Proceeding of the NAVC
North American Veterinary Conference
Jan. 8-12, 2005, Orlando, Florida

Reprinted in the IVIS website with the permission of the NAVC
http://www.ivis.org/
UPDATE ON THE MEDICAL MANAGEMENT OF FELINE INFLAMMATORY BOWEL DISEASE

Alex J. German, BVSc, PhD, CertSAM, MRCVS
Department of Veterinary Clinical Sciences
University of Liverpool, United Kingdom

INTRODUCTION

Inflammatory bowel disease (IBD) is a collective term describing a group of disorders characterized by persistent or recurrent GI signs, with histological evidence of intestinal inflammation on biopsy material. It is a common chronic enteropathy seen in cats, and vomiting is the most consistent clinical sign. Although a number of histological patterns are possible, lymphocytic-plasmacytic enteritis is the most common form of feline IBD, and there are broad similarities with the equivalent condition of dogs. However, in line with the well-known adage ‘cats are not small dogs’, the feline condition has certain idiosyncrasies that should be understood. Most notable is the finding that feline IBD is commonly associated with disease in other abdominal organs, most notably the liver and pancreas. Clinicians should be aware of the existence of this ‘triaditis’, since therapeutic modalities may vary depending on the exact organs affected.

Treatment of feline IBD, usually involves a combination of therapies including dietary modification, antibacterials and immunosuppressive medication. Some cases can be cured with appropriate therapy, whilst others requires long-term (and occasionally lifelong) medication.

DIETARY MODIFICATION

The most appropriate diets for feline IBD have not been determined scientifically with controlled trials, and most current recommendations are based on ‘common sense’ and anecdotal evidence. However, recent studies have highlighted that up to 50% of cats with chronic diarrhea may benefit from dietary modification. The main issues regarding choice of appropriate diet include (1) the site of the GI tract involved, (2) the possibility of associated dietary hypersensitivity and (3) the need to provide a highly digestible diet given the presence of malabsorption. Unlike dogs, IBD involving predominantly the large intestine is rare in cats. Hence there is less of requirement for modifying the fiber content of the diet, as for canine colitis.

A highly digestible diet, balanced in micronutrients, and restricted in fat is usually recommended. Cats may benefit more than dogs from carbohydrate restriction since their capacity for carbohydrate digestion is small and may become limiting more quickly. The diet must be palatable and is best fed in small frequent meals. In some circumstances, it is sensible to restrict protein intake to a single source, especially if an adverse food reaction is a possibility.

High digestibility insures that components can be readily assimilated in the face of suboptimal digestive functions. Efficient absorption also minimizes the substrate that is available to intestinal bacteria, or available for commanding an osmotic potential. Fat restriction is usually recommended in dogs because unassimilated fatty acids can undergo hydroxylation and stimulate electrolyte secretion. However, the need for fat restriction in cats has been challenged, and it may exacerbate existing weight loss. Supplementation with omega 3 fatty acids may also be of benefit in treating inflammatory diseases, although there is, as of yet, no direct evidence confirming efficacy in feline IBD.

Protein should be of high biological value, highly digestible and preferably restricted to a single protein source. Given the possibility of an adverse reaction to food, a novel dietary protein should be chosen. Hydrolyzed protein diets are an alternative, and are based upon chemically treated, low molecular weight protein derivatives of chicken or soy.

In theory, such diets should be less antigenic, although there is no clear evidence to prove that adverse immune responses do not occur, and adverse reactions caused by food intolerance may still arise.

ANTIMICROBIALS

Given that protozoal infections, such as Giardia intestinalis, cause signs similar to IBD, yet can be missed with routine diagnostic testing, early treatment to eliminate this organism is recommended. Either high-dose metronidazole (@ 20 mg/kg q12h p.o for 7 days) or fenbendazole (@50 mg/kg q24h for 3-5 days) should successfully eliminate infection, although additional preventative measure should be considered if the cat lives in a colony environment. Adjunctive antimicrobial therapy is recommended in most feline IBD cases, and the agent used most commonly employed is metronidazole (@ 10mg/g q12h p/o). There is some suggestion that metronidazole has immunosuppressive effects in addition to its antimicrobial activity, although clear evidence for this is lacking. Nevertheless, many cases of feline IBD can be controlled with a combination of dietary modification and metronidazole, and without the need for other immunosuppressives.

