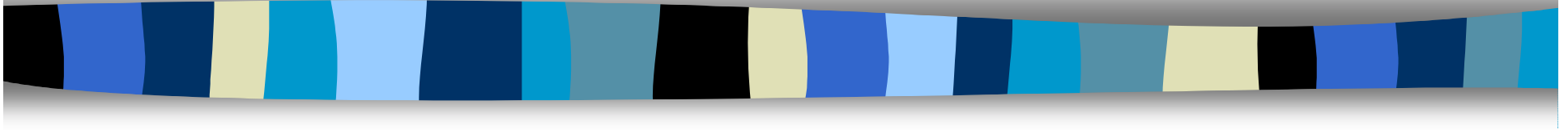


# Inflammatory Bowel Disease (IBD)





# What is IBD?

- An idiopathic syndrome of clinical signs associated with infiltrates of inflammatory cells into the mucosa of the GI tract
- Infiltrates are:
  - Lymphocytic-plasmacytic
  - Eosinophilic
  - Histiocytic
- Clinical signs depend on what part of the GI tract has the most severe infiltrates



# Two theories on pathogenesis

- Altered immune surveillance  
(breakdown of immune tolerance)
- Accentuated immune response to  
ingested or locally produced antigens



## Specific causes of L/P enteritis\*

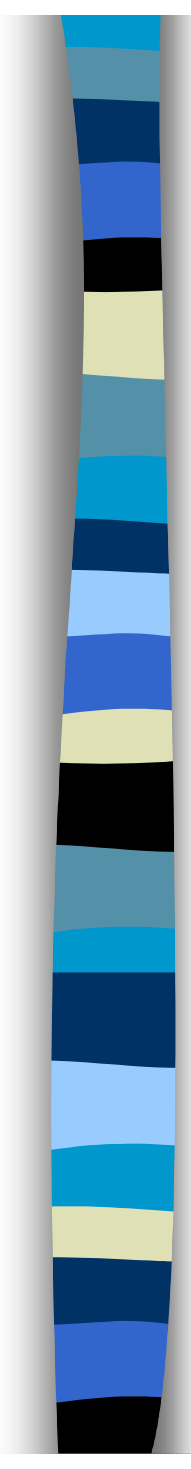
- Dietary intolerance
- Altered numbers or type of bacteria
- Giardia
- Infectious agents (toxoplasma, FeLV, cryptosporidium)
- Systemic immune complexes

\*need to rule out to make a diagnosis of IBD

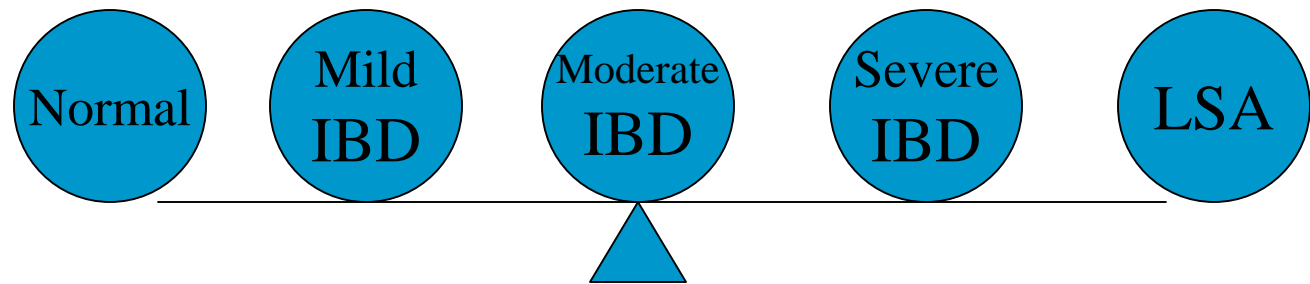


# Diagnosis of IBD

- Clinical signs must be correlated with histologic evidence of gastroenteritis
- Other diseases causing intestinal inflammation have been excluded
- Moderate to severe infiltrates of inflammatory cells



# Spectrum of disease: Number of lymphocytes in GI mucosa



# Breed predisposition

- Basenji
- Soft-coated Wheaten terrier
- Shar pei





# IBD: Clinical Signs

- Chronic intermittent diarrhea
  - Weeks to months to years in duration
  - Small bowel type or large bowel type or mixed
- Weight loss
- Vomiting
- ◆ May show *only* vomiting or *only* large bowel diarrhea (colitis) signs depending on predominant location of the inflammatory infiltrates





- Most common sign of IBD in cats is?



- Most common sign of IBD in cats is?  
**CHRONIC VOMITING**



- Most common sign of IBD in cats is?  
**CHRONIC VOMITING**
- Most common sign of IBD in dogs is?



