Given their importance to the health and performance of Thoroughbreds, joints are a commonly researched topic

Targeting Peak Performance

THE IMPORTANCE OF **JOINT HEALTH**

By **AMANDA DUCKWORTH**

EQUINES ARE COMPLEX creatures. Horses used for sport, especially, rely on healthy joints to be able to perform at their peak.

It is important to understand that the age of the horse and what type of work it is doing can have a significant impact on how serious a joint concern may be in terms of future prospects. Given the importance of joint health, it should come as no surprise that how best to diagnose potential issues is a highly researched area.

At its most basic, a joint is simply something that is formed where two or more bones connect. Horses specifically have three types of joints: fibrous, cartilaginous, and synovial.

In terms of joints in a horse's leg, people are usually speaking about synovial joints, which are the most common and most movable. In July 2024, Veterinary Medicine and Science published "Distal forelimb radiographic bone morphology in Thoroughbred foals during the first 10 months post-partum. Part 1: Carpus."

"The risk of carpal injury in racehorses may be related to the morphology, yet whether carpal morphologies are set from birth or change through growth remains unclear," explained researchers. The object of the study was to quantify carpal bone changes through growth.

A total of 20 privately owned Thoroughbred foals were used for the study. They were all born between January 2022 and May 2023, and they were radiographed bimonthly from birth to 10 months of age. In all, 15 individual and 11 relative angular carpal parameters were measured.

Researchers found that six individual carpal parameters changed with age (radiocarpal joint [RCJ], Prx.dor. radial carpal [Cr], Prx.Cu, Dis.dor. third carpal [C3], Dis.pal.C3 and Dis.pal. intermediate carpal), and one was influenced by side, that is higher in the left carpus (Dis.pal.Cr). Additionally, they concluded that seven relative parameters changed with age, and one relative parameter was influenced by side, that is higher in the left (Ra.met-RCJ). However, they found that sex did not influence any of the carpal parameters, nor did the combined effect of age, side of the limb, and sex.

"Specific individual and relative angular carpal parameters changed significantly over time and some differed between the left and right limb, whereas other parameters did not change," said researchers. "The steeper carpal bone angles achieved proximally with the parameters that did change may improve stability by redirecting the load more medially through the carpus and the proximal and distal bones."

When it comes to racehorses, many are offered at auction while they are young and still growing. Understanding what that means in terms of potential joint changes is a valuable area of study.

In January 2024, the Equine Veterinary

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Studying weanlings and yearlings purchased at auction and who were raced as 2-year-olds, the Equine Veterinary Journal published in 2024: "Racing performance of juvenile Thoroughbreds with femoropatellar osteochondrosis at auction: A retrospective case-control study."

Journal published "Racing performance of juvenile Thoroughbreds with femoropatellar osteochondrosis at auction: A retrospective case-control study."

"Osteochondrosis dissecans (OCD) is common in the femoropatellar joint in Thoroughbred yearlings for sale at auction and there is no consensus on the effect on racing outcomes," explained researchers.

For the study, researchers aimed to describe femoropatellar OCD in juvenile Thoroughbreds and compare the racing performance of affected Thoroughbred horses to siblings and unaffected horses from the same sale. In order to do this, they designed a retrospective case-control study of juvenile horses born 2010-16.

In total, the radiographic reports from 27 Thoroughbred auctions of weanlings and yearlings were reviewed to identify femoropatellar OCD. The subsequent racing performances of those weanlings and yearlings were obtained from an online database. Additionally, racing careers were also compared between cases and sibling controls.

"Femoropatellar OCD was identified in 429 horses with North American race records," concluded researchers. "OCD was present on 519 lateral trochlear ridges and 54 medial trochlear ridges. There were more males in the case group (70%) than in the sibling control group

Systemic Enzymes & Probiotics for Joint Support

Texas Legacy Turns it Around with Systemic Enzymes

Texas Legacy, a six-year-old mare sired by Texas Wildcatter out of Diana's Legacy, has been racing since 2022 with 1 win in 17 starts. In June, she won two back-to-back races. One secret to her recent success? Systemic enzymes.

Lesser known than digestive enzymes, systemic enzymes are making waves in horse racing for their anti-inflammatory and recovery benefits. Enzymes are biocatalysts for every reaction in the body, and due to stress, injury and age, the body's natural production can slow down. Targeted enzyme supplements can support the body's natural processes.

