

Caring for Lung Cancer Patients

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Objectives

- ❖ Describe the types, stages and diagnostic needs for treatment :
 - Pathophysiology of lung cancers
 - incidence and survival of lung cancer
 - risk factors and signs/symptoms
 - diagnostic tests and screening
- ❖ Discuss the treatment options and side effects management for lung cancer patients ; as well as the emotional impact and needs of patients.
- ❖ Discuss the impact oncology nurse in the improvement outcomes and quality of life in lung cancer patients.
- ❖ Survivorship for lung cancer patients

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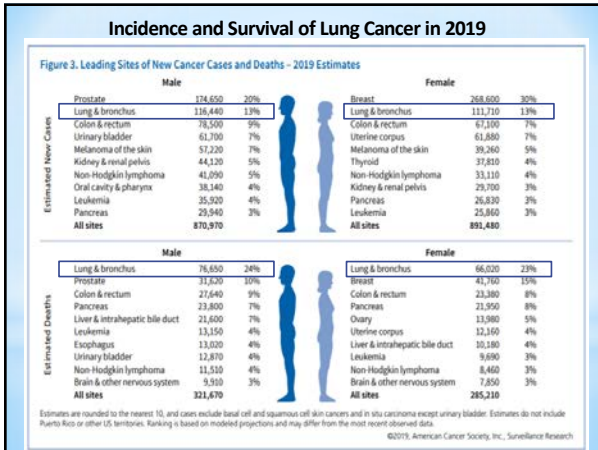
Pathophysiology of lung cancers

Small cell lung cancer

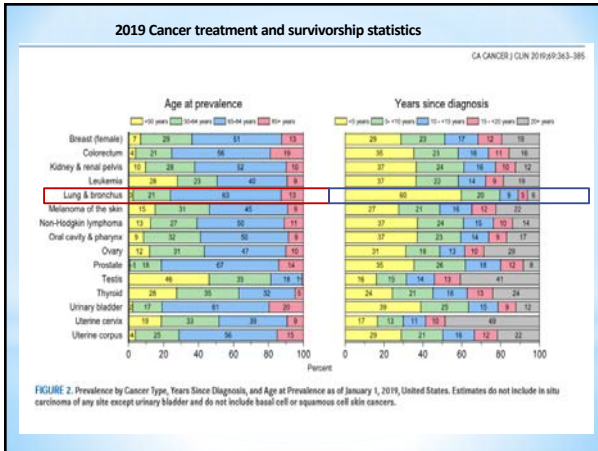
- Arises in peribronchial locations and infiltrates the bronchial submucosa.
- Widespread metastases occur early in the course of the disease, with common spread to the mediastinal lymph nodes, liver, bones, adrenal glands, and brain.
- Production of various peptide hormones leads to a wide range of paraneoplastic syndromes; the most common of these are the [syndrome of inappropriate secretion of antidiuretic hormone \(SIADH\)](#) and the syndrome of ectopic adrenocorticotropic hormone (ACTH) production.
- Autoimmune phenomena may lead to various neurologic syndromes, such as [Lambert-Eaton syndrome](#).
- Most cases are found in smokers, however, less than 2% are from non-smokers.

Non-small cell lung cancer Both exposure (environmental or occupational) to particular agents and an individual's susceptibility to these agents are thought to contribute to one's risk of developing lung cancer. In the United States, active smoking is responsible for approximately 90% of lung cancer cases. Occupational exposures to carcinogens account for approximately 9-15% of lung cancer cases. That is further divided further into squamous cell carcinoma, adenocarcinoma, and large cell carcinoma histologies.

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Cancer Screening

Cervical cancer (via Pap Smear): **Impact : 75% decrease in deaths**

Colorectal cancer (colonoscopy): **Impact: 60% decrease in incidence, 31% decrease in deaths**

Landmarks in Lung Cancer Screening

- February 2015: CMS finalized its guidelines for lung cancer screening; national coverage goes into effect immediately.
- May 2014: The Medicare Evidence & Coverage Advisory Committee voted against recommending national Medicare coverage for lung cancer screening.
- December 2013: The U.S. Preventive Services Task Force recommended annual lung cancer screening in adults aged 55 to 80 years who have a 30 pack-year smoking history and current smokers or those who have quit within 15 years.
- August 2011: The National Lung Screening Trial reports its results in The New England Journal of Medicine: Screening with low-dose computed tomography represented a 20% relative reduction in lung cancer mortality.
- April 2004: The National Lung Screening Trial reached its accrual target.
- September 2002: The National Lung Screening Trial, a U.S. National Cancer Institute-sponsored study, is jointly conducted by Lung Screening Study screening centers.

