Complete Summary

GUIDELINE TITLE

Lung cancer. Palliative care.

BIBLIOGRAPHIC SOURCE(S)

Kvale PA, Simoff M, Prakash UB. Lung cancer. Palliative care. Chest 2003 Jan;123(1 Suppl):284S-311S. [216 references] PubMed

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Symptoms and problems related to lung cancer, including:

- Cancer pain
- Bone metastases
- Spinal cord compression
- Brain metastases
- Dyspnea, including dyspnea caused by pleural effusion
- Cough
- Hemoptysis
- Malignant transesophageal fistulas
- Superior vena cava obstruction

GUIDELINE CATEGORY

Management
Treatment

CLINICAL SPECIALTY

Oncology
Pulmonary Medicine
Radiation Oncology
Thoracic Surgery

INTENDED USERS

Allied Health Personnel
Nurses
Physicians
Respiratory Care Practitioners

GUIDELINE OBJECTIVE(S)

To provide clinically relevant, evidence-based guidelines for the palliation of troublesome symptoms and problems related to lung cancer

TARGET POPULATION

Patients with troublesome symptoms and problems related to lung cancer

INTERVENTIONS AND PRACTICES CONSIDERED

Management of Pain

1. Pain assessment based on patient self-report
2. Rating scale to assess pain
3. Noninvasive medication administration (oral, rectal, and transdermal)
4. Pain management plan
5. Pastoral care
6. Psychosocial care management
7. Referral to specialized pain clinic
8. Cutaneous stimulation for pain associated with muscle tension and spasm
9. Acetaminophen or nonsteroidal anti-inflammatory drugs (NSAIDs)
10. Opioids (e.g., morphine, fentanyl)
11. Adjunctive medications (tricyclic antidepressants, anticonvulsants, neuroleptic agents)
12. Treatment of constipation related to pain medication
13. Avoidance of prolonged immobilization
14. Palliative radiation therapy

Therapies that are Not Recommended

Continuous meperidine administration

Palliative Treatment of Bone Metastases

1. External beam radiation therapy
2. Systemic corticosteroids (e.g., prednisone, methylprednisolone) in conjunction with external radiation therapy
3. Bisphosphonates (alone or as an adjunct to external radiation therapy)

4. Calcitonin
5. Radiopharmaceuticals (e.g., strontium-90, rhenium-186 [Re-186] hydroxyethylidene diphosphonate)
6. Surgical fixation

Palliation of Epidural Spinal Cord Metastases

1. High dose steroids (e.g., dexamethasone) in conjunction with radiation therapy
2. Prophylactic radiation for asymptomatic patients
3. Surgical intervention
4. Surgery followed by radiation therapy

Palliation of Brain Metastases

1. Dexamethasone
2. Whole-brain radiation therapy (WBRT)
3. Stereotactic radiosurgery in conjunction with whole-brain radiation therapy

Palliation of Cough and Dyspnea

1. Pharmacologic management (oxygen, bronchodilators, corticosteroids, antibiotics, and opioid and non-opioid cough suppressants)
2. Nonpharmacologic, noninterventional management (patient education including breathing control, activity pacing, relaxation techniques, fans)
3. Thoracentesis
4. Pleurodesis
5. Systemic chemotherapy
6. Bronchoscopy to determine type of airway obstruction
7. Removal of intraluminal tumor by laser, electrocautery, argon plasma coagulation, cryotherapy, brachytherapy, or photodynamic therapy
8. Stent insertion to relieve dyspnea

Palliation of Hemoptysis

1. Maintaining adequate airway protection
2. Bronchoscopy to identify source of bleeding
3. Tamponade (Nd-YAG laser, electrocautery, argon plasma coagulation [APC])
4. Bronchial artery embolization
5. External beam radiation

Palliation of Malignant Tracheoesophageal Fistula (TEF)

