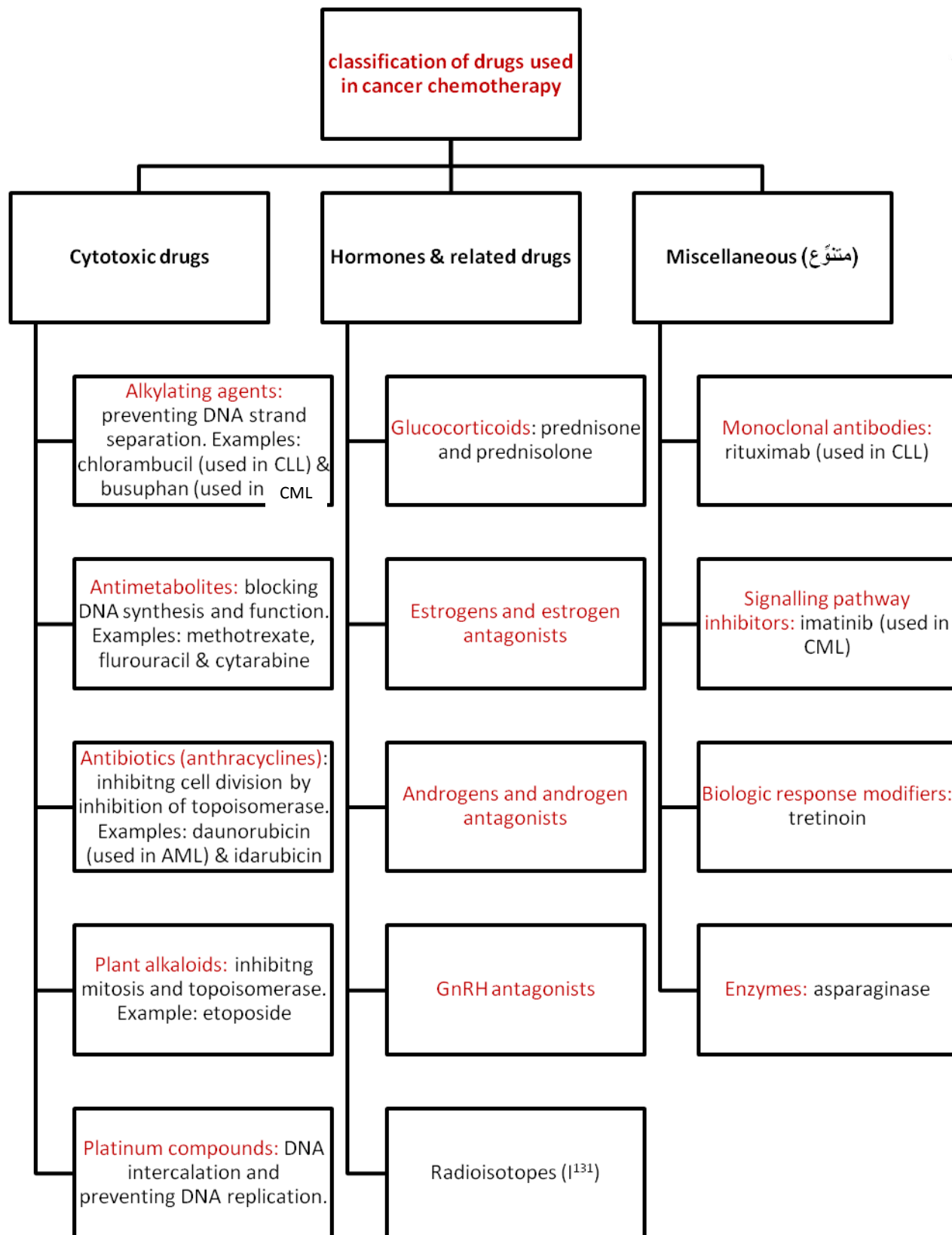




- In a patient who is suffering from Acute Myeloblastic Leukemia (AML), there are two types of therapy:
 - **General (or supportive therapy):** central venous line, administrating platelets and coagulation factors (to correct thrombocytopenia), increasing the Hb (to correct anemia) and treating fever promptly (if present).
 - **Specific therapy:**
 - ✓ Induction of remission: this aims to rapidly kill most of the tumor cells and get the patient into remission (الرجوع إلى حالة الهدوء والسكون). Remission is defined as less than 5% blasts in the bone marrow, normal peripheral blood count and no other signs or symptoms of the disease. In patient suffering from AML, induction of remission is achieved by administrating cytosine arabinoside + daunorubicin (7+3 regimen is the most common). Note: in patients with acute promyelocytic leukemia, ATRA (all-trans retinoic acid) therapy will induce complete remission (if retinoic acid syndrome occurs, this will be controlled with dexamethasone).
 - * **Note:** during induction therapy, tumor lysis syndrome may develop resulting in acute renal failure due to hyperuricemia. This will be prevented by: hydration, urinary alkalization & allopurinol.
 - ✓ Consolidation (التدعيم والتقوية): using high doses of multidrug chemotherapy in order to eliminate the disease or reduce the tumor burden to very low levels. High doses of cytosine arabinoside + daunorubicin are administered to patient with AML. Note that patients >60 yrs are unable to tolerate intensive consolidation chemotherapy.
 - ✓ Maintenance: with the exception of APL, maintenance therapy does not improve survival in AML).
 - ✓ If the patient with AML has a poor prognosis or relapse, allogeneic SCT must be considered.
- Acute Lymphoblastic leukemia is characterized by:
 - **Meningeal syndrome** (headache, nausea & vomiting, blurring of vision and diplopia “double vision”). For the treatment of meningeal syndrome, high-dose methotrexate (given IV or intrathecal) or cranial irradiation is done. Note that nowadays cranial irradiation is avoided as far as possible in children because of substantial side-effects.
 - **Testicular swelling.**
- Patients with Chronic Myeloid Leukemia (CML) have BCR-ABL1 fusion protein--->

↑tyrosine kinase activity ---> enhancing cell proliferation and preventing apoptosis. This condition is going to be treated with:

 - **Imatinib (which is a tyrosine kinase inhibitor):** it block tyrosine kinase activity by competing with adenosine triphosphate (ATP) binding. Side effects of this drug include: skin rash, fluid retention, muscle cramps and nausea. If there is treatment failure, second generation tyrosine kinase inhibitor therapy (with dasatinib or nilotinib) or SCT is considered as options.
 - **Hydroxyurea & busulphan:** not used anymore.
 - **α-interferone:** also not as common as imatinib.



- **Antimetabolite drug categories:**

- **Analog of:** folic acid – purine bases – purine nucleosides – pyrimidine nucleosides.

Antineoplastics	Flurouracil – cytarabine – methotrexate
Immunosuppressants	Methotrexate, azathioprine
Antivirals	-
Antifunguls	Flucytosine
Xanthine oxidase inhibitors (for the treatment of gout:hyperuricemia)	Allopurinol (most common) – oxypurinol