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National Comprehensive Cancer Network[®] **NCCN Guidelines Version 1.2020** Lung Cancer Screening

RISK ASSESSMENT^{1,2,3} **RISK STATUS** **SCREENING**

High risk:
 • Smoking history²
 • Radon exposure²
 • Occupational exposures²
 • Cancer history²
 • Family history of lung cancer in first-degree relatives

Group 1:
 • Age 55-77 y and
 • ≥30 pack-year history of smoking and
 • Smoking cessation <15 y (category 1)

In candidates for screening, shared patient/physician decision-making is recommended, including a discussion of benefits/risks⁴ → Low-dose CT (LDCT)⁵ (category 1) → See Screening Findings (LCS-2)

Group 2:
 • Age 50-79 y and
 • ≥20 pack-year history of smoking and
 • Additional risk factors (other than second-hand smoke) that increase the risk of lung cancer to ≥1.3% (see footnote 1)

In candidates for screening, shared patient/physician decision-making is recommended, including a discussion of benefits/risks⁴ → LDCT⁵ → See Screening Findings (LCS-2)

Moderate risk:
 • Age 50-79 y and
 • ≥20 pack-year history of smoking or second-hand smoke exposures²
 • No additional risk factors

→ Lung cancer screening not recommended

Low risk:
 • Age <50 y and/or
 • <20 pack-year history of smoking

→ Lung cancer screening not recommended

¹It is recommended that institutions performing lung cancer screening use a multidisciplinary approach that includes the specialties of thoracic radiology, pulmonary medicine, and thoracic surgery.
²Lung cancer screening is appropriate to consider for high-risk patients who are potential candidates for definitive treatment. Chest x-ray is not recommended for lung cancer screening.
³All current smokers should be advised to quit smoking, and former smokers should be advised to remain abstinent from smoking. For additional cessation support and resources, smokers can be referred to tobaccoquitnow.net. Lung cancer screening should not be considered a substitute for smoking cessation. Smoking history should document both extent of exposure (in pack-years) and the amount of time since smoking cessation in former smokers. See also the NCCN Guidelines for Smoking Cessation.
⁴Documented sustained and substantially elevated radon exposure.
⁵Agents that are identified specifically as carcinogens targeting the lung: silica, cadmium, asbestos, arsenic, beryllium, chromium, diesel fumes, nickel, coal smoke, and soot.
 *There is increased risk of developing new primary lung cancer among survivors of lung cancer, lymphomas, cancers of the head and neck, or smoking-related cancers.

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FACT: LUNG CANCER IS RARELY DETECTED EARLY ON

Lung cancer accounts for **13%** of all new cancer diagnoses, but **24%** of cancer deaths

Lung cancer kills about 2.5 times as many men as prostate cancer

Only **19%** of all people diagnosed with lung cancer will survive 5 years or more, but if it is caught before it spreads, the chance for 5-year survival improves dramatically

Lung cancer takes more lives annually in the U.S. than the next three most common cancers combined

Lung cancer kills about 1.5 times as many women as breast cancer

FACT: LUNG CANCER RESEARCH NEEDS INVESTMENT THAT MATCHES THE IMPACT OF THE DISEASE

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Number of cancer deaths versus amount of federal funding: Dollars spent (\$) per life lost (\$)

Lung cancer is the leading cause of cancer death, yet **only 6% of federal research dollars** spent on cancer research are spent on lung cancer

Cancer Type	Number of Deaths	Dollars Spent per Life Lost
LUNG	142,670	\$2,488
COLORECTAL	51,020	\$5,312
BREAST	42,260	\$16,777
PROSTATE	31,620	\$7,685

LUNGevity Foundation is firmly committed to making an immediate impact on increasing quality of life and survivorship of people with lung cancer by accelerating research into early detection and more effective treatments, as well as by providing community support and education for all those affected by the disease.

