University College Hospital

Stereotactic ablative body radiotherapy (SABR) for lung cancer
Radiotherapy Department
Patient information series

No 39
If you need a large print, audio or translated copy of the document, please contact us on:

020 3447 3711 (Direct line)
020 3456 7890 ext 73711/bleep 1458
0845 155 5000 ext 73711/bleep 1458

We will try our best to meet your needs.
Introduction
This booklet aims to help you understand more about a new treatment for your lung cancer. The treatment technique is called stereotactic ablative body radiotherapy (SABR). The booklet describes:

• What is stereotactic ablative body radiotherapy (SABR).
• How your treatment is planned and delivered.
• The side effects you may experience during and after treatment, and how best to cope with them.

We understand that this is an anxious time for patients. You may feel that you have been given lots of information about what needs to be done in a short period of time. We hope this booklet answers some of your questions. If you still have any questions or concerns, please let your radiotherapy doctor (also called a clinical oncologist), radiographer or nurse specialist know. We are here to help you, in every way we can.

Information for female patients
It is very important that you should not be or become pregnant at any time throughout your course of radiotherapy and for up to four months afterwards. If you are unsure of this issue or if you think you may be pregnant at any time during your treatment, it is extremely important that you discuss this with your radiotherapy doctor, the radiographers or nurses immediately.

Consent to treatment
Before you start your treatment your radiotherapy doctor or a member of their team will discuss your treatment with you. Together with you, they will consider the risks and benefits of the different treatment options available, and decide how to proceed. You will be asked to sign a consent form stating that you understand what SABR involves, and that the risks, benefits and possible side effects of SABR have been explained, and you have been given the opportunity to ask any further questions. Please contact your doctor, your specialist nurse, or the Macmillan Information and Support radiographer if you have any concerns before your treatment.
What is stereotactic ablative body radiotherapy (SABR)?
SABR is a new technique which is a more effective way of treating small lung cancers, giving a high dose of radiotherapy to a small portion of the lung. It is a very precise treatment, with the same chance of curing or controlling early lung cancer as surgery.

What are the benefits of SABR?
The possible benefits of SABR are:
• Increased chances of tumour control compared to standard radiotherapy.
• Higher doses of radiotherapy per treatment resulting in fewer visits.
• Numerous beams are used, sparing the normal tissues from higher doses of radiation, thereby minimising any side effects.

Are there any alternatives to SABR?
Depending on your lung function you may be offered standard daily radiotherapy, or a short course of palliative radiotherapy to control any symptoms you may be experiencing. Your radiotherapy doctor will be happy to discuss any concerns you may still have.

Planning your treatment
Your SABR has to be accurately planned, so you will have two to three visits to the radiotherapy department before you start your treatment. Your first appointment will be in the radiotherapy mould room. You will be asked to lie on your back on a couch with your arms above your head. You will have a personalised support made to help you keep this position. It is important that you are comfortable and that you are breathing normally. If you are in any discomfort during this process, please tell a member of the team.

You will then be taken for a radiotherapy CT planning scan. You will be asked to lie on your personalised support. A small lightweight plastic box will be placed on your stomach to monitor your breathing. If you have any problems maintaining a steady breathing pattern, we can offer you breathing coaching to help with this.
Once the scan is complete the radiographers will make up to four very small marks on your chest. These are the co-ordinates for your treatment and ensure accuracy for each treatment. The marks are permanent and are done by placing ink on your skin and then gently scratching the surface of the skin with a fine needle. The whole CT process may take up to an hour.

Your final appointment before your treatment starts is called a “treatment plan check”. This is done on the treatment machine to ensure that you are comfortable in the treatment position and to check your radiotherapy treatment plan. A scan will be done on the treatment unit. If the scan is satisfactory, your treatment will start within the next day or two. The radiographers will explain the treatment procedure to you and answer any questions you may have.

**Having your treatment**

SABR is given on alternate days, for example, Monday, Wednesday and Friday with a rest at the weekend. SABR is usually given in three to five sessions each lasting about an hour, over one to two weeks. Your radiotherapy doctor will tell you how many treatments you will be having.

At each treatment session the radiographers will position you, moving the treatment couch and machine to direct the treatment accurately at the cancer.

