Healthcare Improvement Scotland

SIGN

SIGN 137 • Management of lung cancer

Quick Reference Guide *February 2014*

Evidence

ISBN 978 1 909103 23 8

First published February 2014

SMOKING

B **Advise patients to stop smoking as soon as the diagnosis of lung cancer is suspected and explain the benefits of doing so.**

B **Inform patients that smoking increases the risk of pulmonary complications.**

D **Do not postpone surgery for lung cancer to allow patients to stop smoking.**

DIAGNOSTIC INVESTIGATIONS

Chest X-ray

D **A chest X-ray should be performed on all patients being investigated for the possibility of lung cancer.**

✓ Further investigation is recommended in patients with clinically suspected lung cancer even if the chest X-ray is normal.

CT Scanning

B **Contrast enhanced CT scanning of the chest and abdomen is recommended in all patients with suspected lung cancer, regardless of chest X-ray results.**

D **A tissue diagnosis should not be inferred from CT appearances alone.**

D **Contrast enhanced CT scanning of the chest and abdomen should be performed prior to further diagnostic investigations, including bronchoscopy, and the results used to guide the investigation that is most likely to provide both a diagnosis and stage the disease to the highest level.**

PET-CT Scanning

C **FDG PET-CT scanning may be used to investigate patients presenting with solitary lung lesions but histological/cytological confirmation of results will still be required.**

Bronchoscopy

B **Patients with central lesions who are otherwise fit should undergo flexible bronchoscopy in order to establish a histological or cytological diagnosis.**

B **Visible tumours should be sampled using more than one technique to optimise sensitivity.**

B **Bronchoscopy may provide a diagnosis for peripheral lesions, although percutaneous FNA biopsy is the preferred approach.**

Percutaneous FNA biopsy

B **Percutaneous FNA biopsy should be considered as the preferred diagnostic technique in patients with peripheral lesions.**

Sputum cytology

D **Sputum cytology should only be used in patients with large central lesions, where bronchoscopy or other diagnostic tests are deemed unsafe.**

Advanced bronchoscopic techniques

B **The use of advanced bronchoscopic techniques should be considered in patients with tumours where sampling with traditional approaches has failed to provide suitable diagnostic material.**

Video-assisted thoracoscopy

D **Thoracoscopy should be considered for patients with pleural effusions or peripheral lesions where less invasive means have not achieved histological and cytological confirmation of diagnosis.**

Anterior mediastinotomy/mediastinoscopy

✓ Anterior mediastinotomy/mediastinoscopy should be considered in patients with lung cancer presenting with hilar and mediastinal masses where histological or cytological confirmation has not been achieved by less invasive means.

Applicability of cytological samples for optimal assessment

B **Cytology samples can be used to provide material suitable for both NSCLC subtyping and some molecular analysis, provided the samples are appropriately handled and processed.**

Good practice in pathological reporting

✓ The first priority in reporting histology and cytology specimens is to establish a diagnosis. Primary malignancies should then be classified as SCLC or NSCLC. NSCLC tumours should be subtyped where possible.

✓ All histology and cytology specimens should be reported by a consultant pathologist, who is a member of the Royal College of Pathologists continuous professional development programme, who participates in relevant external quality assurance schemes and works in a pathology laboratory with clinical pathology accreditation.

✓ Every effort should be made, during the diagnostic phase, to preserve tumour material for molecular biomarker analysis.

✓ Tissue from biopsies and resection specimens should be archived in the pathology department in a manner consistent with current legislation on consent and stored in line with the recommendations of the Royal College of Pathologists. The material should be available for review if required for the further management of the patient and for audit, teaching and research, as permitted by appropriate consent.

