



THE WINN FELINE FOUNDATION

For the Health and Well-Being of All Cats

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HEALTH NEWS

From THE WINN FELINE FOUNDATION

Summaries by Betty White 11/06

“Immunoglobulin Concentrations in Feline Colostrum and Milk, and the Requirement of Colostrum for Passive Transfer of Immunity to Neonatal Kittens.”

Researchers at the University of Florida, Gainesville, conducted a study to clarify whether cats have different concentrations of immunoglobulins during their colostrum and milk phases of lactation, and whether colostrum received by newborn kittens is essential for the optimal transfer of passive immunity. Milk from healthy, pathogen-free queens was analyzed for immunoglobulin (IgG and IgA) concentrations from the time they gave birth through 6 weeks of lactation. Immunoglobulin concentrations in queens' milk were significantly higher immediately after giving birth than they were on day 7 of lactation.

Serum IgG and IgA concentrations were determined from birth to 8 weeks of age for three groups of kittens: colostrum-fed kittens, colostrum-deprived kittens fed a milk replacement, and colostrum-deprived kittens fostered by queens in the milk phase of lactation. The main immunoglobulin in both colostrum and milk was IgG, and the concentrations in colostrum-deprived kittens fed by foster queens in the milk phase of lactation were similar to colostrum-deprived kittens fed a milk replacement. These concentrations were significantly lower than in colostrum-fed kittens for the first 4 weeks of life. The serum IgA concentrations in both colostrum-deprived groups were significantly lower than colostrum-fed kittens on the second day after birth, but were similar thereafter. Colostrum-deprived kittens fed by foster queens in the milk phase of lactation failed to receive any passive transfer of maternal antibodies.

Adult cat serum may be used to provide protective concentrations of immunoglobulins in kittens deprived of colostrum immediately after birth, but fostering by queens in mid-lactation will not provide protection. [Claus, M .A., Levy, J. K, et al. (2006), *J Fel Med Surg* 8(3): 184-191.]

“Effects of a Single Dose of an Intranasal Feline Herpesvirus 1, Calicivirus, and Panleukopenia Vaccine on Clinical Signs and Virus Shedding After Challenge with Virulent Feline Herpesvirus 1.”

Veterinary researchers in Fort Collins, Colorado, and at Colorado State University in that city wanted to determine if the amelioration of clinical signs and of viral shedding of feline herpesvirus 1 (FHV-1) would occur after the intranasal administration of a commercially available FVRCP vaccine. Three groups of unvaccinated kittens were given one dose of vaccine 6 days before challenge at 2-day

intervals. The fourth group of kittens was maintained as unvaccinated controls. The FHV-1 challenge was induced and the kittens were observed for 14 days. When the three groups of vaccinated kittens were compared with the control group, results showed that the vaccinated kittens had significantly lower clinical scores and lower body temperatures than the unvaccinated kittens. In addition, the group of kittens vaccinated 6 days before challenge demonstrated lower FHV-1 shedding than the group 4 kittens on day 6 after challenge.

This study showed that the administration of this vaccine within several days prior to exposure reduced clinical signs of disease and FHV-1 shedding when compared to unvaccinated kittens. [Lappin, M. R., Sebring, R. W., et al. (2006) *J Fel Med Surg* 8(3): 158-163.]

“Pet Owner Education Key to Diabetes Management.” Writing for *Veterinary Practice News*, Lori Luechtefeld maintains that the veterinary community is striving to keep client education evolving at the same pace as the continued advancement of the treatment and monitoring options for diabetic pets. She quotes Holly Brianceau, DVM, who cites a 2003 study, “Approximately one cat in every 200 develops diabetes and, according to experts, that number is beginning to increase.” Although frequently affecting older cats, especially neutered males, the disease has been diagnosed in all ages, genders, and breeds. The type of diabetes typically seen in cats is similar to Type II diabetes in humans. This type results from decreased sensitivity to insulin. As a result, some cats may eventually become insulin-independent when the disease is properly managed.

An internet survey revealed that less than half of 2,300 pet owners were aware that pets can develop diabetes. Dr. Gary Norsworthy, DVM, Dipl. ABVP, of the Alamo Feline Health Center in San Antonio, Texas, lists the things owners should know about diabetes:

- implications of diabetes to cats and to the owners;
- the importance of consistency in the cat’s lifestyle;
- hyperglycemia versus hypoglycemia, and the clinical signs;
- dysregulation;
- spontaneous remission;
- insulin education;
- foods and feeding schedules;
- home monitoring;
- re-checks.