<https://lungevity.org/sites/default/files/infographics/LungCancerFacts-050619.pdf>

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RISK FACTORS of Lung Cancer

- ✓ **Smoking** is the #1 cause for cancer – not just lung cancer.
- ✓ **Second hand smoke** - live with smokers have a 24% increase in developing lung cancer than those who do not.
- ✓ **Radon/Radioactive dust**
- ✓ **Air Pollution**
- ✓ **Genetic susceptibility** - plays a contributing role in the development of lung cancer, especially in those who develop the disease at a young age.
- ✓ **Familial Predisposition**
- ✓ **Hormonal factors** - new findings that hormones effect risks for lung cancer (i.e. estrogen)
- ✓ **Infectious factors** - TB or other recurrent infections of the lungs
- ✓ **Lung diseases** – COPD is associated with 4-6X the risk of nonsmoker for the development of lung cancer
- ✓ **Arsenic**
- ✓ **Asbestos** - workers who do not smoke have a 5X risk of developing l lung cancer than non-smokers, and workers who smoke have a risk that is 50- 90 X greater than non-smokers
- ✓ **Occupational exposure** – Additional occupational exposures that increase risk include rubber manufacturing, paving, roofing, painting, and chimney sweeping.

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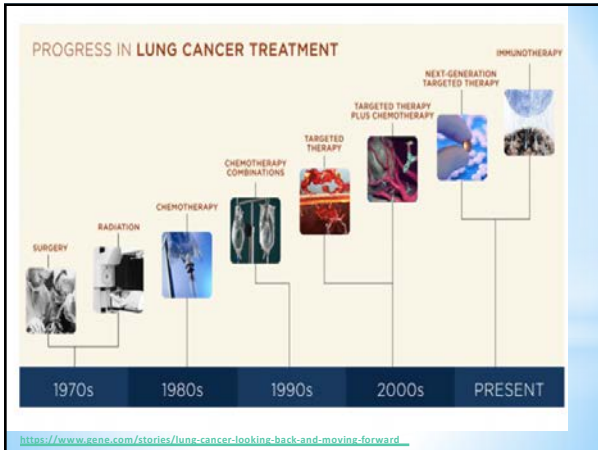
Symptoms and Signs of Lung Cancer

Symptoms and signs from primary tumor	
Central Tumors Cough Hemoptysis Shortness of breath Wheezing Postobstructive pneumonia	Peripheral Tumors Pain Shortness of breath Pleural effusion Cough
Symptoms and signs from regional spread	
Superior vena cava obstruction (superior vena cava syndrome) Recurrent laryngeal nerve palsy (hoarseness) Phrenic nerve palsy (elevated hemidiaphragm and worsening dyspnea) Brachial nerve root compression (Horner syndrome) Brachial nerve root compression by superior sulcus tumors Esophageal compression (dysphagia) Airway compression (dyspnea and superior)	
Symptoms and signs from metastatic spread	
Brain metastases Spinal cord compression Bone pain Liver metastases Hepatomegaly	
Paraneoplastic syndromes	Commonly associated histology
Hypercalcemia Trousseau syndrome Clubbing Hypertrophic pulmonary osteoarthropathy SIADH Ectopic ACTH production Eaton-Lambert syndrome Central nervous system	Squamous cell carcinoma Adenocarcinoma All types Non-small cell carcinoma Small cell carcinoma Small cell carcinoma Small cell carcinoma Multiple
SIADH: Syndrome of inappropriate secretion of antidiuretic hormone ACTH: Adrenocorticotropic hormone	

