Choosing an NSAID

Nonsteroidal antiinflammatory drugs (NSAIDs) for chronic pain are preferable to opioids for a number of reasons. However, there are still concerns about adverse effects, including gastric ulcers, protein-losing enteropathy, nephrotoxicosis, and coagulation disorders. This study evaluated the long-term safety of several frequently used NSAIDs. Thirty-six dogs were evenly divided into 6 groups; each group received 1 of 6 daily oral treatments for up to 90 days: lactose (1 mg/kg, control treatment), etodolac (15 mg/kg), meloxicam (0.1 mg/kg), carprofen (4 mg/kg), ketoprofen (2 mg/kg for 4 days; then 1 mg/kg daily thereafter), or flunixin meglumine (1 mg/kg for 3 days, with consecutive 4-day intervals). Complete examinations, including clinical and laboratory tests (complete blood count, platelet count, serum biochemical analysis, urinalysis, bleeding and clotting times, and occult blood in feces) were conducted before treatment and on days 7, 30, 60, and 90. Gastroscopy was performed before and at the end of treatment. The authors conclude that all of the NSAIDs studied induced only minor, clinically unimportant changes in hemostatic and serum biochemical variables. Regarding gastrointestinal (GI) effects, lesions were found in half of the ketoprofen-treated dogs, but no adverse effects were noted at a lower dosage of 0.25 mg/kg Q 24 H for 30 days. Further studies would be needed to confirm the analgesic effectiveness of this lower dose. In the current study, 4 of 6 dogs given etodolac at this dose (highest recommended dose) had occult blood in their feces after 7 days. From the adverse GI effects in this study, the authors believe flunixin meglumine should be restricted to postoperative use only. Carprofen (4.0 mg/kg; recommended dose 4.4 mg/kg) induced the lowest frequency of GI adverse effects, followed by meloxicam. The authors advise that periodic complete blood count, serum biochemical analysis, and endoscopy be performed to monitor for adverse effects in dogs being treated long term with NSAIDs.

COMMENTARY:

Despite the limitations of this study, it illustrates that NSAIDs of all classes should be used with appropriate caution and clinical monitoring, particularly with more extended administration of weeks to months. Carprofen induced the lowest frequency of GI side effects in this study out to 90 days; however, further trials are needed to examine adverse effects with long-term administration of this or other NSAIDs for months to years.—Bess J. Pierce, MZS, DVM, Diplomate ABVP & ACVIM


Surgical Correction of Traumatic Premature Physeal Closure

This case study followed 3 kittens, ages 3.5 to 4.5 months, that developed growth abnormalities of the distal radius after falling from a height. Only one of the cats had a radiographically visible fracture through the distal radial physis on initial examination. Both of the other cats had fractures of the ulnar styloid process and 1 also had metacarpal fractures. All cats developed varying degrees of shortening of the radius subsequent to damage of the distal radial physis. Widening of the lateral aspect of the radiocarpal joint space due to asymmetric closure was observed in 2 cats. Unlike dogs, which frequently develop elbow incongruity after premature closure of the distal radius, all of the cats in this study showed carpal joint incongruity. Treatment included osteotomy of the radius and ulna and realignment of the radius with external skeletal fixation in one cat, ostectomy in another cat, and radius and ulna osteotomies and distraction osteogenesis of the radius in the third cat. Clinical outcome was considered good for all 3 cats, with none showing obvious lameness at the final examination, although the range of carpal flexion was reduced in all 3.

COMMENTARY:
The distal radial physis closes between ages 14 and 20 months in intact cats, but later in neutered cats. If the physis closes at 5 months of age or younger, clinically significant loss of radial length can occur. These case studies illustrate the importance of watching for premature closure of the distal radial physis in kittens that have had trauma to the distal forelimb—and to follow up with radiographs 2 to 3 weeks after trauma, as compression injury to the growth plate may not be initially visible on radiographs. The surgical options to correct subsequent growth abnormalities depend on the type and severity of the injury as well as the age of the animal. The techniques used yielded clinically satisfactory results in all 3 patients.—Jennifer L. Schori, VMD