Hemorrhagic Bowel Syndrome in Cattle
Case Example

- **History:** >2 lactation Jersey cow, 3 days fresh
  - Late evening: blood in manure, slight diarrhea, normal TPR
  - Next morning: found dead

- **On necropsy:** petechial hemorrhages throughout small intestines
- **4+ Clostridium perfringens** cultured from manure

- **Rule outs:** Hemorrhagic Bowel Syndrome, Salmonellosis, BVD, Winter dysentery
Hemorrhagic bowel syndrome

Aka jejunal hemorrhage syndrome, bloody gut, dead gut

- **Etiology:**
  - Unknown – likely multi-factoral

- *Clostridium perfringes* type A
  - A commensal organism and ubiquitous in the environment
  - has been isolated in many cases – unsure whether it is a causal or consequential association with the disease
  - Some rations may encourage *C. perfringes* overgrowth in the intestines
Etiology cont’d

- *Aspergillus fumigatus*
  - Found in soil and feed
  - Primary insult (e.g. rumen acidosis, abnormal GI motility, metabolic diseases, etc) or injured gut may allow *Aspergillus* to enter the blood

- Nutritional factors
Epidemiology

- Sporadic but primarily in lactating dairy cows in North America (although still present in beef herds)
- Low morbidity, high case fatality (85-100%)
- 5-9% of herds affected
Hemorrhagic bowel syndrome

- Epidemiology cont’d
  - Incidence has increased dramatically over the last 15 yrs
  - Usually in the first 3 months of lactation
  - Risk factors:
    - use of BST,
    - large herd size,
    - high energy diets
  - Cows on pasture may decrease risk
Hemorrhagic bowel syndrome

• Pathogenesis

Intra-luminal blood clot in small intestines (d/t hemorrhage)

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Gastrointestinal obstruction and stasis

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Distention of upstream GI

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hypoCl, hypoK, dehydration, anemia

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Ongoing ischemia and necrosis of the SI
Hemorrhagic bowel syndrome

- Pathogenesis cont’d

- Outcome: within 24-48hrs marked fibronous peritonitis, dehydration, electrolyte imbalance, marked toxemia and death
Hemorrhagic bowel syndrome

- **Clinical Signs**
  - Acute anorexia, depression, decreased milk production, abdominal distension, weakness → recumbency, bloody, melenic or dry scant feces, abdominal pain

- **PE**: Increased HR, pale mm, increased RR, distended bowel on rectal palpation

- **U/S**: can help to differentiate from intussusception, cecal dilation and volvulus, diffuse peritonitis, ileal impaction

- **Laporotomy**: abomasum and SI distended with fluid, dark red/purple on the serosal surface, serosal fibrin tags
Hemorrhagic bowel syndrome

• Treatment
  • No specific treatment
  • Medical:
    • Supportive IV fluids and electrolytes
    • Antibiotics – e.g. penicillin if Clostridium is thought to be involved
    • Analgesics and/or anti-inflammatory drugs
    • Clostridium Perfringens Type A Toxoid

• Surgical:
  • Laporotomy and massaging the clot out of the intestines
  • Enterotomy to remove blood clots
  • Resection of affected bowel and anastomosis has a poor success rate
Hemorrhagic bowel syndrome

- Prognosis – poor
  - Case fatality rate up to 100%
  - If caught early, medical treatment may be sufficient
  - If surgical intervention is required, massaging the blood clot out of the intestines holds a better prognosis than enterotomy, resection and/or anastomosis
Hemorrhagic bowel syndrome

- **Prevention and Control**
  - Annual vaccination: *Clostridium Perfringens* Type A Toxoid
  - Feed additives
    - Omni-Gen AF – tie up Aspergillus in moldy feed
    - Mannan aligosaccharides – reducing toxin load and stimulate immunity
  - Controlling rumen acidosis, metabolic diseases, and other diseases that affect GI motility
  - Controlling carbohydrate overload, high protein/sugar concentration, limiting oral medications and maintaining appropriate fiber content
References