STAGING INVESTIGATIONS

T stage in non-small cell lung cancer

B **Patients with suspected T3 or T4 disease who are otherwise fit for surgery should not be denied surgical exploration on the basis of a CT scan alone.**

B **MRI is not recommended in the routine assessment of the T stage except in patients with superior sulcus tumours. It may be of value in selected patients with suspected mediastinal invasion.**

C **Thoracoscopy may be considered for more accurate determination of the T stage in patients with suspected mediastinal or chest wall invasion when less invasive techniques have been inconclusive.**

N stage in non-small cell lung cancer

B **A positive CT scan result for mediastinal lymphadenopathy** (>10 mm in short axis diameter) **indicates the need for pathological sampling of the enlarged nodes** (with the exception of extensive infiltrating disease) **if clinically indicated.**

B **MRI has no role in the routine staging of mediastinal lymphadenopathy.**

B **All patients with NSCLC who are being considered for radical treatment should have a staging FDG PET-CT scan before treatment.**

B **Patients with a negative FDG PET-CT scan result of mediastinal nodes of 10 mm or less in short axis on CT scanning could proceed to radical treatment.**

B **Histological confirmation of mediastinal nodes should be considered if nodes are >10 mm in short axis diameter on CT or nodes are positive on PET-CT scanning.**

D **Neck US-FNA should be considered for a pathological diagnosis and staging in the case of a positive supraclavicular node on clinical examination, by CT or PET-CT scanning.**

A **Endoscopic assessment of the mediastinal lymph nodes with EBUS-FNA with or without EUS-FNA should be offered to patients with suspected lung cancer prior to mediastinoscopy.**

M stage in non-small cell lung cancer

C **Patients with clinical stage I or II disease on the basis of a CT scan of the chest and abdomen, PET-CT and a negative clinical evaluation do not require further investigation to look for extrathoracic metastases.**

D
- **In patients being considered for active therapy, pleural effusion should be investigated with pleural aspiration and/or pleural biopsy using image guided or thoracoscopic biopsy.**
- **The presence of malignant cells is required to categorise the lesion as M1a.**

✓ Thoracoscopy should be considered if aspiration and image-guided pleural biopsy are negative.

C **All patients with NSCLC who are being considered for radical treatment should have a staging PET-CT scan to detect occult distant metastases.**

C **Contrast-enhanced head CT or MRI in asymptomatic patients with clinical stage I-II disease is not recommended.**

✓ Contrast-enhanced head CT or MRI is warranted in patients with N2 disease who are being considered for curative treatment.

B **A positive nuclear bone scan in patients with otherwise potentially curable disease should be confirmed by other studies** (eg plain X-rays, MRI or biopsy)**.**

C
- **US, contrast enhanced CT, FDG PET-CT or MRI can be used to characterise most benign focal hepatic abnormalities >10 mm.**
- **A definitive confirmation of a liver metastasis can only be made by needle biopsy.**
- **The management of patients with lesions too small to characterise by imaging and not amenable to biopsy is best guided by an estimation of the chance of metastatic disease given the clinical stage and symptoms.**

B **A negative FDG PET-CT reliably excludes adrenal metastases.**

B **In patients with PET-CT positive adrenal lesions pathology, confirmation may be considered unless there is overwhelming clinical and imaging evidence of widespread metastatic disease.**

D **In patients with indeterminate adrenal lesions on FDG PET-CT further assessment with adrenal specific CT or MRI criteria may be considered. If noninvasive imaging findings are indeterminate, adrenal sampling such as EUS-FNA, percutaneous biopsy or adrenalectomy may be considered.**

C **Patients with small pulmonary nodules should not be denied a curative approach without a definitive diagnosis** (by biopsy, FNA or wedge resection).

Small cell lung cancer

B **Investigation for distant metastases is recommended when intensive treatment is being considered for patients with SCLC who are considered to be at high risk of having distant metastases.**

✓ Patients with SCLC should be staged by clinical evaluation and contrast enhanced CT of the chest and abdomen. If the CT does not demonstrate extensive disease and the clinical examination is negative, management should proceed on the assumption of limited stage disease.

SURGERY

Non-small cell lung cancer

D **Patients with stage I and II NSCLC should be considered for curative surgery whenever possible.**

D **Lung resection should be as limited as possible without compromising cancer clearance. Lobectomy remains the procedure of choice for fit patients.**

D **Every effort should be made to avoid a thoracotomy that does not progress to a lung resection.**

B **Video-assisted thoracoscopic surgical resection may be offered to patients with clinical stage I NSCLC lung cancer.**

B **Systematic nodal dissection should be undertaken for lymph node management at resection. Simple nodal sampling is not adequate and radical mediastinal lymphadenectomy is not necessary.**

✓ Patients with proven early N2 NSCLC may be considered for surgery as part of multimodality treatment. All of these cases must be discussed at the multidisciplinary team meeting.

