EOSINOPHILIC GASTROENTERITIS
(INFLAMMATION OF THE STOMACH AND INTESTINES, CHARACTERIZED BY THE PRESENCE OF EOSINOPHILS [A TYPE OF WHITE BLOOD CELL])

BASICS

OVERVIEW
• An inflammatory disease of the stomach and intestine (generally known as "gastroenteritis"), characterized by an infiltration of eosinophils (a type of white blood cell), usually into the lamina propria (the layer just under the lining), but occasionally involving deeper tissues, known as the "submucosa" (the layer of tissue between the lining and the muscular layer of a tubular organ) and "muscularis" (the muscular layer of a tubular organ)

SIGNALMENT/DESCRIPTION of ANIMAL

Species
• Dog and cat; reportedly more common in dogs than in cats

Breed Predilections
• German shepherd dog, rottweiler, soft-coated wheaten terrier, and Chinese shar pei may be more likely to have eosinophilic gastroenteritis than other breeds

Mean Age and Range
• Dogs—most common in animals less than 5 years of age, although any age may be affected
• Cats—median age, 8 years; range, 1.5 to 11 years reported

SIGNS/OBSERVED CHANGES in the ANIMAL
• Intermittent vomiting, small-bowel diarrhea, lack of appetite (anorexia), and/or weight loss are most common; signs are similar to those seen with other causes of gastroenteritis
• One report states that 50% of cats with eosinophilic inflammation of the stomach (known as "gastritis") and/or inflammation of the intestines (known as "enteritis") had blood in the stool (known as "hematochezia") or black, tarry stools (known as "melena") due to the presence of digested blood in the bowel movement
• Cats—thickened bowel loops may be palpated by the veterinarian during physical examination
• If hypereosinophilic syndrome (a condition in which the animal has a high eosinophil [type of white blood cell] count due to overproduction of eosinophils by the bone marrow; the eosinophils invade various tissues [including the gastrointestinal tract] and cause organ damage) is the cause of the inflammation in the stomach and/or intestines, enlarged lymph nodes, liver enlargement, and/or spleen enlargement also may be noted on physical examination

CAUSES
• Unknown cause (known as "idiopathic eosinophilic gastroenteritis")
• Parasitic disease
• Immune-mediated disease—food allergy; adverse drug reaction; associated with other forms of inflammatory bowel disease
• Systemic mastocytosis (condition in which an abnormal number of mast cells are present in multiple tissues; mast cells contain histamine, and if it is released, it stimulates stomach-acid secretion)
• Hypereosinophilic syndrome (a condition in which the animal has a high eosinophil [a type of white blood cell] count due to overproduction of eosinophils by the bone marrow; the eosinophils invade various tissues [including the gastrointestinal tract] and cause organ damage)
• Eosinophilic leukemia (type of blood cancer in which the abnormal cells are eosinophils [a type of white blood cell])
• Eosinophilic granuloma (a mass or nodular lesion containing a type of white blood cell, called an eosinophil)

TREATMENT

HEALTH CARE
• Most can be treated successfully on an outpatient basis
• Patients with systemic mastocytosis (condition in which an abnormal number of mast cells are present in multiple tissues; mast cells contain histamine, and if it is released, it stimulates stomach-acid secretion); disease in which protein is lost from the body into the intestinal tract (known as "protein-losing enteropathy"), or other illnesses occurring at the same time as the eosinophilic gastroenteritis may require hospitalization until they are stabilized
• If the patient is dehydrated or must be withheld from food or water (that is "nothing by mouth" or "NPO") because of vomiting, fluids (such as lactated Ringer's solution) should be administered
• If the animal has severely low levels of albumin (a type of protein) in the blood (known as "hypoalbuminemia") from protein-losing enteropathy, consider administration of colloids—colloids are fluids that contain larger molecules that stay within the circulating blood to help maintain circulating blood volume, examples are dextran and hetastarch

