CARBOplatin (kar-boe-pla-tin)

Classifications
Therapeutic: antineoplastics
Pharmacologic: alkylating agents

Pregnancy Category D

Indications
Advanced ovarian carcinoma (with other agents). Palliative treatment of ovarian carcinoma refractory to other modalities.

Action
Inhibits DNA synthesis by producing cross-linking of parent DNA strands (cell-cycle phase – nonspecific).

Therapeutic Effects:
Death of rapidly replicating cells, particularly malignant ones.

Pharmacokinetics
Absorption: IV administration results in complete bioavailability.

Distribution: Unknown.

Protein Binding: Platinum is irreversibly bound to plasma proteins.

Metabolism and Excretion: Excreted mostly by the kidneys.

Half-life: Carboplatin—2.6–5.9 hr (increased in renal impairment); platinum—5 days.

TIME/ACTION PROFILE (effects on blood counts)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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</thead>
<tbody>
<tr>
<td>IV</td>
<td>unknown</td>
<td>21 days</td>
<td>28 days</td>
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</table>

Contraindications/Precautions

Contraindicated in: Hypersensitivity to carboplatin, cisplatin, or mannitol; OB, Lactation: Pregnancy or lactation.

Use Cautiously in: Hearing loss; Electrolyte abnormalities; Renal impairment (dose recommended if CCr 60 mL/min); Active infections; Diminished bone marrow reserve (dose recommended); Other chronic debilitating illnesses; Geri: q risk of thrombocytopenia, consider renal function in dose determination; Patients with childbearing potential, safety not established.

Adverse Reactions/Side Effects

CNS: weakness, EENT: ototoxicity.
GI: abdominal pain, nausea, vomiting, constipation, diarrhea, hepatitis, stomatitis, M/C periapical abscess, nephrotoxicity.
Derm: alopecia, rash.
F and E: hypocalcemia, hypokalemia, hypomagnesemia, hypotension, metabolic alkalosis, peripheral neuropathy.
Misc: hypersensitivity reactions including anaphylactic-like reactions.

Interactions

Drug-Drug: q nephrotoxicity and ototoxicity with other nephrotoxic and ototoxic drugs (aminoglycosides, loop diuretics).
q bone marrow depression with other bone marrow–depressing drugs or radiation therapy.
May q antibody response to live-virus vaccines.

Route/Dosage

Other dosing formulas are used.

IV (Adults): Initial treatment—300 mg/m2 with cyclophosphamide at 4-wk intervals. Treatment of refractory tumors—360 mg/m2 as a single dose; may be repeated at 4-wk intervals, depending on response.

Renal Impairment

IV (Adults): CCr 41–59 mL/min—initial dose 250 mg/m2; CCr 16–40 mL/min—initial dose 200 mg/m2.

NURSING IMPLICATIONS

Assessment

q Assess for nausea and vomiting, often occur 6–12 hr after therapy (1–4 hr for aqueous solution) and may persist for 24 hr. Prophylactic antiemetics may be used. Adjust diet as tolerated to maintain fluid and electrolyte balance and ensure adequate nutritional intake. May require discontinuation of therapy.

q Monitor for bone marrow depression. Assess for bleeding (bleeding gums, bruising, purpura, gastric ulcers, uterine and rectal bleeding) and avoid IM injections and rectal temperatures if platelet count is low. Apply pressure to venipuncture site for 10 min. Assess for signs of infection during neutropenia. Anemia may occur and may be cumulative; transfusions are frequently required. Monitor for increased lassitude, dyspnea, and orthostatic hypotension.
Monitor for signs of anaphylaxis (rash, urticaria, epigastric bloating, wheezing, tachycardia, hypotension). Discontinue medication immediately and notify physician if these occur. Episodic and resuscitation equipment should be readily available.

Auditory equipment is recommended before initiation of therapy and subsequent doses. White blood cell counts usually occur after 21–28 days and recover by day 35. Withhold subsequent doses until neutrophil count is >100,000/mm³ and platelet count is >100,000/mm³.

Y-Site Incompatibility: Do not use aluminum needles or equipment during preparation or administration.

Y-Site Compatibility: Acetaminophen, lidocaine, promethazine, thiopental.

Concentration: 0.5 mg/mL. Stable for 8 hr at room temperature.