There is a proper way to store, mix, and inject insulin. Owners need to know how to measure urine glucose and ketones, and testing of their pets should be done once weekly. The feeding of high-protein diets has contributed significantly to the successful management of diabetes in cats.

Owners should be aware of the four early clinical signs of diabetes: increased thirst, increased urination, weight loss, and increased appetite. This can be quite difficult to monitor in multi-cat households. Older, overweight, neutered males are at the highest risk for diabetes. Controlling obesity is a giant step in the prevention of diabetes. Also, a latent diabetic cat placed on steroids may become a clinical diabetic.

The use of glucose curves for regulation of diabetic cats, particularly as an in-clinic procedure, has become an ongoing debate. Stress induced by the clinic setting, known in humans as the “white coat syndrome,” can make the blood glucose curve difficult to interpret. Dr. Norsworthy says, “Cats should not be regulated in the veterinary hospital.... When in a hospital, cats often do not eat well and their activity level is considerably less than at home. Therefore, when the regulated cat goes home, several critical variables change and the cat is no longer regulated. Regulating a diabetic cat in the hospital is a huge waste of client dollars.” Home monitoring systems have advanced to the point that many veterinarians now recommend that blood glucose curves be obtained in the home to reduce stress and obtain more accurate readings. [*Veterinary Practice News*, November 2006.]

“A Questionnaire-based Study of Gestation, Parturition, and Neonatal Mortality in Pedigree Breeding Cats in the UK.” Researchers in the United Kingdom based this study on a convenience-sampling questionnaire that produced data collated for the births of 1056 litters from 14 different pedigree breeds and 942 different households. The overall mean gestation length of 65.1 days varied considerably among the breeds, with a mean litter size of 4.6 kittens also varying significantly according to breed. Larger litter sizes were associated with shorter gestation periods and decreased weight of kittens born alive. Longer gestation lengths resulted in increased kitten weight. Once again, the mean weight of kittens varied among the breeds. A higher risk of caesarean sections was associated with smaller litter sizes; 8% of pregnancies resulted in c-section. The specific breed of an expected litter had no significant independent effect on the likelihood of a caesarean section. A mean of 7.2% of all kittens were stillborn, with the risk of a stillborn kitten increasing with litter size and with the presence of congenital defects in the litter. The mean kitten mortality between birth and 8 weeks of age was 9.1%, and most of these occurred in the first week of life.

There was great variety in birthing intervals. The first stage of labor lasted less than 2 hours in 82.9% of cats, while the interval between the birth of the first and last kitten was less than 6 hours in 85.7%. However, three cats spent more than 48 hours delivering kittens. [Sparkes, A. H., Rogers, K., et al. (2006). *J Fel Med Surg* 8(3): 145-157.]

“Oral Hygiene Programs.” In this article written for the veterinary professional, D. H. DeForge, VMD, discusses client periodontal maintenance and the reluctance of the veterinary community to stress its importance to owners. Of interest to the breeder and pet owner are products available and their intended use. Dentifrices contain common abrasive polishing agents -- sodium phosphate, calcium phosphate, calcium carbonate, silica, alumina, and aluminum hydroxide. Additional additives may be anti-tartar compounds, fluoride, flavoring agents, binders, and surfactants. Finger brushes intended for pets are widely available, as are small toothbrushes. The human brushes designed to clean between the teeth are particularly handy. Specific products mentioned are CET by Virbac, Oxyfresh Gel, and Maxiguard. Ideally, teeth should be brushed twice daily. However, this regimen is best attained gradually in order for pets to become comfortable with the process.

In an advanced stage of periodontitis, brushing should be avoided. Chlorhexidine Gluconate 0.12 to 0.2 percent applied topically is a short-term remedy for this problem. Oxyfresh oral products in oral rinse and oral gel forms decrease volatile sulfur compounds responsible for accelerating oral inflammation. When the rinse is added to a pet's drinking water, the water should be changed twice daily. It seems to be accepted better by pets in bottled water.

Care should be taken with the use of fluoride, as it is not a dentifrice and should not be used as such. It is readily absorbed in the topical form. It is important, therefore, that fluoride be used sparingly in the pet's oral cavity to avoid potential fluorotoxicosis. [*Veterinary Practice News*, November 2006.]

