Interpretive Summaries

SMALL ANIMALS

Long-term risks and benefits of early-age gonadectomy in cats

Among 1,660 cats adopted from a large humane shelter, associations between age at gonadectomy and occurrence of 47 medical and behavioral conditions were evaluated. Most conditions were not associated with age at gonadectomy. Among male and female cats with early-age gonadectomy, occurrences of asthma, gingivitis, and hyperactivity were decreased, whereas occurrence of shyness was increased. Among male cats with early-age gonadectomy, occurrences of abscesses, aggression toward veterinarians, sexual behaviors, and urine spraying were decreased, whereas occurrence of hiding was increased. Early-age gonadectomy appears to have more benefits than risks for cats, especially males. Veterinarians should consider routinely gonadectomizing cats before the traditional age of 6 to 8 months. Routinely gonadectomizing cats in humane shelters at any age appears to be safe.—C. V. Spain et al (*J Am Vet Med Assoc* 2004;224:372–379).

Long-term risks and benefits of early-age gonadectomy in dogs

Among 1,842 dogs adopted from a large humane shelter, associations between age at gonadectomy and occurrence of 56 medical and behavioral conditions were evaluated. Among female dogs, early-age gonadectomy was associated with increased rate of cystitis and decreasing age at gonadectomy was associated with increased rate of urinary incontinence. Among male and female dogs with early-age gonadectomy, hip dysplasia, noise phobias, and sexual behaviors were increased, whereas obesity, separation anxiety, escaping behaviors, inappropriate elimination when frightened, and relinquishment for any reason were decreased. Early-age gonadectomy appears to have more benefits than risks for dogs, especially males. Veterinarians should consider recommending gonadectomy for client-owned male dogs before the traditional age of 6 to 8 months. For female dogs, however, increased urinary incontinence suggests that delaying gonadectomy until at least 3 months of age may be beneficial.—C. V. Spain et al (*J Am Vet Med Assoc* 2004;224:380–387).

Evaluation of cisplatin combined with piroxicam for the treatment of oral malignant melanoma and oral squamous cell carcinoma in dogs

A phase I and II clinical trial was performed to determine the maximum tolerated dose (MTD) of cisplatin when administered in combination with piroxicam, the antitumor activity and toxicity of cisplatin combined with piroxicam in dogs with oral malignant melanoma (OMM) and oral squamous cell carcinoma (SCC), and the effects of piroxicam on the pharmacokinetics of cisplatin in dogs with tumors. Twenty dogs were treated with a combination of cisplatin and piroxicam. Piroxicam was administered at a dosage of 0.3 mg/kg (0.14 mg/lb), PO, every 24 hours. Initially, cisplatin was administered at a dosage of 50 mg/m^2, IV, every 3 weeks with 6 hours of IV fluid administration. Initial cisplatin dose was increased by 5 mg/m^2 until the MTD was reached. Tumor stage and size were determined at 6-week intervals during treatment. The pharmacokinetics of cisplatin were determined in dogs that were treated with a combination of cisplatin and piroxicam during the clinical trial (except for 1 dog that was not in the trial) and dogs that were treated with cisplatin alone. Eleven dogs with OMM and 9 dogs with SCC were included in the clinical trial. The MTD of cisplatin administered in combination with piroxicam was 50 mg/m^2. Tumor remission occurred in 5 of 9 dogs with SCC and 2 of 11 dogs with OMM. The most common abnormality detected was renal toxicosis. The clearance of cisplatin in dogs that were treated with cisplatin alone was not significantly different from that in dogs that were treated with a combination of cisplatin and piroxicam. Cisplatin administered at a dosage of 50 mg/m^2, IV, every 3 weeks in combination with piroxicam had antitumor activity against OMM and SCC.—P. A. Boria et al (*J Am Vet Med Assoc* 2004;224:388–394).

Ultrasonographic assessment of hemodynamic changes in the portal vein during surgical attenuation of congenital extrahepatic portosystemic shunts in dogs

Intraoperative Doppler ultrasonographic examination of the portal vein was performed in 17 dogs with single congenital extrahepatic portosystemic shunts before and after shunt ligation. Hepatofugal portal flow was often detected before shunt ligation in the portal segment between the shunt origin and the entering point of the gastroduodenal vein. Shunt ligation resulted in hepatopetal flow in this portal segment and the shunt with favorable outcome. If severe hypoplasia of the portal branches did not allow hepatofugal flow to become hepatopetal flow, poor outcome resulted.

We recommend that the largest possible shunt diameter that ensures hepatopetal flow in the shunt and the entire portal vein should be the goal of ligation. Regardless of these flow directions, hepatopetal portal flow caudal to the shunt should always be maintained with a minimum

time-averaged mean velocity of 3 cm/s. Increase of the portal congestion index > 3.5 times should be avoided.—V. Szatmári et al (*J Am Vet Med Assoc* 2004;224:395–402).