Intermittent Infusion: Concentration: 0.5 mg/mL. Stable for 8 hr at room temperature.

Rate: Infuse over 15–60 min.

V-Y-Site Compatibility: alfuzosin, allopurinol, dantrolene, diazepam, dobutamine, eprosartan, esmolol, etoposide, everolimus, fenoldopam, fentanyl, filgrastim, fluconazole, fludarabine, fluorouracil, furosemide, gemcitabine, gentamicin, glycopyrrolate, granisetron, haloperidol, heparin, hetastarch, hydralazine, hydrocortisone, hyaluronidase, imipenem/cilastatin, insulin, isoproterenol, ketorolac, labetalol, loratadine, lovastatin, metformin, metronidazole, midazolam, milrinone, nitroglycerine, norepinephrine, octreotide, ondansetron, pantoprazole, pentoxyfilline, pentazocine, pentobarbital, phenytoin, piperacillin/tazobactam, potassium acetate, potassium chloride, potassium phosphates, propofol, quinupristin/dalfopristin, ranitidine, remifentanil, rutoside, sodium bicarbonate, sodium chloride, sodium phosphate, succinylcholine, sorbitol, tobramycin, tirofiban, tobramycin, trandolapril, tranexamic acid, vinorelbine, voriconazole, zidovudine, zoledronic acid.

Y-Site Incompatibility: alfuzosin, allopurinol, dantrolene, diazepam, dobutamine, eprosartan, everolimus, fenoldopam, fentanyl, filgrastim, fluconazole, fludarabine, fluorouracil, furosemide, gemcitabine, gentamicin, glycopyrrolate, granisetron, haloperidol, heparin, hetastarch, hydralazine, hydrocortisone, hyaluronidase, imipenem/cilastatin, insulin, isoproterenol, ketorolac, labetalol, loratadine, lovastatin, metformin, metronidazole, midazolam, milrinone, nitroglycerine, norepinephrine, octreotide, ondansetron, pantoprazole, pentoxyfilline, pentazocine, pentobarbital, phenytoin, piperacillin/tazobactam, potassium acetate, potassium chloride, potassium phosphates, propofol, quinupristin/dalfopristin, ranitidine, remifentanil, rutoside, sodium bicarbonate, sodium chloride, sodium phosphate, succinylcholine, sorbitol, tobramycin, tirofiban, tobramycin, trandolapril, tranexamic acid, vinorelbine, voriconazole, zidovudine, zoledronic acid.

Do not use aluminum needles or equipment during preparation or administration. Aluminum reacts with the drug.

Implementation

High Alert: Fatalities have occurred with chemotherapy agents. Before administering,字第1羧酸2014年2月19日

High Alert: Do not confuse Paraplatin with cisplatin. Do not confuse Carboplatin with carboplatin.

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Carboplatin should be administered in a monitored setting under the supervision of a physician experienced in cancer chemotherapy.

Potential Nursing Diagnoses

Risk for infection (Side Effects)

Implementation

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Carboplatin should be administered in a monitored setting under the supervision of a physician experienced in cancer chemotherapy.
Patient/Family Teaching

- Instruct patient to notify health care professional promptly if fever; chills; sore throat; signs of infection; lower back or side pain; difficult or painful urination; bleeding gums; bruising; pinpoint red spots on skin; 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 patients not to drink alcoholic beverages or take medication containing aspirins or NSAIDs because they may precipitate gastric bleeding.

- Instruct patient to promptly report any numbness or tingling in extremities or face, decreased coordination, difficulty with hearing or ringing in the ears, unusual swelling, or weight gain to health care professional.

- Instruct patient not to receive any vaccinations without advice of health care professional and to avoid contact with persons who have received oral polio vaccine within the past several months.

- Advise patient of the need for contraception (if patient is not infertile as a result of surgical or radiation therapy).

- Instruct patient to inspect oral mucosa for erythema and ulceration. If ulceration occurs, advise patient to notify health care professional. Rinses mouth with water after eating, and use sponge brushes. Mouth pain may require treatment with opioids.

- Discuss with patient the possibility of hair loss. Explore methods of coping.

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

Evaluation/Desired Outcomes

- Decrease in size or spread of ovarian carcinoma.