Achieving a Better Understanding of Diarrhea in Cats and Kittens

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Q: What typically causes diarrhea in cats and kittens?

A: Feline diarrhea can be the result of primary or secondary GI disease and can be acute or chronic (see Table 1). In addition, stress can be either a primary cause of diarrhea or a contributing factor. While acute feline diarrhea is often self-limiting, chronic cases require careful workup and development of a comprehensive therapeutic plan.

Table 1. Common Causes of Diarrhea in Cats and Kittens

<table>
<thead>
<tr>
<th>Category</th>
<th>Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dietary</td>
<td>Inappropriate diet/dietary indiscretion, Food intolerance, Food allergies (also a cause of inflammatory bowel disease)</td>
</tr>
<tr>
<td>Infectious</td>
<td>Nematodes - Ancylostoma tubaeforme and Toxocara cati, Protozoa - Giardia spp., Cryptosporidium spp., Tritrichomonas foetus, Bacteria - Campylobacter spp., Clostridium spp., Salmonella spp., Viruses - Enteric coronavirus, panleukopenia virus, feline leukemia virus, Fungi - Regional and rare</td>
</tr>
<tr>
<td>Immune-Mediated*</td>
<td>Lymphoma (in all cats if FeLV-associated), Adenoma/adenocarcinoma*</td>
</tr>
<tr>
<td>Metabolic Disease/Endocrinopathy*</td>
<td>Hepatic diseases, Hyperthyroidism, Pancreatitis, Exocrine pancreatic insufficiency</td>
</tr>
<tr>
<td>Neoplasia</td>
<td>Lymphoma, Bronchial adenoma, Adenoma/adenocarcinoma, Adenocarcinoma</td>
</tr>
<tr>
<td>Foreign Body/GI Obstruction</td>
<td>Trichomesotaxy, Toxoplasma gondii, Toxocara cati, Anoplocephala menthastri, Fungi, Viruses</td>
</tr>
<tr>
<td>Inflammatory</td>
<td>Bacteria - Campylobacter spp., Clostridium spp., Salmonella spp., Cryptosporidium spp., Trichomesotaxy, Toxoplasma gondii, Toxocara cati, Anoplocephala menthastri, Fungi, Viruses</td>
</tr>
<tr>
<td>Infection</td>
<td>Bacteria - Campylobacter spp., Clostridium spp., Salmonella spp., Cryptosporidium spp., Trichomesotaxy, Toxoplasma gondii, Toxocara cati, Anoplocephala menthastri, Fungi, Viruses</td>
</tr>
</tbody>
</table>

*Conditions more commonly seen in adult cats than in kittens.

Q: How are feline and canine diarrhea alike—and different?

A: Both species are generally affected by parasites, viruses and bacteria in the same way, although viral and parasitic diseases tend to be species-specific. In my experience, idiopathic juvenile diarrhea is much more common in kittens than puppies. The clinical signs associated with IBD differ between dogs and cats; dogs frequently exhibit diarrhea, while cats more commonly experience vomiting with or without diarrhea. Dogs are more prone to pancreatitis, which can lead to pancreatic exocrine insufficiency and related diarrhea, while cats are more prone to diarrhea from hyperthyroidism. Both species are predisposed to dietary indiscretions and ingestion of foreign objects. Because cats are obligate carnivores, diarrhea due to inappropriate diet is more common.

Q: How does your understanding of the microbiome affect your nutritional recommendations for cats with diarrhea?

A: The fecal microbiome helps maintain normal gastrointestinal and other physiologic functions, including maintaining a healthy immune system. Diarrhea is common in cats and dogs housed in animal shelters due to stress and diet change as well as the presence of parasites and other pathogens. In one of our studies, the percentage of shelter cats with diarrhea lasting two or more days was significantly lower in the group that received a probiotic compared to the control group.

Prescribing antibiotics to cats with diarrhea can have long-term negative effects on the fecal microbiome. Nutritional intervention can be more effective than prescribing antibiotics for many cats with diarrhea. Depending on the cause and type of diarrhea, feeding an appropriate therapeutic diet along with probiotics and a prebiotic can help quickly resolve the diarrhea.
Helping the Cat with Diarrhea: A Look at Nutrients and GI Health

There is no “one size fits all” approach to nutritional management of patients with diarrhea. Selecting a therapeutic diet for a cat with diarrhea should be based on the patient’s history, clinical signs and diagnostic workup, as well as the diet’s nutrient profile.

Dietary fat absorption
One common cause of diarrhea in both dogs and cats is pancreatitis. While some dogs with chronic pancreatitis may require a reduction in dietary fat intake for long-term nutritional management, there currently is no evidence to support this strategy in cats.

Additionally, a study demonstrated that cats with chronic diarrhea may not benefit from low-fat diets. Cats were fed either high-fat (47% of energy) or low-fat (24% of energy), highly digestible diets. More than 75% of the cats showed a positive response, with no significant differences based on dietary fat intake.1

Protein power
Protein is a critical nutrient in all animals, healthy or not. Adequate protein and amino acid intake are critical to promoting intestinal healing. Following intestinal injury or inflammation, rapid regeneration of enterocytes helps the intestine to heal quickly, but the continuous turnover of cells exerts a high demand for nutrients. The amino acids glutamine and glutamate are critical to the health of the GI tract, where they provide energy and promote the natural barrier function of the intestinal mucosa.2

Carbohydrate options
Healthy cats are able to digest properly processed carbohydrates at greater than 90% efficiency. However, carbohydrate digestion may decrease in cats with chronic enteropathies. Increased carbohydrate fermentation, indicative of carbohydrate malabsorption, has been noted in cats with inflammatory bowel disease.3 The result can be osmotic diarrhea and dysbiosis.