Once you are in the correct position, and the final checks completed, the radiographers will leave the room to switch on the machine. There is no need for concern, as there is a two-way intercom system so the radiographers can talk to you. During treatment, it is important for you to stay as still as possible but to breathe normally. The radiographers will be watching you at all times on a closed circuit television.

Before and after the treatment, the radiographers will take X-rays and CT scans to help ensure the accuracy of your treatment. The treatment machine will move around you, but will not touch you. You will not feel anything and you do not have to hold your breath. All we ask is that you keep still.
The radiographers and radiotherapy care team will monitor you throughout your treatment. You will see a doctor once a week, or more frequently if necessary. If you have any concerns or queries throughout your treatment course, please tell the radiographers who will be there to help you.

**Side effects during treatment**

There will be some side effects which will gradually appear during your course of radiotherapy. These effects can vary from patient to patient. Not everyone will experience all of these effects. There are side effects occurring during treatment, some happening soon after treatment, and some appearing months or years after radiotherapy. The risk and severity of side effects occurring will depend on the dose delivered and the exact area which receives the radiotherapy.

Side effects may occur through the course of treatment and may last for several weeks after it has finished, and then slowly settle down. Please tell the radiographers how you are feeling particularly if your symptoms worsen, so that you can get the care you need.

**Early side effects (during or up to 12 weeks after treatment)**

**Skin changes**

There may be reddening of the skin in the area being treated, and the area may feel warm to the touch. This is a normal reaction to the radiotherapy. Your skin reaction will be monitored daily by the radiographers who will advise you.

**How to look after your skin**

- During treatment we advise that you wash your skin gently using warm water and a non-perfumed soap.
- Pat your skin dry with a soft towel. Do not vigorously rub the treatment area.
Aqueous cream, which will be given to you at the start of your treatment, may be applied to the treated skin. This is a simple, unperfumed moisturising cream to help prevent your skin from becoming too dry. The cream can be used from the start of treatment. Apply the cream two to three times per day. Smooth a little cream very gently onto the treatment area. Do not rub it in. Please ask for a copy of our leaflet “General skin care advice”.

Do not use any other talcs, creams or lotions in the area being treated unless advised by a member of staff.

Fatigue
Fatigue is a very common side effect of radiotherapy treatment, particularly towards the end of treatment. The fatigue may even continue for several weeks after your radiotherapy has finished. Do not worry, this is a normal reaction. We advise that you do as much as you feel you can and to rest when you are feeling tired. Please ask for our leaflet “Coping with fatigue and tiredness”.

Cough
You may notice an increase in a dry or productive cough. This is due to the radiotherapy causing inflammation, but this reaction should settle down when your treatment is over. If the cough is persistent, or you have any concerns, talk to the radiographers or care team who can refer you to the doctor.

You may also notice blood in any sputum that you produce. Please inform the radiographers if you notice this. The bleeding may be the effects of the radiation and should resolve in a short while.

Chest pain
You may develop pain or aches in the area being treated due to the radiotherapy causing inflammation of the tissues. This is usually mild and relieved with simple pain killers. If you develop severe pain that is troubling you, please speak to the radiographers or care team. They can arrange for the doctor to prescribe medication for you.
**Breathlessness**
Radiotherapy to the lung may cause inflammation in the lung tissue. Due to this inflammation or “pneumonitis” you may develop symptoms of increased breathlessness, wheezing, fever or cough towards the end of treatment or after treatment has finished. This should get better on its own within a few weeks. Some patients, however, may require a short course of steroid tablets. If you are worried, or if the side effects continue for longer, please contact your radiotherapy doctor, specialist nurse or GP.

**Eating and swallowing**
During your radiotherapy treatment you are advised to maintain a healthy well balanced diet. If you do not feel like eating, try small regular snacks and supplement these meals with high calorie drinks, which can either be bought from the chemist, given by the dietician or prescribed by your doctor or GP. The radiographers will also give you advice on nutrition or refer you to the dietician.

**Feeling sick (nausea)**
Please inform the radiographers or care team if this happens. The doctor can prescribe anti-sickness tablets to help alleviate any symptoms. If you are feeling sick you may not feel like eating, so you can be referred to the dietician who can offer advice.