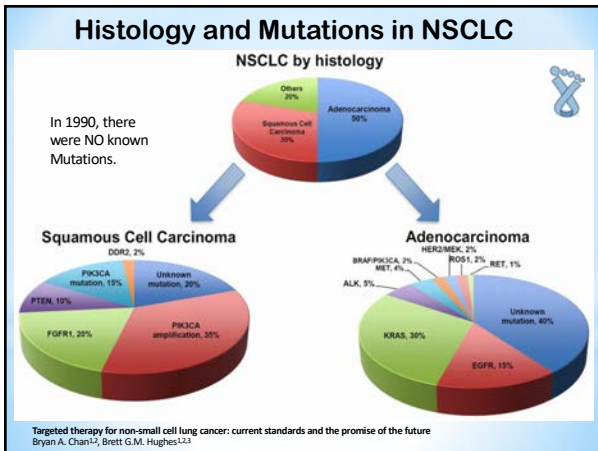
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STANDARD TESTS FOR DIAGNOSIS OF LUNG CANCER

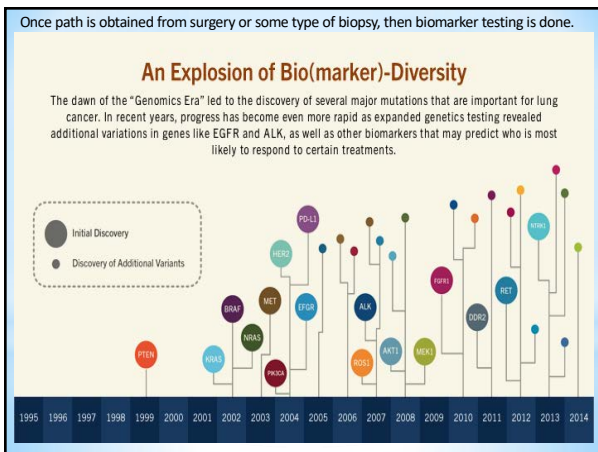
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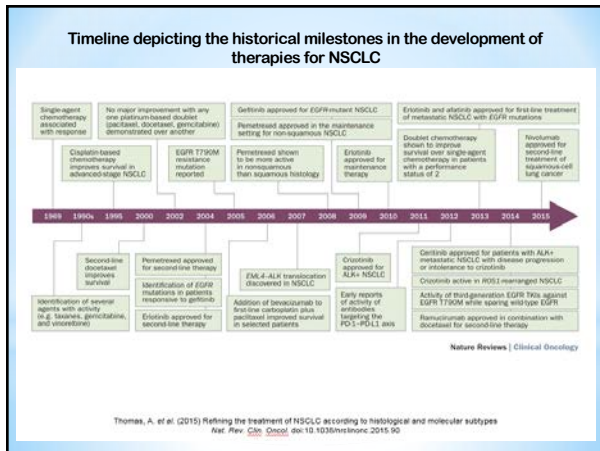
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Frequency of Mutations and Availability of Targeted Therapies in NSCLC

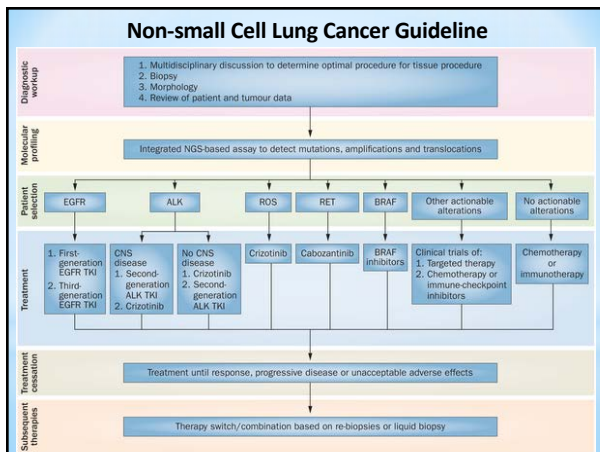
Gene	Alteration	Frequency in NSCLC
AKT1	Mutation	1%
ALK	Rearrangement	3-7%
BRAF	Mutation	1-3%
DDR2	Mutation	~4%
EGFR	Mutation	10-35%
EGFR1	Amplification	20%
HER2	Mutation	2-4%
KRAS	Mutation	15-25%
MEK1	Mutation	1%
MET ^a	Amplification	2-4%
NRAS	Mutation	1%
PIK3CA	Mutation	1-3%
PTEN	Mutation	4-8%
RET	Rearrangement	1%
ROS1 ^a	Rearrangement	1%

★ = drug for tx

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Challenges of Biomarker Use for Second & Third Line treatment