Concurrence between clinical and pathologic diagnoses in a veterinary medical teaching hospital: 623 cases (1989 and 1999)

Medical records of hospitalized dogs that died or were euthanatized and necropsied at a veterinary teaching hospital in 1989 and 1999 were reviewed to determine whether there was a decline in the percentage of dogs undergoing necropsies and whether there was substantial agreement or disagreement between clinical and pathologic diagnoses. There was a significant decline in the necropsy rate of hospitalized dogs that died or were euthanatized in 1999, compared with 1989. In both 1989 and 1999, there was disagreement between the clinical and pathologic diagnoses in approximately a third of the cases. Despite improved diagnostic methods, the accuracy of diagnosis did not improve significantly in 1999, compared with 1989. Increased availability of teaching funds may promote efforts to have necropsies performed in veterinary teaching hospitals.—M. S. Kent et al (*J Am Vet Med Assoc* 2004;224:403–406).

EQUINE

Use of dapsone in the treatment of *Pneumocystis carinii* pneumonia in a foal

A 6-month-old male Quarter Horse was evaluated for chronic respiratory tract disease. Diagnostic investigations revealed pulmonary inflammation; *Pneumocystis carinii* was detected within macrophages. Lymphocyte subpopulation phenotyping and immunoglobulin concentration analysis were performed and results suggested immune suppression. Trimethoprim-sulfamethoxazole administration was initiated; the colt was discharged but was reexamined 8 days later because of profuse diarrhea and endotoxemia. Bacterial culture of feces recovered *Salmonella* spp resistant to trimethoprim-sulfamethoxazole, and a diagnosis of antimicrobial-associated colitis was made. Bilateral fibrinous hypopyon developed and was treated with topical medication and intracameral injections of human recombinant tissue plasminogen activator. Dapsone (3 mg/kg [1.4 mg/lb], PO, q 24 h; dose extrapolated from human data) was administered for treatment of *P carinii* pneumonia (56-day treatment period). The colt recovered from the pneumonia and diarrhea. Dapsone may be a useful adjunct to traditional treatment for *P carinii* pneumonia in horses or as a sole medication for horses that cannot tolerate other treatments.—S. C. Clark-Price et al (*J Am Vet Med Assoc* 2004;224:407–410).

Use of magnetic resonance imaging for identifying subchondral bone damage in horses: 11 cases (1999–2003)

Eleven horses were evaluated for lameness, which was localized to a joint by physical examination and diagnostic local anesthesia. The abnormalities observed on magnetic resonance (MR) imaging of these horses were not identified by radiography. Lameness was localized to the metacarpophalangeal or metatarsophalangeal joint in 4 horses, the distal interphalangeal joint in 5 horses, and the tarsocrural joint in 2 horses. The duration of lameness ranged from 2 weeks to 20 months. Magnetic resonance imaging of the affected joint revealed abnormalities in the subchondral bone. There was an abnormally high signal intensity that was hyperintense to the surrounding bone. The hyperintense signal was caused by fluid accumulation at the site of bone damage. Arthroscopy of the affected joint was performed in 4 horses. Communication with the articular surface was suspected on the basis of MR imaging in 4 horses; arthroscopy in 1 horse and necropsy in 1 horse confirmed disruption of the articular surface. The remaining 2 horses with articular surface damage were not evaluated further. Magnetic resonance imaging was useful in providing a diagnosis when other imaging techniques did not identify the cause of lameness. Magnetic resonance imaging was capable of detecting small areas of subchondral bone damage that may not have been observed with other imaging techniques.—C. J. Zubrod et al (*J Am Vet Med Assoc* 2004;224:411–418).

RUMINANTS

Use of somatic cell counts and California mastitis test results from individual quarter milk samples to detect subclinical intramammary infection in dairy cattle from a herd with a high bulk tank somatic cell count

Milk samples were collected from 278 Holstein-Friesian dairy cattle in a single herd to determine whether somatic cell counts (SCCs) or California mastitis test (CMT) scores for individual quarter milk samples could be used to detect subclinical intramammary infection among dairy cattle in a herd with a high bulk tank SCC. Individual quarter milk samples were submitted for bacterial culture, California mastitis testing, and determination of SCC. Additional milk samples were collected 34 days later and submitted for bacterial culture.

During the initial visit to the herd, milk samples were collected from all 278 cows. However, because of blind mammary quarters or missing data, results for 1,057 quarter milk samples were included. Bacterial culture did not yield any growth for 622 (58.8%) of these samples, and regardless of the cutoff that was used, sensitivity of the CMT score was ≤ 0.50 and sensitivity of the SCC linear score (SCS) was ≤ 0.60. For 497 mammary quarters, results of bacterial culture of samples collected 34 days apart were concordant; bacterial culture did not yield any growth for 342 (68.8%) of these quarters. Regardless of the cutoff that was used, sensitivity of the CMT score was ≤ 0.61 and sensitivity of the SCS was ≤ 0.76 for mammary quarters with concordant bacterial culture results. Results suggest that neither CMT score nor SCC is sensitive enough to be useful as a screening test for identifying infected mammary quarters among dairy cattle in a herd with high bulk tank SCC.—J. R. Middleton et al (*J Am Vet Med Assoc* 2004;224:419–423).