Lung Cancer

Clinical Group - 001

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Nursing Assessment

Physical

Subjective Data:

- Past health history
- Medications
- Function health problems
- Early

Physical Manifestations

- **Early Manifestations**
  - Cough
  - Chest pain
- **Late manifestations**
  - Weakness & fatigue
  - Change in eating habits/anorexia
  - Nausea & vomiting
  - Hoarseness
  - Confusion, disorientation, unsteady gait

Nursing Assessment
Physical

Objective Data

Vitals

- Decreased blood pressure
- Increased heart rate
- Increased respiratory rate
- Increased temperature

Inspection

- Respirations/diaphragmatic excursion
- Nails and skin

Palpation

- Masses & lesions
- Tumors

Percuss

- Dullness over lung field

Auscultate

- Lung sounds

Nursing Assessment

Radiology

Imaging tests:

- X-ray
- CT Scan/virtual bronchoscopy
- Radial probe endotracheal ultrasound
- PET scan/bone scan

Sputum cytology

Biopsy (tissue sample)

Nursing Interventions

For the patient post op from thoracotomy:

- Inspect and monitor surgical incisions for signs of infection
- Supplemental oxygen as prescribed
- Change dressings as ordered using strict sterile technique
- Monitor vital signs and assess respiratory function (rate, effort, breath sounds, sputum volume and color, oxygen saturation)

Chest tube interventions:

- Observe volume, color, and consistency of drainage from lungs and record
- Ensure all tubing connections are securely attached and taped
- Document bubbling of suction chamber of chest tube drainage system and tidaling in water-seal chamber

Pain management:

- Prevent pain by giving pain medications before procedures/treatments such as coughing and deep breathing exercises

Chemo/Radiation:

- Administer antiemetics before the start of chemo/radiation therapy or when N&V occurs as ordered

Pharmacological Treatment

- Radiation therapy is when a high-powered energy beam like an x-rays and protons kill cancer cells
  - During this treatment you lie supine while a big machine moves around you and directs radiation to the precise location it's aiming for.
  - Radiation can be used before and after surgery as well as with chemotherapy drugs
- Chemotherapy is a drug used to kill cancer cells by injecting into the veins or orally taking this medication.
  - Sometimes they use chemo drugs to shrink the cancer cells prior to surgery. This makes it easier to remove it all.
  - Chemo is extremely hard on the body so they usually give it in a series so you can go a long period of time without having it. This enables the body to recover since chemo kills good cells too.
- Stereotactic Body Radiotherapy is another drug they use. This drug uses beams of radiation at many different angles at the cancer. This treatment is usually done in one treatment
  - This treatment is good for small lung cancers who can't have surgery.
  - This is also good for cancer that has spread to other parts of the body, this includes the brain
- Immunotherapy uses your own immune system to fight against lung cancer. Our bodies' immune system won't attack the cancer because the cancer cells produce proteins that help them hide from the immune system and immunotherapy interferes with that process.
  - Immunotherapy is good for patients with lung cancer that hasn't spread as well as cancers that have spread

Evaluation for Effectiveness of Plan

The expected outcomes are that this patient with lung cancer will:

- Have adequate breathing patterns
- Maintain adequate oxygenation
- Have minimal to no pain
- Complete a smoking cessation program, if instructed in the care plan
- Convey feelings openly and honestly, with a realistic attitude about prognosis

- Harding, M., Kwong, J., Roberts, D., Hagler, D., & Reinisch, C. (2020). *Lewis's Medical-surgical nursing: Assessment and management of clinical problems*. St. Louis, MO: Elsevier.

Patient Education

Potential barriers that may affect this specific patient's health literacy

- Age
- Ethnicity
- Disability

Teaching Method:

- Speak slowly and give the patient time to take in and understand new information.
- Have patient repeat back teaching to validate understanding
- Use an interpreter to address language barriers.

Teaching points:

- Educate the importance of smoking cessation
- Encourage patient to exercise
- Educate patient about signs and symptoms that need prompt medical intervention
  - Any chest pain or shortness of breath
  - Fever of 100.4 F of higher
  - Any unusual bleeding
  - Signs of infection around incision such as redness, drainage, warmth, and pain.

Three strategies to promote authentic presence

Assess for communication barriers-- determine if interpreter is needed

Be present with the patient by:

- •- Address questions and/or concerns
- •- Provide feedback in timely manner
- •- Actively listen to patient and family members
- •- Explain procedures and what to expect to relieve fear/anxiety
- •- Eliminate distractions

Communicating with other team members about the patient, so as to reduce errors and anxiety. This way everyone is on the same page in regard to the patient wants/ and the care to provide to them.

Harding, M., Kwong, J., Roberts, D., Hagler, D., & Reinisch, C. (2020). *Lewis's medical-surgical nursing: assessment and management of clinical problems*. Elsevier, Inc.

Technology Used Specific to Cancer

Radiosurgery

- Radiosurgery: A type of radiation therapy that uses highly focused intense beams of energy to target and treat tumors. It is referred to as Radiosurgery because the treatment is normally done in 1 – 5 sessions with results similar to surgery. Radio surgery targets and kills the tumor cells, shrinking the tumor over time. There are three types of radiosurgery: Cobalt 60 systems, Linear accelerator systems and proton beam therapy (Fraser & Grossman, n.d.).