- ✓ Tumor biopsy usually required for biomarker testing
- ✓ Tissue difficult to obtain in advanced NSCLC patients
- ✓ Re-biopsy in second line often not feasible
- ✓ Genetic variations between primary and metastatic tumors may occur
- ✓ A minority of patients harbor mutations that predict benefit of targeted therapy

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Surgical Candidate Assessment

- ❖ Size and Tumor location (clinically stage I, II, some IIIa)
- ❖ Pulmonary function status
- ❖ Assess Fev1 and DLCO
- ❖ May need exercise study
- ❖ May need perfusion scan
- ❖ Assess cardiac function

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Lung Cancer Stages and Treatments

Stage 1: Localized
 Stage 2: Larger (>5 cm) or spread to local lymph nodes
 Surgery, +/- chemotherapy

Stage 3: Locally advanced
 Chemotherapy and radiation, +/- surgery


Stage 4: Advanced/metastatic
 Chemotherapy +/- palliative radiation

Lung Cancer: Stage, Treatments and Targeted Therapies - David Barble, MD, Lowe Center for Thoracic Oncology, Dana-Farber Cancer Institute, November 2, 2013

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Patient Characteristics to Consider in Treatment Decisions


- ❖ Age
- ❖ Co-morbidities
- ❖ PS 0, 1 vs. PS 2
- ❖ Non-squamous vs. squamous histology
- ❖ Mutation positive vs. mutation wild type
 - ❖ Principally EGFR
- ❖ Non-smoker vs. smoker



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Radiotherapy in Stage I /II NSCLC


- ❖ While surgery is the most beneficial therapy radiation alone has been used in patients that can not tolerate surgery.
- ❖ Smaller tumors have better survival outcomes.
- ❖ In larger tumors cure is rare but local control may be obtained.
- ❖ Co-morbidities also influence survival rates
- ❖ Has been used to preoperatively but with little increase in survival benefit
- ❖ Cyberknife radiation can be done – must have fiducials placed via bronchoscopy



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Radiotherapy in Stage III NSCLC


- ❖ Traditional Dosing 1.8 – 2.0 Gy/ day in 2 dimensions to a total dose of 60 Gy standard of care until late 1990s
- ❖ Clinical trials have been ongoing looking at dosing up to 90 Gy
- ❖ Trials have looked at sequential vs concurrent chemo/rads with results showing that concurrent has better outcomes (sequential – happens one after the other. Concurrent – at same time. Can be more toxic)
- ❖ Trials have also looked at hyperfractionation which also seem to have better outcomes (dose is given twice a day rather than once)
- ❖ Conformal 3D radiotherapy is considered the new standard of care (tighter fields / less toxicity)



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Radiotherapy In Stage IV NSCLC


- ❖ Radiotherapy is used to treat brain metastasis and painful bone metastasis
- ❖ Prophylactic with small cell lung cancer – to brain
- ❖ Occasionally radiotherapy may be used to treat pneumonias caused by tumor obstruction resulting in cough, SOB and hemoptysis
- ❖ Stage IV radiotherapy is always palliative



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Radiation Patient and Nursing Care


- ❖ Assess patient and family's knowledge regarding treatment process
- ❖ Teach family about treatment plan and appropriate side effects
- ❖ Assess for skin changes during radiation - be sure patients are aware to monitor skin changes and prevent breakdown
- ❖ Assess for esophagitis in patients undergoing mediastinal radiotherapy
- ❖ Assess for pain management
- ❖ Assess for dietary interventions– be sure patient is able maintain intake of fluids and nutritional intake



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Small Cell Lung Cancer


- ❖ Most common in Smokers. Less than 2% are never smokers.
- ❖ Described in two stages : Limited – confined to chest; Extensive - outside the chest
- ❖ Limited stage disease- disease confined to the chest that can be encompassed in one radiation port ; Extensive stage disease – outside of one radiation port.
- ❖ 20% cure rate for Limited Stage (LS) (only if caught in limited stage)
- ❖ Overall response rate 50-75%
- ❖ Untreated survival 6 weeks ; Treated survival ~9mo
- ❖ Most aggressive of all lung cancer types