- Most common sign of IBD in cats is?  
**CHRONIC VOMITING**
- Most common sign of IBD in dogs is?  
**CHRONIC DIARRHEA (small bowel or colitis)**

# Other clinical signs

- Animals with severe diffuse IBD of the small bowel can develop protein losing enteropathy
- PLE features:
  - Low albumin
  - Low globulin
  - +/- Ascites



# Radiographic findings



- Cannot judge bowel wall thickness from survey radiographs
- Radiographic findings on barium contrast studies in IBD are highly variable



# Diagnosis of IBD

- Endoscopic biopsies
  - Stomach
  - Small bowel
  - +/- colon
- Full-thickness surgical biopsies
  - Stomach
  - Small bowel



# Histologic diagnosis

- Precise histologic criteria not yet established
- Differentiation between “normal” and mild IBD is very difficult
- Differentiation between severe L/P IBD and lymphosarcoma can be very difficult





# Diagnosis depends on establishing that...

- Signs are chronic and consistent with IBD
- Mucosal inflammation is associated with the signs
- Architectural and mucosal epithelial changes are associated with the inflammatory infiltrate
- The condition is idiopathic (all specific causes of inflammation have been ruled out)
  - Some require failure to respond to an elimination diet as a criterion, while others do not exclude animals with dietary hypersensitivity



# Dietary hypersensitivity

- Also called “dietary allergies” or adverse reactions to food
- Can be immunologic or non-immunologic
- Can have dermatologic or GI signs (rarely both)
- Typically have been ingesting the offending allergen for months to years
- Allergens usually protein or glycoproteins



# Overview of IBD Treatment Steps

(Exclude and treat any underlying condition such as giardia)

- Dietary modification
- Metronidazole (Flagyl)
- Corticosteroids
- Other immunosuppressive drugs (azathioprine = Imuran)



# Dietary management

- First line therapy in dogs or cats with mild disease
- A component of therapy in all cases
- Four strategies
  1. Hydrolyzed protein, single source CHO, low fat (z/d, z/d ultra, CNM HA)
  2. Single novel protein (restricted antigen or “hypoallergenic”). Feed test diet for 6-12 weeks.





# Dietary management, cont'd.

## 3. Diets high in fish oils

- May modulate immune responses by increasing amount of omega-3 fatty acids in cell membranes
- Eukanuba Veterinary Response formula

## 4. High fiber diets for IBD colitis

1. w/d diet



# Antimicrobial therapy

- Good choice in IBD small bowel diarrhea: Metronidazole
  - Anaerobic activity
  - Inhibits cellular immunity
  - Antiprotozoal activity at higher dose
- Secondary bacterial overgrowth reported in up to 60% of IBD cases
- Tylosin (Tylan) for IBD colitis



# Immunosuppressive therapy

- Prednisone or prednisolone
  - High dose to start
    - DOGS: 1-2 mg/kg PO q 24 hr
    - CATS: 2-3 mg/kg PO q 24
  - Taper to lowest possible alternate day dose
- May be able to stop after 3-6 months or may require lifelong therapy
- Pred + azathioprine
  - Dog and cat dose and frequency of administration very different
  - Monitor CBC at 2 and 4 weeks



# Medical treatment of IBD Colitis

- 5-aminosalicylate drug instead of corticosteroids
  - Sulfasalazine
  - Olsalazine
  - Mesalamine
- Local inhibition of PG and leukotriene formation in colon
- Minimal absorption (caution re 5-ASA absorption in cats)



# Sulfasalazine



- Cleaved into sulfapyridine and 5-ASA by gut bacteria
- Monitor for KCS
- Newer formulations lack sulfa
  - No KCS
  - Greater percent of drug reaches colon



## Other possible therapies

- Anti-inflammatory retention enemas (5-ASA or hydrocortisone)
- Antioxidants (Vitamin E, vitamin C, iron, zinc, S-AMe)
  - Vitamin E provided protection to rats in IBD model
- Ursodeoxycholic acid (Ursodial)
  - Reduces toxic enteric bile acids



# Treatment summary: IBD (Stomach/small bowel)

- Dietary management
  - z/d, HA, or novel protein diet
- Metronidazole
- Corticosteroids (start at 1 mg/lb minimum)
- Azathioprine

**Try to make changes one at a time to assess results of therapy.**



# Treatment summary: IBD (Colitis)

- High fiber diet
- Tylosin
- Olsalazine
- Prednisolone
- Imuran

Try to make changes one at a time to  
assess results of therapy.



# Treatment Failures: WHY?

- Incorrect diagnosis (R/O LSA)
- Very severe disease (PLE) or irreversible lesions (fibrosis)
- Poor client compliance
- Use of inappropriate drugs or nutritional therapy
- Concurrent disease (SIBO, lymphangiectasia)
- Uncorrected nutritional deficiencies (B<sub>12</sub>)



# What is lymphangiectasia?

- A form of protein-losing enteropathy characterized by dilation of lacteals
- Lacteals rupture and lymph is lost into the gut
- As a result, patients lose:
  - Proteins
  - Cholesterol
  - lymphocytes



# Management

- Often need full thickness biopsies to diagnoses
- Associated with LSA, severe IBD, right-sided CHF
- Also idiopathic
- Manage underlying disease aggressively (corticosteroids) and support nutritionally with low fat diet and MCT