ACTIVITY

- No need to restrict, unless severely debilitated

DIET

- Dietary manipulation is usually a critical component of therapy
- Highly digestible diets with limited nutrient sources (known as "hypoallergenic diets")—extremely useful for eliciting remission; can be used as maintenance diets once the patient is stabilized; most cases are managed successfully using dietary manipulation
- Dog—diet examples include: Hill's Prescription Diet® d/d®, z/d®, and i/d®; Purina Veterinary Diets® EN GastroENteric® brand Canine Formula, HA HypoAllergenic® brand Canine Formula, and LA Limited Antigen® brand Canine Formula; Royal Canin™/Innovative Veterinary Diets Limited Protein diets; Eukanuba® Low Residue™ Diet and Response™ Formula FP or KO; balanced homemade diets
- Cat—diet examples include: Hill's Prescription Diet® i/d®, z/d®, m/d® and d/d®; Purina Veterinary Diets® DM Diabetes Management® brand Feline Formula and EN GastroENteric® brand Feline Formula; Royal Canin™/Innovative Veterinary Diets Limited Protein diets; Eukanuba® Low Residue™ Diet
- Monomeric diets are designed to provide protein as either peptides or amino acids (the smallest component of protein); these diets require little digestion—they have "nonallergenic" components; can be used in patients that are not vomiting, but have moderate-to-severe inflammation of the stomach and intestines (gastroenteritis); useful if a food allergy is suspected
- Patients with severe intestinal involvement and significant loss of protein through the intestines (protein-losing enteropathy), may need intravenous feeding (known as "total parenteral nutrition" or "TPN") until remission of disease is obtained; it is rare that TPN is necessary
- Once the patient is stabilized, an elimination-diet trial may be instituted, if food allergy or intolerance is the suspected cause, to attempt to identify the offending nutrient

MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Corticosteroids—mainstay of treatment; prednisone used most frequently
- Gradually taper dose of corticosteroids, following your pet's veterinarian's recommendations; relapses are more common in patients that are taken off corticosteroids too quickly
- Occasionally other drugs that suppress or decrease the immune response (known as "immunosuppressive drugs") can be used to allow a reduction in corticosteroid dose and avoid some of the adverse effects of steroid therapy; these immunosuppressive mediations also may be added in cases where the animal does not respond or responds poorly to dietary modification and medication
- Azathioprine is the most common additional immunosuppressive therapy
- Chlorambucil can be used as an additional immunosuppressive therapy
- Budesonide, a new oral corticosteroid, has been used to treat cats and dogs with inflammatory bowel disease successfully; it has been approved recently in the United States, but must be compounded (that is, prepared) for use in animals by a pharmacist

FOLLOW-UP CARE

PATIENT MONITORING

- Initially frequent for more severely affected patients; doing blood counts to determine eosinophil counts may be helpful; the corticosteroid dosage usually is adjusted during these visits
- Patients with less severe disease may be checked 2 to 5 weeks after the initial evaluation; monthly to bimonthly thereafter until corticosteroid therapy is completed
- Patients receiving azathioprine or chlorambucil—complete blood count (CBC) should be performed every 10 to 14 days after the start of treatment, with rechecks monthly and then bimonthly thereafter for the entire treatment period; bone-marrow suppression, leading to low red-blood cell and low white-blood cell counts, can be seen at any time during treatment and generally is reversible with drug discontinuation
- Patients usually do not require long-term follow-up, unless the problem recurs

PREVENTIONS AND AVOIDANCE

- If a food allergy or intolerance is suspected or documented, avoid feeding that particular nutrient and adhere strictly to dietary changes recommended by your pet's veterinarian

POSSIBLE COMPLICATIONS

- Weight loss, debilitation in cases that do not respond or respond poorly to dietary manipulation or medication
- Adverse effects of corticosteroid therapy, such as excessive thirst (known as "polydipsia") and excessive urination (known as "polyuria")

• Bone-marrow suppression (leading to low red-blood cell and low white-blood cell counts); inflammation of the pancreas (known as “pancreatitis”); inflammation of the liver (known as “hepatitis”); or lack of appetite (anorexia) caused by azathioprine and/or chlorambucil

EXPECTED COURSE AND PROGNOSIS

• Majority of dogs with eosinophilic gastroenteritis respond to a combination of dietary manipulation and steroid therapy
• Cats often have more severe disease, with a poorer prognosis than dogs
• Cats often require higher doses of corticosteroids for longer periods of time to elicit remission

KEY POINTS

• Eosinophilic gastroenteritis tends to be a waxing and waning disease, meaning that the animal may have signs for a while and then have a period without signs and then the signs recur
• Need vigilance for the life of the pet regarding inciting factors, such as avoiding certain food ingredient
• Potential that long-term therapy will be needed