Client Information
- Give before meals, preferably in the morning

Chemistry/Synonyms
A substituted benzimidazole proton pump inhibitor, omeprazole has a molecular weight of 345.4 and pK_a's of 4 and 8.8.

Omeprazole may also be known as: H-168/68, or omeprazolum, *Gastrogard®*, *Prilosec®*, *Ulcergard®* and *Zegerid®*.

Storage/Stability
Omeprazole oral paste should be stored below 86°F. Transient exposure to temperatures up to 104°F is permitted. Omeprazole tablets should be stored at room temperature in light-resistant, tight containers. Omeprazole pellets found in the capsules are fragile and should not be crushed. If needed to administer as a slurry, it has been suggested to mix the pellets carefully with fruit juices, not water, milk or saline.

Dosage Forms/Regulatory Status
VETERINARY-LABELED PRODUCTS:

Omeprazole Oral Paste, 2.28g per syringe; *Gastrogard®* (Merial), (Rx); *Ulcergard®* (Merial), (OTC)

The ARCI (Racing Commissioners International) has designated this drug as a class 5 substance. See the appendix for more information.

HUMAN-LABELED PRODUCTS:

Omeprazole Oral Delayed-Release Capsules: 10 mg, 20 mg (tablets & capsules) & 40 mg; *Prilosec®* (AstraZeneca); *Prilosec® OTC* (*Losec®* in Canada) (*Procter & Gamble*); generic; (Rx & OTC)

Omeprazole/Sodium Bicarbonate Oral Capsules (Immediate Release): 20 mg omeprazole/1,100 mg sodium bicarbonate; 40 mg omeprazole/1,100 mg sodium bicarbonate; *Zegerid®* (Santarus); (Rx)

Omeprazole/Sodium Bicarbonate Powder for Oral Suspension: 20 mg omeprazole/1,680 sodium bicarbonate; 40 mg omeprazole/1,680 sodium bicarbonate; in 30 unit-dose packets; *Zegerid®* (Santarus); (Rx)

ONDANSETRON HCL

(on-***dan***-sah-tron) Zofran®

5-HT_3 RECEPTOR ANTAGONIST

Prescriber Highlights
- 5-HT_3 receptor antagonist for severe vomiting
- Appears to be well tolerated in dogs
- Generic dosage forms now available

Uses/Indications
Used as an antiemetic when conventional antiemetics are ineffective, such as when administering cisplatin or for other causes of intractable vomiting. The use of ondansetron in cats is somewhat controversial and some state it should not be used in this species.

Pharmacology/Actions
Ondansetron is a 5-HT_3 (serotonin type 3) receptor antagonist. 5-HT_3 receptors are found peripherally on vagal nerve terminals and centrally in the chemoreceptor trigger zone (CTZ). It is not clear if ondansetron's effects are mediated centrally, peripherally or both.

Pharmacokinetics
No veterinary species data was located for ondansetron pharmacokinetics. In humans, ondansetron is well absorbed from the GI tract, but exhibits some first pass hepatic metabolism. Bioavailability is about 50–60%. Peak plasma levels occur about 2 hours after an oral dose. Ondansetron is extensively metabolized in the liver. Elimination half-lives are about 3–4 hours, but are prolonged in elderly patients.

Contraindications/Precautions/Warnings
Ondansetron is contraindicated in patients hypersensitive to it or other agents in this class. Ondansetron may mask ileus or gastric distention; it should not be used in place of nasogastric suction. Use with caution in patients with hepatic dysfunction as half-life may be prolonged.

Because ondansetron is potentially a neurotoxic substrate of P-glycoprotein, it should be used with caution in those herding breeds (*e.g.*, Collies, Shelties, Australian shepherds, etc.) that may have the gene mutation that causes a nonfunctional protein.

Adverse Effects
Ondansetron appears to be well tolerated. Constipation, extrapyramidal clinical signs, arrhythmias and hypotension are possible (incidence in humans <10%).

Reproductive/Nursing Safety
Safety in pregnancy not clearly established, but high dose studies in rodents did not demonstrate overt fetal toxicity or teratogenicity. In humans, the FDA categorizes this drug as category ***B*** for use during pregnancy (*Animal studies have not yet demonstrated risk to the fetus, but there are no adequate studies in pregnant women; or animal studies have shown an adverse effect, but adequate studies in pregnant women have not demonstrated a risk to the fetus in the first trimester of pregnancy, and there is no evidence of risk in later trimesters.*)

Ondansetron is excreted in the maternal milk of rats. Exercise caution when 5-HT_3 antagonists are administered to nursing patients.

Overdosage/Acute Toxicity
Overdoses of up to 10X did not cause significant morbidity in human subjects. If an overdose occurs, treat supportively.

Drug Interactions/Laboratory Considerations
None reported

Doses
- **DOGS:**
  a) As an antiemetic for adjunctive treatment of pancreatitis: 0.1–0.2 mg/kg IV slowly (Webb 2007a)
  b) As an antiemetic when conventional antiemetics are ineffective: 0.1–1 mg/kg PO q12–24h, or 30 minutes prior to and 90 minutes after starting cisplatin infusion (Frimberger 2000)
  c) For intractable vomiting associated with Parvo enteritis: 0.11–0.176 mg/kg IV given as a slow IV push every 6–12 hours (based on patient response) (Tams 2003d)
  d) As an antiemetic: 0.1–0.2 mg/kg IV q6–12h or 0.1–1 mg/kg PO q12–24h (Otto 2005)
  e) As an antiemetic for adjunctive treatment of uremia: 0.6–1 mg/kg PO or IV q12h; usually combined with metoclopramide. (Polzin 2005a)

■ **CATS:**

a) For intractable vomiting when other less expensive drugs are ineffective: 0.22 mg/kg (route not identified) 2–3 times a day (Willard 1999)

b) As an anti-emetic for intractable vomiting: 0.1–0.15 mg/kg slow IV push q6–12h as needed (Scherk 2003c)

c) As an antiemetic for adjunctive treatment of severe pancreatitis: 0.1–1 mg/kg PO or IV q12–24h (Armstrong 2007)

Monitoring

■ Clinical efficacy

Client Information

■ This medication is generally used in inpatient settings for treatment of serious vomiting.