Small cell lung cancer

A **Routine surgery for limited disease SCLC is not recommended.**

D **Patients with early stage SCLC may be considered for resection following extensive staging investigation.**

✓ Adjuvant systemic anticancer therapy should be considered following resection of early stage SCLC.

Good practice in lung cancer surgery

✓ Lung cancer surgery should be practised in high volume thoracic surgery centres by surgeons trained in thoracic surgery who undertake this surgery as a major component of their clinical commitment.

✓ The thoracic surgery unit should have appropriate specialist support available pre- and postoperatively, including chest physicians, anaesthetists, radiologists, specialist nurses and pathologists with an interest in pulmonary diseases.

✓ Thoracic surgery centres should:

- have a thoracic high dependency unit with dedicated staff and adequate monitoring facilities
- have ready access to intensive care support
- be efficiently linked to oncology specialties and geographically distant referring physicians.

✓ Treatment plans should be formulated following case review in fully serviced multidisciplinary team meetings.

✓ Lung cancer resection specimens should be reported by pathologists with reference to the WHO classification of lung and pleural tumours and the Royal College of Pathologists' minimum dataset for lung cancer histopathology reports.

RADIOTHERAPY

Non-small cell lung cancer

B **Patients with NSCLC stage I and II who are medically inoperable or who do not consent to surgery should be offered radical radiotherapy.**

D **A clinical oncologist specialising in lung oncology should determine suitability for radical radiotherapy, taking into account performance status and comorbidities.**

A **Patients having radical radiotherapy should be given CHART** (54 Gy in 36 fractions over 12 days) **in preference to 60 Gy in 30 fractions over six weeks.**

B **Patients with early-stage peripheral lung cancers who are not suitable for surgery should be considered for stereotactic ablative radiotherapy.**

D **Perform spirometry in all patients being considered for treatment with curative intent. Measure TLCO if breathlessness is disproportionate or there is other lung pathology.**

Patients with symptomatic locally advanced lung cancer

A **Patients with thoracic symptoms and good performance status not suitable for radical radiotherapy should be considered for more fractionated, higher dose regimens of palliative radiotherapy, such as 39 Gy in 13 fractions.**

A **Patients with thoracic symptoms and poor performance status not suitable for radical radiotherapy should receive palliative radiotherapy.**

✓ Patients with SCLC should be considered for palliative thoracic radiotherapy if they have significant chest symptoms and other treatments have been ineffective or are considered inappropriate.

Patients with SCLC and NSCLC brain metastases

B **Patients with single brain metastases should be offered resection followed by adjuvant radiotherapy.**

Prophylactic cranial irradiation in patients with SCLC

A **Prophylactic cranial irradiation should be offered to patients with limited disease SCLC achieving remission after systemic anticancer therapy.**

A **Prophylactic cranial irradiation should be offered to patients with extensive stage small cell lung cancer who have demonstrated a response to systemic anticancer therapy. Patients should be informed of the potential prolongation of treatment-related side effects** (hair loss and fatigue) **as well as decreased functioning scales to allow informed treatment decisions to be made.**

Patients with symptomatic metastases

A **Patients with lung cancer and symptomatic bone metastases should be treated with a single 8 Gy fraction of palliative radiotherapy.**

✓ Patients with symptomatic skin metastases should be considered for palliative radiotherapy with single fractions of 8 Gy.

SYSTEMIC ANTICANCER THERAPY

First line therapy for patients with stage IIIB and IV NSCLC

A **First line single agent tyrosine kinase inhibitors should be offered to patients with advanced NSCLC who have a sensitising *EGFR* mutation. Adding combination systemic anticancer therapy to a TKI confers no benefit and should not be used.**

A **Patients who have advanced disease, are performance status 0-1, have predominantly non-squamous NSCLC and are *EGFR* mutation negative should be offered combination systemic anticancer therapy with cisplatin and pemetrexed.**

A **All other patients with NSCLC should be offered combination systemic anticancer therapy with cisplatin/carboplatin and a third generation agent** (docetaxel, gemcitabine, paclitaxel or vinorelbine)**.**

A **Platinum doublet systemic anticancer therapy should be given in four cycles; it is not recommended that treatment extends beyond six cycles.**

Second line therapy for patients with NSCLC

A **Second line systemic anticancer therapy with single agent docetaxel or erlotinib should be considered for patients with performance status 0-2 recurrent NSCLC who have been previously treated with first line SACT for advanced disease.**

A **Second line systemic anticancer therapy with pemetrexed should be considered for patients with advanced non-squamous cell NSCLC who have been previously treated with first line SACT for advanced disease.**

Postoperative therapy for patients with NSCLC

A **Patients with good performance status** (PS 0-1) **who have completely resected NSCLC** (stage II to IIIa) **should be offered platinum based postoperative systemic anticancer therapy.**

✓ The risks and benefits of postoperative systemic anticancer therapy should be discussed with each patient.

Patients with SCLC

A **Combination intravenous SACT should be considered for patients with SCLC over 70 years of age with performance status 0-2.**

A **A regimen containing a platinum agent and etoposide is recommended for first line treatment of patients with SCLC.**

A **In patients with SCLC the recommended number of systemic anticancer therapy cycles is three to six.**

B **Second line systemic anticancer therapy in patients with SCLC should be considered depending on the duration of response to first line treatment and on patients' performance status and wishes.**

B **Maintenance systemic anticancer therapy following first line treatment is not recommended.**

COMBINED MODALITIES

Postoperative radiotherapy in patients with NSCLC

A **Patients with NSCLC who have had complete tumour resection should not receive postoperative radiotherapy, except as part of a randomised trial.**

✓ Postoperative radiotherapy may be considered in patients with incomplete resection.

Concurrent chemoradiotherapy in patients with NSCLC

A **Concurrent chemoradiotherapy should be administered to patients with locally advanced NSCLC** (suitable for radical radiotherapy) **who have a good performance status (PS 0-1).**

✓ Treatment within a clinical trial is recommended.

PALLIATIVE INTERVENTIONS

Management of malignant pleural effusion

✓ Achieving complete lung re-expansion prior to pleurodesis remains the most important prerequisite for success.

A **Talc is the optimal sclerosant for thoracoscopic pleurodesis in patients with a malignant pleural effusion who are fit enough to undergo sedation or general anaesthesia.**

✓ In patients who are unfit for a thoracoscopic procedure, tube thoracostomy pleurodesis using talc slurry should be performed.

Management of superior vena cava obstruction

B **In patients with superior vena cava obstruction due to SCLC, SACT/radiotherapy is recommended as initial treatment, but stenting may be considered for relapse or persistent superior vena cava obstruction.**

✓ In patients with superior vena cava obstruction due to NSCLC, stenting may be considered as a primary treatment.

Management of bone metastases

B **Patients with lung cancer who have symptomatic bone metastases should be considered for treatment with a bisphosphonate.**

SUPPORTIVE AND PALLIATIVE CARE

Specialist palliative care services

B **All patients with lung cancer should have access to a specialist palliative care team.**

✓ Specialist palliative care services should be available in the community setting to support patients who wish to die at home.

Symptom management

D **Symptoms should be assessed regularly and appropriate interventions initiated by the full multidisciplinary team.**

✓ Regular multidisciplinary team assessment of fatigue should be made and interventions initiated.

✓ All patients should undergo psychosocial assessment and have access to appropriate psychosocial and spiritual support.

✓ Breathlessness clinics led by nurses or physiotherapists should be made available to all patients with lung cancer.