Stenting

Therapies that are Not Recommended

1. Esophageal bypass
2. Curative resection

Palliation of Superior Vena Cava Obstruction

Radiation therapy, stenting, or both

MAJOR OUTCOMES CONSIDERED

- Pain relief
- Response rate
- Need for supplemental analgesia
- Quality of life
- Functional status

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Overview

As a first step in identifying the evidence for each topic, the guideline developers sought existing evidence syntheses including guidelines, systematic reviews, and meta-analyses. They searched computerized bibliographic databases including MEDLINE, Cancerlit, CINAHL and HealthStar, the Cochrane Collaboration Database of Abstracts of Reviews of Effectiveness, the National Guideline Clearinghouse, and the National Cancer Institute Physician Data Query database. Computerized searches through July 2001 used the MeSH terms lung neoplasms (exploded) and bronchial neoplasms or text searches for lung cancer combined with review articles, practice guidelines, guidelines, and meta-analyses. They also searched and included studies from the reference lists of review articles, and queried experts in the field. An international search was conducted of Web sites of provider organizations that were likely to have developed guidelines. Abstracts of candidate English language articles were reviewed by two physicians (one with methodological expertise and one with content area expertise) and a subset was selected for review in full text. Full-text articles were reviewed again by two physicians to determine whether they were original publications of a synthesis and were pertinent to at least one of the topics of the guideline. Articles described as practice guidelines, systematic reviews, or meta-analyses were included, as were review articles that included a "Methods" section. Included articles were classified according to topic.

Strategy Specific for Palliative Care Section of the Guidelines

This section of the evidence-based guidelines is based on an extensive review of the medical literature. The Agency for Health Care Policy and Research (AHCPR) guidelines for the management of cancer pain was used in an abbreviated form for the guidelines regarding management of pain in lung cancer. Randomized controlled trials (RCTs) have generally not been done for most aspects of palliative care in lung cancer specifically, and meta-analyses are not available. Three randomized controlled trials were identified that studied surgical resection

for brain metastases and whole-brain radiation therapy (WBRT) for brain metastases. One randomized controlled trial was identified that studied the effect of corticosteroids in bone metastases, spinal cord compression, and brain metastases, respectively. Most reports of the topics considered in this section of the guideline were case series.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus
Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

The United States Preventive Services Task Force (USPSTF) scheme offers general guidelines to assign one of the following grades of evidence: good, fair, or poor. In general, good evidence included prospective, controlled, randomized clinical trials, and poor evidence included case series and clinical experience. Trials with fair quality of evidence, for instance, historically controlled trials or retrospective analyses, were somewhere in between. In addition to the strength of the study design, however, study quality also was considered. The United States Preventive Services Task Force approach considers well-recognized criteria in rating the quality of individual studies for a variety of different types of study design (e.g., diagnostic accuracy studies and case-control studies). The thresholds for distinguishing good vs fair and fair vs poor evidence are not explicit but are left to the judgment of panelists, reviewers, and members of the executive committee.

Assessment of the Scope and Quality of Clinical Practice Guidelines

Clinical practice guidelines identified from the systematic search were evaluated by at least four reviewers using the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Informal Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Each writing committee received a comprehensive list of existing systematic reviews and meta-analyses as well as guidelines published by other groups. In addition, for five key topics (prevention, screening, diagnosis, and staging [invasive and noninvasive]), new systematic reviews were undertaken (see "Description of Methods Used to Collect the Evidence" and "Description of Methods Used to Analyze the Evidence" fields). For all other topics, writing committees were responsible for identifying and interpreting studies that were not otherwise covered in existing syntheses or guidelines.

The guidelines developed by the writing committee were distributed to the entire expert panel, and comments were solicited in advance of a meeting. During the meeting, proposed recommendations were reviewed, discussed, and voted on by the entire panel. Approval required consensus, which was defined as an overwhelming majority approval. Differences of opinion were accommodated by revising the proposed recommendation, the rationale, or the grade until consensus could be reached. The evidence supporting each recommendation was summarized, and recommendations were graded as described. The assessments of level of evidence, net benefit, and grade of recommendation were reviewed by the executive committee.