Chemistry/Synonyms

A selective inhibitor of serotonin type 3 (5-HT3), ondansetron HCl dihydrate occurs as a white to off-white powder that is soluble in water.

Ondansetron HCl may also be known as: GR-38032F or ondansetroni hydrochloridum, and *Zofran*®.

Storage/Stability

Unless otherwise labeled, store oral products in tight, light-resistant containers between 2–30°C. The injection should be stored between 2–30°C and protected from light.

Dosage Forms/Regulatory Status

VETERINARY-LABELED PRODUCTS: None

HUMAN-LABELED PRODUCTS:

Ondansetron HCl Tablets: 4 mg, 8 mg and 24 mg; *Zofran*® (GlaxoSmithKline), generic; (Rx)

Ondansetron Orally Disintegrating Tablets: 4 mg & 8 mg (as base); *Zofran*® *ODT* (GlaxoSmithKline), generic; (Rx)

Ondansetron HCl Oral Solution: 4 mg/5 mL (5 mg as the HCl) in 50 mL bottles; *Zofran*® (GlaxoSmithKline), generic; (Rx)

Ondansetron HCl Injection: 2 mg/mL in 2 mL single-dose and 20 mL multi-dose vials, and 32 mg/50 mL (premixed; preservative free) in 50 mL single-dose containers; *Zofran*® (GlaxoSmithKline); generic; (Rx)

***o,p*-DDD—see Mitotane**

Opiate Antidiarrheals–See Separate Monographs for Diphenoxylate/Atropine, Loperamide, or Paregoric

ORBIFLOXACIN

(or-bi-***flox***-a-sin) Orbax®

FLUOROQUINOLONE ANTIBIOTIC

Prescriber Highlights

- Fluoroquinolone antibiotic labeled for dogs & cats
- Contraindications: Immature dogs during the rapid growth phase; known hypersensitivity to this class of drugs. Caution: Known or suspected CNS disorders
- Adverse Effects: GI effects most likely
- Drug Interactions

Uses/Indications

Orbifloxacin is indicated for treatment in dogs and cats for bacterial infections susceptible to it. Orbifloxacin may also be of benefit in treating susceptible gram-negative infections in horses.

Pharmacology/Actions

Orbifloxacin is a concentration-dependent bactericidal agent. It acts by inhibiting bacterial DNA-gyrase (a type-II topoisomerase), thereby preventing DNA supercoiling and DNA synthesis. The net result is disruption of bacterial cell replication.

Orbifloxacin has good activity against many gram-negative and gram-positive bacilli and cocci, including most species and strains of *Klebsiella* spp., *Staphylococcus intermedius* or *aureus, E. coli,* Enterobacter, Campylobacter, Shigella, Proteus, Pasturella species. Some strains of *Pseudomonas aeruginosa* and *Pseudomonas* spp. are resistant to orbifloxacin and most *Enterococcus* spp. are resistant. Like other fluoroquinolones, orbifloxacin has weak activity against most anaerobes and is not a good choice when treating known or suspected anaerobic infections.

Pharmacokinetics

After oral administration in dogs or cats, orbifloxacin is apparently nearly completely absorbed. The drug is distributed well (V_d=1.5 L/kg in dogs and 1.4 L/kg in cats) and only bound slightly to plasma proteins (8% dogs; 15% cats). Orbifloxacin is eliminated primarily via the kidneys. Approximately 50% of the drug is excreted unchanged. Serum half-life is about 6 hours in both dogs and cats. Urine levels remain well above MIC's for susceptible organisms for at least 24 hours after dosing.

In horses, orbifloxacin is well absorbed after oral administration (bioavailability is about 70%) and distributes in many body fluids and endometrial tissue. Elimination half-life is approximately 9 hours.

Contraindications/Precautions/Warnings

Orbifloxacin, like other fluoroquinolones, can cause arthropathies in immature, growing animals. Because dogs appear to be more sensitive to this effect, the manufacturer states that the drug is contraindicated in immature dogs during the rapid growth phase (between 2–8 months in small and medium-sized breeds and up to 18 months in large and giant breeds). The drug is also contraindicated in dogs and cats known to be hypersensitive to orbifloxacin or other drugs in its class (quinolones).

The manufacturer states that orbifloxacin should be used with caution in animals with known or suspected CNS disorders (*e.g.*, seizure disorders) as, rarely, drugs in this class have been associated with CNS stimulation.

Adverse Effects

While the manufacturer reports that no adverse effects were reported during clinical studies (at 2.5. mg/kg dosing) in adult animals, higher doses or additional experience with use of the drug may demonstrate additional adverse effects. Gastrointestinal effects (anorexia, vomiting, diarrhea) would most likely be the first adverse effects noted.

Ophthalmic adverse effects are not likely in cats, but the FDA's Adverse Drug Reaction database has received 10 reports (as of July 3, 2007) of blindness associated with orbifloxacin. Causal effect cannot be proven, but use higher dosages carefully.

Reproductive/Nursing Safety

Safety in breeding or pregnant dogs or cats has not been established. It is not known whether orbifloxacin enters maternal milk.