Foscarnet (foss-ka-net)  

**Classification**  
Therapeutic: antivirals  

**Pregnancy Category C**  

**Indications**  
Treatment of cytomegalovirus (CMV) retinitis in HIV-infected patients (alone or with ganciclovir). Treatment of acyclovir-resistant mucocutaneous herpes simplex virus (HSV) infections in immunocompromised patients.

**Action**  
Prevents viral replication by inhibiting viral DNA-polymerase and reverse transcriptase.  

**Therapeutic Effects:**  
Virustatic action against susceptible viruses including CMV.

**Pharmacokinetics**  
Absorption: IV administration results in complete bioavailability.  
Distribution: Variable penetration into CSF. May concentrate in and be slowly released from bone.  
Metabolism and Excretion: 80–90% excreted unchanged in urine.  
Half-life: 3 hr (in patients with normal renal function); longer half-life of 90 hr may reflect release of drug from bone.  

**TIME/ACTION PROFILE**  
ROUTE ONSET PEAK DURATION  
IV rapid end of infusion 8–24 hr  

**Contraindications/Precautions**  
Contraindicated in:  
Hypersensitivity.  

**Use Cautiously in:**  
Renal impairment (dose reduced if CCr < 1.4–1.6 mL/min/kg; see product information); History of seizures; OB, Lactation, Pedi: Safety not established.  

**Adverse Reactions/Side Effects**  
CNS: SEIZURES, headache, anxiety, confusion, dizziness, fatigue, malaise, mental depression, weakness.  
EENT: conjunctivitis, eye pain, vision abnormalities.  
F and E: hypocalcemia, hypomagnesemia, hyperphosphatemia, hypophosphatemia.  
Musculoskeletal: myalgia, myositis, rhabdomyolysis, polyarthralgia.  
Local: pain/edema at injection site.  
Miscellaneous: malaise, fatigue, back pain, sterile abscess, musculoskeletal pain, coughing.

**Interactions**  
Drug-Drug: Concurrent use with parenteral pentamidine may result in severe, life-threatening hypocalcemia. Risk of nephrotoxicity may be increased by concurrent use of other nephrotoxic agents (amphotericin B, aminoglycosides).

**Route/Dosage**  

<table>
<thead>
<tr>
<th>Route</th>
<th>Indication</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>CMV retinitis—60 mg/kg q8h for 2–3 wk, then 90–120 mg/kg/day as a single dose. Dose required for any degree of renal impairment; HSV—40 mg/kg q 8–12 hr for 2–3 wk or until healing occurs.</td>
<td></td>
</tr>
</tbody>
</table>

**NURSING IMPLICATIONS**  
Assessment  
- CMV Retinitis: Diagnosis of CMV retinitis should be determined by ophthalmoscopy before treatment with foscarnet. Ophthalmologic examinations should also be performed at the conclusion of induction and every 3 wk during maintenance therapy.  
- Culture for CMV (urine, blood, throat) may be taken before administration. However, a negative CMV culture does not rule out CMV retinitis.  
- HSV Infections: Assess lesions before and during therapy.  
- Lab Test Considerations: Monitor serum creatinine before and 2–3 times weekly during therapy. If CI decreases below 1.4–1.6 mL/min/kg, discontinue foscarnet.  
- Monitor serum calcium, magnesium, potassium, and phosphorus before and 2–3 times weekly during induction therapy and at least weekly during maintenance therapy. May cause hypocalcemia.  
- May cause anemia, granulocytopenia, lymphopenia, and thrombocytopenia. May cause hyperkalemia, hypomagnesemia, and hypocalcemia.  

**Contraindications**  
Hypersensitivity.  

**Use Cautiously in:**  
Renal impairment (dose reduced if CCr < 1.4–1.6 mL/min/kg; see product information); History of seizures; OB, Lactation, Pedi: Safety not established.  

**Adverse Reactions/Side Effects**  
CNS: SEIZURES, headache, anxiety, confusion, dizziness, fatigue, malaise, mental depression, weakness.  
EENT: conjunctivitis, eye pain, vision abnormalities.  
F and E: hypocalcemia, hypomagnesemia, hyperphosphatemia, hypophosphatemia.  
Musculoskeletal: myalgia, myositis, rhabdomyolysis, polyarthralgia.  
Local: pain/edema at injection site.  
Miscellaneous: malaise, fatigue, back pain, sterile abscess, musculoskeletal pain, coughing.
Potential Nursing Diagnoses

■ Risk for infection (Indications)

Implementation

- Adequately hydrate patient with 750–1000 mL of 0.9% NaCl or D5W before first infusion to establish diuresis, then administer 750–1000 mL with 125 mg/kg of foscarnet or 500 mL with 40–60 mg/kg of foscarnet with each dose to prevent renal toxicity.

IV Administration

- pH: 7.4.

- Concentration: Undiluted: 24 mg/mL; Diluted: 12 mg/mL.

- Dose is based on patient weight; excess solution may be discarded from bottle before administration to prevent overdosage.

- Patients who experience progression of CMV retinitis during maintenance therapy may be re-treated with induction therapy followed by maintenance therapy.

- Rate: Administer at a rate not to exceed 1 mg/kg/min.

- Infuse solution via infusion pump to ensure accurate infusion rate.

- Y-Site Compatibility:
  - aldesleukin, amikacin, amphotericin B colloidal, amphotericin B lipid complex, caspofungin, diazepam, digoxin, dobutamine, doxorubicin, droperidol, epirubicin, ganciclovir, haloperidol, idarubicin, leucovorin, midazolam, mitoxantrone, mycophenolate, pentamidine, prochlorperazine, promethazine, vinorelbine.

- Y-Site Incompatibility: Manufacturer recommends that foscarnet not be administered concurrently with other drugs or solutions in the same IV catheter except D5W or 0.9% NaCl.

- acyclovir, amphotericin B colloidal, amphotericin B lipid complex.

Patient/Family Teaching

- Inform patient that foscarnet is not a cure for CMV retinitis. Progression of retinitis may continue in immunocompromised patients during and after therapy. Advise patients to have regular ophthalmologic exams.

- Advise patient to notify health care professional immediately if perioral tingling or numbness in the extremities or paresthesia occurs during or after infusion. If these signs of electrolyte imbalance occur during administration, infusion should be stopped and lab samples for serum electrolyte concentrations obtained immediately.

- Emphasize the importance of frequent follow-up exams to monitor renal function and electrolytes.

© 2015 F.A. Davis Company

CONTINUED
CONTINUED

foscarnet

Evaluation/Desired Outcomes
- Management of the symptoms of CMV retinitis in patients with AIDS.
- Crusting over and healing of skin lesions in HSV infections.

Why was this drug prescribed for your patient?