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Treatment Options - Small Cell

- ❖ **Limited Stage Disease (LS)**- Chemotherapy in combination with radiation therapy
- ❖ **Extensive Stage Disease(ES)**- Chemotherapy and radiation to any painful areas for pain control
- ❖ **Chemotherapy used in SCLC:** Cisplatin + Etoposide(VP16) or Irinotecan; Carboplatin/ VP16 (Etoposide), Carboplatin/Cisplatin + Paclitaxel; Adriamycin + Cytosan.
- ❖ **LS** – prophylactic CRT is usually recommended; **ES**- radiotherapy may be used palliative (SVC, Brain mets, bone mets)
- ❖ **Clinical trials**



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Small cell Lung Cancer

PRINCIPLES OF SYSTEMIC THERAPY*

Systemic therapy as primary or adjuvant therapy:

- Limited stage (maximum of 4-6 cycles):
 - Cisplatin 60 mg/m² day 1 and etoposide 120 mg/m² days 1, 2, 3¹
 - Cisplatin 80 mg/m² day 1 and etoposide 100 mg/m² days 1, 2, 3²
 - Carboplatin AUC 5-6 day 1 and etoposide 100 mg/m² days 1, 2, 3³
 - During systemic therapy + RT, cisplatin/etoposide is recommended (category 1).
 - The use of myeloid growth factors is not recommended during concurrent systemic therapy plus radiotherapy (category 1 for not using GM-CSF).⁴
- Extensive stage (maximum of 4-6 cycles):¹
 - Carboplatin AUC 5-6 day 1 and etoposide 100 mg/m² days 1, 2, 3⁵
 - Cisplatin 75 mg/m² day 1 and etoposide 100 mg/m² days 1, 2, 3⁶
 - Cisplatin 80 mg/m² day 1 and etoposide 80 mg/m² days 1, 2, 3⁷
 - Cisplatin 25 mg/m² days 1, 2, 3 and etoposide 100 mg/m² days 1, 2, 3⁸
 - Carboplatin AUC 5 day 1 and irinotecan 50 mg/m² days 1, 8, 15⁹
 - Cisplatin 60 mg/m² day 1 and irinotecan 60 mg/m² days 1, 8, 15¹⁰
 - Cisplatin 30 mg/m² days 1, 8 and irinotecan 85 mg/m² days 1, 8¹¹

Subsequent systemic therapy:¹

- Clinical trial preferred.
- Relapse ≤6 mo, PS 0-2:
 - Topotecan PO or IV^{12,14}
 - Irinotecan¹⁵
 - Paclitaxel^{16,17}
 - Docetaxel¹⁸
 - Temozolomide^{19,20}
 - Nivolumab ± ipilimumab^{21,22}
 - Vinorelbine^{23,24}
 - Oral etoposide^{25,26}
 - Gemcitabine^{27,28}
 - Cyclophosphamide/doxorubicin/vincristine (CAV)¹²
 - Bendamustine (category 2B)²⁹
- Relapse >6 mo: original regimen^{30,31}

Consider dose reduction or growth factor support for patients with PS 2

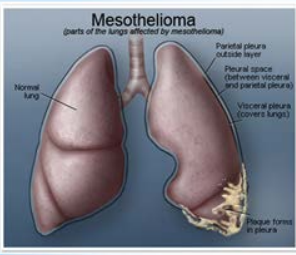
Response Assessment SCLC 2 of 3

References on SCLC 3 of 3

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* Mesothelioma

Aggressive cancer affecting the membrane lining of the lungs and abdomen




- Rare type of lung cancer: ~2,000 new cases/year in the U.S.
- 80 percent of cases are the result of asbestos exposure
- Currently no known cure
- treatments such as surgery and chemotherapy can help to improve prognosis
- Prognosis 1-2 years with treatment

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Nursing Care for Lung Cancer Patients

To optimize their quality of life, patients need to be aware of ways to control their symptoms and side effects of their treatments through...


