

Chronic Enteropathies – Feline

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Definition

Chronic feline enteropathies include *adverse reactions to food* and *inflammatory bowel diseases* (IBD), and are defined by the occurrence of chronic, sometimes intermittent vomiting and/or diarrhea associated with an inflammatory infiltrate of variable severity in the gastrointestinal (GI) mucosa in the absence of an identifiable cause. Many cats present with vomiting and/or anorexia only.

Key Diagnostic Tools and Measures

It is essential to initially rule out parasite infestation. In cats with mild diarrhea and/or vomiting, an initial treatment trial with an elimination diet is appropriate before considering more invasive options. In cats with moderate to severe disease, a more aggressive approach is preferred. A variety of diseases originating outside the GI tract may cause vomiting in cats. They may be ruled out with a complete blood count (CBC) and chemistry profile including serum thyroxine (T4) concentration. An abdominal ultrasound exam may be helpful as well. If the disease is limited to the digestive tract, endoscopic or surgical sampling of mucosal biopsies may be required.

Pathophysiology

The pathophysiology of adverse reactions to food includes food intolerance (a non-immunologically mediated reaction) and food allergy (IgE mediated or non-IgE-mediated). The pathogenesis of feline IBD remains largely unknown. Abnormal intestinal flora and aberrant interactions with host immune system are most likely key players as exemplified by the recent finding of mucosa-adherent and invasive *E. coli* in association with feline IBD.

Signalment

Cats affected with chronic enteropathies are usually middle-aged, but the age range is wide and includes young and old animals as well. There is no documented breed predilection, although purebred cats such as Siamese, Persians, and Himalayans may be at increased risk. No gender predilection has been identified.

Key Nutrient Modifications

Food ingredients to which the cat may have an adverse reaction must be identified and avoided. Most allergic reactions occur to proteins in foods. The food ingredients most commonly recognized to be associated with adverse reactions in cats include beef, dairy, and fish products. Affected cats may respond to a novel protein or hydrolyzed protein diet. Highly digestible diets may be of benefit in animals with dietary sensitivities or IBD because these cats may have decreased gastrointestinal function. Omega-3 fatty acids from fish oil can reduce inflammation, and some patients with IBD may benefit from a diet with increased fish oil. Probiotics may be of benefit in cats with IBD.

Recommended Ranges of Key Nutrients

There is insufficient information available to recommend specific nutrient levels for cats with chronic enteropathies. Total digestibility should be $\geq 85\%$ (this information is not on labels, but should be available from the manufacturer). All essential nutrients should meet normal requirements adjusted for life stage, lifestyle and energy intake.

Therapeutic Feeding Principles

For *diet-responsive chronic enteropathies*, the goal of dietary therapy is to provide balanced nutrition for patients while helping to address clinical signs. Cats suspected to have adverse reactions to food should undergo a trial with an elimination diet. Two options exist: a diet composed of ingredients to which the cat has not previously been exposed (novel protein); or a hydrolyzed protein diet in which the antigens have been reduced in size below the point of recognition by allergen-specific antibodies (hypoallergenic). Selection of a novel protein diet must be based on a comprehensive diet history to avoid prior intake. Selection must also consider carbohydrate sources, such as grains, that also contain potentially allergenic proteins. Hydrolyzed hypoallergenic diets provide the advantages that a diet history is not critical to diet selection, and they reduce the risk for development of allergy to the novel diet. Most cats with diet-responsive diarrhea will show noticeable improvement within 1 to 3 weeks after being fed an appropriate elimination diet. Ongoing management depends on identifying and avoiding the specific food ingredients to which the patient reacts. Some cats, however, with food-responsive diarrhea may respond to a dietary change and not recrudescence when challenged. After a period of stabilization, some of these cats may return to their normal diet without problems.

For *IBD*, the goal of dietary therapy is to provide balanced nutrition for patients while helping to address clinical signs. GI inflammation can occur in response to food antigens, bacterial antigens, or other irritants. Any dietary change can result in alterations in these potential stimulants. A high percentage of cats with suspected or confirmed IBD showed clinical improvement when fed either a novel protein diet (see above), or a highly digestible diet containing either high or low dietary fat. Some cats with diarrhea respond positively to a low-carbohydrate diet. Probiotics may be of value in IBD patients. By altering the GI microflora, they may change the bacterial antigens presented to the gut and thereby reduce the inflammatory stimulus.