Systemic enzymes promote a healthy response to inflammation—a true game-changer in a sport where nearly 70% of racehorses suffer from lameness due to inflammation.

"The enzymes have helped reduce swelling, increase circulation, and ease muscle soreness," says expert trainer John Snow, who uses Buddy Biotics Equine Muscle + Joint™, a potent systemic enzyme blend, with 10 of his horses. "The horses move better, and their joints feel stronger."

Snow's success inspired others, including his father, Canadian trainer Mel Snow, who now has six horses on Buddy Biotics Equine™, and Blaine Wright of BDW Racing, who uses it with 34 horses.

Horses on Buddy Biotics Equine™ have won 17 races and counting!

> **"Horses on Buddy Biotics Equine™ have won 17 races and counting!"**

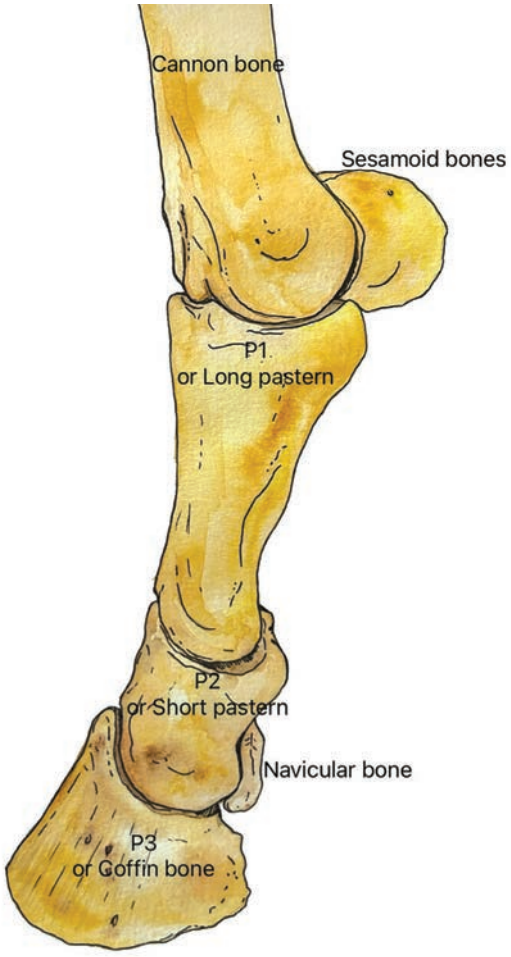
Mel Snow's horse, Borrowed Equity, broke a winless streak with a personal-best speed figure of 71 shortly after starting Buddy Biotics Equine™, followed by another win just a month later. Other horses in his stable are thriving too—Space captured a record speed figure of 90, while Cascade Billy notched back-to-back victories. With six horses now on Buddy Biotics, the elder Snow is ready for more wins.

Systemic enzymes are being embraced as a safe, natural alternative. As more trainers turn to these natural supplements, systemic enzymes are poised to become a staple in racehorse care, boosting performance, supporting recovery, and helping equine athletes stay strong and race-ready.

(47%). Case racing performance was compared to 1,042 sibling and 757 hip controls. There were significant but small decreases in racing metrics of cases and increases in males for years raced, total starts, starts for 2-5 years of age, total placings, and placings at 2-4 years of age. Analysis of specific lesion metrics revealed weak correlations for performance outcomes (positive and negative) resulting in an inability to draw firm conclusions. Femoropatellar OCD in juvenile Thoroughbreds for sale at auction decreases some racing outcomes."

In March 2024, the study "Computed Tomographic Evaluation of the Sagittal Ridge of the Third Metacarpal Bone in Young Thoroughbred Racehorses: A Longitudinal Study" was published by Animals (Basel) and looked into abnormalities in Thoroughbreds starting when they were yearlings.

"Pain in the metacarpophalangeal joint region is one of the most common causes of lameness in Thoroughbred racehorses," explained researchers. "Radiographic abnormalities in the sagittal ridge of the third metacarpal bone have been described and associated with mild-to-moderate joint effusion, lameness, and reduced sales prices."



In a horse's lower leg there are several key joints that play essential roles in movement and stability, including the pastern joint, which is located between the long pastern and short pastern bones

For the study, researchers wanted to describe the computed tomographic (CT) appearance of the sagittal ridge (SR) in racehorses and document the progression of these findings over three assessments. In all, 40 yearlings were included in the first examination. They were re-examined twice, approximately six months apart. The first re-examination included 31 horses and the second had 23 horses.

