AHDS- DEALING WITH THE BLOODY SHITS

Ee Fung Teo (Teffy)
WAVES ECC

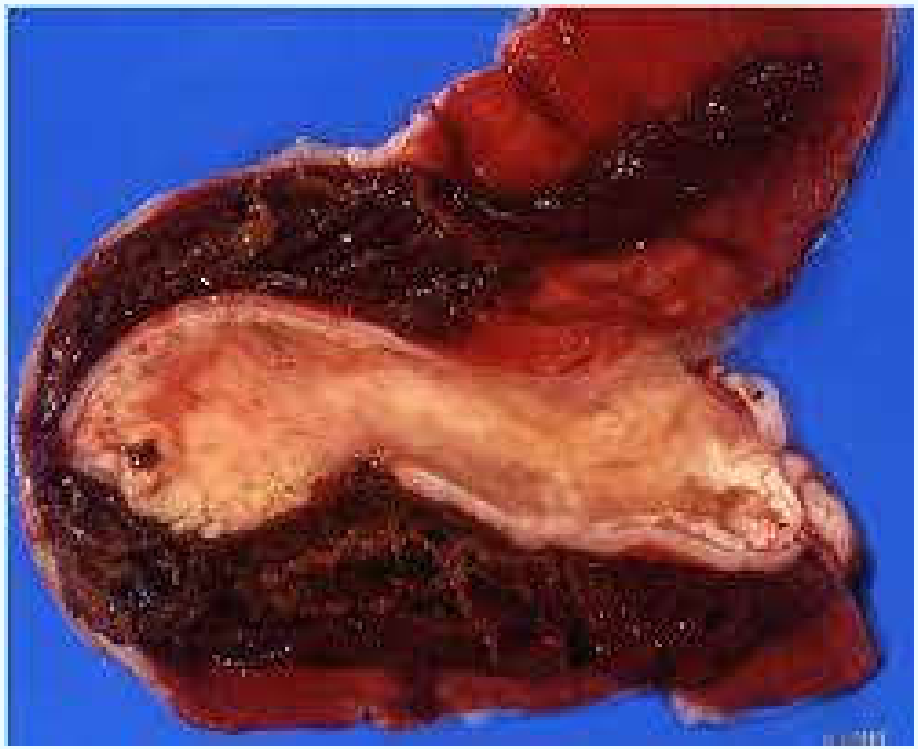
WHAT IS IT?

Clinical syndrome

- Acute vomiting and severe hemorrhagic diarrhoea
- Most patients have rapid clinical improvement with IVFT
- NOT transmissible to other dogs/ species
- Previously known as HGE

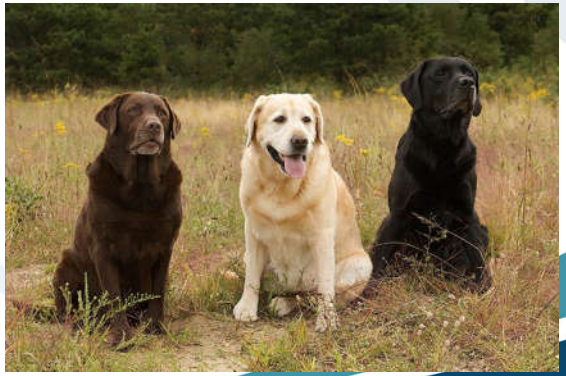
PATHOGENESIS

- **Not fully defined**
- C Perfringens suspected since late 1980s
- Net E, NetF toxin +/- enzymes and other minor toxins
- **But** unknown inciting cause of proliferation and release of toxins



SIGNALMENT

- Often in small breed dogs, but may affect all breeds
- More often in middle- aged dogs (median 5 year old)
- No sex predilection
- Chronic enteropathies may predispose



CLINICAL SIGNS

- Peracute to acute onset (<24 hours)
- Vomiting (80% with hematemesis)
- Range of severity :
  - mild dehydration
  - severe hypovolemic shock
  - septic shock

CLINICAL SIGNS

- Associated with hypovolemia
- Severe abdominal pain is uncommon
- Pyrexia uncommon, temperature normal to low (if in shock)

LAB FINDINGS

- PCV normal to high
- Stress leukogram +/- left shift
- TS normal to low: Hypoalbuminemia may develop secondary to ongoing losses
- Electrolyte abnormalities (Hyponatremia, hypokalemia, hypochloremia)

LAB FINDINGS

- Secondary to hypovolemia
  - Pre- renal azotemia
  - Mild ALT elevations
  - High lactate
  - Metabolic acidosis

- CRP??