Values

The panel considered data on functional status, quality and length of life, tolerability of treatment, and relief of symptoms in formulating guideline recommendations. Cost was not explicitly considered in the guideline development process. Data on these outcomes were informally weighted, without the use of explicit decision analysis or other modeling. The values placed on types of outcomes varied with clinical scenarios. For example, in some situations they considered life expectancy, such as the effects of early detection. In other situations they weighed quality of life more heavily, such as in palliative care and in interpreting small increases in life expectancy with chemotherapy for stage IV disease.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

The guideline developer´s grading scheme is a modification of the United States Preventive Services Task Force (USPSTF) grades to allow recommendations for a service when (1) evidence is poor, (2) the assessment of the net benefit is moderate to high, and (3) there is consensus among the expert panel to recommend it. This change was necessary because, unlike preventive services (i.e., the routine offering of tests or treatments to well people) in which the burden of proof is high, clinical decisions about the treatment of patients with lung cancer often must be based on an interpretation of the available evidence, even if it is of poor quality. This adaptation distinguished between interventions with poor evidence for which there is consensus (grade C) and interventions with poor evidence for which there is not consensus (grade I).

Grades of Recommendations and Estimates of Net Benefit

The grade of the strength of recommendations is based on both the quality of the evidence and the net benefit of the service (i.e., test, procedure, etc).

Grade A The panel strongly recommends that clinicians routinely provide [the service] to eligible patients. An "A" recommendation indicates good evidence that [the service] improves important health outcomes and that benefits substantially outweigh harms.

Grade B The panel recommends that clinicians routinely provide [the service] to eligible patients. A "B" recommendation indicates at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.

Grade C The panel recommends that clinicians routinely provide [the service] to eligible patients. A "C" recommendation indicates that there was consensus among the panel to recommend [the service] but that the evidence that [the service] is effective is lacking, of poor quality, or conflicting, or the balance of benefits and harms cannot be reliably determined from available evidence.

Grade D The panel recommends against clinicians routinely providing [the service]. A "D" recommendation indicates at least fair evidence that [the service] is ineffective or that harm outweighs benefit.

Grade I The panel concludes that the evidence is insufficient to recommend for or against [the service]. An "I" recommendation indicates that evidence that [the service] is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined, and that the panel lacked a consensus to recommend it.

Net Benefit

The levels of net benefit are based on clinical assessment. Estimated net benefit may be downgraded based on uncertainty in estimates of benefits and harms.

Substantial Benefit: Benefit greatly outweighs harm

Moderate Benefit: Benefit outweighs harm

Small/weak Benefit: Benefit outweighs harm to a minimally clinically important degree

None/negative Benefit: Harms equal or outweigh benefit, less than clinically important

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

After extensive review within the expert panel and executive committee, the guidelines were reviewed and approved by the American College of Chest

Physicians (ACCP) Health and Science Policy Committee and then by the American College of Chest Physicians Board of Regents.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Each recommendation is rated based on the levels of evidence (good, fair, poor), net benefit (substantial, moderate, small/weak, none/negative), and the grades of the recommendations (A, B, C, D, I). Definitions are presented at the end of the "Major Recommendations" field.

