VETERINARY TEACHING HOSPITAL

VIRGINIA VETERINARY NOTES

VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE

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WHAT'S INSIDE!

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UNIVERSITY OF MARYLAND 1807-1856-1920

CANINE PARVOVIRUS CONTINUES TO THRIVE

Despite extensive vaccination programs, the diagnostic laboratories continue to diagnose cases of canine parvovirus infection. A review of laboratory records for the past three years reveals that about 40% of the samples examined for canine parvovirus were positive. Although canine enteric viral infections can be diagnosed by several different laboratory procedures (Electron-microscopy (EM), immunofluorescence (IF) or ELISA), we at the Kissimmee Laboratory feel that the EM examination of feces is superior to the other two methods because EM provides us the opportunity to detect other canine enteric viruses, such as coronavirus, rotavirus, astrovirus, calicivirus, that might be present in the parvovirus preparation.

The Diagnostic Laboratory continues to receive fecal samples from suspected cases of parvovirus infection that are negative when tested with the "in-house" fecal tests. In a majority of these cases the Electron Microscopist will see a limited number of clumped parvovirus particles that appear to be coated with antibody. We feel that the antibody coating the virus causes a blockage of the viral antibody sensors and results in a false negative test.

Practitioners experiencing negative "in-house" fecal tests in obvious cases of canine parvovirus infection may want to confirm their diagnosis by submitting fecal samples for EM examination to the Kissimmee Laboratory.

Fecal samples for EM examination should be submitted in a hard plastic screw cap container, with a refrigerant pack and be sent by overnight or next day delivery. **--Diagnostic Lab Newsletter, Florida Department of Agriculture and Consumer Services, Division of Animal Industry, Winter 1996, Florida Animal Health Bulletin, as reported in Florida Veterinary Scene, Vol. 5, No. 8, September 1996.**

ORPHAN MEDICAL LAUNCHES ANTIZO-VET™ (FOMEPIZOLE) FOR INJECTION

Orphan Medical, Inc. (Nasdaq: ORPH) announced that Antizol-Vet™ (fomepizole) for injection is now commercially available.

Antizol-Vet is an antidote for ethylene glycol poisoning in dogs. Ethylene glycol is a chemical component of antifreeze and coolants. While assessments of the number of ethylene glycol poisonings that occur in the United States vary, Orphan Medical estimates that there are approximately 10,000 dogs that could benefit from this antidote therapy each year. If untreated, ethylene glycol poisoning is fatal.

"Ethylene glycol poisoning, because of its difficult diagnosis and intense patient management, is one of the most serious and respected poisonings in veterinary medicine today," said Michael Knight, DVM of the American Society for the Prevention of Cruelty to Animals (ASPCA)/National Animal Poison Control Center (NAPCC). "Antizol-Vet offers clinicians an easy-to-use, effective alternative therapy that has been proven to prevent the serious consequences, including death, of ethylene glycol poisoning in dogs."

Antizol-Vet, commonly known as 4-methylpyrazole or 4MP, prevents the metabolism of ethylene glycol to its toxic metabolites through the inhibition of the enzyme alcohol dehydrogenase. Ethylene glycol and its metabolites are then removed from the dog primarily by urinary excretion. Studies have shown that rapid treatment with Antizol-Vet improves clinical outcomes.

Antizol-Vet is supplied in a 1.5 mL vial and is accompanied by a 30 mL vial of sodium chloride for reconstitution. **--Press Release from Orphan Medical; January 29, 1997, as reported in Florida Veterinary Scene, Vol. 6, No. 4, April 1997.**

THOUGHT FOR THE MONTH

From now through the year 2014 a "baby boomer" will turn 50 years of age every 7.6 seconds.

EFFECT OF LENTE INSULIN FOR TREATMENT OF DIABETES MELLITUS IN 12 CATS

Background
Insulin administration forms the mainstay of the treatment of diabetes mellitus in cats, despite the availability and occasional success of oral hypoglycemic agents. Recent changes in the availability of different forms of insulin have resulted in a re-evaluation of insulin treatment in cats. Discontinuation of protamine zinc insulin (PZI) resulted in increased use of ultralente and lente insulins in the cat. Ultralente is a crystal form of zinc insulin which is poorly absorbed.