C-reactive protein as a tool for monitoring response to treatment in dogs with hemorrhagic diarrhea syndrome

https://www.frontiersin.org/articles/10.3389/fvets.2022.1019700/full

Florian Sänger[1]*, Stefan Unterer[2], Melanie Werner[2] and René Dörfelt[1]

A retrospective study of 237 dogs hospitalized with suspected acute hemorrhagic diarrhea syndrome: Disease severity, treatment, and outcome

Nana Dupont | Lisbeth Rem Jessen | Frida Moberg | Nathali Zyskind | Camilla Lorentzen | Charlotte Reinhard Bjørnvad

DIFFERENTIALS

Addison's disease

- Lack of stress leukogram
- Electrolyte changes (HypoNa, HyperK)
- Atypical Addison's

Baseline Cortisol

DIFFERENTIALS

Young, unvaccinated or inadequately vaccinated dog:

- Parvovirus
- Other viral GI disease
- Parasites

Fecal testing
(IH SNAP, PCR)

DIFFERENTIALS

Neutropenia, segmented neutrophils > 20,000/ml or band neutrophils > 2,500/ml:

- Enteropathogenic infection (Circovirus, Salmonella, campylobacter)
- Bacterial translocation
- Sepsis

DIFFERENTIALS

Anaphylaxis

- Gall bladder edema (>3mm thickness)

DIAGNOSIS

- GI biopsies when C perfringens is observed on necrotic surface- impractical
- Fecal inflammatory markers (calproctectin, a1- proteinase inhibitor) - not clinically practical
- Fecal culture- not useful

Diagnostic value of fecal cultures in dogs with chronic diarrhea

Melanie Werner[1] | Jan S. Suchodolski[2] | Jonathan A. Lidbury[2] | Jörg M. Steiner[2] | Katrin Hartmann[1] | Stefan Unterer[1]

- Fecal PCR – pros and cons
- **Diagnosis is still based on clinical observations and exclusion of other causes of AHD**

HOW TO APPROACH A CASE?

- Thorough history taking
- Fecal examination
- Hematology, Biochemistry, Electrolytes
- **If no improvement:**
  - Repeat full blood profile
  - Cortisol testing
  - Abdominal imaging
  - Fecal PCR

INITIAL TREATMENT

- 10- 20 ml/kg crystalloid bolus and reassessment

- Frequent re-examination important
  - ➢ Hydration status
  - ➢ Ongoing GI losses
  - ➢ Perfusion parameters
  - ➢ Electrolytes
  - ➢ Albumin/ TS (need for oncotic support?)

ONGOING TREATMENT

- Antiemetics (Maropitant, Ondansetron)
- Prokinetics (Erythromycin, Metoclopramide)
- Analgesia (No NSAIDS!)
- Omeprazole? (No indications)

ANTIBIOTICS- WHY NOT?

- Incidence of bacteremia LOW

Prospective study of bacteraemia in acute haemorrhagic diarrhoea syndrome in dogs

S. Unterer, E. Lechner, R. S. Mueller, G. Wolf, R. K. Straubinger, B. S. Schulz, K. Hartmann

- Antibiotics have not shown to change clinical course of disease

J Vet Intern Med 2011;25:973–979

Treatment of Aseptic Dogs with Hemorrhagic Gastroenteritis with Amoxicillin/Clavulanic Acid: A Prospective Blinded Study

S. Unterer, K. Strohmeyer, B.D. Kruse, C. Sauter-Louis, and K. Hartmann

Evaluating the effect of metronidazole plus amoxicillin-clavulanate *versus* amoxicillin-clavulanate alone in canine haemorrhagic diarrhoea: a randomised controlled trial in primary care practice

V. Ortiz*, L. Klein*, S. Channell*, B. Simpson*, B. Wright*, C. Edwards*, R. Gilbert*, R. Day* and S. L. Caddy*,†,‡

Routine use of antibiotics is not recommended

ANTIBIOTICS- WHEN YES?

- **Indication for Antibiotics:**

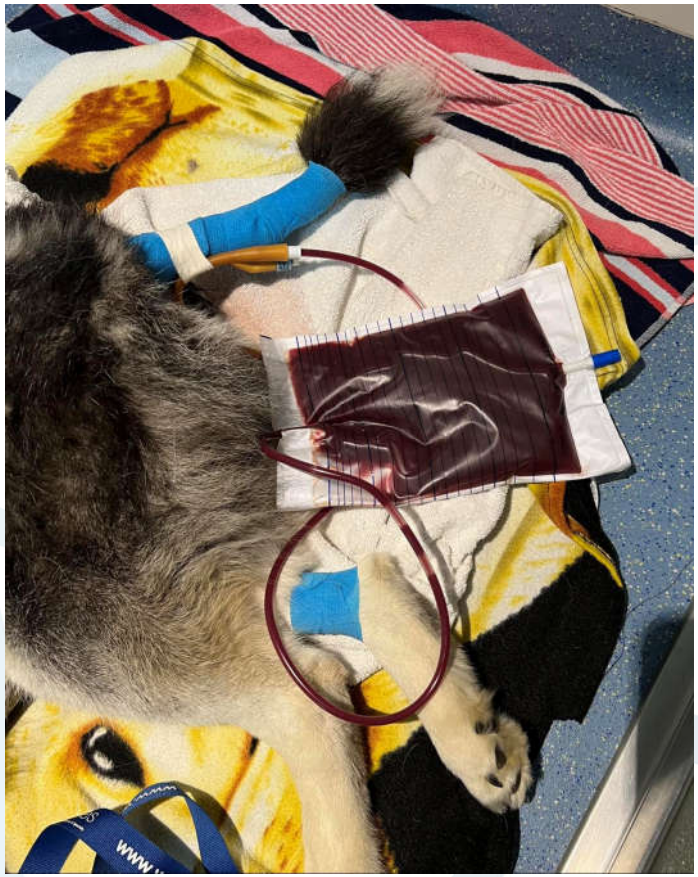
  - Signs of sepsis
  - Immunocompromised
  - Portosystemic shunt
  - Significant liver dysfunction