■ **Treats** – Treats, as well as flavored medications, should be completely omitted in cats undergoing a dietary trial (for food-responsive inflammation). Alternatively, treats can be composed of bits of the elimination diet. If a dry diet is fed, kibble can be set aside to give as treats. If a canned diet is being fed, meatballs of this food can be used as is, or after broiling to create a crisper texture. Other acceptable treats include bits of cooked chicken breast and fat-free yogurt.

■ **Tips for Increasing Palatability** – Warming canned foods to body temperature releases aromatic compounds and can enhance palatability. Food may be sprinkled with a flavor-enhancing probiotic product.

■ **Diet Recommendations** – For cats with adverse reaction to food, selection of novel protein diet is dependent on lack of prior exposure, so a thorough dietary history is required. Consider both primary and secondary protein sources, such as grains (see Appendix II). Commercial hydrolyzed protein diets are appropriate. In addition, limited-ingredient home-made diets can be good choices for short-term use during the elimination period.

For cats with IBD, select a highly digestible diet. Some cats respond to a low-carbohydrate (<15% dry basis) diet. For a dietary trial, use either a hydrolyzed protein or novel protein diet. Consider addition of probiotics for long-term management.

Client Education Points

- Strict dietary management of cats with chronic intestinal disease is a central component of the treatment. While this may prove challenging at times, it remains essential to feed cats exclusively with the recommended diet. If you own several cats, you may need to switch all

to the new diet as long as the other cats do not require a different specific dietary treatment. Any treats that re-expose the cat to offending proteins may cause a relapse and should be avoided during the dietary trial.

- Although home-prepared diets can be helpful, they generally do not provide a balanced nutrition in the long term. This is why commercially available, nutritionally balanced diets are preferred.

Common Comorbidities

It has been reported that cholangiohepatitis and pancreatitis may occasionally occur more frequently in cats with IBD. The term *triaditis* is used when intestine (IBD), liver (cholangiohepatitis), and pancreas (pancreatitis) are simultaneously affected. To date there is no confirmed theory describing a common pathomechanism for the three diseases.

Moderate to severe chronic enteropathies affecting the small intestine are frequently associated with maldigestion and malabsorption due to failing intestinal function. This may result in malnutrition and weight loss. Cobalamin (vitamin B12) deficiency has been documented in cats with chronic enteropathies. In such instances, parenteral cobalamin supplementation is necessary for the treatment to be successful. The recommended dose in cats with documented cobalamin deficiency is 250 µg given subcutaneously (SC). Injections are administered weekly for 6 weeks, and every other week for 6 additional weeks. Regular reassessment of the cat's clinical status and cobalamin concentration is recommended to guide further treatment.

Vitamin K deficiency was detected and attributed to intestinal malabsorption in cats with severe IBD but rarely resulted in bleeding

tendencies. Vitamin K1 supplementation was beneficial (1–5 mg/kg SC daily).

Interacting Medical Management Strategies

Corticosteroids are the mainstay for the treatment of idiopathic IBD, and are often administered at high doses (immunosuppressive dose of prednisolone: minimum 2 mg/kg daily). Corticosteroids are catabolic hormones and are, therefore, not desirable in cats suffering from gastrointestinal dysfunction. In cases of IBD, however, their beneficial effects targeting the immune system by far outweigh the deleterious effects they may have on the metabolism.

Monitoring

Response to a diet change usually occurs within 7 to 21 days in cats with diet-responsive chronic enteropathies. If dietary treatment fails, follow the algorithm provided.

In cats with documented IBD, prednisolone therapy usually initially includes high doses (2–4 mg/kg/day) which are progressively decreased in 2-week steps. Ideally, rechecks should be scheduled before each change in steroid therapy to reassess the cat's condition.

Monitoring body weight (BW) and body condition score (BCS) will help ensure the cat receives adequate amounts of food.

Differentiating IBD and alimentary lymphoma may be challenging in cats. Low-grade lymphoma may temporarily respond to steroid treatment but eventually relapse. Therefore, treatment-refractory IBD cats may in fact have lymphoma.

Algorithm – Nutritional Management of Feline Chronic Vomiting with or without Diarrhea