Summary
Twelve cats that were originally treated with ultralente (n=8) or PZI (n=2), or were not previously treated (n=2) were administered lente insulin twice daily. Effective control of the hyperglycemia was attained in eight cats, as evidenced by resolution of clinical signs, maintenance of desirable body weight, and regulation of blood glucose concentrations between 100 and 300 mg/dl throughout the day. Doses of insulin in these cats ranged from 0.3-1.3 (mean, 0.7) U/kg, twice per day. The blood glucose nadir occurred near four hours, and the mean duration was 12 hours. The dose of lente insulin required to maintain good glycemic control was less than that of ultralente in five of six cats previously treated with ultralente insulin. The insulin dose necessary to control the hyperglycemia varied over time in individual cats. Among the eight cats that were initially controlled with lente insulin, one became refractory due to chronic pancreatitis, and one eventually maintained euglycemia without insulin administration. Lente insulin had a duration of action of less than eight hours in one of the four cats in which lente insulin was used unsuccessfully. Of the three remaining cats that did not respond to lente insulin, one had concurrent hyperadrenocorticism, and two were suspected of having concurrent acromegaly. A pituitary adenoma was present in one of the cats; the other was euthanized because of renal failure. A necropsy was not performed. The authors concluded that lente insulin is a useful treatment if ultralente insulin is unsuccessful in managing the diabetic state, but ultralente insulin is preferred because of the potential for once per day treatment.

Clinical Impact
Lente insulin was successful in the treatment of eight of nine cats without underlying endocrinopathies causing insulin resistance. Five were effectively treated with doses (per kg) that were less than the last unsuccessful dose of ultralente. Since all cats in this study were selected because of failure to respond to ultralente insulin, lente insulin should be considered a more successful treatment for feline diabetes mellitus. However, ultralente insulin has a duration of effect in some cats that permits once per day administration. Since 70% of lente insulin is composed of ultralente, cats with poor control on ultralente insulin might respond better to neutral protamine Hagedorn (NPH) insulin, which had different means of prolonging the absorption of insulin than the lente family of insulins. **--Bertoy EH, Nelson RW, Feldman EC. J Am Vet Med Assoc 1995; 206:1729-1731, as reported in Florida Veterinary Scene, Vol. 6, No. 2, February 1997.**

CALVES AREN'T WATER QUALITY CONSCIOUS

"Calves don't care what they drink," says University of Missouri animal scientist Rich Crawford. "Those results are hard to believe," he says, adding they contradict years of recommendations to the effect: "Don't ask your cattle to drink what you wouldn't." But, he says, a second trial confirmed, "calves will drink the dirtiest pond water just as readily as clean, fresh well water. The water quality makes no difference in water consumption--or gains on pasture." Chemical analysis showed the water in the analysis to be above safe drinking water standards for humans in both iron and sodium content. However, safe drinking standards for cattle allow only 15 coliform forming units per 100 ml of water. By October of the first year, after a summer of drought, the coliform count reached 29,000. Still, calves provided pond water drank 8.84 gal./day while calves on well water drank 8.97 gal./day (water provided in stock tanks). Calves drinking pond water gained 0.91 lbs./day while fresh-water calves gained 0.95. **--BEEF, FEB 97, as reported in Herd Health Memo, University of Kentucky, 1996-97, No. 10.**