"A significant increase in attenuation of the sagittal ridge, reflecting an increase in bone mineral density due to adaptive remodeling, occurred in the first six months of racehorse training," researchers concluded. "In the study population of young Thoroughbred racehorses, the dorsal half of the sagittal ridge had greater hyperattenuation than the palmar half. Hypoattenuating lesions in the dorsal aspect of the sagittal ridge have a potential to decrease in size and to disappear during the first year of training. In this population of young Thoroughbred racehorses, these lesions were not associated with lameness."

Understandably, unhealthy joints are of concern for all involved, as they can lead to tragic outcomes. The Equine Veterinary Journal published "Prospective, longitudinal assessment of subchondral bone morphology and pathology using standing, cone-beam computed tomography in fetlock joints of 2-year-old Thoroughbred racehorses in their first year of training" in January 2024.

"Catastrophic injuries of the fetlock joints occur in Thoroughbred racehorses and are preceded by stress-induced bone injury," explained researchers. "Early detection of subchondral bone injury is essential to prevent irreversible damage or bone failure."

For this study, researchers wanted to investigate the use of standing, robotic cone-beam computed tomography (CBCT) for assessing longitudinal changes in subchondral bone morphology and pathology of the fetlock joints associated with race training in young Thoroughbreds. The observational cohort study used 41 2-year-old Thoroughbreds who were all recruited before the start of their race training.

Each horse had standing CBCT and radiographs of all four metacarpo-/metatarsophalangeal (MCP/MTP) joints done when they were newborn, 6 months old, and 1-year-old.

"Subchondral bone sclerosis increased significantly over time in the medial and lateral MC3/MT3 condyles and in the medial and lateral parasagittal grooves of MC3/MT3," researchers concluded. "The presence of subchondral bone pathology increased significantly over time in the medial and lateral palmar condyles of MC3/MT3, the lateral parasagittal groove, the medial dorsal condyle, and the medial and lateral ridges of P1.

"Standing CBCT is an efficient and effective screening tool for assessing subchondral bone morphology and identifying pathology of the fetlock joint in young Thoroughbred racehorses. CBCT may facilitate early detection of bone pathology allowing for timely intervention and prevention of more serious injuries."

Researchers did note that limitations of the study included attrition of horses

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Diagnosing problems, such as stress-induced bone injuries, before a horse reaches the races, is understandably an area of high interest to researchers

due to relocation, change in ownership, and retirement from racing. Additionally, husbandry, training regimens, and racing schedules were not controlled for the study.

Furthering understanding of what can cause catastrophic injury remains of importance to all involved with Thoroughbreds. In April 2024, the Equine Veterinary Journal published "Condylar fracture location is correlated to exercise history in Thoroughbred racehorses." A condylar fracture is when there is a break in a condyle, a rounded projection on a bone at a hinge joint.

"Condylar fractures are a major cause of morbidity and mortality in Thoroughbred racehorses," explained researchers. "Condylar fractures have a variety of fracture configurations that suggest there may be differences in etiopathogenesis." Etiopathogenesis refers to the cause and development of a disease or abnormal condition.

For the study, researchers aimed to determine if exercise history differs with condylar fracture location in a population of Thoroughbred racehorses. They conducted a retrospective analysis of clinical and exercise data. Specifically, the exercise history of Thoroughbred racehorses that had condylar fracture repair between January 2018 and February 2021 was compared between racehorses that had fractures located radiographically either within the parasagittal groove (PSG) or abaxial to the PSG (non-PSG).

Furthermore, researchers noted that the exercise history variables of both groups were each compared with a group-specific control population, each consisting of three control racehorses of equivalent age and sex matched to each affected racehorse by the last race or official timed work before fracture.

"Eighty-two horses with 84 fractures (45 PSG, 39 non-PSG) met inclusion criteria," explained researchers. "Age was not different between groups. Number of races, total race furlongs, and number of active days before fracture were greater; while mean number of layups was fewer in horses with non-PSG fracture. Horses with non-PSG fractures had more differences compared with their respective control group than horses with PSG fractures. Outcomes following fracture repair were not different between groups. Thoroughbred racehorses with non-PSG condylar fractures have a more extensive exercise history than horses with PSG condylar fractures, suggesting differences in fracture etiopathogenesis."