- Fraser, M., & Grossman, N. (n.d.). *Radiosurgery - Health Encyclopedia - University of Rochester Medical Center*. Www.Urmc.Rochester.Edu. Retrieved October 12, 2020, from https://www.urmc.rochester.edu/encyclopedia/content.aspx?contenttypeid=85&contentid=p08476

Technology Used Specific to Cancer
Radiosurgery (Cont.)

- Cobalt 60 / Gamma Knife: These systems use Gamma rays created from Cobalt 60, a radioactive isotope of Cobalt.
  - Hundreds of gamma beams are focused to a single point to treat small to medium sized tumors.
  - Mostly used on Brain tumors.
  - Fixed machine that requires patients to remain completely still. A head frame is attached to the head with screws for targeting of the tumor and fixation of the head during the procedure.
  - Typically requires a single treatment.

- Linear accelerator systems / Cyberknife: This type of treatment uses high energy X-rays to target and kill cancer cells (MedStar Georgetown University Hospital, 2012).
  - Does not use a radioactive source as seen with Cobalt 60 systems.
  - Multiple high energy x-rays are focused to a single point to treat medium to large tumors.
  - Not a fixed system: Can be used to treat tumors outside of the brain such as lung cancers where the tumor is not fixed to a single spatial location.
  - Gold seeds are placed in the tumor before treatment as a targeting source for the x-rays.
  - Treatment is typically 1 -5 sessions.
  - https://youtu.be/mLoePrfTfLk

Technology Used Specific to Cancer
Radiosurgery (Cont.)

- Proton beam therapy: Does not use radiation waves like Gamma or X-rays. Uses protons separated from hydrogen gas.
  - Protons are separated from hydrogen gas and accelerated by magnets until they reach the desired speed and energy level for treatment (Cancer, 2014).
  - Used to treat small or irregular shaped tumors.
  - Most accurate type of radiosurgery currently available. Can be focused to the point that almost all energy is deposited in the tumor with no exit dose. Treats the tumor in layers.
  - Few treatment centers in North America
  - https://youtu.be/a40fROBtkpI

Technology Used Specific to Cancer - Targeted Drug Therapy

- Targeted Drug therapy: A treatment that uses medications to attack cancer like chemotherapy but with less effect on non-cancerous tissue (*Differences between Chemotherapy and Targeted Therapy | Sino Biological*, n.d.).
    - Works by targeting mutations specific to different types of cancer. Where chemo may target a protein needed in cell division a targeted therapy would only target the mutation in that protein that causes the cell to divide out of control.
    - Reduces the effects on tissues outside of the tumor.
    - Can treat in a number of different ways: DNA replication, glucose use, blood supply.
    - Often used in conjunction with chemotherapy to reduce recovery time and improve outcomes.
    - Avastan is an example of a target therapy drug. It is used to inhibit the growth of blood vessels to the tumor.

References

- Ackley, B. J., Ladwig, G. B., Makic, M. B. F., Martinez-Kratz, M. R., & Zanotti, M. (2019). *Nursing diagnosis handbook: an evidence-based guide to planning care*. Mosby.
- Al Shamsi, H., Almutairi, A. G., Al Mashrafi, S., & Al Kalbani, T. (2020, April 30). *Implications of Language Barriers for Healthcare: A Systematic Review*. Oman medical journal. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7201401/.
- *Chemotherapy and Targeted Therapy, What's the Differences*. Differences between Chemotherapy and Targeted Therapy | Sino Biological. https://www.sinobiological.com/research/targeted-therapy/chemotherapy-targeted-therapy.
- Content - Health Encyclopedia - University of Rochester Medical Center. https://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeID=85.
- Harding, M., Kwong, J., Roberts, D., Hagler, D., & Reinisch, C. (2020). *Lewis's medical-surgical nursing: assessment and management of clinical problems* (11th ed.). Elsevier, Inc.
- Harding: Lewis's Medical-Surgical Nursing, 11th Edition - Nursing Care Plans. https://coursewareobjects.elsevier.com/objects/elr/Lewis/medsurg11e/nursingcareplan/?ch=27.
- *Health Literacy: Hidden Barriers and Practical Strategies*. https://www.ahrq.gov/health-literacy/improve/precautions/1stedition/tool3.html.
- Huether, S. E., McCance, K. L., Brashers, V. L., & Rote, N. S. (2017). *Understanding pathophysiology*. Elsevier.

References

- *Lifestyle Changes to Manage Lung Cancer*. Winchester Hospital. https://www.winchesterhospital.org/health-library/article?id=19766.
- *Lung Cancer Nursing Care Plan & Management*. (2017, July 24). https://www.rnpedia.com/nursing-notes/medical-surgical-nursing-notes/lung-cancer/.
- *Lung cancer*. (2020, October 10). https://www.mayoclinic.org/diseases-conditions/lung-cancer/diagnosis-treatment/drc-20374627.
- Vera, M., By, -, Vera, M., & Matt Vera is a registered nurse with a bachelor of science in nursing since 2009 and is currently working as a full-time writer and editor for Nurseslabs. During his time as a student. (2019, April 10). *5 Lung Cancer Nursing Care Plans*. Nurseslabs. https://nurseslabs.com/5-lung-cancer-nursing-care-plans/2/.
- Weber, J., & Kelley, J. (2018). *Health assessment in nursing*. Wolters Kluwer.