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Volume 3,
August 2002

WELCOME!

Welcome to the August 2002 edition of VetCom. Our clinical, *In the Trenches*, discussion this month highlights two independent topics. The topic of NSAIDs and liver enzyme monitoring is introduced, to be followed in more detail in our October issue.

Additionally we have included a piece on Addison's disease (hypoadrenocorticism) which is particularly relevant to us as we are introducing our NEW Diagnostic Rotor with SODIUM!

I want to thank all our readers for your continued interest, we have over 700 subscribers to date. You are a quiet bunch however! I really do encourage you to check in regarding the *In Your Opinion* topic, send a query to our *Ask the Lab* advisor or send me general comments on what you like, don't

In the Trenches

Liver Enzyme Monitoring for Canine NSAIDs Patients

Non-steroidal anti-inflammatory drugs (NSAIDs) are primarily prescribed for their anti-inflammatory effect and are one of the most commonly used drugs for both humans and animals. Although the mechanism of NSAIDs are not completely understood, their key method of efficacy is to inhibit production of the hormone-like substances, prostaglandins. Reduced prostaglandin release decreases the inflammatory process thereby providing pain relief.

Two of the most commonly prescribed NSAIDs for canine patients are Rimadyl® (carprofen, Pfizer) and EtoGesic® (etodolac, Fort Dodge). Although these

like and would like to see in future issues!

Guerilla Marketing's Golden Rule #46

To succeed at marketing during an economic downturn, focus your efforts on existing customers and larger transactions.

Because the cost of marketing to a brand-new customer is *five times higher* than selling to an existing customer, guerilla marketers turn their gaze from strangers to friends.

In a recession, when everything seems to be shrinking, think in terms of expanding your offerings. Do absolutely everything you can to motivate customers to expand the size of their purchase.



compounds have undoubtedly brought relief to many dogs, the veterinarian and client must remain aware of potential adverse effects. In addition to possible gastrointestinal ulceration as a result of decreased levels of beneficial prostaglandin in the GI tract, hepatopathy has been reported in a number of Rimadyl-treated dogs, in particular, Labrador retrievers.

Although the prevalence of liver disease is quite low (5.2 cases per 10,000 dogs treated, Pfizer Animal Health, 1999), it can be life-threatening if not treated in a timely fashion. In order to identify dogs at risk, a chemistry profile accomplished prior to initiating Rimadyl therapy will provide the veterinarian with baseline liver enzyme values. Liver enzymes may then be re-checked following 7-14 days of therapy. Significant

Show that you are fully aware of the recession and that you have priced your goods and services accordingly. Don't make the mistake of thinking that the right price for a recession is the lowest price. Price almost becomes secondary during hard times; people are searching for value.

Guerilla Marketing Excellence, Levine, Houghton Mifflin Co

Evaluating your laboratory capabilities and services may provide you an excellent source for revenue growth as well as the practice of better medicine. According to the Well-Managed Practice™ Study*, lab services should account for ~ 20% of revenue. Some ways to expand your laboratory offerings are to introduce or enhance Wellness & Senior Care programs. Client compliance with these programs is excellent.

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**Plug Revenue Leaks and Boost your Income*, Vet Economics, Sep 2001.

increase in liver values is an indicator to discontinue Rimadyl immediately. Incidents of carprofen-mediated hepatopathy reaction have been shown most commonly to occur within the first three weeks of therapy, though may theoretically occur anytime during treatment. Therefore, routine liver enzyme monitoring of dogs on Rimadyl would be considered a beneficial prophylactic measure.

In our next issue, Dr. Brent Hoff, will discuss NSAIDs-induced liver

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dysfunction and share his recommendations for monitoring these patients.

Brent Hoff D.V.M., D.V.Sc., Dip. Tox. currently holds the position of Clinical Pathologist/Clinical Toxicologist at the Animal Health Laboratory, University of Guelph, Guelph, Ontario, Canada.

Hypoadrenocorticism

Addison's Disease in Review

Dan Brod, DVM

Hypoadrenocorticism is a condition in dogs and cats whereby the adrenal gland is deficient in its production of glucocorticoids and mineralocorticoids. The condition can be primary, which is usually iatrogenic, or secondary, which is usually from hypothalamic or pituitary failure.

Hypoadrenocorticism is usually a disease of middle-aged female dogs. The disease has been recognized most commonly in standard poodles, Labrador retrievers and Portuguese water

dogs. Other predisposed breeds include Great Danes, Rottweilers, West Highland white terriers, and German shepherds. Clinically the signs may vary from vague ones such as depression, weakness or lethargy to more profound such as vomiting, diarrhea, shaking and shivering, anorexia, and sensitive abdomen. Dogs presented in a crisis are often in shock with one or more of the above signs present. They commonly have bradycardia due to hyperkalemia.

The changes in the hemogram are secondary to glucocorticoid deficiency. Commonly a mild normochromic, normocytic non-regenerative anemia is present. A lymphocytosis and eosinophilia are present in 10-20% of dogs.

Elevation of creatinine and BUN, with urine specific gravity less than 1.030 is common in dogs with hypoadrenocorticism. The elevated BUN and creatinine are due to hypotension, dehydration and volume contraction. The low urine specific gravity is due to medullary wash-out.

Hypercalcemia is present in 30% of the dogs with hypoadrenocorticism. Hyperphosphatemia is present in

70% of dogs with hypoadrenocorticism. These abnormalities are related to the severity of the dehydration and other electrolyte abnormalities.

