Chapter 53: Antineoplastic Medications

Chemo Drugs
- Kill or inhibit the reproduction of neoplastic cells
- Used to cure, increase survival time, and decrease life-threatening complications
- Side and adverse effects from chemotherapy result from the effects of the antineoplastic medication on normal cells
- "cause rapid destruction of cells, resulting in the release of uric acid"
- Fatigue is the most common adverse reaction
- Given in multiple cycles to allow for recuperation of normal cells between doses and to catch cancer cells in various phases of the cell cycle
- Partial remission of a client's cancer indicates that it is not spreading further to the lymph nodes or growing (progressing), but rather that it has regressed (decreased) 50% or more
- Complete remission would be characterized as the cancer appearing to have disappeared.
- Site for Administration → between the antecubital space and wrist, proximal to any recent venipuncture site.
- Vesicant chemotherapy agents should be administered before non vesicant drugs if two such drugs are ordered in combination.
- Painful IV site during chemotherapy administration → stop the infusion

Chemotherapy Dosage
- Based on BSA
  - Requires a current accurate height and weight for BSA calculation
- Immunizations
  - Must contact HCP before receiving immunizations
  - Avoid contact with individuals who have recently received a live virus
- Avoid:
  - Avoid aspirin and aspirin containing products to minimize the risk of bleeding
  - Avoid alcohol to minimize risk of toxicity and adverse/side effects
- Bleeding precautions:
  - Initiated when platelet count decreases
  - Normal = 150,000 - 450,000
- Neutropenic Precautions:
  - Normal = 4,500 to 11,000 (5,000-10,000 - varies on book)
  - Initiated when below 4,500
- Extravasation
  - Indications: redness, swelling, and a slowed infusion
  - Nursing Interventions
    - Stop the infusion
- Notify HCP
- Ice or heat may be prescribed for application to the site
- Antidote may be prescribed to be administered into the site

**Methotrexate**
- Cell-cycle-specific drug
- **Side Effects:**
  - Nausea/vomiting/diarrhea
  - Anorexia
  - Alopecia
  - Ulcerative stomatitis
  - Dizziness
- **Nursing Considerations**
  - Treatment of cancer, mycosis fungoides, psoriasis, rheumatoid arthritis
  - Avoid crowds and people with infections
  - Do not take with ASA or other NSAIDS → GI bleeding
  - Monitor for pulmonary toxicity → may manifest early as a dry, nonproductive cough

**Tamoxifen**
- **Use:** For advanced breast cancer that is not responsive to other treatments
- **Action:** Competitively binds to estrogen receptors on tumors and other tissue targets
- **Monitor:** Calcium levels
- **Side Effects:**
  - Nausea, vomiting
  - Hot flashes
  - Rash
  - Vaginal discharge
  - Irregular menses
  - Fluid retention
  - Depression, mood disturbances
- **Nursing Consideration:**
  - Take after antacid, after evening meal, before bedtime, or take antiemetic 30-60 min prior to decrease GI upset
  - Vaginal bleeding, pruritus, hot flashes are reversible after stopping
  - Contact HCP if decreased visual acuity → may be permanent
  - Tumor flare (increase in tumor size and increased bone pain) may occur but will decrease rapidly

**Bleomycin**
- Can cause interstitial pneumonitis → pulmonary fibrosis
Must check pulmonary function studies along with heme, hepatic and renal function tests

- **Busulfan**
  - Can cause an increase in uric acid

- **Etoposide**
  - Can cause orthostatic hypotension
  - Should be administered slowly over 30-60 min to avoid hypotension
  - Must monitor BP during infusion

- **Vincristine**
  - **Adverse Effects:** peripheral neuropathy - occurs in almost every patient*

- **Asparaginase**
  - **Action:** Impairs pancreatic function → pancreatic function tests should performed
  - Monitor for signs of pancreatitis - nausea, vomiting, and abdominal pain
  - Contraindicated if hypersensitivity exists, in pancreatitis, or hx of pancreatitis

- **Megestrol acetate**
  - **Action:** suppresses the release of luteinizing hormone from the anterior pituitary by inhibiting pituitary function and regressing tumor size
  - Contact HCP if patient has a history of thrombophlebitis

- **Daunorubicin**
  - **Adverse effects:**
    - Lung crackles → heart failure or cardiotoxicity
    - Bone marrow depression
    - Fever
    - Sores in mouth and throat
    - n/v

- Methotrexate, paclitaxel (taxol), 5-fluorouracil (adrucil), and vincristine (oncovin) are all cell-cycle-specific chemotherapy drugs.
- Cyclophosphamide (cytoxan), doxorubicin (Doxil), and nitrogen mustard, Cisplatin (platinol) are cell-cycle-nonspecific drugs.

Resources: