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VETERINARY VOICE:
Tips of the Trade

Critical Care – Parvoviral Enteritis

Pathophysiology of the virus?

It preferentially invades and destroys rapidly dividing cells like intestinal crypt epithelium and bone marrow progenitor cells. Destruction of intestinal crypts leads to vomiting, diarrhea, intestinal bleeding, and possible bacterial translocation.

Presenting signs?

Most dogs present for GI signs- anorexia, vomiting, and/or diarrhea. Diarrhea may be absent for the first 24-48 hours of illness.
Puppies infected in utero or before 8 weeks of age may develop myocarditis

How is the diagnosis made?

- Parvo snap test is a rapid in-house test that is highly sensitive and specific. May have false negative if performed before fecal shedding has begun. May also have weak false positive 5-10 days after vaccination with modified live virus.
- CBC: typically will see marked leukopenia/neutropenia; may be normal on initial presentation but typically drops low as GI signs become more severe

May have electrolyte abnormalities due to vomiting, hypoglycemia, and patients often develop hypoproteinemia due to GI loss.

What is the treatment?

- Fluid therapy to correct hydration, treat shock, and correct electrolyte imbalances is the most important aspect of treatment.
  - consider crystalloid fluid bolus (generally start with 10ml/kg over 15 minutes)
  - Maintenance rate ~ 4-6ml/kg/hr, may need to be more aggressive depending on ongoing loss
- Treat hypoglycemia if present
- Maintain plasma oncotic pressure with hetastarch or plasma if hypoproteinemia is present
  - Hetastarch bolus 5ml/kg over 20-30 minutes then 20mls/kg/day
  - Plasma 10-20ml/kg over 2-3 hours
- Antibiotics are recommended due to bacterial translocation and leukopenia
  - Ampicillin + sulbactam (Unasyn) 20mg/kg IV q 8hr
  - Enrofloxacin 7.5-10mg/kg IV q 24hr if severe neutropenia or febrile despite unasyn therapy
  - Can consider amikacin 15mg/kg IV q 24hr after re-hydration but need to monitor urine sediment
- Antiemetics to help control vomiting
  - Metoclopramide CRI – generally start at 2mg/kg/day but can increase to 0.3mg/kg/hr
  - Maropitant citrate (Cerenia) 1 mg/kg SQ q 24hr for up to 5 days; use with caution in patients under 12 weeks
- Nutrition: early enteral nutrition despite continued vomiting has shown to help decrease the length of hospitalization over starting enteral nutrition 12 hours after vomiting is resolved
- Recommend daily monitoring of body weight, electrolytes, glucose, and PCV/TS. Recheck CBC every 2-3 days.

Prognosis?

- 75-80% survival with appropriate medical therapy. Recovered animals are considered to be immune for at least 1-2 years and possibly life-long.

Questions?

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The Veterinary Specialty Center of Tucson has a board-certified criticalist caring for critical cases every day of the week. They are also available to answer questions or accept referrals 7 days a week. The critical care service is open 24 hours a day and is staffed by highly trained doctors and technicians at all times. Board-certified criticalists have four additional years of training after veterinary school and are certified by the American College of Veterinary Emergency and Critical Care to assure competency in advanced veterinary critical care.