- ❖ **Proper nutrition** – Educate patients the need of good diet and adequate hydration. Small frequent meals. High calorie foods to prevent weight loss. Monitor for weight loss and look for early interventions. Educate the patient early in the needs and ways to prevent alterations in taste and weight loss.
- ❖ **Adequate rest** – monitor for sleeplessness due to medication interactions, depression, anxiety, etc. When patients come in to clinic, assess sleep patterns. To prevent fatigue, some studies show low impact exercise prevents fatigue. Instruct patients to not take more than 1 nap a day and no more than 30 minutes at a time.
- ❖ **Managing pain and side effects** – When starting on pain medications, make sure patients understand side effects and monitor control of pain with medications. Keep pain log to see if changes are needed.



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Nursing Care for Lung Cancer Patients


- ❖ **Controlling anemia** – monitor labs closely and question patient on visit to see if having signs/symptoms – i.e., Shortness of breath, fatigue, weakness, etc..
- ❖ Obtaining **physical therapy** if needed – question patient on visits about his daily activity and any changes in ambulating and transfers, or falls.
- ❖ **Emotional/social support** and meeting spiritual needs– monitor for symptoms for depression, family interactions, family attending with patient on visits, offer information on support groups and other community activities with patients of similar needs. Identify depression or depressive symptoms and address as needed.
- ❖ **Educate patients and family about treatment related side effects.** Making them aware of the side effects that may occur or ways to prevent/treat them, makes them more accountable for their own health and needs. This can hopefully prevent unnecessary ER visits or hospital admissions.



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Oncology Emergencies in Lung Cancer
SUPERIOR VENA CAVA SYNDROME- SVCS

- ❖ develops in approximately 3% to 15% of patients with lung cancer.
- ❖ four times more likely to occur in patients with right- versus left-sided lesions
- ❖ Presents with: facial edema or erythema, dyspnea, cough, orthopnea, or arm and neck edema. Also may include hoarseness, dysphagia, headaches, dizziness, syncope, lethargy, and chest pain.
- ❖ symptoms may be worsened by positional changes, particularly bending forward, stooping, or lying down.
- ❖ **Common findings** : edema of the face, neck, or arms; dilatation of the veins of the upper body; and plethora or cyanosis of the face. Periorbital edema may be prominent. Also may have laryngeal or glossal edema, mental status changes, and pleural effusion (more commonly on the right side).
- ❖ Treatment includes: radiotherapy, chemotherapy, thrombolytic therapy and anti-coagulation, expandable wire stents, balloon angioplasty, and surgical bypass.
- ❖ Most patients derive relief from obstructive symptoms which may be radiation or chemotherapy and also when treated with diuretics and steroids




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Oncology Emergencies in Lung Cancer

Paraneoplastic Syndrome

- ❖ Anorexia, weight loss (cachexia):
 - most common presenting symptoms of ANY cancer. Loss of greater than 10% of baseline weight. No appetite or desire to eat. (Hormonal supplement, steroids or herbal treatments).
- ❖ Hormonal
 - SIADH (low sodium - nausea, vomiting, headache, weakness, muscle cramping, decreased appetite, confusion, N/V, diarrhea, decreased output and increase thirst). Common in small cell lung cancer. Require supplements, fluid restriction, chemotherapy and other medications (Demeclocycline- tetracycline derivative.)
- ❖ Hypercalcemia
 - high calcium – confusion, abdominal pain, renal stones, bradycardia, anorexia, N/V, dehydration, pruritus. present in advanced disease with bone mets
 - Tx: Hydration, bisphosphonates
- ❖ Deep venous thrombosis or Pulmonary embolism
- ❖ Anemia - common in advanced disease or related to treatment.
- ❖ WBC elevation -can be elevated as a direct response to the cancer (like an inflammatory response) in some patients. May see the WBC level drop as patient responds to treatments.