While a reduction in digestible dietary carbohydrate may be indicated in such cases, cats with diarrhea may still benefit from dietary fiber, which have very different physiological effects than digestible carbohydrate. Some dietary fibers can be prebiotics—substrates that are selectively utilized by host microorganisms, conferring a health benefit.4 Constipated cats may also benefit from a blend of insoluble and soluble fibers in their diet.

Diarrhea is a common condition in cats but there is no single nutritional solution. Careful study of patient history, clinical signs and diagnostics can help veterinarians determine the cause of diarrhea and successfully tailor the nutritional approach.

Bovine colostrum can boost kitten immunity
Diarrhea is a common condition in kittens as they undergo the stresses of weaning, diet transition, rehoming and vaccinations. The GI tract and its protective mucosal layer are home to 70% of the body’s immune cells; however, stressful situations at any age can negatively impact immune function.1

In a 2009 study, Purina researchers investigated the effect of feeding a diet containing 0.1% spray-dried bovine colostrum (BC) to growing kittens for 36 weeks. Colostrum supplementation, which has been previously demonstrated to have immunological benefits in dogs,5 was associated with increased fecal IgA production, improved specific immune system response to an innocuous immune challenge (in the form of a rabies vaccine booster), and greater microbiota stability. Over the study period, the gut microbiota in BC-fed kittens had 91% similarity to the pre-challenge microbiota compared to 65% similarity in the control kittens.

We frequently encounter patients with diarrhea in my feline-only practice. Our protocol in these cases includes 1) performing a thorough physical exam to assess for clinical signs like abdominal pain and thickening of the bowel loops; 2) performing appropriate diagnostic tests; and 3) performing a nutritional assessment. Because gastrointestinal (GI) and immune health are linked, diarrhea should be addressed promptly.

**Age affects the diagnostic approach**

In *kittens*, I tend to see more cases of acute diarrhea vs. chronic diarrhea, with the most common cause being intestinal parasitism. I diagnose these cases by running a fecal analysis by centrifugation—if an appropriate sample can be obtained by the owner. Most of the time, these patients can be treated with an empirical deworming.

With *adult cats*, I may consider empirical deworming; however, a comprehensive physical examination is critical with appropriate diagnostics to follow. Initial diagnostics to consider include a fecal centrifugation, fecal cytology to look for abnormal growth of organisms like *Campylobacter*, and a SNAP Giardia test if the patient seems at higher risk of intestinal parasitism. If basic assessments are not rewarding—and especially in older cats with chronic diseases—I may consider the Texas A&M GI panel with TLI, PLI, cobalamin, and folate to assess for pancreatitis, pancreatic insufficiency or IBD. Any cat older than 7 years of age should have a minimum database, so I’d consider a CBC, chemistry panel, and T4, as well as a urinalysis for these older cats, since hyperthyroidism can be a cause of diarrhea as well.

**Nutritional assessment is a must**

For cats with clinical signs of GI symptoms, a nutritional assessment is critical in determining whether or not the diarrhea could be diet-related and/or something disease-related that warrants further diagnostics. When I am obtaining the patient’s history, I ask...
owners about the diet they are feeding, if they have recently changed their cat’s diet and—for new patients—if the cat has experienced problems with diarrhea before.

In assessing the current diet, it’s important to ensure that the diet is complete and balanced for a cat’s specific life stage or for cats at all life stages. Look for the Association of American Feed Control Officials (AAFCO) nutritional adequacy statement on the bag or can. For me, the availability of both canned and dry formulations of a diet can be helpful due to varied patient preferences.

**Formulate a feeding plan**

I often recommend Purina® Pro Plan® Veterinary Diets EN Gastroenteric® Feline Formula for patients with diarrhea. EN has a high total digestibility to promote nutrient absorption. EN dry contains colostrum to help stabilize intestinal microflora, which reduces the risk of stress-related diarrhea and primes the local and systemic immune systems.

**Promote immune health**

It’s critical to consider the immune system of patients when managing their GI health. Along with changing the diet, I often recommend Purina® Pro Plan® Veterinary Supplements FortiFlora® Feline Probiotic Supplement. FortiFlora enhances palatability and contains a probiotic proven to promote normal intestinal microflora. It also promotes a strong immune system.

**Key Takeaways**

- Selecting a therapeutic diet for a cat with diarrhea should be based on patient history, clinical signs and a diagnostic workup.
- In a study conducted by Purina, colostrum supplementation was associated with increased fecal IgA production, improved specific immune system response to an innocuous immune challenge and greater microbiota stability in kittens.
- A thorough physical exam, medical history, diet history and appropriate diagnostic testing are important steps in diagnosing and managing patients with diarrhea.