COMPARISONS OF INTRAVAGINAL AND INTRAUTERINE INSEMINATION OF BITCHES WITH FRESH OR FROZEN SEMEN

To compare the importance of the route of insemination when using fresh or frozen semen, six groups of five bitches were inseminated either into the uterus (groups 4, 5 and 6) or the vagina (groups 1, 2 and 3) with fresh (groups I and 4) or frozen semen (groups 2, 3, 5, and 6). The fresh semen was collected when needed from the same dog. The frozen semen used in groups 2 and 5 was obtained from seven dogs on the same day, and pooled and processed simultaneously so that the groups were inseminated with exactly the same semen. The frozen semen used in groups 3 and 6 was obtained from different dogs and processed independently to evaluate not only the effect of the route of insemination but also the potential effect of the dog. The mean concentration of the fresh semen was 310 x 106 spermatozoa/ml, its motility was greater than 80 percent and the percentage of normal live spermatozoa was 80 to 92 percent. The mean spermatozoal concentration of the frozen semen was 200 x 106 spermatozoa/ml, its motility was greater than 60 percent and the percentage of normal live spermatozoa was 80 percent. In all the groups there were fewer than 15 percent abnormal spermatozoa. the animals inseminated with fresh semen received significantly more spermatozoa than the others. The bitches were inseminated twice, three and five days after the estimated peak of luteinizing hormone, with a total volume of 5 ml for the vaginal inseminations and 2 ml for the intrauterine inseminations. Sixty percent of the bitches inseminated with frozen semen and 100 percent of the bitches inseminated with fresh semen became pregnant, irrespective of the insemination technique used. **--Silva, LDM; Onclin, K; Lejeune, B; Verstegen, JP (1996). Vet. Rec. 138:154-157. Society for Theriogenology Newsletter, Volume 20, No. 1, January/February 1997, as reported in Animal Health Spectrum, Mississippi State University, Volume 8, No. 2, April 1997.**

TIDBITS OF INFORMATION ABOUT MEAT

- Dairy cows account for:

  8% of U.S domestic beef production

  25% of U.S. non-fed beef available for consumption in the United States

  18% of U.S. ground beef

- Almost all cull dairy cows in the United States are intended for beef slaughter. And 4.5% are sent to other operations for continued dairy production.

- The United States became a net exporter (shipped abroad more pork than imported) in 1995.

- Exports of pork

  represented 4.4% of total pork produced.

  added $3.70 per cwt or $9.25 per market hog to cash prices.

- Demand for bacon by the nation's fast food operators added $8.70 value per hog in wholesale value in April 1996.

- Hardee's 3,400 fast food stores used an average of 1.5 million pounds of bacon per month from January to April.

- The value of pork bellies (source of bacon) was nearly doubled in April of 1996, compared to April 1995 ($69.69 cwt vs $35.86).

--APHIS Info Sheet, Veterinary Services, May 1996. Checkoff-NPPC pub., July/August 1996, p. 15-56, as reported in Florida Veterinary Scene, Vol. 5, No. 8, September 1996.

DIABETES IN VIRGINIA

A new surveillance program for human diabetes is being implemented to monitor the disease in Virginia. Approximately 5% of the population nationwide has been diagnosed with diabetes with the prevalence higher in females and blacks. The average age of diagnosis is 49 years.

Of the 728,477 admission to human hospitals in Virginia during 1994, 81,016 (11.1%) were for persons with diabetes. The bill for these diabetic individuals in Virginia hospitals totalled over $800,000,000 for an average of $10,046 per person admitted. **--Virginia Epidemiology Bulletin, January 1997, Vol. 97, No. 1.**

FUNDING AT VIRGINIA TECH

At the end of 1989, Virginia ranked 28th in the nation in state funding for higher education, but by 1996 had dropped to 43rd. Over a five year period starting in 1989, Virginia Tech alone lost $46.5 million in General Fund revenue from Richmond. Approximately $16 million was offset by increases in student fees and tuition. As a result of these increases, students paid 38.5% of their educational costs in 1989 and 56% by the end of 1995. Out-of-state students had tuition increases of 91% over this same period.

Virginia is presently near the top of the list in tuition cost among land-grant institutions nationally, but has the lowest comprehensive fee and the lowest room and board charges in Virginia.

The gap between General Fund revenue and the needs of higher education is of on-going concern among Virginia's leaders in government, education, and business. The Business Higher Education Council has been a powerful force in reversing the downward trend in funding for Virginia's colleges and universities. An increase of $200 million in the 1996 funding and $30 million in 1997 have helped to reestablish the importance of higher education in the Commonwealth. **--Excerpts from a talk by Minnis Ridenour, Executive Vice President, Virginia Tech, Blacksburg, VA.**

VMRCVM - CLASS OF 2001

Statistics for the incoming first year class at the College of Veterinary Medicine at Virginia Tech have been compiled and may be of interest. These students start classes on August 18, 1997.

