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Side Effects of Radiation Therapy [1]

This section has been reviewed and approved by the Cancer.Net Editorial Board [2], 02/2013

This is the third article in a four-part series, and it describes the side effects of radiation therapy. The other articles in this series provide anoverview of radiation therapy[3], including the various types; explainwhat to expect when receiving radiation therapy[4]; and answerfrequently asked questions[5].

Although it is an effective treatment for many types of cancer, radiation therapy, like other cancer treatments, may cause side effects. These side effects vary from person to person and with the type and location of cancer, the treatment dose, and the person's health.

Side effects associated with radiation therapy occur because the high doses of radiation used to destroy cancer cells can also damage healthy cells and tissues located near the treatment area. However, major improvements in radiation technology have made it more precise, leading to fewer side effects.

For some people, radiation therapy causes few or no side effects. For others, the side effects are more severe. The reactions often begin during the second or third week of treatment and may last for several weeks after the final radiation treatment has been given. Your health care team will work with you to ease or prevent many of these side effects. This approach is called palliative or supportive care [6] and is an important part of cancer treatment.

Common side effects of radiation therapy

Many people who receive radiation therapy experience skin problems [7], such as dryness, itching, blistering, or peeling. These issues usually resolve a few weeks after treatment has finished. If skin damage from radiation treatment becomes a serious problem, the doctor may change the dose or schedule of treatments.

Another common side effect is fatigue (a persistent sense of tiredness or exhaustion). Fatigue associated with cancer treatment is different from fatigue from lack of sleep; it is a feeling of exhaustion that does not improve with rest. Your level of fatigue may depend on whether you are undergoing other treatments, such as chemotherapy. Learn more about fatigue [8] and how to cope with it.

Although most side effects go away after radiation therapy has finished, some long-term side effects may occur months or even years after treatment ends. These late effects [9] may include developing a second cancer. However, the risk of developing a second cancer because of radiation therapy is low, and this risk is generally outweighed by the benefit of treating the primary, existing cancer.

Site-specific side effects

In addition to the general side effects described above, some side effects of radiation therapy depend on where the radiation is given.

Head and neck. Side effects of radiation therapy to the head and neck may include dry mouth [10], difficulty swallowing [11], mouth and gum sores [12], stiffness in the jaw, nausea, and a type of swelling called lymphedema [13]. In addition, tooth decay may occur. Before beginning radiation therapy for any head and neck cancer, visit an oncologic dentist (a dentist experienced in treating people with head and neck cancer). This dentist may prescribe a special fluoride treatment to help prevent tooth decay and may recommend removing already decayed teeth before beginning treatment to help prevent osteoradionecrosis (jaw disease). Learn more about dental health during cancer treatment [14].

Chest. Side effects from radiation therapy to the chest may include difficulty swallowing, shortness of breath [15], breast or nipple soreness, and shoulder stiffness. Some people may develop a cough, fever, and fullness of the chest that is diagnosed as radiation pneumonitis, an inflammation of the lung occurring between two weeks and six months after radiation therapy. If left untreated, radiation pneumonitis can cause radiation fibrosis (permanent scarring of the lungs from radiation), which can lead to more serious heart and lung problems. Fortunately, the dose of radiation associated with fibrosis is well known, and the radiation oncologist accounts for this in the planning process to minimize the risk of fibrosis.

Stomach and abdomen. Side effects from radiation therapy to the stomach and abdomen may include nausea, vomiting [16], or diarrhea [17]. These symptoms will likely disappear when treatment is completed. Your doctor can prescribe medications for these side effects, and making changes to your diet [18] may also reduce your discomfort.

Pelvis. Side effects from radiation to the pelvic area may include diarrhea, rectal bleeding, incontinence [19], bladder irritation, and sexual problems [20] in both men and women. For instance, radiation to the prostate can result in impotence (the inability to maintain an erection).

Radiation therapy to the pelvis can also affect the reproductive system. Some women receiving high doses of radiation therapy may stop menstruating and experience symptoms of menopause, such as vaginal itching, burning, and dryness. Permanent infertility (the inability to conceive a child or maintain a pregnancy) can occur, but generally only if both ovaries receive radiation. Men receiving radiation therapy to the testes or to nearby organs, such as the prostate, will have lowered sperm counts and reduced sperm activity, which affects fertility (the ability to father a child). Learn more about the effects of cancer treatment on fertility [21].

Everyone?s experience with cancer treatment is different, so you should talk with your doctor or

nurse about which side effects you may or may not develop before treatment begins. It is also important to continue communicating with your health care team throughout your treatment schedule. Although there are many options for managing side effects, the doctors and nurses need to know you are experiencing them in order to help you feel better.

More Information

Managing Side Effects [22]

Coping with the Fear of Treatment-Related Side Effects [23]

Podcast: Managing Nausea and Vomiting Caused by Cancer Treatment, with Gary Lyman, MD [24]

Additional Resources

National Cancer Institute: Radiation Therapy Side Effects [25]

RT Answers: Side Effects [26]

Links:
[1] http://www.cancer.net/navigating-cancer-care/how-cancer-treated/radiation-therapy/side-effects-radiation-therapy
[2] http://www.cancer.net/about-us
[3] http://www.cancer.net/node/24728
[4] http://www.cancer.net/node/24661
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[25] http://www.cancer.gov/cancertopics/radiation-therapy-and-you/page6
[26] http://www.rtanswers.org/treatmentinformation/sideeffects/index.aspx