Normally, the sodium:potassium ratio is 27:1 to 40:1 with a mean of 30:1. 90-95% of dogs with hypoadrenocorticism have an elevated potassium and 80% have a decrease in sodium. Ten percent of dogs with this disease have a normal sodium:potassium ratio. It is important to note that hypoadrenocorticism is not the only disease associated with a low sodium:potassium ratio.

The differential diagnoses for hyperkalemia and/or hyponatremia are:

- I. Hypoadrenocorticism
- II. Renal or Urinary tract disease
 - A. Acute primary renal disease
 - B. Chronic severe oliguric or anuric renal failure
 - C. Urethral obstruction
 - D. Uroabdomen
 - E. Post-obstructive diuresis
 - F. Nephrotic syndrome

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Coming Conferences

We'll See You There!

PA VMA

Hersey, PA

Aug 8-11, 2002

Hospital Design Show

Kansas City, MO

Aug 15-16, 2002

Events of Note

Instituting and Enjoying A Successful Wellness Program

Charles Sodikoff, DVM

CVC

Kansas City, MO

Aug 16-20, 2002

AAV

(Assoc of Avian Veterinarians)

Monterey, CA

Aug 27-29, 2002

IVECCS

(Int'l Vet Emergency & Critical Care)

San Antonio, TX

Sep 5-7, 2002

Tufts Animal Expo

Boston, MA

Sep 11-14, 2002

Chicago VMA

Chicago, IL

Sep 11, 2002

FL VMA

Lake Buena Vista, FL

Sep 13-15, 2002

Abaxis, Inc.
Union City, CA

TBD

(early September 2002)

**Contact Marty Munn
for information
800 822-2947, ext. 1494**

Local Abaxis Representatives are available to present a one-hour presentation on the topic of the benefits of in-clinic wellness testing for local veterinary meetings.

The program offers a review of veterinarian approaches to wellness and senior testing, published relevant

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August's Question:

In Your Opinion,

*How do you utilize canine
cholesterol and triglycerides
measures in your practice?
Do you foresee greater utilization of
these analytes as current opinion
appears to be shifting toward
treating hypercholesterolemia?*

**Abaxis Contact
Information**

1-800-822-2947

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Pam Conboy, ext. 6604
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Technical Service EXT 2
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and VetScan distributor information*
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*Watch for further discussion of this
topic in next month's In the Trenches*

*Got a Question for the Lab?
Send it in....*

*Email me with your replies and
queries: pamconboy@abaxis.com*



**Comprehensive Diagnostic Profile
with sodium
available late August**

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- | | | |
|---|---|--|
| <p>III. Severe liver failure</p> <p>A. Cirrhosis</p> <p>B. Neoplasia</p> | <p>IX. Diabetes mellitus</p> | <p>mineralocorticoid deficiencies respond very well to injections of DOCP 2.2mg/kg every 25 days. Prednisone or prednisolone 0.2mg/kg/day control glucocorticoid deficiency when used with DOCP. During stressful periods, the dosage of glucocorticoids may need to be increased 2-10 fold. During treatment, sodium and potassium levels need to be monitored.</p> |
| <p>IV. Severe gastrointestinal diseases</p> <p>A. Parasitic infestations</p> <p>B. Salmonellosis</p> <p>C. Viral enteritis</p> <p>D. Gastric dilatation/volvulus</p> <p>E. Gastrointestinal perforation</p> <p>F. Severe malabsorption</p> <p>G. Idiopathic hemorrhagic enteritis</p> | <p>X. Primary polydipsia</p> <p>XI. Inappropriate ADH secretion</p> <p>XII. Drug-induced</p> <p>A. Potassium-sparing diuretics</p> <p>B. Non-steroidal anti-inflammatory agents</p> <p>C. Angiotensin-converting enzyme inhibitors</p> <p>D. Potassium-containing fluids</p> | <p><i>Dr. Dan Brod is a practicing veterinarian at the award-winning Deer Creek Animal Hospital outside of Denver, CO.</i></p> |
| <p>V. Severe metabolic or respiratory acidosis</p> | <p>Feldman EC: Adrenal gland disease. In Ettinger, SJ: Textbook of Veterinary Internal Medicine. 4th ed. Philadelphia, WB Saunders, 1995, p 1584.</p> | |
| <p>VI. Congestive heart failure</p> | | |
| <p>VII. Massive release of potassium to the extracellular fluid</p> <p>A. Crunch injuries</p> <p>B. Aortic thrombosis</p> <p>C. Rhabdomyolysis</p> <p>1. Heat stroke</p> <p>2. Exertional</p> <p>D. Massive infections</p> <p>E. Massive hemolysis</p> | <p>Confirmation of hypoadrenocorticism is determined by an ACTH stimulation test. Results of the test with Addison's will typically be low to normal in the resting sample and fail to stimulate after injection of ACTH. Post-stimulation values are less than 5.0 ug/dl with hypoadrenocorticism.</p> | <p>Additional Web Resources:</p> <p>www.acvim.org</p> <p>www.aavld.org</p> <p>www.vin.com</p> |
| <p>VIII. Pseudohyperkalemia</p> <p>A. The Akita breed</p> <p>B. Severe leukocytosis</p> <p>C. Severe thrombocytosis</p> | <p>Treatment is aimed at correcting mineralocorticoid, glucocorticoid, fluid and electrolyte deficiencies. In a crisis situation, dehydration, shock and hyperkalemia all need to be closely monitored and treated accordingly. Long-term management of</p> | |