



South West Radiotherapy
Operational Delivery Network

Radical radiotherapy for cancers of the upper abdomen

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Introduction

Your oncologist has recommended that you have a course of radiotherapy. This leaflet is for patients having radiotherapy to their upper abdomen and gives you information about the planning, delivery and side-effects that you may experience during and after treatment.

Please be aware that radiotherapy centres are training centres for doctors, nurses and radiographers. Students may be present in the department but they are supervised at all times. If you would prefer not to have students present during your treatment, please let a member of staff know.

You may find it useful to write down some questions before you start your treatment. A space is provided towards the back of this leaflet for you to do so.

Useful contacts

Radiotherapy appointments: _____

Radiographers: _____

Clinical Nurse Specialist: _____

Radiotherapy to the upper abdomen for gastrointestinal cancers

This leaflet is for patients having radiotherapy to their upper abdomen. Upper abdomen gastrointestinal organs include the stomach, pancreas, duodenum, gall bladder, bile ducts and liver. Your doctor may recommend you have radiotherapy combined with chemotherapy (chemoradiotherapy). You may or may not have surgery before or after your treatment.

What is radiotherapy?

Radiotherapy uses high energy X-rays or other types of radiation to destroy cancer cells. It is also known as radiation therapy or external beam radiotherapy. The organs and tissues in the body are made up of cells. Normal cells in the treated area can also be damaged by radiotherapy, but normal cells can repair themselves more effectively than cancer cells. Side effects can occur as a result of damage to normal cells (see pages 6 & 7).

How is radiotherapy given?

Radiotherapy is given using a special type of X-ray machine called a linear accelerator, or 'LINAC'. Therapy radiographers operate these machines to deliver your treatment. The radiotherapy is given as a beam focused from outside the body (external radiotherapy). This treatment will not make you radioactive, so it is perfectly safe for you to mix with other people, including children or anyone who is pregnant, throughout your treatment.

The machine delivers the treatment by moving around you. It may come close to you but will not touch you. You will not see or feel the treatment, but you may hear the sound of the machine moving around you.

What will happen at my planning scan appointment?

You will normally have a planning scan appointment before your radiotherapy starts, so that the radiotherapy team can make a treatment plan for you. This is a CT scan and will be taken with you in the position in which you will have your treatment. This is usually with you lying on your back with your arms supported above your head. You will need to be in a stable position so that you do not move during your treatment. This will be done using varying pieces of equipment depending on your mobility.

You may be asked to fast for 2 hours before your planning scan appointment and to drink a special liquid that helps to show your organs on the scan. You may then be asked to do the same for each of your radiotherapy treatments. You might need an injection of contrast into a vein in your arm or hand for the planning scan. This is a dye that helps body tissues show up more clearly on the scan. This injection will not be needed for your treatments.

If your tumour is in part of the abdomen that moves a lot with breathing, your treatment may be planned and delivered with your breath held. You may be invited to discuss this further and to practice the breath-hold instructions immediately before your planning scan. Or a

piece of equipment may be used to put some pressure on your abdomen, during the planning scan and your treatments, to reduce the movement. This can be uncomfortable but is not painful.

After the scan, with your permission, 3 tiny permanent skin marks (tattoos) will be made, using a pinprick needle and permanent black ink. These permanent skin marks will be no bigger than a freckle, as show in the image.



These marks will be used by the radiographers to get you into the right position for your treatment.

What does my treatment involve?

The radiographers will position you on the couch of the machine using the tattoo dots on your skin. It is important for you to stay relaxed and still. A team of radiographers work together in the treatment room and you will hear them giving each other instructions and information relating to your treatment. The radiographers will leave the room to switch on the machine. You will only be alone for a few moments at a time. The radiographers will be watching you on a closed-circuit TV monitor (CCTV). There is a two-way intercom system enabling the radiographers to talk to you and you can talk to them. Please remember to stay still at all times so that your treatment is in the right place. If you need the radiographers you can move your hand to alert them and they can stop the treatment machine and be with you in

seconds. Treatment only takes a few minutes. The machine may move around you while the radiographers are outside of the room. This is perfectly normal and they are watching you and the machine the whole time.

Routine blood tests, requested by your doctor, may be taken during your course of treatment.

Who will I see and when?

You may see a Clinical Oncologist (doctor), a consultant or a specialist registrar. Therapy radiographers are specially trained to use the equipment required to plan and deliver radiotherapy. You will see a team of therapy radiographers at each treatment session.