In August 2024, the Equine Veterinary Journal published a study titled "Comparison of radiography and computed tomography for identification of third metacarpal structural change and associated assessment of condylar stress fracture risk in Thoroughbred racehorses."

"Catastrophic injury has a low incidence but leads to the death of many Thoroughbred racehorses," said researchers. "The objective of this study is to determine sensitivity, specificity, and reliability for third metacarpal condylar stress fracture risk assessment from digital radiographs (DR) and standing computed tomography (sCT)."

For this controlled ex vivo experiment, a blinded set of metacarpophalangeal joint DR and sCT images were prepared from 31 Thoroughbreds. As the researchers explained, four observers evaluated the condyles and parasagittal grooves (PSG) of the third metacarpal bone for the extent of dense bone and lucency/fissure and assigned a risk assessment grade for condylar stress fracture based on imaging features. From there, sensitivity and specificity for detection of subchondral structural changes in the condyles and PSG, and for risk assessment for condylar stress fracture were determined by comparison with a reference assessment based on sCT and joint surface examination.

"Sensitivity for detection of structural change was lower than specificity for both imaging methods and all observers," researchers concluded. "For horses categorized as normal risk on reference assessment, observer assessment often agreed with the reference. Sensitivity for risk assessment was lower than specificity for all observers. For horses with a reference assessment of high risk of injury, observers generally underestimated risk. Diagnostic sensitivity of risk assessment

COADY MEDIA

EquiCoxib™ (firocoxib)
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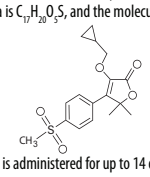
Non-steroidal anti-inflammatory drug for oral use in horses only.

CAUTION: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

Description: EquiCoxib™ (firocoxib) belongs to the coxib class of non-narcotic, non-steroidal anti-inflammatory drugs (NSAIDs). Firocoxib is a white crystalline compound described chemically as 3-(cyclopropylmethoxy)-4-(4-(methylsulfonyl)phenyl)-5,5-dimethylfuranone. The empirical formula is $C_{17}H_{20}O_5S$, and the molecular weight is 336.4. The structural formula is shown below:



Indications: EquiCoxib Oral Solution is administered for up to 14 days for the control of pain and inflammation associated with osteoarthritis in horses.

Dosage and Administration: Always provide the Client Information Sheet with the prescription. The recommended dosage of EquiCoxib (firocoxib) for oral administration in horses is 0.045 mg/lb (0.1 mg/kg) of body weight once daily for up to 14 days. In target animal safety studies, toxicity was seen at the recommended dose when the duration of treatment exceeded 30 days. **Only administer EquiCoxib with the provided dosing syringe.**

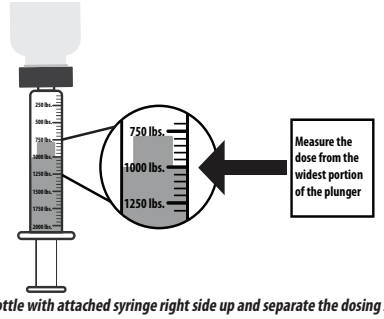
Each 1.25 mL volume will treat 250 pounds of body weight and each additional 0.25 mL volume corresponds to approximately a 50 lb weight increment. The provided dosing syringe is calibrated so that each line corresponds to a 50 lb weight increment. To deliver the correct dose, round the horse's body weight up to the nearest 50 pound increment (if the body weight is an exact 50 pound increment, do not round up).

FOR ORAL USE ONLY. DO NOT INJECT EQUICOXIB.
ONLY ADMINISTER WITH THE PROVIDED DOSING SYRINGE.

EquiCoxib Oral Dosing Guide

Body Weight (lb)	Dose Volume (mL)
250	1.25 mL
500	2.5 mL
750	3.75 mL
1000	5 mL
1250	6.25 mL

1) Remove draw-off cap. Peel off the foil-backed seal from the bottle.
2) Screw the draw-off cap tightly back on the bottle.
3) Remove the seal from the top of the cap exposing the cross-hatched opening in the center of the silicone liner.
4) Remove the provided oral dosing syringe from its plastic cover.
5) Insert the oral dosing syringe firmly into the cross-hatched opening of the cap's silicone liner.
6) Turn the bottle with attached syringe upside down. Pull back the syringe plunger until the widest portion of the plunger lines up with the line that corresponds with the animal's weight. Each line between the 250 lb increments corresponds to 50 lb.



