Intensity modulated radiotherapy (IMRT) – A fact sheet for patients

This fact sheet has been written to tell you about the benefits of Intensity modulated radiation therapy (IMRT). You should read it alongside the Macmillan Cancer Support booklet '*Understanding Radiotherapy'*. Your radiotherapy centre can give you a copy of this booklet. This information is being provided so that you can discuss with your oncologist if you would benefit from having this type of treatment.

What is IMRT?

Intensity modulated radiotherapy (IMRT) can create radiation beams of differing strengths; this is not possible with convetional radiotherapy. IMRT can also shape the radiotherapy beams more precisely. This means that different doses of radiotherapy can be given to different parts of the treatment area so the dose to nearby tissues is kept as low as possible.

Why is IMRT beneficial to people?

The goal of radiotherapy is to keep the dose of radiation to the normal tissues as low as possible. With IMRT, lower doses of radiotherapy can be given to healthy tissue. This means that both short-term and long-term side effects are reduced.

Which side effects can be reduced by treating with IMRT?

IMRT is often used to treat tumours that are close to important organs or structures. For example, when IMRT is used to treat pelvic tumours it can reduce the risk of long term bowel problems such as:

- cramps or spasms in the bowel and/or feeling that you haven't emptied your bowel completely (tenesmus)
- diarrhoea or severe constipation
- needing to rush to open your bowels (urgency)
- passing a lot of wind

IMRT can also be used to treat tumours in the head and neck region. The radiotherapy dose to important structures such as the salivary glands can be kept as low as possible. These structures are very sensitive to the effects of radiotherapy. IMRT can reduce the damage to them and reduce the risk of permanent mouth dryness[1] (called xerostomia). IMRT may also allow higher doses of radiotherapy to be given to the tumour.

Should all radiotherapy patients have IMRT?

It is generally accepted that IMRT should be used in at least 1 in 3 people who are having radiotherapy which is aiming to cure their cancer[2]. It may benefit many different people with different types of tumour. But its main use is in the treatment of people with head and neck, prostate, bladder, lung and breast cancers.

How do people find out if they should have IMRT?

When you are referred for radiotherapy your oncologist should advise if you are likely to benefit from having IMRT. The clinical oncologist (radiotherapy specialist) should then tell you if their centre can provide it.

Is IMRT available to everybody that should receive it?

Many radiotherapy departments are currently able to provide IMRT for people that need it. If your clinical oncologist agrees that you would benefit from IMRT, but they cannot provide it at their centre, then arrangements can be made to send you to another hospital where it can be provided. Your oncologist or another member of your health care team will be able to give you more information about how this will happen.

Why is IMRT not available at all radiotherapy centres in England?

IMRT can be delivered on all modern linear accelerators. However the processes required to design an IMRT treatment are far more complex than for standard radiotherapy. A small number of radiotherapy departments are still working towards being able to provide this service for all people that should receive it.

For more information please go to:-

www.macmillan.org.uk/Cancerinformation/Cancertreatment/Treatmenttypes/Radiotherapy/IMRT.aspx

References

1. Ahmed S, Duke S, Jena R, Williams MV, Burnet N. Advances in Radiotherapy. *BMJ*, 2012; **345**: e7765.
2. Williams MV, Cooper T, Mackay R, Staffurth J, Routsis D, Burnet N. The Implementation of Intensity-modulated radiotherapy in the UK. *Clinical Oncology*, 2010; **22**(8): 623-628.

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Disclaimer

This document has been prepared for people, carers and professionals to inform them about IMRT. Every effort has been taken to ensure it is accurate and up to date at the time of publication. It is not intended as a substitute for medical and professional advice.