Recommendations for Pain Control

1. All patients and their families must be reassured that pain can be relieved safely and effectively. Level of evidence: good; net benefit: substantial; grade of recommendation: A
2. All patients should be questioned about their pain, and the patient´s self-report of pain should be the primary source of assessment. Simple rating scales for pain should be used to assess pain for all patients, and to document the effectiveness of pain management at regular intervals during treatment. Level of evidence: good; net benefit: moderate; grade of recommendation: B
3. For all patients, medications that are used to control pain should be individualized. Level of evidence: fair; net benefit: substantial; grade of recommendation: B
4. For all patients, medication administration should be simple and noninvasive, whenever possible. Level of evidence: fair; net benefit: substantial; grade of recommendation: B
5. For all patients, mild-to-moderate pain should be managed initially with acetaminophen or a nonsteroidal anti-inflammatory drug (NSAID), assuming there are no contraindications to their use. Opioids should be administered when pain is more severe or when it increases. Level of evidence: good; net benefit: substantial; grade of recommendation: A
6. For patients whose pain persists, the dose of opioid or its potency should be increased. Level of evidence: fair; net benefit: substantial; grade of recommendation: B
7. For patients whose pain is not controlled by pure analgesic medications, adjunctive medications such as tricyclic antidepressants, anticonvulsants, and neuroleptic agents will often augment the effects of pure analgesic medications. Level of evidence: fair; net benefit: moderate; grade of recommendation: B
8. For all patients who require medications to control cancer pain, the medications should be administered around the clock with additional as-needed doses. Level of evidence: fair; net benefit: substantial; grade of recommendation: B
9. For any patient, if it is anticipated that there will be a continuous need for opioid medication, meperidine should not be administered. It has a short duration of action, and its metabolite, normeperidine, is toxic and causes central nervous system (CNS) stimulation with dysphoria, agitation, and seizures. Level of evidence: fair; net benefit: none; grade of recommendation: D

10. For all patients, medications should be administered orally because of convenience and cost-effectiveness. If medications cannot be taken orally, rectal and transdermal routes are preferred because they are relatively noninvasive. Level of evidence: fair; net benefit: small; grade of recommendation: C
11. For all patients, medications should not be administered intramuscular (IM) because of pain and inconvenience, and because intramuscular medications are not reliably absorbed. Level of evidence: fair; net benefit: none; grade of recommendation: D
12. For all patients receiving opioids, constipation is common and it should be anticipated, treated prophylactically, and constantly monitored. Level of evidence: fair; net benefit: moderate; grade of recommendation: B
13. All patients should be given a written pain management plan. Level of evidence: fair; net benefit: substantial; grade of recommendation: B
14. All patients should be encouraged to remain active and to care for themselves whenever possible. Prolonged immobilization should be avoided whenever possible. Level of evidence: fair; net benefit: moderate; grade of recommendation: B
15. For patients whose pain is associated with muscle tension and spasm, cutaneous stimulation techniques, such as heat and cold applications, should be offered for pain relief. Level of evidence: poor; net benefit: small; grade of recommendation: C
16. For all patients, psychosocial methods of care should be introduced early in the management plan, but they should not be regarded as a substitute for analgesia. Level of evidence: fair; net benefit: substantial; grade of recommendation: B
17. For interested patients and family, pastoral care should be encouraged. Level of evidence: poor; net benefit: moderate; grade of recommendation: C
18. When patients have metastases that have caused pain, palliative radiation therapy should be offered. Level of evidence: fair; net benefit: moderate; grade of recommendation: B
19. For all patients with pain, referral to a specialized pain clinic should be considered. Level of evidence: fair; net benefit: moderate; grade of recommendation: B

Recommendations for Management of Bone Metastases

20. For patients with bone metastases, external radiation therapy is indicated to control localized pain. Higher fractionated doses of external radiation therapy provide the most predictable and longer-lasting pain relief for bone metastases. Level of evidence: fair; net benefit: moderate; grade of recommendation: B
21. For most patients with pain from bone metastases, a single large fraction of external radiation will provide pain relief, but this technique is best reserved for patients with survival expectancy < 3 months and for smaller extremity lesions. Level of evidence: fair; net benefit: small; grade of recommendation: C
22. For patients with bone metastases, systemic corticosteroids (prednisone, 20 to 40 mg/d), when used together with external beam radiation, may augment pain relief. Level of evidence: fair; net benefit: small; grade of recommendation: C

