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Equine Joint Therapies - What You Need To Know

The ultimate goal of treatment is to preserve the internal structures. Thus, it's ideal to intervene when the joint first becomes inflamed, rather than once it reaches a diseased state.

If your horse's joints are starting to be painful, chances are you have a lot of questions: Will he return to soundness? Should I scratch from the next show? How much time will he need off? Then you do a quick Google search to see what types of treatment your veterinarian might prescribe, and things get even less clear: Will he use a systemic product or a topical one? Intra-articular injections? Or maybe physical therapy? Which option is best?

While navigating equine joint therapy options can be challenging, it's easier when you have a good understanding of each treatment and how it works. To that end, Laurie Goodrich, DVM, PhD, Dipl. ACVS, reviewed some common joint treatments for horses at the 2015 World Equine Veterinary Association Congress, held Oct. 9-10 in Guadalajara, Mexico. Goodrich is an associate professor of surgery and lameness in the Department of Clinical Sciences and the Orthopaedic Research Center at Colorado State University's College of Veterinary Medicine & Biomedical Sciences, in Fort Collins.

She did not discuss stem cells, platelet-rich plasma, or IRAP (interleukin-1 receptor antagonist protein), as she covered these in another lecture. However, veterinarians can use these regenerative modalities, in some cases, to help treat equine joints.

The goals of joint therapy center around removing the inciting cause, reducing inflammation, and getting the best possible outcome for the horse. Goodrich said the ultimate goal is to preserve the internal structures, such as cartilage, which isn't possible once the horse develops progressive joint disease or severe osteoarthritis. Thus, it's ideal to intervene when the joint is just inflamed, rather than once it reaches a diseased state.

Goodrich said there are disease- and symptom-modifying treatments that can help. Symptom-modifying treatments can help the horse feel more comfortable and move easier, but they do not stop the disease from progressing. Disease-modifying treatments, on the other hand, can slow, stop, or even reverse the degenerative process.

So what options do veterinarians have to choose from? Goodrich reviewed the following:

Corticosteroids—A mainstay in treating equine joint inflammation, this group of medications has evolved substantially over time, she said. There are several corticosteroids to choose from, including:

- ***Triamcinolone***, which can reduce lameness and increase range of motion, Goodrich said. Researchers determined that it can help protect cartilage and has both symptom- and disease-modifying effects. She cautioned that it can induce laminitis in some horses, and new discussions are underway about dosages. However, she also noted that study results revealed that, of more than 2,000 horses that received 52-40 mg of triamcinolone, just three developed laminitis, two to three months following administration. In other words, the risk for laminitis development appears to be fairly low. Still, veterinarians should use caution when administering any corticosteroid to a horse with a history of or at risk for developing laminitis.
- Researchers found that ***betamethasone*** had no detrimental effects on cartilage or subchondral bone when administered in the joint. Thus, it appears safe to administer to horses whose cartilage has not been damaged.
- ***Methylprednisolone***, on the other hand, does appear to have deleterious effects on cartilage—even at low doses—despite the fact that it can help reduce inflammation, Goodrich said. She advised against using methylprednisolone in horses if their cartilage is still in good shape.

The bottom line, she relayed, is that it's important to remember that not all steroids are created equal. And, it's crucial to take steroid administration seriously and administer them only when needed. Goodrich said that in one study of 1,911 horses, 392 of which had received intra-articular corticosteroids, researchers found a positive association between corticosteroid administration and subsequent musculoskeletal injury.

She also touched on using intra-articular anesthesia and corticosteroids together to diagnose and treat conditions simultaneously. She explained that the combination of methylprednisolone and lidocaine yielded poor results in a study in humans, and she cautioned against using bupivacaine in joints, as it can be toxic in this application. However, she said that, administered together, triamcinolone and mepivacaine did not hinder each other's method of action and reduced lameness in horses.

Hyaluronic Acid (HA)—Another commonly used treatment, HA is naturally found in horses' synovial fluid and is used to decrease synovitis, a less-damaging type of joint inflammation.

Goodrich said there is some debate over whether high or low molecular weight HA is more beneficial for use in horses' joints. Essentially, high molecular weight HA has larger molecule sizes than low molecular weight products.

Goodrich said the commercially available intravenous HA product (marketed as Legend) is effective at decreasing joint inflammation and is a good prophylactic (preventive) and maintenance choice for many horses.

Corticosteroids + HA—If both corticosteroids and HA can be effective in improving horses' joint function, than administering them together must achieve great results, right? Not necessarily.

Goodrich said there's not much research to indicate that a combination of the two treatments is better than one alone. In fact, she added, one study revealed better results when triamcinolone was used alone versus when it was administered with HA. Another study showed that HA administered with methylprednisolone did not decrease the corticosteroids detrimental effects on cartilage.

Polysulfated glycosaminoglycan (PSGAG)—Goodrich said early literature showed that intra-articular PSGAG (marketed as Adequan) consistently helped reduce synovial effusion (swelling), vascularity, and joint capsule fibrosis(scarring). But, she noted, the administration route carries the risk of joint infection, although that risk is significantly reduced if veterinarians administer antibiotics such as amikacin simultaneously.

Thus, many practitioners opt to use the intramuscular formula, which has less risk of infection, but also could be less effective in improving joint problems, she said.

Polyglycan—Polyglycan is made up of hyaluronic acid, chondroitin sulfate, and N-acetyl-D-glucosamine. It's currently labeled for intra-articular post-surgical lavage and replacement of synovial fluid, but is not commonly marketed or approved as a drug in the United States, Goodrich said. Still, many practitioners have found this "device" useful to reduce lameness and increase bone proliferation in ailing joints, she said. Polyglycan appears most useful in horses that still have full-thickness cartilage, she added.

Goodrich said veterinarians should not administer polyglycan intravenously, as it could have detrimental effects which are still being researched. Rather, she recommended giving the drug intra-articularly, where the effects were very positive.

Pentosan polysulfate—This product (marketed as Pentosan), which Goodrich said has been used in Australia and New Zealand for the past 20 years, is similar to HA and has good anecdotal reports backing its use. It is thought to decrease cartilage fibrillation (the softening and grooving of joint surface cartilage) and improve cartilage histology, making it a very promising treatment option, she said.

Goodrich said one unpublished study found that horses receiving pentosan polysulfate appeared to respond to treatment faster than those receiving PSGAG, and the latter group regressed to their pre-treatment state sooner than those receiving pentosan polysulfate. Still, more studies are needed to confirm its effects, she said.

Diclofenac sodium—Goodrich said she prefers to use this topical non-steroidal anti-inflammatory (marketed as Surpass) as a ground to other internal joint treatments.

Firocoxib—This relatively new non-steroidal (marketed for horses as Equioxx) has a similar pain-reducing effect as phenylbutazone (bute), Goodrich said. However, it is less likely to cause gastric ulcers, a common side effect of bute.

Non-steroidal anti-inflammatory drugs target the enzyme cyclooxygenase (COX), which is responsible for the body's inflammatory responses. There are two "subtypes" of COX: COX-2 is primarily associated with inflammation, while COX-1 is associated with normal day-to-day processes such as protecting the gastric mucosa (lining). While traditional NSAIDs, like Bute, block both COX-1 and -2, some newer ones—such as firocoxib—are designed to target the inflammation associated with COX-2 while sparing the COX-1 enzymes.

Take-Home Message
Yes, there are equine joint treatments galore. Your veterinarian can help determine which option is best suited for your horse's situation to give him the best chance of returning to soundness or remaining sound.