGRT).

Ablative SBRT for liver or pancreatic cancer is given in either 15 or 25 treatments.

About MRI-guided adaptive radiation therapy

With magnetic resonance imaging (MRI)-guided adaptive radiation therapy, radiation is given by a machine called an MR-linac that has a built-in MRI scanner. This lets your radiation oncologist see the tumor and your organs more clearly during your treatments. They're able to adjust your radiation plan in real time to account for the natural movement of the tumor and your organs in your body.

With MRI-guided adaptive radiation therapy, ablative radiation for liver or pancreatic cancer is usually given in 5 treatments. Because so much radiation is given during each treatment, this type of radiation therapy isn't safe if the tumor is too close to important organs, such as your intestine. In that case, your radiation oncologist will recommend a different treatment plan.

What to Expect During Your Ablative Radiation Therapy

Before your first ablative radiation treatment, you'll have treatment planning procedure called a simulation. The simulation is done to map the treatment area and make sure you get the right dose of radiation. Your simulation appointment will take about 1 to 2 hours. It's usually around 10 days before your first ablative radiation treatment.

Your ablative radiation therapy treatments can be done at Memorial Hospital (MSK's main hospital) or one of MSK's regional locations. Each treatment will take about 30 minutes.

Side Effects of Ablative Radiation Therapy

Some people have nausea (feeling like you're going to throw up) or fatigue (feeling very tired and having less energy than usual) during ablative radiation therapy. Out of every 100 people who get ablative radiation therapy for liver or pancreatic cancer, fewer than 10 people have these side effects and more than 90 people don't. Your radiation therapy team will help you manage nausea or fatigue if you have them.

Ablative radiation therapy can also cause minor bleeding in your digestive tract (stomach or intestines). Out of every 100 people who get ablative radiation therapy for liver or pancreatic cancer, about 2 to 3 people have this side effect and about 97 to 98 people don't. People taking an anticoagulant (blood thinner) medication are more likely to have this side effect. If you have bleeding and lose too much blood, you can get a blood transfusion to replace the blood while the bleeding area heals. You won't need to be admitted to the hospital.

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

Last Updated
June 17, 2021
Learn about our Health Information Policy.

Tell us what you think

Tell us what you think

Your feedback will help us improve the educational information we provide. Your care team cannot see anything you write on this feedback form. Please do not use it to ask about your care. If you have questions about your care, contact your healthcare provider.

While we read all feedback, we cannot answer any questions. Please do not write your name or any personal information on this feedback form.

Was this information easy to understand?

- Yes
- Somewhat
- No

What could we have explained better?

Please do not write your name or any personal information.

Submit