Radiation Therapy to the Abdomen using Cyberknife

The Ottawa Hospital Cancer Centre
Disclaimer

This pamphlet contains general information developed by The Ottawa Hospital Cancer Centre. It is not intended to replace the advice of a qualified healthcare provider. Please consult your healthcare provider who will be able to determine the appropriateness of the information for your specific situation.
What is CyberKnife?

The CyberKnife Robotic Radiosurgery System uses precise radiation doses to treat cancerous and non-cancerous tumours.

Each treatment session can range from 30-120 minutes to complete, depending on the type of tumour being treated. Your treatment can be delivered in one to eight sessions. The number of treatments depends on many factors including tumour location, tumour size and tumour type.

Depending on the size and location of the tumour, three to five platinum seeds may be inserted into the tumor or surrounding tissue prior to your treatment. These seeds will help the Cyberknife System pinpoint the tumour’s exact location. If this is the case, you will be scheduled for an outpatient procedure in which the seeds are surgically inserted. Your radiation oncologist will explain this in more detail if this applies to you.

Even though the CyberKnife System has the ability to treat with great accuracy, there can still be some side effects. The side effects associated with your treatment are very specific to the area being treated. These side effects can occur immediately after treatment or even weeks to months later. Side effects you may experience will be explained by your Radiation Oncologist. Listed in this booklet are general side effects that can be seen in patients receiving CyberKnife treatments to the abdomen.

Even though your Radiation Oncologist will prescribe your treatment, a team of Radiation Therapists will be administering your daily treatments. You may also see the Radiation Oncology Nurse during your treatment.

If you have concerns or questions, please discuss them with your radiation therapy team. They are here to help you in the following weeks.
Patients are encouraged to stop smoking or at least not to smoke during treatment. Smoking increases side effects and decreases the effectiveness of your treatment. If you are having difficulties stopping smoking please talk to your health care team.

Please note that the following is a list of acute, or short-term, temporary reactions to your radiation treatment. Please discuss possible long-term effects of your treatment with your radiation oncologist.

**Possible Side Effects**

**Nausea and Vomiting**

You may develop nausea (a feeling of sickness in the stomach) and/or vomiting (throwing up) during your radiation therapy treatment. This may occur within 1-6 hours after treatment and usually lasts 24-48 hours after treatment. **Please advise your radiation therapy team if you experience nausea or vomiting.**

**Management of Nausea**

**Medication:**
- If you have anti-nausea medication, take it as directed, usually at least 30 minutes before your meals.

**Eating:**
- Nausea can be made worse by an empty stomach. Eating small amounts of the foods suggested below can help. Try a few crackers as soon as you start feeling nauseated.
- Try eating several small meals (6-7 meals per day) instead of three large meals.
- Eat slowly.
• The smell of certain foods may cause nausea. If possible, stay out of the kitchen and ask someone else to prepare meals or purchase already prepared meals which only require reheating. Try cold foods as they tend to be less smelly than hot foods.
• Avoid fatty foods, fried foods, and spicy foods.
• Avoid very rich and sweet foods.
• Do not try your favourite foods when you are nauseous. Wait until you are feeling better to enjoy those foods.
• Foods which are better tolerated:
  • Soda crackers, toast, cereals, dry plain cookies
  • Cold foods: cheese, cold deli meats, sandwiches, eggs
  • Potatoes, rice, pastas
  • Juice, “flat” soft drinks, bouillon, tea
  • Gelatin desserts, popsicles
  • Try resting after your meals. Do not lie down; a sitting position is ideal.

**Drinking:**
• Do not drink and eat at the same time: drink your liquids 30-60 minutes before or after your meals.
• Drink slowly.

If you experience nausea or vomiting, you may be referred to a dietitian to assist you in meeting your nutritional needs.

**Management of Vomiting**

If you experience vomiting please notify your radiation therapy team.

**DIARRHEA AND CRAMPING**

If radiation passes through bowel you may experience changes in the frequency or consistency of your bowel movements which may lead to diarrhea and cramping. Diarrhea is
most commonly described as loose, frequent, watery bowel movements which may be accompanied by gas and bloating. These symptoms may occur as early as one week after you first treatment. Please notify your Radiation Therapy Team as soon as you notice any changes in your normal bowel habit as early intervention is important. The following is a list of dietary changes you can make as soon as you experience loose bowel movements or an increase in the number of daily bowel movements.

**Management**

**Eating:**
- Use less roughage (fiber) in your diet. Avoid fruit and vegetable skins, seeds and membranes, whole grain breads and cereals, nuts and popcorn.
  Note: Oatmeal, peeled apples, pears, potatoes and other foods from the fruit/vegetable group are good sources of certain types of fiber that may help to alleviate diarrhea. **A nutritional guidelines booklet containing other suggested foods is available.**
- Potassium is an important element to your body and is lost in great quantities when you have diarrhea. Make sure you eat some foods that are high in potassium (but will not worsen diarrhea) such as bananas, apricot or peach nectar, potatoes, tomatoes or vegetable juice.
- Stay away from foods that may encourage gas or cramps such as carbonated drinks, beer, beans, cabbage, broccoli, cauliflower, highly spiced foods, too many sweets and sugarless chewing gum (containing sorbitol and mannitol).
- Try eating several small meals (6-7 meals per day) instead of three large meals.

