Radiotherapy

Treatment and tests Infosheet

This Infosheet explains what radiotherapy is, how it is used in the treatment of myeloma, how it is given and what the possible side effects of this treatment are.

What is radiotherapy?

Radiotherapy is the use of high-energy radiation (usually X-rays) to kill cancer cells. It works by targeting cells that are multiplying rapidly (such as myeloma cells) and damaging them so they cannot grow and multiply.

How is radiotherapy used in the treatment of myeloma?

Radiotherapy is primarily used in myeloma to relieve pain in areas where there is damage caused by myeloma bone disease. Myeloma bone disease is a common feature of myeloma and bone pain is a very common symptom. Myeloma bone disease happens because the myeloma cells in the bone marrow can affect the surrounding bone and cause it to thin. Sometimes this makes the bone break (fracture).

For more information see the **Myeloma bone disease Infoguide** from Myeloma UK

Radiotherapy is generally used to treat only small areas of myeloma bone disease that are causing particular problems. This is because it also damages normal, healthy cells.

Radiotherapy can be used to:

- Relieve pain and kill myeloma cells in a specific area of bone
- Relieve pressure on the spinal cord if myeloma cells have expanded out of the bone marrow, causing spinal cord compression, or if the bones of the spine (vertebrae) collapse due to myeloma bone disease
- Control or prevent the return of a solitary plasmacytoma. A solitary plasmacytoma is an accumulation of myeloma cells with no evidence of myeloma elsewhere in the body
- Reduce the number of myeloma cells prior to an allogeneic stem cell transplant (using donor stem cells)

What does radiotherapy involve?

Radiotherapy is a treatment requiring specialist staff and equipment, and is carried out in the radiotherapy department of larger hospitals. This means it is sometimes necessary to travel to another hospital for treatment.

How is radiotherapy given

Radiotherapy is usually given as an outpatient, unless you are already in hospital for other treatment.

Radiotherapy is given using a large machine positioned exactly over the area of the body to be treated (see Figure 1). Radiotherapy treatment needs to be carefully planned to make sure the targeted area receives the correct dose of radiation while normal body tissues are as unaffected as possible.

The area to be treated is established using X-ray, CT or MRI imaging. It is then marked using a special permanent ink pen to guide the treatment. The marks left by this pen are similar to small pin point tattoos and can remain on the skin for some time.

Depending on the area being treated, you may need to have a mould (also called a shell) or mask made. These are worn during treatment and keep the area being treated still during each radiotherapy session.

Receiving radiotherapy is very similar to having an X-ray. The radiation beam is invisible

but the machine may move and make a noise. Radiotherapy is a painless procedure and only lasts for a few minutes, sometimes only seconds. It is important to remain still and breathe normally.

Treatment sessions

The full dose of radiation is given over a number of treatment sessions called 'fractions'. This is to allow the healthy cells to recover between fractions. Effective pain relief is usually achieved in around 10–15 fractions, but you may not need as many as this.

Radiotherapy takes a little while to begin to work and can sometimes cause a flare up of pain for a day or so following treatment. An improvement in symptoms is normally noticeable within a few days but it can take a few weeks for patients to feel the full benefit of radiotherapy.

Radiotherapy treatment does not make you radioactive as the radiation passes through your body. It is therefore safe to mixn with other people during and after radiotherapy treatment.

Figure 1. Radiotherapy machine in use

What are the potential short-term side effects of radiotherapy?

Side effects vary from patient to patient, but are almost always mild and fade soon after treatment is finished. Usually any side effects will have completely gone 2-3 weeks after treatment has been stopped. Most patients have no problems at all.

If side effects develop during or after radiotherapy, it is important to tell your doctor or nurse as most of these effects can be easily managed.

Some of the more common potential side effects are listed below.

Sensitivity of skin

The skin can become red and sore at the site of treatment (similar to sunburn). The skin on the other side of your body to the area treated (where the radiation exits the body) may also be affected. Excessive washing, friction or heat should be avoided and areas treated with radiotherapy should not be exposed to the sun.

The radiotherapy staff will advise you on how to care for your skin following radiotherapy treatment, and will usually tell you to gently wash the affected area with mild, unperfumed soap and warm water.

You will usually be advised not to use any creams or lotions that have not been prescribed to you by the radiographer or your haematologist.

