



Antineoplastic Drugs



Antineoplastic Drugs

Used to cure cancer, prevent its spread, relief cancer symptoms or prolong the survival.



Cancer chemotherapy



- **Antineoplastic drugs are also called anticancer, chemotherapy, chemo, cytotoxic, or hazardous drugs.**



Classifications

- **Alkylating agents**
- **Antimetabolites**
- **Antibiotics Antineoplastic**
- **Hormonal antineoplastic drugs**
- **Radioactive isotopes**
- **Miscellaneous (V)**

Pharmacodynamics

- **Damage the DNA of cancer cells to keep them from making more copies of themselves.**
- **Interfere with DNA and RNA synthesis**

Alkylating agents

**Busulfan, Carboplatin, Carmustine,
Chlorambucil, Cisplatin, Cyclophosphamide,
Mechlorethamine, Melphalan, Oxaliplatin**

Indications

- Lymphomas
- Leukemias
- Myelomas
- Ovarian
- Testicular
- Breast **Cancers,**
- Pancreatic **Cancers**

Antimetabolites

- 5-fluorouracil (5-FU)
- 6-mercaptopurine (6-MP)
- Cladribine, Clofarabine, Decitabine
- Floxuridine, Fludarabine
- Hydroxyurea, Methotrexate, Pentostatin

Antibiotics Antineoplastic

- Doxorubicin, daunorubicin,
- Bleomycin, Mitomycin and dactinomycin



Hormonal antineoplastic drugs

- Estrogens
- Anti-estrogens
- Progestins
- Androgens
- Anti-androgens
- Luteinizing hormone agonists
- Glucocorticoids hormones

Indications

- Breast Cancers
- Prostate Carcinoma.
- Endometrium Carcinoma
- Lymphomas
- Certain Leukemias.

Radioactive isotopes

Radioactive Isotope	Applications in Medicine
Cobalt-60	Radiation therapy to prevent cancer
Iodine-131	Locate brain tumors, monitor cardiac, liver and thyroid activity
Carbon-14	Study metabolism changes for patients with diabetes, gout and anemia
Carbon-11	Tagged onto glucose to monitor organs during a PET scan
Sodium-24	Study blood circulation
Thallium-201	Determine damage in heart tissue, detection of tumors
Technetium-99m	Locate brain tumors and damaged heart cells, radiotracer in medical diagnostics (imaging of organs and blood flow studies)

Miscellaneous

- Vinblastine
- Vincristine
- Vincristine liposomal
- **Vinorelbine**



- **Acute Leukemia**
- **Hodgkin's And Non- Hodgkin's Lymphoma, Neuroblastoma**
- **Wilms' Tumor**
- **Multiple Myeloma**
- **Chronic Leukemias**
- **Brain Tumors.**



Side Effects

- Increased risk of catching infectious diseases like colds or the flu.
- **Fatigue.**
- **Nausea, vomiting,** and other digestive problems.
- Localized and whole body **pain.**
- Both male and female fertility problems.

Side Effects

- **Antimetabolites**
- **Hepatotoxicity**
- **Nephrotoxicity**

Home Work

- **Nurse's Responsibilities**



References

- **K.D Tripathi Textbook for Pharmacology**
- **Williams and Wilkins, Textbook of Pharmacology for nurses 2 in 1**