Role of the multidisciplinary team

D **All patients with a diagnosis of lung cancer should have their treatment and management planned and directed by a multidisciplinary team.**

D **Allied health professional services should be offered to all patients with lung cancer.**

✓
- Following diagnosis and staging, all new cases of lung cancer should be discussed in a multidisciplinary team meeting, attended if possible, by the respiratory physician, radiologist, pathologist, thoracic surgeon, oncologists, site-specific lung cancer nurses, allied healthcare professionals and pharmacists, with the aim of formulating a management plan for each patient.
- The diagnosis, staging and management plan should be explained by the physician and the nurse to the patient at the earliest opportunity, clearly and unambiguously, so that the patient is in full possession of all necessary information. A carer should be involved when appropriate. Provision of written as well as verbal information is best.

✓ Healthcare professionals have a responsibility to:
- provide and promote rapid access to an MDT
- respond sympathetically to emotional, physical, psychosocial and spiritual problems
- communicate and collaborate with primary, secondary and tertiary care settings.

Follow up

B **Follow up by clinical nurse specialists should complement conventional arrangements.**

✓ The development of clinical nurse specialist posts should be encouraged, through resourcing and training, to facilitate best practice.

B **Hospital follow up should be continued where hospital treatment or specialist advice is still required, or whilst clinical trials are ongoing.**

- **After surgery, the surgeon should follow up all patients initially: later follow up should be according to local policy.**
- **After palliative therapy is completed, follow up should be agreed between the oncologist, respiratory physician, GP and palliative care team.**

✓ Written and verbal information on follow up should be shared between primary, secondary and tertiary care in keeping with best practice and MCN guidelines.

Communication

A **Communication skills training should be provided across the multidisciplinary team.**

✓ Information needs should be resourced and provided using a variety of media, to meet individual patient/carer needs.

SOURCES OF INFORMATION

ASH Scotland
8 Frederick Street, Edinburgh EH2 2HB
Tel: 0131 225 4725 • Email: ashscotland@ashscotland.org.uk
www.ashscotland.org.uk

British Lung Foundation
73–75 Goswell Road, London, EC1V 7ER
Helpline: 03000 030 555
www.blf.org.uk

Cancer Research UK
PO Box 123, 61 Lincoln's Inn Fields, London WC2A 3PX
Tel: 020 7242 0200
www.cancerresearchuk.org

CancerHelp UK
Tel: 0800 800 4040
www.cancerhelp.org.uk • www.cancerresearchuk.org/cancer-help

Macmillan Cancer Support (Scotland)
132 Rose Street, Edinburgh EH2 3JD
Tel: 0808 808 00 00
www.macmillan.org.uk • Email: southscotland@macmillan.org.uk

Maggie's Centres Scotland
Maggie's Centres, 1st Floor, 1 Waterloo Street, Glasgow G2 6AY
Tel: 0300 123 1801
E-mail: enquiries@maggiescentres.org

Marie Curie Cancer Care (Scotland)
14 Links Place, Edinburgh EH6 7EB
Tel: 0800 716 146
www.mariecurie.org.uk

NHS Inform
www.nhsinform.co.uk/cancer/tips

North of Scotland Cancer Network (NOSCAN)
Rosehill Annexe, ARI Site, Cornhill Road, Aberdeen AB25 2ZG
Tel: 01224 552745
www.noscan.scot.nhs.uk

Roy Castle Lung Cancer Foundation
98 Holm Street, Glasgow, G2 6SY
Tel: 0333 323 7200 (option 2)
Email: info@roycastle.org • www.roycastle.org

South East Scotland Cancer Network (SCAN)
Pentland House, 47 Robbs Road, Edinburgh EH14 1TY
Tel: 0131 465 7681
www.scan.scot.nhs.uk

West of Scotland Cancer Network (WOSCAN)
1st Floor, St Mungo Building, Glasgow Royal Infirmary, 84 Castle Street, Glasgow G4 0SF
Tel: 0141 211 1145
www.woscan.scot.nhs.uk

This Quick Reference Guide provides a summary of the main recommendations in **SIGN 137 Management of lung cancer.**

Recommendations are graded **A B C D** to indicate the strength of the supporting evidence.

Good practice points ✓ are provided where the guideline development group wishes to highlight specific aspects of accepted clinical practice.

Details of the evidence supporting these recommendations can be found in the full guideline, available on the SIGN website: **www.sign.ac.uk**.

This Quick Reference Guide is also available as part of the SIGN Guidelines app.