Lomustine (loe-mus-teen) 
CCNU, CeeNu

Classification
Therapeutic: antineoplastics
Pharmacologic: alkylating agents

Pregnancy Category D

Indications
Used alone or with other agents for: Primary and metastatic brain tumors, Hodgkin’s disease.

Action
Inhibits DNA and RNA synthesis by alkylation (cell-cycle phase–nonspecific). Therapeutic Effects: Death of rapidly replicating cells, particularly malignant ones.

Pharmacokinetics

Absorption: Rapidly absorbed following oral administration.
Distribution: Widely distributed. Active metabolites enter the CSF well. Enters breast milk.
Metabolism and Excretion: Mostly metabolized by the liver. Some metabolites are active antineoplastic agents. Metabolites are excreted by the kidneys.
Half-life: 1–2 days (active metabolites).

TIME/ACTION PROFILE (effects on blood counts)

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<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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<tbody>
<tr>
<td>PO</td>
<td>unknown</td>
<td>4–7 wk</td>
<td>1–2 wk</td>
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Contraindications/Precautions

Contraindicated in: Hypersensitivity; Pregnancy or lactation.
Use Cautiously in: Patients with childbearing potential; Active infections; Decreased bone marrow reserve (dosage reduction required); Geriatric patients or patients with other chronic debilitating illnesses; Impaired liver function.

Adverse Reactions/Side Effects


Interactions

Drug-Drug: May increase bone marrow depression with other antineoplastics or radiation therapy. May decrease antibody response to live-virus vaccines and/or risk of adverse reactions.

Route/Dosage

PO (Adults and Children): 100–130 mg/m² as a single dose every 6 wk (adjustments required for concurrent therapy or decreased blood counts).

NURSING IMPLICATIONS

Assessment

● Monitor for bone marrow depression. Assess for bleeding (bleeding gums, bruising, guaiac stools, urine, and emesis) and avoid IM injections and rectal temperatures if platelet count is low. Apply pressure to venipuncture sites for 10 min. Assess for signs of infection during neutropenia. Anemia may occur. Monitor white blood cell count (WBC) and platelet count daily until normal values are reached.

● Assess for nausea and vomiting, which usually begin within 3 hr of administration and persist for 24 hr. Prophylactic antiemetics may be used. Monitor intake and output, daily weight, and appetite. Adjust dose as tolerated for anorexia.

● Monitor pulmonary function tests prior to initiation of therapy and periodically during therapy. Pulmonary toxicity may occur with cumulative doses of 600–1100 mg or with 6 mo or more of therapy.

Lab Test Considerations:

● Monitor CBC and differential prior to and periodically during therapy to detect early signs of myelosuppression, which may occur with cumulative doses of 600–1100 mg or with 6 mo or more of therapy.

Potential Nursing Diagnoses

Risk for infection (Side Effects)
Inbalanced nutrition: less than body requirements (Side Effects)
Implementation

- **PO:** Administer on empty stomach at bedtime. Preadministration of an antiemetic and a hypnotic may help control nausea.

Patient/Family Teaching

- Instruct patient to take lomustine exactly as directed, even if nausea and vomiting occur. If vomiting occurs shortly after dose is taken, consult health care professional.
- Instruct patient that several different types of capsules may be found in medication container. Patient should take all the capsules at one time to receive the correct dose.
- Advise patient to notify health care professional promptly if fever, chills, sore throat, or altered respiratory pattern occurs. Cautions patient to avoid crowds and persons with known infections. Instruct patient to avoid contact with pets and animals.
- Advise patient to notify health care professional if abdominal pain, nausea, vomiting, diarrhea, or cramps occur. Instruct patient to avoid alcoholic beverages and antacids. Cautions patient to use soft toothbrush and electric razor. Caution patient not to drink alcoholic beverages or take products containing aspirin or other NSAIDs.
- Instruct patient to notify health care professional if fever; chills; sore throat; signs of infection; bleeding gums; bruising; petechiae; or blood in urine, stools, or emesis occurs. Cautions patient to avoid crowds and persons with known infections. Instruct patient to use soft toothbrush and electric razor. Caution patient not to drink alcoholic beverages or take products containing aspirin or other NSAIDs.
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