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Oncology Emergencies in Lung Cancer

Pericardia Effusion/ Pericardial Tamponade

- ❖ Abnormally large accumulation of fluid within the pericardial sac.
- ❖ Amounts range from 200 cc – 1800 cc (normal fluid amount is 15-50cc)
- ❖ Can be caused by disease, radiation effects on heart or chemotherapy.
- ❖ Tamponade results when the heart is compromised from increase amount of fluid and heart can no longer function properly.
- ❖ Signs/symptoms depend on rate of the accumulation: fatigue, mild dyspnea, orthopnea, and cough. Asymptomatic if accumulates slow, or may decompensate and critically ill if onset is rapid. Vague retrosternal chest pain that may be severe in supine position with palpitations.
- ❖ More fluid = more pronounced symptoms. May include worsening dyspnea, cough, peripheral edema, and possibly low grade fever.
- ❖ Severe tamponade =increase in anxiety, restless and confusion.
- ❖ Treatment –drain the fluid and restore cardiac function; prevention of reaccumulation of fluid; treat the cancer that is the underlying cause. Pericardial catheter may be placed and monitor the re-accumulation of the fluid. Pericardiocentesis may be the definitive treatment. Surgical intervention includes pericardial window or pericardiectomy.




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Oncology Emergencies in Lung Cancer

Pleural Effusion

- ❖ Excess accumulation of pleural fluid within the pleural space and a common complication of cancer
- ❖ Malignant pleural effusion is common – fluid may appear to be exudate
- ❖ Symptoms depend on the amount of fluid present and rate of reaccumulation: shortness of breath, dry cough, pleuritic chest pain, orthopnea, ipsilateral shoulder pain or discomfort
- ❖ Can become emergent when large amounts of fluid are present and a mediastinal shift may exist that can lead to hemodynamic compromise. If mediastinal shift occurs, trachea may deviate to the opposite side. Decreased, absent breath sounds, or rub may be heard.
- ❖ Diagnosed with CXR or CT scan
- ❖ Treatment – thoracentesis to drain off fluid, placement of pleurex catheter, or pleurodesis (sclerosing of the pleura with talc) or pleurectomy




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Oncology Emergencies in Lung Cancer

Malignant Spinal Cord Compression

- ❖ True neurologic emergency. Without prompt intervention and treatment, may result in paralysis or loss of bowel/bladder control
- ❖ Symptoms depend on site of met and amount of tumor invasion. Back pain is usually presenting symptom. Pain is localized (at or near site of tumor), or radicular (from irritation of nerve root from compression); shooting pain or burning pain worse with cough or movement. Thoracic vertebrae will cause bilateral pain where cervical or lumbar may be unilateral.
- ❖ Compression pain is worse with lying flat - arthritic pain is relieved with lying flat.
- ❖ Palpation of the spine reveal tenderness at the level of tumor involvement.
- ❖ Diagnosed with plain x-ray of spine, bone scan, CT or MRI (best images are obtained via MRI)
- ❖ Treatment – Surgery is for lesions with spinal instability, compression from bone fragments and radioresistant areas, or significant pain. Medical management includes – corticosteroids, pain control, radiation therapy and possibly kyphoplasty.




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Survivorship in Lung Cancer

- ❖ The 1 and 5 year relative survival rates for lung cancer are 44% and 17%, respectively.
- ❖ Only 15% of lung cancers are diagnosed at an early stage or locally, for which the 5 year survival rate is 54%.
- ❖ More than half (57%) are diagnosed at a distant stage (metastatic), for which the 1 and 5 year survival is 26% and 4%, respectively.
- ❖ The 5 year survival for small cell lung cancer is 6%, significantly lower than that of NSCLC (21%).



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QUESTIONS?



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 **Resources** 

UNC Lineberger Cancer Center www.cancer.med.unc.edu	NC Lung Cancer Initiative www.lungcancerinitiative.org
Cancer Grace CANCERGRACE.org	Never Smokers with Lung Cancer www.neversmokers.com
American Cancer Society www.cancer.org	Lung Cancer Alliance www.lungcanceralliance.org
National Cancer Institute www.cancer.gov	I CAN COPE American Cancer Society 1-800-ACS-2345
Cancer Care www.cancercares.org	Chemocare.com
NC Radiation Protection http://www.ncradiation.net/	

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What Cancer Cannot Do

Cancer is so limited...
 It cannot topple love.
 It cannot shatter hope.
 It cannot corrode faith.
 It cannot eat away peace.
 It cannot destroy confidence.
 It cannot kill friendship.
 It cannot shut out memories.
 It cannot silence courage.
 It cannot reduce eternal life.
 It cannot quench the spirit.

Author unknown

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