The radiotherapy department may be a training centre for student radiographers and they may be present in the department. If you would prefer not to have students present during your treatment let one of the members of staff know.

You may have review appointments during your treatment; the frequency of these depends on the number of treatments you have. These appointments provide an opportunity for you to discuss your side effects and your wellbeing during treatment. You will still have the opportunity every day to discuss any side effects that you have with the radiographers who treat you, so please do not feel that you have to save up your concerns for the review.

Side-effects of radiotherapy to the upper abdomen

The majority of side-effects from radiotherapy are predictable, expected and temporary (short term side effects), whilst other side-effects can be chronic (long term). Everyone's healing is different so you may find you experience some or all of these symptoms. Likewise, you may recover very quickly over some weeks or it may take several months.

Short-term side-effects

Radiotherapy has a delayed effect; this means that you usually do not notice any side effects until the end of the second week of treatment. Side effects usually start as mild and slowly build up during the course of your treatment. They most commonly include:

- **Tiredness/Fatigue**

Some patients may find that they feel more tired than usual during treatment (often after 2 to 3 weeks). Travelling to your radiotherapy appointments may also add to this. It is important that you continue with your normal activities and routines as much as possible. Try to find a sensible balance between rest and activity.

- **Nausea (feeling sick)/Indigestion (heartburn)**

Please report any nausea, vomiting or indigestion to your radiographers as this can be relieved with anti-sickness tablets or medicine.

- **Diarrhoea**

There is a possibility that your radiotherapy treatment can cause you to experience looser bowels. It is helpful to drink plenty of fluids to replace those lost through diarrhoea. Please inform the radiographers if you experience this side effect as advice regarding diet and medications is available.

- **Skin reaction of the treated area**

The skin in the treated area may become pink, dry and itchy, similar to sunburn, as your treatment progresses. The skin in the treated area may get very sore and may peel or blister which will become painful and uncomfortable. See **page 11 & 12** for information on how to care for your skin.

- **Loss of appetite**

You may see a dietitian during your course of treatment. If you are using a special feeding tube called a PEG or RIG tube, the dietitians will see you during your treatment to provide advice and support however, don't be afraid to ask for help. It is important to maintain your nutrition during and after your treatment to allow the normal tissue damaged by the radiotherapy to heal.

Long term side effects

These depend on which organs are close to the area being treated and can occur despite our efforts to minimise the radiation dose that they receive. They are less common but can be permanent due to scar tissue forming from the radiotherapy.

- **Pancreas**

You may not absorb fat (from digested food) from your bowel and this can cause loose bowel motions. This is treated by medication that helps you to absorb food normally.

Problems producing insulin, the hormone responsible for lowering your blood sugar level, can occur so you may have to cut down carbohydrates and sugars from your diet or take tablets to lower your blood sugar.

- **Small bowel**

Scarring of the small bowel can occur; leading to long term change in bowel habit – either constipation or diarrhoea.

Narrowing of the small bowel can occur but is rare. The symptoms to be aware of would be abdominal swelling, colicky abdominal pains, nausea or vomiting and complete constipation. Occasionally this requires a procedure to place a stent to open up the bowel.

Rarely ulceration of the small bowel can cause a perforation. This tends to cause sudden and severe pain and usually requires surgery to repair it. There is a small possibility this can be fatal.

- **Kidney**

It is uncommon for a kidney to be affected, as your doctors will ensure that the dose to the kidneys is as low as possible, however sometimes the kidney function can be reduced compared to prior to treatment.

- **Stomach**

Occasionally the stomach can develop an ulcer (peptic ulcer) and there is a risk that an ulcer may perforate (tear) or bleed. Very rarely this can be life threatening.

- **Spleen**

The dose to the spleen will be calculated during your radiotherapy planning. If there is concern that the function will be affected you may be offered antibiotics or vaccination against some bacterial illnesses.

- **Spine**

If spinal bones receive a significant dose there is a risk of fracture.

As the treatment involves using radiation, there is a very rare risk that it may cause another cancer within the area treated in the future.

Self-care during radiotherapy

Try to allow time for rest. Everyone reacts differently, and as treatment progresses you will get an idea of the effect it is having on you.

Skin care in the treatment area

- Moisturise frequently; gently smooth it onto your skin until it is absorbed. Do not rub.
- Continue to use the moisturiser you prefer and like to use – if you do not currently use one, speak with your radiographer or CNS and they will be able to suggest some options.

