Bile Duct Cancer: Radiation

What is radiation therapy?

Radiation therapy is a treatment for cancer that uses strong rays of energy. Radiation can be delivered from a machine (called a linear accelerator). Or it may be given in the form of radioactive seeds or pellets that are put into or near the cancer. Radiation therapy is also called radiotherapy. Its goal is to kill or shrink cancer cells. For bile duct cancer, radiation is often done along with chemotherapy. This is called chemoradiation.

When radiation therapy may be used

Radiation can be used in these ways:

- Before surgery to try to shrink the size of a tumor so it's easier to take out all of the cancer
- After surgery to try to kill any cancer cells that were missed or could not be removed
- If surgery can't be done, radiation might be the main treatment. It won't cure the cancer, but it can control it and help people live longer.
- To help ease symptoms caused by the tumor, like blockages or pain when the tumor presses on a nerve

How radiation therapy is done

There are two main types of radiation therapy:

- **External radiation.** The radiation comes from a large X-ray machine. The beams go through the skin over the tumor.
- **Internal radiation (brachytherapy).** Radioactive material is put inside the body, into or near the tumor. This type is used less often. It may be done along with external radiation.

External beam radiation treatment (EBRT)

When the radiation comes from a machine outside the body, it's called external beam radiation therapy. This treatment is a lot like getting an X-ray, but it takes longer. A radiation oncologist will plan this treatment. This healthcare provider specializes in the use of radiation to kill cancer cells. They decide how often you need radiation and at what dose.

The types of external beam radiation that may be used for bile duct cancer are:

- **Three-dimensional conformal radiation therapy (3D-CRT).** With 3D-CRT, radiation beams are shaped and aimed at the tumor from different angles. This makes it less likely to damage normal tissues. Treatment is most often done 5 days a week for several weeks.
- **Intensity-modulated radiation therapy (IMRT).** With IMRT, the radiation beams are also shaped and aimed from different angles. But the strength (intensity) of the beams is adjusted to keep the highest doses only on the tumor. This gets an even higher dose to the tumor and reduces the dose to the surrounding normal organs. Treatment is most often done 5 days a week, not including weekends. It lasts many weeks.
- **Stereotactic body radiotherapy (SBRT).** SBRT uses very focused beams of radiation. They're aimed at the tumor from many different directions. Higher doses of radiation are used per session, so the treatment can be given over fewer sessions than 3D-CRT and IMRT. A course of SBRT may take 1 or 2 weeks.

Internal radiation treatment (brachytherapy)

Brachytherapy is not used as often as EBRT for bile duct cancer. It may be done by a surgeon or an interventional radiologist, with a radiation oncologist guiding the treatment. Radiation seeds attached to a wire are put right into the bile duct. The radiation doesn't travel far, so the seeds are placed as close as possible to the tumor or into the tumor itself. This is so that fewer normal cells are exposed to radiation.

Questions to ask your healthcare provider about radiation therapy

Here are some questions you may want to ask your healthcare provider about radiation therapy:

- What is the goal of this treatment?
- What will happen if I don't have radiation therapy?
- Are there other treatment choices?
- Do I need a second opinion?
- How will I get radiation?
- How many treatments will I get?
- Over what weeks will the treatment be?
- When will the treatment begin?
- When will it end?
- How will I feel during radiation therapy?
- What can I do to take care of myself during radiation therapy?
- What kind of side effects should I watch for and tell you about?
- Where can I get more information?

What to expect after radiation therapy

Radiation affects both normal cells and cancer cells. This means it can cause side effects. Radiation side effects tend to start after a few weeks of treatment. What the effects are depends on what part of your body is treated and the type of radiation used. If you have internal radiation therapy, you will be less likely to have side effects. Some common side effects of external radiation include:

- Skin irritation that can lead to redness, blistering, and peeling in the treated area
- Extreme tiredness (fatigue)
- Weight loss due to lack of appetite
- Nausea and vomiting
- Diarrhea
- Hair loss in the area being treated

Most side effects go away over time after treatment ends. Some side effects can occur later on, called late side effects. Ask your healthcare provider what short- and long-term side effects you should expect. Always tell your healthcare provider or nurse about the side effects you have. They may be able to help ease them and keep them from getting worse.