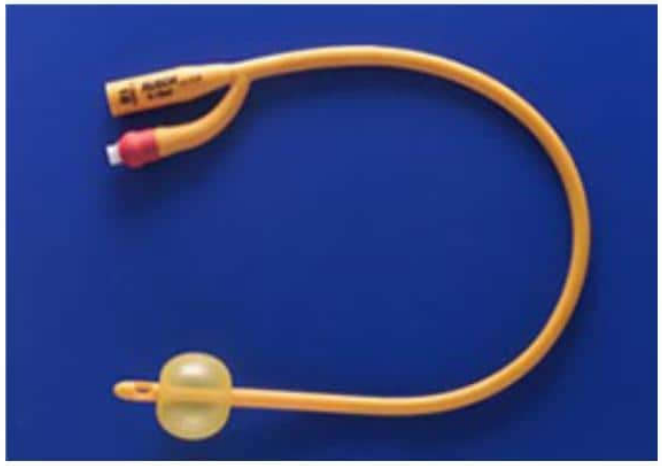
ONGOING TREATMENT

Early enteral nutrition- nasogastric tube feeding

ONGOING TREATMENT

Rectal foley catheter – hygiene





OTHER TREAMENTS

Probiotics

RESEARCH ARTICLE

Effect of probiotic treatment on the clinical course, intestinal microbiome, and toxigenic *Clostridium perfringens* in dogs with acute hemorrhagic diarrhea

Anna-Lena Ziese[1]*, Jan S. Suchodolski[2], Katrin Hartmann[1], Kathrin Busch[1], Alexandra Anderson[1], Fatima Sarwar[2], Natalie Sindern[1], Stefan Unterer[1]

A Randomized Double Blinded Placebo-Controlled Clinical Trial of a Probiotic or Metronidazole for Acute Canine Diarrhea

Justin Shmalberg[1], Christina Montalbano[1], Giada Morelli[2] and Gareth J. Buckley[3]*

OTHER TREATMENTS

Fecal Microbiota Transplantation

Fecal Microbial and Metabolic Profiles in Dogs With Acute Diarrhea Receiving Either Fecal Microbiota Transplantation or Oral Metronidazole

Jennifer Chaitman[1], Anna-Lena Ziese[2], Rachel Pilla[3], Yasushi Minamoto[3], Amanda B. Blake[3], Blake C. Guard[3], Anitha Isaiah[3], Jonathan A. Lidbury[3], Jörg M. Steiner[3], Stefan Unterer[2] and Jan S. Suchodolski[3]*

One dog's waste is another dog's wealth: A pilot study of fecal microbiota transplantation in dogs with acute hemorrhagic diarrhea syndrome

Arnon Gal[1]*, Patrick C. Barko[1], Patrick J. Biggs[2,3], Kristene R. Gedye[2], Anne C. Midwinter[2], David A. Williams[1], Richard K. Burchell[4], Paolo Pazzi[5]

RECENT DISCOVERIES

Increased risk of chronic GI disease

Frequency of signs of chronic gastrointestinal disease in dogs after an episode of acute hemorrhagic diarrhea

Elisabeth Skotnitzki[1] | Jan S. Suchodolski[2] | Kathrin Busch[1] | Melanie Werner[1] | Yury Zablotski[1] | Bianca D. Ballhausen[3] | Felix Neuerer[4] | Stefan Unterer[1]

RECENT DISCOVERIES

Gut microbiome is important and dysbiosis causes risk for long term consequences of acute enteritis- also focus of treatment

The Fecal Microbiome in Dogs with Acute Diarrhea and Idiopathic Inflammatory Bowel Disease

Jan S. Suchodolski, [1,*] Melissa E. Markel, [1] Jose F. Garcia-Mazcorro, [2] Stefan Unterer, [3] Romy M. Heilmann, [1] Scot E. Dowd, [4] Priyanka Kachroo, [5] Ivan Ivanov, [5] Yasushi Minamoto, [1] Enricka M. Dillman, [5] Jörg M. Steiner, [1] Audrey K. Cook, [5] and Linda Toresson [6]

SUMMARY

- AHDS is likely driven by toxins produced by C. perfringens but triggers are unknown
- Gastrointestinal fluid losses is marked and hospitalization for IVF is necessary with constant reassessment of patient
- Routine antibiotic administration is not recommended
- Long term implications are possible and more research needed to prevent chronicity
- Prognosis otherwise GOOD

QUESTIONS?

Thank you!

waves

Western Australian Veterinary Emergency & Specialty