7) Turn the bottle with attached syringe right side up and separate the dosing syringe from the bottle.
8) Give orally according to your veterinarian's instructions. DO NOT INJECT.

Contraindications: Horses with hypersensitivity to firocoxib should not receive EquiCoxib Oral Solution.

Warnings:
For oral use in horses only. Do not use in horses intended for human consumption.

Human Warnings: Not for use in humans. Keep this and all medications out of the reach of children. Wash hands with soap and water after use. Consult a physician in case of accidental ingestion by humans.

Animal Safety: Clients should be advised to observe for signs of potential drug toxicity and be given a Client Information Sheet with each prescription.

Keep EquiCoxib in a secure location out of reach of dogs, cats, and other animals to prevent accidental ingestion or overdose.

To report suspected adverse drug events, for technical assistance or to obtain a copy of the Safety Data Sheet (SDS), contact Aurora Pharmaceutical at 1-888-215-1256 or www.aurorapharmaceutical.com. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at www.fda.gov/reportanimalae.

Precautions:
Horses should undergo a thorough history and physical examination before initiation of NSAID therapy. Appropriate laboratory tests should be conducted to establish hematological and serum biochemical baseline data before and periodically during administration of any NSAID. Clients should be advised to observe for signs of potential drug toxicity and be given a Client Information Sheet with each prescription. See **Information for Owner or Person Treating Horse** section of this package insert.

Treatment with EquiCoxib should be terminated if signs such as inappetance, colic, abnormal feces, or lethargy are observed. As a class, cyclooxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal, and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Horses that have experienced adverse reactions from one NSAID may experience adverse reactions from another NSAID. Patients at greatest risk for adverse events are those that are dehydrated, on diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Concurrent administration of potentially nephrotoxic drugs should be carefully approached or avoided. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such anti-prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that has not been previously diagnosed. Since many NSAIDs possess the potential to produce gastrointestinal ulcerations and/or gastrointestinal perforation, concomitant use of EquiCoxib Oral Solution with other anti-inflammatory drugs, such as NSAIDs or corticosteroids, should be avoided. The concomitant use of protein bound drugs with EquiCoxib Oral Solution has not been studied in horses. The influence of concomitant drugs that may inhibit the metabolism of EquiCoxib Oral Solution has not been evaluated. Drug compatibility should be monitored in patients requiring adjunctive therapy. The safe use of EquiCoxib Oral Solution in horses less than one year in age, horses used for breeding, or in pregnant or lactating mares has not been evaluated. Consider appropriate washout times when switching from one NSAID to another NSAID or corticosteroid.

Adverse Reactions: In controlled field studies, 127 horses (ages 3 to 37 years) were evaluated for safety when given firocoxib at a dose of 0.045 mg/lb (0.1 mg/kg) orally once daily for up to 14 days. The following adverse reactions were observed. Horses may have experienced more than one of the observed adverse reactions during the study.

Adverse Reactions Seen in U.S. Field Studies Firocoxib was safely used concomitantly with other therapies, including vaccines, anthelmintics, and antibiotics, during the field studies. The safety data sheet (SDS) contains more detailed occupational safety information.

To report suspected adverse drug events, for technical assistance, or to obtain a copy of the Safety Data Sheet (SDS), contact Aurora Pharmaceutical Inc. at 1-888-215-1256 or www.aurorapharmaceutical.com. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS, or online at www.fda.gov/reportanimalae.

Adverse Reactions	Firocoxib n=127	Active Control n=125
Abdominal pain	0	1
Diarrhea	2	0
Excitation	1	0
Lethargy	0	1
Loose stool	1	0
Polydipsia	0	1
Urticaria	0	1

Information for Owner or Person Treating Horse: You should give a Client Information Sheet to the person treating the horse and advise them of the potential for adverse reactions and the clinical signs associated with NSAID intolerance. Adverse reactions may include erosions and ulcers of the gums, tongue, lips and face, weight loss, colic, diarrhea, or icterus. Serious adverse reactions associated with this drug class can occur without warning and, in some situations, result in death. Clients should be advised to discontinue NSAID therapy and contact their veterinarian immediately if any of these signs of intolerance are observed. The majority of patients with drug-related adverse reactions recover when the signs are recognized, drug administration is stopped, and veterinary care is initiated.