23. In patients who do not respond to external beam radiation for the relief of pain caused by bony metastases, bisphosphonates can be administered alone or as an adjunct to external radiation therapy for bone metastases. Level of evidence: fair; net benefit: moderate; grade of recommendation: B
24. For patients with bone metastases for whom external radiation is not effective, calcitonin may provide pain relief. Level of evidence: poor; net benefit: small; grade of recommendation: C
25. In patients with bone metastases, a variety of radiopharmaceuticals are available to treat pain. They should be considered when analgesics and external radiation therapy fail to control pain. Level of evidence: poor; net benefit: small; grade of recommendation: C
26. In patients with bone metastases, if survival is expected for > 4 weeks and general health status is satisfactory, surgical fixation of a symptomatic or an asymptomatic metastasis to long and/or weight-bearing bones is indicated to minimize the potential for a fracture. Intramedullary nailing is the preferred approach, especially for the femur or the humerus. Level of evidence: fair; net benefit: moderate; grade of recommendation: B

Recommendations for the Palliation of Epidural Spinal Cord Metastases

27. For patients with epidural spinal cord metastases, prompt treatment favorably affects outcome and should be administered to all such patients. Level of evidence: fair; net benefit: substantial; grade of recommendation: B
28. For patients who are not paretic and ambulatory, a combination of high-dose steroids plus radiation should be administered. High-dose dexamethasone, 64 mg/d, is recommended as an adjunct to radiation therapy in retaining or restoring ambulation after treatment, but with a relatively high incidence of serious side effects that must be accepted. Level of evidence: fair; net benefit: substantial; grade of recommendation: B
29. For patients with asymptomatic epidural spinal cord compression, prophylactic radiation should be prescribed. Level of evidence: fair; net benefit: moderate; grade of recommendation: B
30. For patients with epidural spinal cord compression and spinal instability, progressive neurologic deterioration from bony collapse and compression, intractable pain, and failure of conservative treatment, surgical intervention is indicated. Progression of neurologic deficit while patients are receiving radiation is also an indication for surgical stabilization. Level of evidence: fair; net benefit: moderate; grade of recommendation: B
31. When there is spinal instability, bony compression, or paraplegia at the time of presentation, surgery should be performed first and should then be followed by radiation. Level of evidence: poor; net benefit: moderate; grade of recommendation: C

Recommendations for Palliative Treatment of Brain Metastases From Lung Cancer

32. Patients with symptomatic brain metastases should be treated with dexamethasone, 16 mg/d, for 4 weeks during the course of whole-brain radiation therapy (WBRT); dexamethasone should then be rapidly tapered and discontinued. Level of evidence: good; net benefit: moderate; grade of recommendation: B

33. Patients with multiple brain metastases from lung cancer should be treated with whole-brain radiation therapy. Level of evidence: fair; net benefit: moderate; grade of recommendation: B
34. For patients with intracranial metastases that are not surgically accessible, or when two to four intracranial metastases are present, or for intracranial recurrence after surgery, stereotactic radiosurgery, accompanied by whole brain radiation therapy, can also be offered. Level of evidence: poor; net benefit: moderate; grade of recommendation: C