“Some UTI Remedies Validated by Research.” Narda Robinson, DVM, a regular observer of complementary medicine in this publication, reports on non-pharmacologic alternatives to treat uncomplicated urinary tract infections, some of which are “old cures” now validated by exhaustive research.

Diuretic Herbs: Some herbs, such as cleavers, horsetail, and pipsissewa, are weak diuretics, while dandelion and stinging nettle are moderate. In the strong category are parsley, celery, birch, lovage, and goldenrod. Parsley's diuretic effect has been recognized since ancient times, and both it and celery possess calcium channel-blocking activity in vitro that prevents spasms or convulsions. Goldenrod, birch, parsley, and stinging nettle counter inflammation; birch provides antimicrobial benefits. Dandelion acts as a digestive tonic. Combination products designed for pets with urinary tract disorders often contain one or more herbs with diuretic properties.

Urinary Antiseptics: Plants noted for antibacterial effects include uva-ursi (bearberry) and juniper. Uva-ursi leaves contain a glycoside that forms glucose and hydroquinone in the digestive tract. Further chemical changes in the body allow the hydroquinone to act directly against urinary pathogens. This herb cannot be used long term, however, as chronic exposure to synthetic hydroquinones is carcinogenic. Juniper leaves contain terpenoids with antimicrobial actions. Some terpenoids also behave as diuretics.

Anti-adhesion Herbs: Both cranberry and berberine (found in Oregon grape and goldenseal) are botanical compounds that interfere with adhesion of *E. coli* to bladder epithelium. In addition, proanthocyanidins in cranberry further inhibit the ability of *E. coli* to bind to intestinal mucosa and prevent *H. pylori* from adhering to gastric mucosa. Blueberries also contain proanthocyanidins, which impart similar anti-adhesion properties. Dry foods for dogs and cats in increasing numbers are listing cranberries and blueberries as ingredients.

Probiotics: Because many urinary tract pathogens arise from the intestinal microflora, researchers are now promoting lactulose as an agent that can alter the pathogenicity of the fecal flora. It follows that controlling the amount of pathogenic bacteria in the gut provides an additional non-toxic means of preventing infection in the urinary tract. (Editor's note: Your veterinarian should always be consulted before administering an herbal product to your cat. Most herbal products have not been tested in cats for safety or efficacy.) [*Veterinary Practice News*, November 2006.]

“Inhaled Fluticasone Reduces Bronchial Responsiveness and Airway Inflammation in Cats with Mild Chronic Bronchitis.” Researchers at the Faculty of Veterinary Medicine, University of Liège, Belgium, investigated the effect of inhaled fluticasone on lower airway inflammation and bronchial responsiveness to inhaled carbachol in cats with very mild, chronic bronchitis. Affected cats were compared with healthy cats serving as controls. At test 1, healthy cats and cats with bronchitis were evaluated before treatment with chest radiographs and non-invasive bronchial responsiveness tests. Bronchoalveolar lavage fluid was analyzed cytologically. During the treatment phase, inhalant fluticasone (250 µg once daily) was administered for 2 consecutive weeks to cats with bronchitis. Test 2 following treatment revealed significantly reduced lower airway inflammation in very mild bronchitis. Untreated, control cats did not show significant changes over time. Fluticasone is sold in North America under the brand name Flovent. [Kirschvink, N., et al. (2006). *J Fel Med Surg* 8(1): 45-54.]

“Prevalence of Feline Infectious Peritonitis in Specific Cat Breeds.” It is generally known that pedigreed cats are more likely to develop feline infectious peritonitis (FIP) than random-bred cats. Does the disease afflict some breeds more than others? This was the question that researchers at a veterinary teaching hospital in North Carolina sought to answer utilizing records of cats diagnosed with FIP over a 16-year period. This study, as those done previously, indicated that sexually intact cats and pedigreed cats were significantly more likely to be diagnosed with FIP. It also revealed that males and young cats also had a higher prevalence of the disease. Significantly higher risk for FIP was found in Abyssinians, Bengals, Birmanians, Himalayans, Ragdolls, and Cornish Rex, while Burmese, Exotics, Manx, Persians, Russian Blues, and Siamese were not at increased risk for the development of FIP. Undoubtedly, additional factors influence the relative prevalence of FIP. However, this study provides additional guidance when prioritizing diagnostic differentials in ill, pedigreed cats. [Pesteanu-Somogyi, L. D., et al. (2006). *J Fel Med Surg* 8(1): 1-5.]