Ninety students were accepted for the Class of 2001. Of these 90 students, 50 were legal residents of Virginia, 30 were legal residents of Maryland and 10 were residents of other states or the District of Columbia

There were 682 qualified applicants for the class, 197 were interviewed at either College Park or Blacksburg, and 90 were accepted. Of these 90 students, 70 had received bachelor degrees, 6 had masters degrees and 1 student had a PhD upon matriculation.

The 90 accepted students attended a total of 52 colleges or universities, with 20 coming from Virginia Tech, 5 each from the University of Maryland-College Park and the University of Virginia, 3 each from George Mason University and Penn State, and 2 each from several schools including the University of Miami, University of Delaware, Towson State, Johns Hopkins, and James Madison.

These students majored in 26 different subjects, with 40 in biology and 17 in animal science predominating, but included everything from accounting to zoology. Their cumulative grade point average was a solid 3.50 on a 4.0 scale.

Student ages range from 20 to 42 years with an average of 24. Female students outnumber males 68 to 22. **--Kent Roberts, DVM, VMRCVM - Virginia Tech.**

CE OPPORTUNITIES

Date	Topic	Location	Contact Hours
September 5-6	Orthopedic Surgery - Canine Forelimb	Blacksburg	10
October 17-18	Diagnostic Ultrasonography	Blacksburg	10
November 14-15	Reconstructive Surgery & Wound Mgt	Blacksburg	10
November 21-22	Patient Pain Management	Roanoke/Blacksburg	10

Please note: The courses listed above are limited enrollment and feature a hands-on laboratory experience. Program brochures will provide course details. For registration or more information, please contact:

Dr. J.M. Bowen
VMRCVM - Virginia Tech
Blacksburg, VA 24061
(540) 231-7388

Dr. David Mitchell
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Virginia Tech
(540) 231-9340

SMALL ANIMAL SERIES

Small Animal Problem Solving - begins September 5 for six monthly sessions
Soft Tissue Surgery - begins September 26 for six monthly sessions

Our Series courses represent the highest quality of continuing education for veterinarians with hands-on, interactive five-hour sessions in small groups under the direct supervision of VMRCVM faculty specialists.

BACK ON MY FEET AGAIN (IN A MANNER OF SPEAKING)

Thank you often seems trivial when compared to the measure of concern shown to me and my family by the veterinary community at large. Yet, just as my accident has been a life-changing experience, so has my attitude from the support of many of you. I could not be more proud to be a veterinarian than now. I doubt any other profession would come to the aid of one of its colleagues in any way approaching the response which I have received. My immediate needs have been met in a way that has helped me return to my duties as Hospital Director, beginning on April 30th. And I was able to address the graduating class of 1997 on May 9th, reminding them that the "kind words and cool water" of giving, sharing, and caring are a universal language understood and needed by all and are, I believe, best exemplified by our profession.

It is a pleasure to direct a teaching hospital in an economic climate of prosperity when one has a competent and stable faculty and staff, excellent facilities and equipment, top quality veterinarians as referral resources, all surrounded by the bright, inquisitive minds of superb students who are our profession's future. I am justifiably proud of our college, its teaching hospital and the quality of services offered as we instruct our students in a way that competes nationally with any other college of veterinary medicine. And I am thankful to be back among you in my role here.

Dr. Greg Troy did an outstanding job as interim director during my 5-month absence and we are all indebted to him for his leadership and commitment in an acute situation. And I thank each of you for your interest in and concern for me and my well-being. I continue to pursue independence, making progress in my functional abilities to mobilize myself on a daily basis. I am a blessed man in innumerable ways, not the least of which is belonging to the profession of veterinary medicine. -- **Robert A. Martin, Hospital Director.**

MAILING LIST UPDATE

Dear Colleagues:

In our continuing efforts at maintaining a current and accurate mailing list for this newsletter, I request that you take a minute to update us on any changes in address, name, practice, etc.

If you no longer wish to receive the newsletter or know of a colleague who would like to be added to our mailing list, please fill out and return the form below at your earliest convenience. Because of budgetary restrictions, we cannot send separate newsletters to each and every veterinarian in our circulation area. Please share your copy with a colleague.

Name _____

New Address

_____

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Old Address

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_____

Practice Name (if applicable) _____

Please discontinue mailings _____ Name _____

Comments _____

_____

_____

It is a great help to us if you include Virginia Veterinary Notes when notifying people of an address change.

Please mail to:

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