Recommendations for Palliation of Cough and Dyspnea

35. In all patients with lung cancer, potentially correctable causes of dyspnea, such as localized obstruction of a major airway, a large pleural effusion, or an exacerbation of coexisting chronic obstructive pulmonary disease (COPD), should be sought initially. Level of evidence: poor; net benefit: moderate; grade of recommendation: C
36. For all lung cancer patients with dyspnea, pharmacologic approaches for the management of dyspnea may include oxygen, bronchodilators, corticosteroids, antibiotics, and opioids. Level of evidence: poor; net benefit: moderate; grade of recommendation: C
37. For all lung cancer patients with dyspnea, nonpharmacologic, noninterventional treatments, including patient education and intervention by allied health personnel, should be used to help control dyspnea, including breathing control, activity pacing, relaxation techniques, fans, and psychosocial support. Level of evidence: poor; net benefit: moderate; grade of recommendation: C
38. For all patients with lung cancer who continue to have cough, opioids are the best cough suppressants and should be used. Level of evidence: fair; net benefit: moderate; grade of recommendation: B
39. Patients with malignant pleural effusions that cause dyspnea initially should be drained by thoracentesis. Level of evidence: fair; net benefit: substantial; grade of recommendation: C
40. Patients with lung cancer who have poor performance status and limited life expectancy, and with recurring malignant pleural effusions, can be managed with repeated thoracenteses. Level of evidence: fair; net benefit: small; grade of recommendation: C
41. Non-small cell lung cancer (NSCLC) patients with better performance status and recurrent malignant pleural effusions, and whose lungs re-expand with initial thoracentesis or thoracoscopy, should be followed up with pleurodesis. Level of evidence: good; net benefit: moderate; grade of recommendation: B
42. In patients with small cell lung cancer (SCLC), the treatment of choice for malignant effusions is systemic chemotherapy. Level of evidence: good; net benefit: moderate; grade of recommendation: B
43. For patients with central airway obstruction, bronchoscopy should be done to determine the type of airway obstruction (extraluminal tumor compression of the major airways, intraluminal tumor growth, or both). Level of evidence: fair; net benefit: substantial; grade of recommendation: B
44. In patients with central airway obstruction, rapid relief of dyspnea can be accomplished via bronchoscopy with removal of intraluminal tumor (laser, electrocautery, argon plasma coagulation [APC]) and/or by inserting a stent. Other methods (cryotherapy, brachytherapy, photodynamic therapy [PDT])

are effective but do not relieve dyspnea as quickly. Level of evidence: poor; net benefit: substantial; grade of recommendation: C

Recommendations for the Palliation of Hemoptysis

45. In managing a patient with massive hemoptysis, the initial priority should be maintaining adequate airway protection. If intubation is required, a standard single-lumen endotracheal tube should be used. Level of evidence: poor; net benefit: moderate; grade of recommendation: C
46. For patients with massive hemoptysis, bronchoscopy is typically needed to identify the source of bleeding. Early bronchoscopy to assess the site of bleeding is recommended. Level of evidence: poor; net benefit: substantial; grade of recommendation: C
47. For patients with massive hemoptysis, endobronchial management options begin with tamponade. Effective adjunctive devices include argon plasma coagulation, Nd-YAG laser, and electrocautery. Level of evidence: fair; net benefit: small; grade of recommendation: C
48. For patients with massive hemoptysis due to lung cancer, bronchial artery embolization is a temporizing treatment. Level of evidence: poor; net benefit: small; grade of recommendation: I
49. For patients with massive hemoptysis or persistent large-volume hemoptysis that is determined to arise from an endoscopically visible, unresectable lung cancer, external beam radiation should be considered. Level of evidence: fair; net benefit: moderate; grade of recommendation: B

Recommendations for the Palliative Treatment of Malignant Tracheoesophageal Fistula (TEF)

50. For patients with a malignant tracheoesophageal fistula or bronchoesophageal fistula, stenting of both the tracheobronchial tree and the esophagus is the procedure that yields the best overall results for symptomatic relief. Level of evidence: poor; net benefit: moderate; grade of recommendation: C
51. For any patient with lung cancer and a tracheoesophageal fistula, attempts at curative resection of the involved trachea and/or bronchi and/or esophageal segments should not be done. Level of evidence: fair; net benefit: none; grade of recommendation: D
52. For any patient with advanced lung cancer, esophageal bypass procedures have very high morbidity and mortality and should not be done. Level of evidence: fair; net benefit: none; grade of recommendation: D

Recommendations for Palliation of Superior Vena Cava (SVC) Obstruction

53. Lung cancer patients with symptomatic superior vena cava obstruction can be treated with radiation therapy, insertion of a stent, or both. Level of evidence: fair; net benefit: moderate; grade of recommendation: B

Definitions:

Levels of Evidence

In general, good evidence included prospective, controlled, randomized clinical trials, and poor evidence included case series and clinical experience. Trials with fair quality of evidence, for instance, historically controlled trials or retrospective analyses, were somewhere in between.