Clinical Pharmacokinetics / Pharmacodynamics: Pharmacokinetics: When administered as a 0.045 mg/lb (0.1 mg/kg) dose in oral paste to adult horses with normal access to roughage, feed, and water, the absolute bioavailability of firocoxib from oral paste is approximately 79%. Following oral administration, drug peak concentration (Cmax) of 0.08 mcg/mL can be reached at 4 hours (Tmax) post-dosing. However, in some animals, up to 12 hours may be needed before significant plasma concentrations are observed. Little drug amount distributes into blood cells. The major metabolism mechanism of firocoxib in the horse is decyclopropylmethylation followed by glucuronidation of that metabolite. Based upon radiolabel studies, the majority of firocoxib is eliminated in the urine as the decyclopropylmethylated metabolite. Despite a high rate of plasma protein binding (98%), firocoxib exhibits a large volume of distribution (mean Vd(ss) = 1652 mL/kg). The terminal elimination half-life ($T_{1/2}$) in plasma averages 30-40 hours after IV or oral paste dosing. Therefore, drug accumulation occurs with repeated dose administrations and steady state concentrations are achieved beyond 6-8 daily oral doses in the horse. Dose linearity exists from 1X-2X of 0.1 mg/kg/day.

Mode of action: EquiCoxib (firocoxib) is a cyclooxygenase-inhibiting (coxib) class, non-narcotic, non-steroidal anti-inflammatory drug (NSAID) with anti-inflammatory, analgesic and antipyretic activity[1] in animal models. Based on in vitro horse data, firocoxib is a selective inhibitor of prostaglandin biosynthesis through inhibition of inducible cyclooxygenase-2-isoenzyme (COX-2)[2]. Firocoxib selectivity for the constitutive isoenzyme, cyclooxygenase-1 (COX-1) is relatively low. However, the clinical significance of these in vitro selectivity findings has not been established.

Effectiveness: Two hundred fifty-three client-owned horses of various breeds, ranging in age from 2 to 37 years and weighing from 595 to 1638 lbs, were randomly administered firocoxib oral paste or an active control drug in multi-center field studies. Two hundred forty horses were evaluated for effectiveness and 252 horses were evaluated for safety. Horses were assessed for lameness, pain on manipulation, range of motion, joint swelling, and overall clinical improvement in a non-inferiority evaluation of firocoxib oral paste compared to an active control. At study's end, 84.4% of horses treated with firocoxib oral paste were judged improved on veterinarians' clinical assessment, and 73.8% were also rated improved by owners. Horses treated with firocoxib oral paste showed improvement in veterinarian-assessed lameness, pain on manipulation, range of motion, and joint swelling that was comparable to the active control.

Animal Safety: In a target animal safety study, firocoxib was administered orally to healthy adult horses (two male castrates and four females per group) at 0, 0.1, 0.3 and 0.5 mg firocoxib/kg body weight (1, 3 and 5X the recommended dose) for 30 days. Administration of firocoxib at 0.3 and 0.5 mg/kg body weight was associated with an increased incidence of oral ulcers as compared to the control group but, no oral ulcers were noted with 0.1 mg/kg. There were no other drug-related adverse findings in this study.

In another target animal safety study, firocoxib was administered orally to healthy adult horses (four males or male castrates and four females per group) at 0, 0.1, 0.3 and 0.5 mg firocoxib/kg body weight (1, 3 and 5X the recommended dose) for 42 days. Administration of firocoxib at 0.1, 0.3 and 0.5 mg/kg body weight was associated with delayed healing of pre-existing oral (lip, tongue, gingival) ulcers. In addition, the incidence of oral ulcers was higher in all treated groups as compared to the control group.

Clinical chemistry and coagulation abnormalities were seen in several horses in the 0.5 mg/kg (5X) group. One 5X male horse developed a mildly elevated BUN and creatinine over the course of the study, prolonged buccal mucosal bleeding time (BMBT), and a dilated pelvis of the right kidney. Another 5X male had a similar mild increase in creatinine during the study but did not have any gross abnormal findings. One female in the 5X group had a prolonged BMBT, bilateral tubulointerstitial nephropathy and bilateral papillary necrosis. Tubulointerstitial nephropathy occurred in one 3X female, two 3X male horses, and the 5X female horse discussed above with the prolonged BMBT. Papillary necrosis was present in one 1X male horse and the 5X female horse discussed above. Despite the gross and microscopic renal lesions, all of the horses were clinically healthy and had normal hematology, clinical chemistry and urinalysis values.

