altretamine (alt-ret-a-meen)
Hexalen, Hexamethylmelamine, Hexastat
Classification
Therapeutic: antineoplastics
Pregnancy Category D

Indications
Management of ovarian cancer unresponsive to treatment with other agents.

Action
Mechanism unknown, but may disrupt DNA and RNA synthesis. Therapeutic Effects: Death of rapidly replicating cells, particularly malignant ones.

Pharmacokinetics
Absorption: Well absorbed following oral administration. Requires metabolism for conversion to antineoplastic compounds.
Distribution: Reaches high concentrations in liver, kidney, and small intestine. Poor penetration into brain.
Metabolism and Excretion: Mostly metabolized by the liver to compounds with antineoplastic activity.
Half-life: 7 – 10 hr.

TIME/ACTION PROFILE (effects on blood counts)
ROUTE ONSET PEAK DURATION
PO unknown 3–4 wk 6 wk

Contraindications/Precautions
Contraindicated in: Hypersensitivity; OB, Lactation: Contraindicated due to risk to fetus/infant.
Use Cautiously in: Pre-existing neurologic diseases; Patients with childbearing potential; Infections; Decreased bone marrow reserve; Other chronic debilitating illnesses; Pedi: Safety not established.

Adverse Reactions/Side Effects
CNS: SEIZURES, fatigue.
CV: orthostatic hypotension.
GI: nausea, vomiting, anorexia, hepatic toxicity.
GU: gonadal suppression, renal insufficiency, proteinuria, skin rash.
Endo: gonadal suppression.
Blood: anemia, leukopenia, thrombocytopenia.
Neuro: peripheral neuropathy.
Derm: alopecia, pruritus, skin rash.
Dx: headache.

Interactions
Drug-Drug: Concurrent use with MAO inhibitors may produce orthostatic hypotension. May increase antibody response and increase risk of adverse reactions from live-virus vaccines. Additive bone marrow depression may occur with other antineoplastics or radiation therapy. Cimetidine increases blood levels and risk of toxicity.

Route/Dosage
PO (Adults): 0.5 mg/kg/4 times daily (after meals and at bedtime) for 14 or 21 days of each 28-day cycle. Dosage reduction to 0.5 mg/kg/4 times daily (after meals and at bedtime) recommended after 14 or more days rest for any of the following: GI intolerance, severe bone marrow depression, or progressive neurologic toxicity.

NURSING IMPLICATIONS
Assessment
• Nausea and vomiting of gradual onset frequently occur. Tolerance may develop after several weeks of therapy. Treatment includes antiemetics or dosage reduction and, rarely, discontinuation. Monitor amounts of emesis and notify physician if emesis exceeds guidelines to prevent dehydration.
• Monitor for bone marrow depression throughout therapy. Although the patient is often asymptomatic, symptoms include anemia (unusual tiredness), leukopenia (fever, chills, sore throat, cough or hoarseness, lower back or side pain, painful or difficult urination, and dizziness), and thrombocytopenia (bleeding gums, bruising, petechiae, guaiac stools, urine, and emesis). Notify physician if these symptoms occur.
• Avoid IM injections and taking rectal temperatures. Apply pressure to venipuncture sites for 10 min.
• Assess patient for signs of neurotoxicity including CNS effects (drowsiness, confusion, dizziness, depersonalization, drowsiness, illusions, mental depression, weakness, seizures) and peripheral neuropathy (numbness, tingling, paresthesia) prior to initiation of each course and routinely throughout therapy. Pyridoxine may minimize peripheral neuropathy; usually reversible on discontinuation of therapy. If neurotoxicity continues, dose reduction, discontinue therapy.

SUBSTANCE CONSIDERATIONS: Monitor CBC and platelets prior to each course of therapy, monthly, and as clinically indicated. The rate of leukopenia and thrombocytopenia may be decreased by administration of filgastrim and filgrastim and increased by administration of antilymphocyte globulin.
bocytopenia occurs in 3–4 wk with 21-day therapy and recovers in 6 wk with intermittent dosing, with continuous dosing the nadir occurs in 6–8 wk. Dose should be held for 14 or more days and reinitiated at 50 mg/m2/day 4 times daily for any of the following: GI intolerance unresponsive to conventional therapy, WBC <2000 mm3, granulocytes <1000 mm3, platelet count <75,000 mm3, or progressive neurologic toxicity.

Potential Nursing Diagnoses
Risk for infection (Adverse Reactions)
Risk for injury (Side Effects)

Implementation
● High Alert: Fatalities have occurred with chemotherapeutic agents. Before administering, clarify all ambiguous orders; double check single, daily, and course-of-therapy dose limits; have second practitioner independently double check original order and dose calculations.

● PO: Administer doses after meals and at bedtime to reduce nausea and vomiting.

Patient/Family Teaching
● Instruct patient to notify health care professional promptly if fever; sore throat; signs of infection; bleeding gums, bruising, petechiae; blood in stools, urine, or emesis; increased fatigue, dyspnea, or orthostatic hypotension occurs. Caution patient to avoid crowds and persons with known infections. Instruct patient to use soft toothbrush and electric razor and to avoid falls. Caution patient not to drink alcoholic beverages or take medications containing aspirin or NSAIDs; may precipitate GI bleeding.

● Instruct patient to report promptly any numbness or tingling in extremities.

● Instruct patient not to receive any vaccinations without advice of health care professional.

● Advise patient of the need for contraception.

● Emphasize the need for periodic lab tests to monitor for side effects.

Evaluation/Desired Outcomes
● Decrease in size or spread of malignancy.

Why was this drug prescribed for your patient?