Grades of Recommendations and Estimates of Net Benefit

The grade of the strength of recommendations is based on both the quality of the evidence and the net benefit of the service (i.e., test, procedure, etc).

Grade A The panel strongly recommends that clinicians routinely provide [the service] to eligible patients. An "A" recommendation indicates good evidence that [the service] improves important health outcomes and that benefits substantially outweigh harms.

Grade B The panel recommends that clinicians routinely provide [the service] to eligible patients. A "B" recommendation indicates at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.

Grade C The panel recommends that clinicians routinely provide [the service] to eligible patients. A "C" recommendation indicates that there was consensus among the panel to recommend [the service] but that the evidence that [the service] is effective is lacking, of poor quality, or conflicting, or the balance of benefits and harms cannot be reliably determined from available evidence.

Grade D The panel recommends against clinicians routinely providing [the service]. A "D" recommendation indicates at least fair evidence that [the service] is ineffective or that harm outweighs benefit.

Grade I The panel concludes that the evidence is insufficient to recommend for or against [the service]. An "I" recommendation indicates that evidence that [the service] is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined, and that the panel lacked a consensus to recommend it.

Net Benefit

The levels of net benefit are based on clinical assessment. Estimated net benefit may be downgraded based on uncertainty in estimates of benefits and harms.

Substantial Benefit: Benefit greatly outweighs harm

Moderate Benefit: Benefit outweighs harm

Small/weak Benefit: Benefit outweighs harm to a minimally clinically important degree

None/negative Benefit: Harms equal or outweigh benefit, less than clinically important

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

The majority of patients who acquire lung cancer will have troublesome symptoms during the course of their disease. Pain, dyspnea, hemoptysis, and the effects of regional or distant metastases to bones, brain, or spinal cord are common. There are many effective methods available to relieve these symptoms. Familiarity with the palliative approach to care is crucial for a clinician to be competent in caring for patients with lung cancer.

POTENTIAL HARMS

Pain Control Therapy

Constipation is a side effect of opioid medications.

Pharmacotherapy of Epidural Spinal Cord Metastases

- Significant side effects occur in 11% of those who receive high-dose dexamethasone. Side effects include cushingoid facies, peripheral edema, and steroid-induced myopathy.
- Vertebral body resection has a high complication rate and perioperative mortality.

Palliative Treatment of Brain Metastases

Side effects of whole brain radiotherapy may include measurable deterioration of neuropsychological function.

Pharmacotherapy of Dyspnea

- Continuous intravenous infusion of morphine has the possibility of causing severe hypoventilation and hypercarbic respiratory failure and death. The major side effect of morphine is sedation.
- Opioids may cause respiratory suppression and hypoventilation as well as somnolence.

Risks Associated with Bronchoscopic Methods to Palliate Dyspnea and Cough

- Endotracheal intubation: bleeding
- Laser therapy: severe hemorrhage, pneumothorax, and pneumomediastinum
- Electrocautery: endobronchial fire, hemorrhage, and inadvertent electrical shock to the operator or patient.
- Silicone stents: stent migration and inspissation of thick mucus within the stent lumen. Metallic stents are likely to promote growth of granulation tissue.
- Brachytherapy: fistula formation between the airways and other thoracic structures including the risk of massive hemoptysis when a fraction size of 15 Gy is used.
- Photodynamic therapy: phototoxicity, hemoptysis, and obstruction of bronchi by thick necrotic material.

Palliative Treatment of Superior Vena Cava Obstruction (SVC)

Complications attributable to stent insertion are bleeding due to vascular injury, and thrombosis within the stent for a minority of patients.