Loss of hair in the treatment area

Radiotherapy makes hair fall out in the treatment area. Hair in other parts of the body is not affected. The hair should begin to grow back again a few weeks after the treatment ends.

Tiredness and fatigue

You may feel very tired after radiotherapy treatment. This is because the body is repairing the damage to healthy cells. Tiredness may persist for a week or two after treatment has stopped.

Radiotherapy also sometimes slows down the cells in the bone marrow that produce your blood cells. If your level of red blood cells is low, you may feel tired and breathless.

You may find the following tips help manage your fatigue:

- Maintain a healthy balanced diet
- Drink 2-3 litres of water per day
- Rest when you need to
- Gentle exercise such as walking or cycling

Nausea

Nausea can start within a few hours of treatment but usually only lasts 24-48 hours. It is generally only a problem if the upper abdomen or corresponding area of the back is being treated. Nausea can be treated with anti-sickness (also called anti-emetics) drugs.

Diarrhoea

Treatment to the abdomen or pelvic region can cause diarrhoea. Let your healthcare team know if you have diarrhoea, as they can give you treatment to help.

Mouth sores

Mouth sores can sometimes happen if the upper part of your body has been treated with radiotherapy. The radiotherapy staff will advise on how to manage this side effect, such as gentle and regular tooth cleaning, using an alcohol-free mouth wash, and avoiding spicy or very hot foods and drinks.

What are the potential longer term side effects of radiotherapy?

Longer term side effects are rare in myeloma but can include the following listed below.

Changes to skin colour

You may find the skin in the treated area changes colour following radiotherapy. It may look darker than the surrounding skin. You may also note the appearance of small broken veins in the treated area. This is called telangiectasia.

Neither of these changes will affect your health and both, if they are problematic, can be covered with camouflage make-up which can be prescribed by your GP.

Fertility and sexual function

The stress of living with myeloma, worry about treatment and the fatigue caused by radiotherapy can cause a loss of interest in sex (loss of libido).

Radiotherapy to the pelvis can also sometimes lead to vaginal dryness or erectile dysfunction (usually temporary) due to damage

to the nerves in that area. There is treatment that can help if difficulty in having sex becomes an issue.

Fertility is only likely to be affected if radiotherapy is applied to the lower abdomen, lower spine or pelvis and the risk increases with higher doses.

Whole body irradiation used sometimes as part of an allogenic (donor) stem cell transplant can cause permanent infertility.

Ask your doctor or specialist nurse for advice if you are worried about these possible longer-term effects of radiotherapy.

Key points

- Radiotherapy is the use of high-energy radiation to kill myeloma cells
- Radiotherapy is primarily used in myeloma to relieve pain from myeloma bone disease
- Radiotherapy is used to target specific areas of the bone and is usually given over different treatment sessions to allow time for healthy cells to recover between sessions
- An improvement in symptoms is usually noticeable within a few days of treatment, but the full benefit may take a few weeks for patients to feel
- Most side effects of radiotherapy fade after treatment is finished. Longer term side effects are rare in myeloma patients

About this Infosheet

The information in this Infosheet is not meant to replace the advice of your healthcare team. They are the people to ask if you have questions about your individual situation.

For a list of references used to develop our resources, visit myeloma.org.uk/references

We value your feedback about our patient information.
For a short online survey go to myeloma.org.uk/pifeedback or email comments to patientinfo@myeloma.org.uk

Other information available from Myeloma UK

Myeloma UK has a range of information booklets available covering all aspects of myeloma and related conditions. Download or order them from myeloma.org.uk/publications

To talk to one of our Myeloma Information Specialists about any aspect of smouldering myeloma, call our Myeloma Infoline on 0800 980 3332 or 1800 937 773 from Ireland.

The Infoline is open from Monday to Friday, 9am to 5pm and is free to phone from anywhere in the UK and Ireland.

Information and support about myeloma is also available around the clock at myeloma.org.uk

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We're here for everything a diagnosis of myeloma brings

Get in touch to find out more about how we can support you

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0800 980 3332

Email Ask the Nurse at
AskTheNurse@myeloma.org.uk

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Myeloma UK
22 Logie Mill, Beaverbank Business Park,
Edinburgh EH7 4HG
0131 557 3332
myelomauk@myeloma.org.uk
Registered Charity No: SC026116

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