In another target animal safety study, firocoxib was administered orally to healthy adult horses (three females, two male castrates and one male per group) at 0, 0.25 mg/kg, 0.75 mg/kg and 1.25 mg/kg (2.5, 7.5 and 12.5X the recommended dose of 0.1 mg/kg) for 92 days. An additional group of three females, two male castrates and one male per group, was dosed at 1.25 mg/kg for 92 days but was monitored until Days 147-149. There were treatment-related adverse events in all treated groups. These consisted of ulcers of the lips, gingiva and tongue and erosions of the skin of the mandible and head. Gross and microscopic lesions of the kidneys consistent with tubulointerstitial nephropathy were seen in all treated groups. Papillary necrosis was seen in the 2.5X and 12.5X groups. In addition, several 12.5X horses had elevated liver enzymes (GGT, SDH, AST and ALT). One 2.5X horse had increased urine GGT and urine protein levels which was due to renal hemorrhage and nephropathy. Gastric ulcers of the margo plicatus and glandular area were more prevalent in the 2.5X and 7.5X groups, but not seen in the 12.5X group. The group of horses that were monitored until Days 147-149 showed partial to full recovery from oral and skin ulcers, but no recovery from tubulointerstitial nephropathy.

Storage Information: Store below 77°F (25°C). Brief excursions up to 104°F (40°C) are permitted.

How Supplied: EquiCoxib is available in bottles containing 90 mL of EquiCoxib Oral Solution, sufficient to treat a 1250 lb. horse for up to 14 days.

References: [1]McCann ME, Rickes EL, Hora DF, Cunningham PK et al. In vitro effects and in vivo efficacy of a novel cyclooxygenase-2 inhibitor in cats with lipopolysaccharide-induced pyrexia. Am J Vet Res. 2005 Jul;66 (7):1278-84

[2]McCann ME, Anderson DR, Brideau C et al. In vitro activity and in vivo efficacy of a novel COX-2 inhibitor in the horse. Proceedings of the Academy of Veterinary Internal Medicine. 2002. Abstract 114, p.789.

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IN 55-1756 12/2023

was improved with sCT imaging, particularly for horses categorized as having elevated risk of injury from the reference assessment. Assessment repeatability and reliability was better with sCT than DR.

"Risk assessment through screening with diagnostic imaging is a promising approach to improve injury prevention in racing Thoroughbreds. Knowledge of sensitivity and specificity of fetlock lesion detection provides the critical guidance needed to improve racehorse screening programs. We found improved detection of MC3 subchondral structural change and risk assessment for condylar stress fracture with sCT ex vivo."

Besides fractures, another concern for Thoroughbreds is osteoarthritis. In March 2024 Animals (Basel) published "Infrared Spectroscopy of Synovial Fluid Shows Accuracy as an Early Biomarker in an Equine Model of Traumatic Osteoarthritis."

"Osteoarthritis is a leading cause of lameness and joint disease in horses," explained researchers. "A simple, economical, and accurate diagnostic test is required for routine screening for OA. This study aimed to evaluate infrared (IR)-based synovial fluid biomarker profiling to detect early changes associated with a traumatically induced model of equine carpal osteoarthritis (OA)."

For the study, unilateral carpal OA was induced arthroscopically in nine of 17 healthy Thoroughbred fillies, while the others served as sham-operated controls. The median age of both groups was 2 years, and synovial fluid (SF) was obtained before surgical induction of OA and weekly until Day 63.

"Following spectral pre-processing, predictive models using random forests were used to differentiate OA, sham, and control samples. The accuracy for distinguishing between OA and any other joint group was 80%. The classification accuracy by sampling day was 87%. For paired classification tasks, the accuracies by joint were 75% for OA vs. OA Control and 70% for OA vs. Sham. The accuracy for separating horses by group (OA vs. Sham) was 68%. In conclusion, SF IR spectroscopy accurately discriminates traumatically induced OA joints from controls."

Joint health remains a highly studied area of research and for good reason. Understanding what is problematic helps those dealing with issues address problem areas as soon as possible. BH