Chapter 17
Care of the Patient with Cancer

Oncology
- Branch of medicine that deals with the study of tumors
- Lung cancer is the leading cause of cancer-related death in both men and women
- More children 14 years of age and younger die of cancer than of any other disease
What types of diet may place a person at higher risk for cancer?

1. Diet high in fats
2. High fiber diet
3. Diet with lots of vegetables
4. Diet high in carbohydrates
Carcinogenesis and the prevention of cancer (continued)

- Risk factors:
  - Smoking
    - 87% of people who develop lung cancer are smokers
  - Dietary habits
  - Exposure to radiation
  - Exposure to certain chemicals
  - Chronic infections
- Smoking and alcohol consumption are significant factors in the development of cancer.
Hereditary Cancers

- About 90% of cancers are NOT inherited
- Genetic susceptibility
  - Incidence of breast cancer is higher in women with a family history of this disease
- Cancer risk assessment and cancer genetic counseling
  - First step toward identifying hereditary cancer predisposition
Cancer Prevention and Early Detection
- Planned periodic examination and recognition of cancer’s warning signs
- Colorectal tests
- Prostate cancer detection
- Pelvic examination with Pap smear for women
- Breast cancer detection (self-exams)
- Skin examinations

Cancer’s seven warning signs
1. Changes in bowel or bladder habits
2. A sore that does not heal.
3. Unusual bleeding or discharge.
4. Thickening or lump in breast or elsewhere
5. Indigestion or difficulty eating
6. Obvious changes in warts or moles
7. Nagging cough or hoarseness

Pathophysiology of Cancer
- Cell mechanisms and growth
  - Normal cells
    - When cells are destroyed, cells of the same type reproduce until the correct number have been replenished
  - Cancer cells
    - Instead of repairing their own damaged cells, cancer cells divide and reproduce in an uncontrolled and unregulated manner
Mutations in Tumor Suppressor Genes

Invasion and Metastasis

1. Cancer cells invade surrounding tissues and blood vessels
2. Cancer cells are transported by the circulatory system to distant sites
3. Cancer cells reinvade and grow at new location

Malignant versus Benign Tumors

Benign (not cancer) tumor cells grow only locally and cannot spread by invasion or metastasis
Malignant (cancer) cells invade neighboring tissues, enter blood vessels, and metastasize to different sites
Grading and Staging of Tumors

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

Tumor Staging

Five-Year Survival Rates for Patients with Melanoma by Stage

Diagnosis of Cancer

- Biopsy
  - Incisional, excisional, needle aspiration
**Diagnosis of Cancer**

- Laboratory tests
  - Carcinoembryonic antigen (CEA)
  - PSA and CA-125
  - Stool examination for blood

**Cancer Therapies**

- Surgery
- Preventive
- Diagnostic
- Curative
- Palliative
  - Radiation therapy
    - External radiation therapy
    - Internal radiation therapy
Cancer Therapies

- Chemotherapy
  - Side effects:
    - Leukopenia
    - Anemia
    - Thrombocytopenia
    - Alopecia
    - Nausea, vomiting, and diarrhea
    - Tumor lysis syndrome

- Bone marrow transplantation
  - Process of replacing diseased or damaged bone marrow with normally functioning bone marrow

- Peripheral stem cell transplantation
  - This procedure is based on the fact that peripheral or circulating stem cells are capable of repopulating the bone marrow

Advanced Cancer

- Pain management
  - Opioids:
    - Morphine, hydromorphone, fentanyl, methadone
    - Sustained-release morphine
    - MS Contin, Roxanol SR
  - Administration:
    - IV drips and epidurally
    - Avoids peaks and valleys
  - Patient self-control:
    - Distraction, massage, relaxation, biofeedback, hypnosis, and imagery
Advanced Cancer

- Pain management
  - Patients should not be subjected to severe suffering from potentially controllable pain
    - Fear of addiction should not be a factor when considering pain relief for the terminally ill

Advanced Cancer

- Nutritional therapy
  - Problems:
    - Malnutrition
    - Anorexia
    - Altered taste sensation
    - Nausea/vomiting
    - Diarrhea
    - Stomatitis
    - Mucositis

Advanced Cancer

- Terminal prognosis
  - Most patients with advanced cancer know they are dying
  - Honesty and openness are the best approaches
  - Spiritual activities may provide mental and emotional strength
  - Social worker assists the patient and family in planning for home care
  - Hospice services can be arranged to assist in directing toward relief from pain and other problems