Extended-spectrum Penicillins (Carbenicillin)

Drs. Foster & Smith Educational Staff

Generic Names
Alpha-carboxypenicillins: carbenicillin, tecarcillin
Acylaminopenicillins: piperacillin, azlocillin, mezloxillin

Brand Name
Carbenicillin: Geocillin (oral), Pyopen (injectable), Geopen (oral and injectable)

Type of Drug
Class of penicillin antibiotic. (There are 4 classes of penicillins, based upon their ability to kill various types of bacteria.) From narrow to broad range of effectiveness they include:

Form and Storage
Tablets and injectable
Unless otherwise specified by the manufacturer, store at room temperature.

Indications for Use
Treatment of susceptible bacterial infections.

General Information
Not FDA approved for use in dogs or cats, but are used in some cases when other antibiotics are ineffective (e.g., infections with Pseudomonas). Other penicillins are used more commonly. Available by prescription. Penicillins are bacteriocidal. Extended-spectrum penicillins treat similar infections as the aminopenicillins, but have additional activity against more gram negative bacteria. Susceptible to inactivation by penicillinase and beta-lactamase producing bacteria.

Usual Dose and Administration
Contact your veterinarian.

Side Effects
May see lack of appetite, drooling, vomiting, or diarrhea. In case of an allergic reaction, may see rash, fever, changes in the blood cells, enlarged lymph nodes, incoordination, increased heart rate, increased rate of breathing, difficulty breathing, or swelling of face or limbs.

Contraindications/Warnings
People with hypersensitivities (allergies) to penicillins or beta-lactam antibiotics such as cephalosporins should not handle the penicillins as allergic reactions could occur just from contact.

Not for use in patients hypersensitive to penicillins or beta-lactam antibiotics.

Penicillins do cross the placenta, and it is advised not to use in pregnant animals although no detrimental results to fetuses have been reported.

Some of the penicillins may cause electrolyte changes especially in very small animals who may be dehydrated or have kidney or heart disorders.

Ticarcillin and carbenicillin have been associated with bleeding problems in humans.

Drug or Food Interactions
Not for use with bacteriostatic drugs such as erythromycin or tetracyclines as these types of medications halt the growth of bacteria which need to be growing to be killed by the penicillins.

Probenecid may increase serum levels of penicillins.

Use with caution with anticoagulants like heparin.

For best absorption, give 1 hour prior to feeding or 2 hours after feeding. May give with food if needed to decrease side effects such as vomiting.
Overdose/Toxicity
May see vomiting or diarrhea. Dogs on high doses or long-term use may show signs of incoordination (difficulty walking). Epinephrine and/or steroids are used in case of an allergic reaction.

Summary
Extended-spectrum penicillins, such as carbenicillin are less commonly used antibiotics in dogs and cats. They are prescribed for certain bacterial infections when other antibiotics are ineffective. There are many forms of penicillin, so dosages vary greatly.
Always check with your veterinarian regarding the use and dosage of penicillins in your pet. Inadequate doses or treatment periods, or overdosage, can cause significant problems.

- Natural penicillins
- Penicillinase-resistant penicillins
- Aminopenicillins
- Extended-spectrum penicillins
- Potentiated penicillins

Keep this and all other medications out of the reach of children and pets.

If you think your pet has been poisoned...
Contact your veterinarian or one of the Animal Poison Hotlines (listed below) if you think your pet may have accidentally received or been given an overdose of the medication.

**ASPCA Animal Poison Control Center - 24-hour service available throughout North America
1-888-4ANI-HELP (1-888-426-4435). $65.00 per case, billed to caller's credit card.
Follow-up calls can be made at no additional charge by dialing 888-299-2475.
There is a charge when the call involves a product covered by the Animal Product Safety Service.

**Pet Poison Helpline - 24-hour service available throughout North America for pet owners and veterinary professionals who require assistance with treating a potentially poisoned pet.
1-888-213-6680 ($59.00 per incident). Staffed 24-hours a day.