ANTI-INFLAMMATORY AND IMMUNOSUPPRESSIVE THERAPY

Anti-inflammatory or immunosuppressive therapy is commonly required for severe cases of feline IBD, although the author prefers to attempt treatment with diet and antimicrobials if possible, and only use immunosuppressives as a last resort. However, immunosuppressive medication should be administered earlier in the course of disease when patients are debilitated, and parenteral therapy is sometimes necessary (e.g. prednisolone by intramuscular injection). Glucocorticoids, e.g prednsone or prednisolone, are the author’s first-choice; an immunosuppressive dose is recommended initially (e.g. 1.0-2.0 mg/kg q12h p/o), which is gradually tapered (over weeks to months) once remission is achieved. The treatment can occasionally be discontinued altogether, although some cases require lifelong low-dose therapy. Budesonide is an enteric-coated, locally active steroid that is destroyed 90% first-pass through the liver. Preliminary studies have shown its efficacy in dogs, but not yet in cats. Its use could be contemplated when glucocorticoid side effects are problematic. However, this is less often a concern in cats, and the author has not yet had experience of it use in this species.

Most cases of feline IBD respond well to glucocorticoids in addition to appropriate dietary and antimicrobial therapy. In rare cases that respond poorly, a second drug can be added. Azathioprine is most commonly used for dogs but should not be used in cats. Instead, chlorambucil (at 2-6 mg/m² SID p/o) is a suitable alternative. Once remission is achieved, both the steroids and the other immunosuppressives can be tapered gradually. The effects of chlorambucil can be delayed, and hematological parameters must be monitored regularly whilst on therapy to
minimize the potential for development of bone marrow suppression. The added advantage of a prednisone-chlorambucil protocol is that this combination is often used for alimentary lymphoma in this species. Thus, in cases where the histopathological distinction between IBD and lymphoma is problematic, such treatment would be the logical choice.

Other immunosuppressive drugs used in human IBD include methotrexate, mycophenolate and ciclosporin. But the author has not used these drugs for cats. Ciclosporin would be the most logical choice, and is now licensed in the UK both for canine anal furunculosis and atopy. Ciclosporin has been used for immunosuppression post-renal transplant in cats, although there are occasional reports of subsequent development of clinical toxoplasmosis. In light of these reports, and the fact that this may have arisen secondary to reactivation of dormant *Toxoplasma gondii* bradyzoites, this drug should be used cautiously, and only when *Toxoplasma* status is known.

PROBIOTICS AND PREBIOTICS

A probiotic is a living organism that, when administered orally, exerts health benefits beyond those of inherent basic nutrition. Probiotics can directly antagonize pathogenic bacteria, and modulate innate (e.g. phagocytic activity) or specific (e.g. secretory IgA) mucosal immune responses. Traditionally, live yoghurt was recommended, but preparations are now commercially available for use in cats. Recent studies have suggested that human patients with IBD benefit from probiotic administration, but there is currently little objective evidence to support their use in cats.

Prebiotics are selective substrates for a limited number of ‘beneficial’ species, and therefore cause alterations in the luminal microflora. Most are non-digestible carbohydrates such as inulin and fructo-oligosaccharides. Prebiotics are now incorporated into some veterinary diets and have been shown to alter feline colonic flora, although their effects on small intestinal flora are limited. Prebiotics may assist in the treatment IBD, but more work is required before their use can be justified.

OTHER THERAPY

If there is evidence of concurrent disease in the liver and pancreas specific therapy is recommended. Examples include the use of aggressive nutritional support for hepatic lipiodis, ursodeoxycholic acid or *s*-adenosyl-1-methionine for cholangiohepatitis, and specific therapy for acute pancreatic necrosis (analgesics, enzyme supplementation etc).

All cats with IBD should have B-vitamin concentrations monitored regularly, and supplemented if required. Of greatest concern is hypocobalaminemia, which needs to be corrected with parenteral supplementation (cyanocobalamin @ 20 µg/kg s/c monthly; *some authors recommended more frequent dosing initially given that the deficit may be severe and half life is often shorter in affected individuals*).

Symptomatic therapy might be required to control acute bouts of clinical signs or flare-ups. If vomiting and diarrhea have lead to severe dehydration, intravenous fluid therapy may be required. The choice of fluid, and requirement for potassium supplementation, depends on the individual case. If there is marked hypoproteinemia (e.g. total protein <40 g/l; albumin <15 g/l), plasma or synthetic colloids may be required. Cases with mild dehydration and no vomiting can be treated with oral rehydration therapy, which can be provided as free water or as a balanced electrolyte solution if tolerated. However, the success of oral rehydration should be monitored closely, and aggressive parenteral therapy provided if problems do not resolve.

Some clinicians favor the use of protectants adsorbents (e.g. bismuth subsalicylate, kaolin), although their benefit in feline IBD is questionable. Further, bismuth products should be used with caution in cats, as elimination is prolonged. Similarly, some clinicians employ anticholinergics and opioid analgesics, as potential motility and secretion-modifying agents. Their use is not recommended by the author.

References are available on request.