**Hair loss**
There may be a temporary loss of chest hair (in male patients) in the area treated. This is a normal reaction. The hair usually grows back within a few months once the treatment is over. However, sometimes hair loss may be permanent, depending on the dose of radiotherapy given.
Later side effects
(12 weeks and above after treatment)

Lung scarring/Collapse
Lung SABR treatment will cause scarring of the lung tissue in the area where the cancer was treated. This scarring is permanent and can cause a small portion of the lung to collapse. The precise planning of your treatment keeps this amount of lung scarring/collapse to a minimum. However in some patients this scarring and collapse can make you become more short of breath.

Chest wall pain/Rib fractures
For tumours close to the ribs there is a chance that the radiotherapy may weaken the ribs and cause pain or rib fracture. For most patients, this does not cause any symptoms and is discovered when you have a scan after the treatment.

Brachial plexopathy
For tumours close to the top of the lungs, there is a very small risk of the radiotherapy treatment damaging the nerves going to the arm. This would mean that there may be weakness or numbness in part of the arm. The chances of this happening are very small. Great care is taken when planning your treatment to avoid or minimise the doses of radiation to these nerves.

Second malignancy
Very rarely, people who have received treatment for one particular tumour may develop another type of tumour in the treated area some years later. The radiotherapy doctors will discuss this risk if it is relevant to you.
Support
This booklet deals with the physical aspects of your treatment, but your emotional well-being is just as important. Having treatment can be distressing for some patients. Within the radiotherapy department there will be access and support from the Macmillan information and support radiographer, the radiotherapy nurses and the treatment radiographers. However, if you require further medical or emotional support you can be referred to a variety of health professionals specialising in patients’ needs.

All the staff are here to make sure your treatment goes as smoothly as possible, and to support you through this difficult period. We will try to help you with any questions or problems you may have.

After your radiotherapy has finished
Once your radiotherapy treatment has finished, you will be given a follow-up appointment to see the radiotherapy doctors in four weeks time. This will either be at University College London Hospital or your referring hospital.

The side effects you will have experienced will continue after radiotherapy treatment has finished. It is common to experience a worsening of the skin reactions for about 10 to 14 days after radiotherapy. Please feel free to contact the department, your specialist nurse, the nursing staff or the Macmillan information and support radiographer if you are worried. You could also contact your GP or call the outpatients to request an earlier follow-up appointment. However, most of the side effects should resolve after you have finished treatment. Before you complete your course of treatment please ask for the leaflet “Finishing treatment”. It contains information on what to expect after your treatment has finished.
Useful contact numbers

Local

Macmillan Information and Support Radiographer
Mark Williams
Direct telephone:  020 3447 3711
Main switchboard:  0845 155 5000
ext 73711
bleep 1458
Alternative switchboard:  020 3456 7890
ext 73711
bleep 1458

Email: mark.williams@uclh.nhs.uk
**National**

**Roy Castle Lung Cancer Foundation**  
Freephone: 0800 358 7200  
Monday to Friday, 09:00 to 17:00  
Email: foundation@roycastle.liv.ac.uk  
Website: www.roycastle.org

**British Lung Foundation**  
Freephone Helpline: 0845 850 5020  
Email: enquiries@blf-uk.org  
Website: www.lunguk.org

**Macmillan Cancer Support**  
Cancer Line freephone: 0808 808 0000  
Monday to Friday, 09:00 to 21:00  
Textphone: 0808 808 0121  
Monday to Friday, 09:00 to 18:00  
Email: cancerline@macmillan.org.uk  
Website: www.macmillan.org.uk

**Carers UK**  
Freephone: 0808 808 7777  
Wednesday to Thursday  
Email: adviceline@carersuk.org  
Website: www.carersuk.org

**CancerHelp UK**  
Freephone Helpline: 0808 800 4040  
Monday to Friday, 9:00 to 17:00  
Website: www.cancerhelp.org.uk

**Cancer Research UK**  
Website: www.cancerresearchuk.org
National Library for Health
Covers all aspects of health, illness and treatments
Website: www.library.nhs.uk

NHS Direct
Telephone: 0845 4647
Available 24 hours
Website: www.nhsdirect.nhs.uk

NHS 24
Telephone: 08454 242424
Website: www.nhs24.com

NHS Choices
Website: www.nhs.uk

Patient UK
Comprehensive, free, up-to-date health information
Website: www.patient.co.uk

Health Talk Online
Website: www.healthtalkonline.org