- Do not apply moisturiser immediately before treatment.
- If a moisturiser is causing irritation, stop using it and discuss it with a radiographer or your CNS.
- If your skin blisters or peels, stop using moisturiser in that particular area and seek advice from a radiographer or your CNS.
- Avoid sun exposure in the treatment area – wear a brimmed hat and/or cover up with clothing.
- **Please avoid rubbing the area, using sticky tape, wet shaving, and using wax, hair removal cream or lasers.**

Health and wellbeing

- Keep well hydrated – aim to drink 2 litres (4 pints) of water a day.
- Avoid drinking alcohol.
- Eat a nutritionally well-balanced diet. If you are struggling to eat, a dietitian can advise you on how to add extra nourishment to your food, adapting the texture of your diet and high energy and high protein options. They can also arrange a prescription for nutritional supplements, such as high calorie drinks to help keep your weight up. It is important to try to maintain your weight during treatment. This will help to make sure that you remain as well as possible and should minimise any interruptions to your treatment.
- Keep active if you can – activity helps to improve outcomes and help you cope better with side-effects

What can I expect after treatment has finished?

Radiotherapy has a delayed effect in which the side-effects will continue even after your treatment has finished. They tend to reach their peak around 7 to 14 days after your last radiotherapy session, so don't be alarmed if they worsen.

Recovery times vary from person to person, but side-effects should gradually improve over the following 6 to 12 weeks.

In the weeks following your treatment, you will be reviewed by the specialists that have been looking after you. This will vary depending on your diagnosis and treatment regimen, but you will be advised on this by your treatment team.

Everyone is different and may react differently to treatment. If at any point, after you have finished treatment, you are concerned about anything please contact your radiotherapy team or your GP.

It is not unusual for people to be anxious and it might be better to seek advice rather than worry. **If you need urgent help out of normal working hours please contact NHS 111 for advice.**

What support is available?

Many people, quite naturally, feel emotionally upset and frightened following the diagnosis of cancer. It may be

difficult to adjust to what is happening. Finding out as much as you can, about your treatment, may calm your fears and help you to cope better.

The therapy radiographers and other healthcare professionals you may meet will be willing to listen to your worries and support you in any way they can. They may be able to refer you to support services offered in your hospital.

Questions

Please use this space to write down any questions you have, to help you remember to ask them at your first radiotherapy appointment.

Radiotherapy summary

This page is intended for your health care professional to use when they talk to you about your radiotherapy. It is not an official document or consent, but to help summarise everything in one place for you.

You are having radiotherapy delivered to: _____

Your radiotherapy consultant is: _____

Treatment intent

<input type="checkbox"/> Radical radiotherapy – aiming to give long term benefits and cure in some patients – and may be in combination with chemotherapy given before, during or after the radiotherapy	<input type="checkbox"/> Palliative radiotherapy – aiming to improve symptoms. While a cure is not likely palliative radiotherapy may also prolong life
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You will be having _____ treatments over _____ days, not including weekends.

Side-effects

The ticked boxes below are potential side-effects that will arise from your radiotherapy treatment. This is to be taken as a guide, and will not be experienced by all patients.

Frequently occurring short term side-effects

- Fatigue
- Nausea and vomiting
- Indigestion
- Reduced appetite
- Skin irritation – similar to sun burn
- Diarrhoea

Long term side-effects

These may occur many months to years after treatment:

- Narrowing of the small bowel
- Scarring of the small bowel
- Ulcer in the stomach (may tear or bleed)
- Risk of pancreas damage (difficulty producing insulin)
- Risk of damage to kidney reducing function
- Risk of damage to spleen reducing function
- Risk of spine fracture
- A radiation induced malignancy (very rare)

Further information

Further information is readily available on:

Macmillan Cancer Support

Tel: 0808 808 0000

Website: www.macmillan.org.uk



Cancer Research UK

Website: www.cancerresearchuk.org



NHS Choices

Website: www.nhs.uk (search for upper abdomen cancer)

Pancreatic Cancer UK

Tel: 0808 801 0707

Website: www.pancreaticcancer.org.uk



The QR codes below will direct you to further resources relating to your radiotherapy treatment. You can use your smartphone camera to scan the codes:

The Society and College of Radiographers

Radiotherapy Skin Reactions



Macmillan: Understanding Radiotherapy

Website: www.macmillan.org.uk/cancer-information-and-support/stories-and-media/booklets/understanding-radiotherapy



Further support will be available locally, please speak to your oncology team who can advise what local charities are there to help you, and which support groups are available near you.

Your data

All personal images and photographs taken during your radiotherapy will be used in accordance with the local Trust policy on the protection and use of patient information.

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