CONTRAINDICATIONS

CONTRAINDICATIONS

Contraindications to surgical treatment of metastatic disease to long bones include a survival expectancy <4 weeks, and a poor general condition that is an obstacle to a safe operation.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

1. The American College of Chest Physicians (ACCP) is developing a set of PowerPoint slide presentations for physicians to download and use for physician and allied health practitioners education programs.
2. The ACCP is developing a Quick Reference Guide (QRG) in print and PDA formats for easy reference.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

End of Life Care
Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Kvale PA, Simoff M, Prakash UB. Lung cancer. Palliative care. Chest 2003 Jan;123(1 Suppl):284S-311S. [216 references] PubMed

ADAPTATION

The section on pain control was adapted from the Agency for Health Care Research and Policy (now known as the Agency for Healthcare Research and Quality) clinical practice guideline on cancer pain: Jacos A, Carr DB, Payne R, et a. Management of cancer pain: clinical practice guideline No. 9. Rockville, MD: Agency for Health Care Policy and Research, U.S. Department of Health and Human Services, Public Health Service, March 1994, AHCPR Publication No. 94-0592.

DATE RELEASED

2003 Jan

GUIDELINE DEVELOPER(S)

American College of Chest Physicians - Medical Specialty Society

GUIDELINE DEVELOPER COMMENT

The guideline development panel was composed of members and nonmembers of the American College of Chest Physicians (ACCP) who were known to have expertise in various areas of lung cancer management and care, representing multiple specialties from the following 13 national and international medical associations:

- Alliance for Lung Cancer Advocacy, Support, and Education (a patient support group)
- American Association for Bronchology
- American Cancer Society
- American College of Physicians
- American College of Surgeons Oncology Group
- American Society of Clinical Oncology
- American Society for Therapeutic Radiology and Oncology
- American Thoracic Society
- Association of Community Cancer Centers
- Canadian Thoracic Society
- National Comprehensive Cancer Network
- Oncology Nurses Society
- Society of Thoracic Surgeons

The specialties included pulmonary/respiratory medicine, critical care, medical oncology, thoracic surgery, radiation oncology, epidemiology, law, and medical ethics.

SOURCE(S) OF FUNDING

Funding for both the evidence reviews and guideline development was provided through an unrestricted educational grant from Bristol-Myers Squibb, which had no other role in the evidence review or guideline development process or content.

GUIDELINE COMMITTEE

American College of Chest Physicians (ACCP) Expert Panel on Lung Cancer Guidelines

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Information about potential conflicts of interest were collected from each member of the expert panel or writing committee at the time of their nomination in accordance with the policy of the American College of Chest Physicians. Information on conflicts of interest for each panelist is listed in the guideline.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available to subscribers of Chest - The Cardiopulmonary and Critical Care Journal.

Print copies: Available from the American College of Chest Physicians, Products and Registration Division, 3300 Dundee Road, Northbrook IL 60062-2348.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

Background Articles

- Alberts WM. Lung cancer guidelines. Introduction. Chest 2003 Jan;123(1 Suppl):1S-2S
- McCrory DC, Colice GL, Lewis SZ, Alberts WM, Parker S. Overview of methodology for lung cancer evidence review and guideline development. Chest 2003 Jan;123(1 Suppl):3S-6S.

- Harpole LH, Kelley MJ, Schreiber G, Toloza EM, Kolimaga J, McCrory DC. Assessment of the scope and quality of clinical practice guidelines in lung cancer. Chest 2003 Jan;123(1 Suppl):7S-20S.
- Alberg AJ, Samet JM. Epidemiology of lung cancer. Chest 2003 Jan;123(1 Suppl):21S-49S.

Electronic copies: Available to subscribers of Chest - The Cardiopulmonary and Critical Care Journal.

Print copies: Available from the American College of Chest Physicians, Products and Registration Division, 3300 Dundee Road, Northbrook IL 60062-2348.

PATIENT RESOURCES

None available

NGC STATUS

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