**Drinking:**
- Make sure you drink plenty of fluids, 6-8 glasses (10 oz) per day. Drink fluids between meals instead of with them.
• Minimize or avoid alcohol and caffeinated beverages such as coffee, tea, cola and energy drinks.

If your diarrhea and/or cramping lasts longer than 24 hours and these management strategies do not work, please notify your radiation therapy team right away.

A dietician is available to assist you with diet management strategies. Please ask your radiation therapist, nurse or radiation oncologist for a referral if you do not already have one.

SKIN REACTIONS

Skin reactions are not common since the CyberKnife focuses the high radiation doses around the tumour. It is more likely in patients where the target is close to the surface of the skin. Skin reactions in these areas may occur 10-12 days after starting treatment (often after the first three treatments). You may experience discomfort, itchiness, tenderness, swelling, and reddening. Your radiation therapy team will explain which areas of your skin may be affected. The treatment area may include areas on your back. The severity of the reaction is dependent upon your skin type (sensitivity to radiation), the area being treated and the dose and number of treatments prescribed. If indicated by you health care team. Use the following guidelines to minimize any skin reaction you may experience.

Management
(Appplies to treatment area only)

The guidelines below are to be used beginning on the first day of your radiation treatment and are to be continued for a minimum of two weeks after finishing all of your radiation treatments or until your skin has healed completely.

Washing instructions
• Wash treated area gently once a day. Use only mild soap containing:
– Moisturizing agents
  – **No** scents or perfumes
• Use only lukewarm water when bathing or showering. Avoid long hot soaks in the tub.
• If possible, the shower setting should be adjusted to low pressure.
• Do not use a wash cloth. Instead, use your bare hand to gently wash the treated area.
• Do not scrub the skin in the treatment area.
• Do not remove any non permanent skin markings.
• Air dry or gently pat skin with a soft cotton towel after bathing. Avoid rubbing skin in the area being treated.

Other General Guidelines
• **Hydration:** You are advised to apply a moisturizing lotion or cream to the treatment area after bathing and as often as possible throughout the day to moisturize the skin. Start before treatment if possible. The lotion or cream should contain:
  – **No** scents or perfumes
  – **No** lanolin
Discontinue the use of the lotion or cream and inform your radiation therapy team if the skin starts to become itchy, dry or begins to break down or open.
• **Irritants:** Avoid any irritants such as perfumes, body sprays, etc.
• **Scratching:** Do not scratch itchy skin within the treatment area.
• **Temperatures:** Avoid exposing skin in the treatment area to temperature extremes (ice packs, heating pads, hot/cold/wet compresses, hot waxing, saunas and hot tubs, etc.).
• **Bandages:** Avoid Band Aid® type bandages and adhesive tapes on treated skin.
• **Clothing:** Wear soft, breathable, loose fitting clothing and avoid tight fitting or compression garments in the treated area.
• **Sun and wind exposure:** Protect treated area from direct sunlight and wind exposure. Do not use sunscreen on the treated area during radiation treatments and for 2 weeks after the completion of treatment. Once the skin has healed, a sunscreen with SPF of 30 or higher, should always be applied to the treated area due to permanent sensitivity to the sun.

• **Swimming:** Swimming may be allowed ONLY if the skin in the treatment area is intact. Please discuss with your radiation therapy team whether or not swimming is advisable for you. Remove your wet swimsuit after swimming if it is in contact with the treated area and rinse your skin using the washing instructions mentioned above. Avoid swimming if you start to develop a skin reaction.

Your skin reaction will be monitored by your radiation therapy team. Should your skin become itchy or begin to breakdown, please inform your radiation therapist. Your skin reaction may increase in severity 1-2 weeks following treatments. **You are advised to follow all skin care guidelines listed above for 2 weeks following the end of your radiation treatments or until your skin has healed completely.** You can contact your radiation oncology nurse (613-737-7700 ext. ) in the first two weeks after treatment if you are concerned with the condition of your skin. Following this two weeks period after the end of treatment, you are to contact your patient designated nurse with any questions related to side effects. Contact information will be provided on your last day of treatment.

**Radiation Induced Fatigue**

You may experience some level of fatigue during the course of your treatment. Fatigue is the feeling of being mentally and/or physically tired. You may already be feeling tired as it is one of the most common symptoms associated with cancer. This lack of energy can get in the way of your normal functioning making it harder to concentrate and bringing down your mood. Some patients may feel even more tired in the first two weeks following
their radiation treatments. It may take a few weeks to return to how you felt before the treatments.

Management

• **Eating:** Eat a balanced diet and drink plenty of fluids.

• **Set priorities.** Continue with regular daily activities, however, only perform most important tasks if fatigue increases.

• **Rest:** Take short naps during the day if required. Aim to get the majority of your sleep at night.

• **Stay active:** Physical activity and exercise can help to minimize the effects of fatigue. Take a brisk 20-30min walk daily if you are able.

Let your radiation therapy team know if you are feeling very fatigued, sleepy, depressed or are having difficulty performing everyday tasks. Your radiation therapy team can direct you to other resources as required.

**Other side effects**

If you experience side effects other than those listed in this pamphlet, please notify your radiation therapy team and you will be referred to the appropriate health professional.

**NOTES**