Chapter 56
Care of the Patient with Cancer

Cancer Rates in the US

- 1 in 2 men and 1 in 3 women will develop cancer in their lifetime
- Most common sites in men are prostate, lung, colon, and rectum
- Most common sites in women are breast, lung, colon, and rectum
- Cancer is the second leading cause of death in the US

Carcinogenesis

- The process by which normal cells are transformed into cancer cells
- Cancer may be caused by external and internal factors
Cancer Prevention

- Primary prevention
  - Smoking cessation
  - Eat a healthy diet
  - Avoid excessive exposure to the sun
  - Avoid using smokeless tobacco
  - Avoid excessive alcohol consumption
  - Exercise regularly
  - Adequate rest
  - Regular medical exams

Detection of Cancer

- Identify causes of cancer
- Learn and practice self-examination
- PSA for men over 50
- Mammogram for women over 40

Risk Factors for Cancer

- Smoking
- Smokeless tobacco
- Diet
- UV exposure
- Environmental carcinogens
- Chemical carcinogens
- Heavy alcohol use
- Heredity
- Age
Preventive Behaviors for Men

- Testicular self-examination (TSE)
- PSA after age 50

Preventive Behaviors for Women

- Pap test
- Breast self-examination
- Mammogram biannually after age 40

Warning Signs of Cancer

- CAUTION
Cancer Terminology

- Neoplasm—a new growth
  - Abnormal or uncontrolled growth
- Benign—not recurrent or progressive
- Malignant—abnormal cell growth with a loss of normal role and function
- Tumor—a growth; may be local or invasive
- Metastasis—the process by which tumor cells spread from the primary site to a secondary site
- Immunosurveillance—the immune system’s recognition and destruction of newly developed abnormal cells

Characteristics of Malignant Cells

- Rapid growth
- Irregular
- Rarely contained within a capsule
- Capable of metastasis
- Little resemblance to parent tissue

Types of Malignancies

- Carcinoma—malignant tumors composed of epithelial cells
- Sarcoma—malignant tumors of connective tissues
- Lymphoma and leukemia—malignant tumors that originate from the hematopoietic system
Pathophysiology of Cancer

- Cells are the basic structure of tissues
- Cells reproduce steadily at a controlled rate
- Cells divide by splitting DNA, and being replicated using RNA
- As the cells divide, sometimes errors in the genetic code occur
- These errors are referred to as mutations
- As mutations occur, the likelihood of cancer development increases

Metastasis

- Metastasis is the process by which tumor cells spread from the primary site to a secondary site
- Once cancer cells have moved to another area of the body, secondary tumors may grow in that area
- However, the cancer is still named for the tissue of origin

Metastasis cont’d

- Metastasis can occur by
  - Direct spread of tumor cells by diffusion to other body cavities
  - Circulation by way of blood and lymphatic channels
Cancer Classification Systems

- Clinical staging
- TNM classification system
- Bethesda system

Clinical Staging

- Stage O: Tumor in situ
- Stage I: Tumor limited to the tissue of origin
- Stage II: Limited local spread
- Stage III: Extensive local and regional spread
- Stage IV: Metastasis

TNM Staging System

- T: Tumor size
- N: Degree of regional spread to the lymph nodes
- M: Metastasis
Bethesda System

- The results of the Bethesda system as determined by a Pap smear
  - Negative: Normal (formerly class I)
  - Probably negative: May indicate infection, atypical squamous cells, or reactive changes (formerly class II)
  - Suspicious, but not conclusive for malignancy: Low-grade squamous intraepithelial lesion (formerly class III)
  - More suspicious, strongly suggestive of malignancy: High-grade squamous intraepithelial lesion (formerly class IV)
  - Conclusive for malignancy: Invasive squamous cell carcinoma (formerly class V)

Diagnostic Tests Used to Identify Cancer

- Biopsy
- Endoscopy
- Diagnostic imaging
- Radioisotope studies
- CT
- Ultrasound
- MRI
- PET scan
- Lab values

Biopsy

- The removal of a small piece of living tissue from an organ or other part of the body for microscopic examination
- Used to confirm or establish a diagnosis, establish prognosis, or follow the course of a disease
- The only definitive way to determine the presence of malignant cells
Surgery Nursing Interventions

- Provide patient education
- Relieve anxiety
- Assess nutritional status
- Provide preoperative care
- Provide postoperative care
- Community resources

Radiation Nursing Interventions

- Provide patient education
- Keep skin dry
- Place "Radiation in Use" sign on patient's door
- Encourage ROM exercises
- Assess skin regularly
- Monitor I&O
- Monitor nutritional status

Chemotherapy Nursing Interventions

- Provide patient education
- Monitor nutritional status
- Administer antiemetics
- Monitor hydration status
Chemotherapeutic Agents

- Alkylating agents
- Antitumor antibiotics
- Antimetabolites
- Hormonal agents
- Vinca alkaloids

Tumor Lysis Syndrome

- An oncologic emergency with rapid lysis of malignant cells
- The syndrome develops when chemotherapy or irradiation causes the destruction (or lysis) of a large number of rapidly dividing malignant cells
- This results in hyperkalemia, hyperphosphatemia, hyperuricemia, and hypocalcemia

Tumor Lysis Syndrome cont’d

**Clinical Manifestations**

- Early clinical manifestations include
  - Nausea
  - Vomiting
  - Anorexia
  - Diarrhea
  - Muscle weakness
  - Cramping

**Clinical Manifestations**

- Later signs and symptoms may include
  - Tetany
  - Paresthesias
  - Seizures
  - Anuria
  - Cardiac arrest
Tumor Lysis Syndrome cont’d

Diagnostic Tests and Medical Management
- Diagnosed by assessment and lab values
- Medical management
  - Hydration
  - Diuretics
  - Allopurinol
  - Sodium bicarbonate
  - Calcium gluconate

Nursing Interventions
- Administer medications
- Monitor for signs and symptoms of tumor lysis syndrome and electrolyte abnormalities
- Promote anxiety relief
- Treat pain
- Prevent further complications

Prognosis
- Typically resolves in 7 days once treatment is initiated
## Pain Relief Guidelines for Advanced Cancer

- Opioids
- NSAIDs
- Analgesics
- Acupuncture
- Biofeedback
- Guided imagery
- Massage
- Distraction