

Equine Joint Injections

Joint injections can help veterinarians diagnose lameness or medicate a horse's painful joint

Overview

Intra-articular injections are performed to sterilely deliver one or more pharmaceutical drugs or other products directly into the joint. The two most common reasons for a veterinarian to perform a joint injection are to anesthetize or “block” a joint during a lameness examination or to medicate a joint to help keep the horse's joints pain-free.^{1,2}

In addition to traditional anesthetics, antibiotics, and steroids, emerging therapies such as interleukin-1 receptor agonist protein (IRAP) therapy are being used increasingly for horses with joint diseases such as synovitis and osteoarthritis.

Joint injury, joint disease secondary to trauma or injury, and osteoarthritis (OA) are major causes of attrition and loss of function in horses. Treatment of these conditions is an important component of maintaining the overall health and mobility in pleasure and athletic horses, and joint injections play an important role in managing joint health in conjunction with other therapies such as nutritional supplementation, weight management, and non-steroidal anti-inflammatory drugs.³

Intra-Articular Injections

Regardless of the product being administered, the process of delivering intra-articular medications is essentially the same.^{1,4} The joint is cleaned with an antiseptic soap for approximately 10 minutes. The soap is rinsed off with isopropyl alcohol. Clipping the horse's hair is often not necessary. The veterinarian then injects the desired drugs or products into the clean joint using sterile needles and syringes while wearing sterile gloves. Well-behaved horses might only require a twitch to ensure sufficient restraint, but less-well-mannered horses will require sedation.



Joint injections are most commonly used for putting medication into a joint to help it heal or protect it, or to put anesthetic in a joint to block pain and determine lameness.

Blocking Joints

Joint blocks using local anesthetics, such as lidocaine or carbocaine, are important tools during lameness exams to confirm the anatomic structure(s) involved. For example, 15 to 20 minutes after the local anesthetic is injected in the joint, the horse can be reassessed to determine if its lameness has changed.

If the horse has improved and is more sound after blocking, then the anesthetized joint is likely contributing to the lameness. Advanced diagnostics and/or treatment then can be undertaken.

Medicating Joints

Corticosteroids, hyaluronic acid, and polysulfated glycosaminoglycan (PSGAG) antibiotics are the most frequently administered intra-articular medications. Each of

these drugs has a different mechanism of action, but they are all used to control inflammation (i.e., pain and swelling) and improve mobility.

The decision of which product or combination of products is best will depend on the joint, the horse's function, your veterinarian's preference, and timing before competition. A small amount of antibiotic is sometimes injected along with the above-described medications for infection control purposes.

Emerging Joint Therapies

IRAP (autologous conditioned serum, ACS) therapy has become an increasingly popular therapy for horses with osteoarthritis or other inflammatory conditions.^{3,5} Interleukin-1 (IL-1) is an inflammatory cytokine (mediator) that stimulates inflammation after binding to the IL-1 receptor.

IRAP is a protein that competes with IL-1 to bind to the IL-1 receptor without causing inflammation. The IRAP protein is produced by incubating a small volume of the horse's blood with the manufacturer supplied syringe containing glass beads that are coated with a substance designed to promote the production of anti-inflammatory molecules (IRAP and others). The sample is processed (i.e., filtered, assessed for sterility, and frozen) and divided into individual doses that are injected into the affected joint.

Alternatively, stem cell therapy and platelet-rich plasma (PRP) can also be administered intra-articularly. Stem cells are the body's “master cells,” which can, upon stimulation, turn into virtually any cell type found in the body.

Stem cells can be harvested from either bone marrow or adipose (fat) tissue, processed, and reintroduced into the body at the injury site.³ PRP, also considered a regenerative therapy, is a fraction of whole blood collected from a horse and processed

ANNE M. EBERHARDT

to produce a blood product containing a concentrated source of platelets—microscopic storage facilities for a variety of growth factors that facilitate healing.

Presently, stem cell therapy and PRP are commercially available, but they are primarily used for tendon and ligament injuries. Only recently has the use of stem cell therapy and PRP been extended to include joint diseases, and their efficacy as intra-articular therapies remains unclear.

One of the most attractive features of IRAP, stem cells, and PRP is that they are all derived from the horse's own body (e.g., fat tissue, bone marrow, blood) and are essentially void of adverse events subsequent to administration.

Things to Consider

The potential benefits of a joint injection are far-reaching; but, medicating joints can be expensive, might not result in the desired effect, and can potentially result in a post-injection complication such as joint flare, joint infection, and irreversible cartilage degeneration.

Joint flares and infections are important sources of morbidity (illness) and



A detailed view of a fetlock (metacarpal/metatarsophalangeal) joint injection.

economic loss, but they are rare. It is currently estimated that only 0.1-0.5% of injected horses suffer a flare or infection. Any horse with pain or swelling following

any joint injection should be re-examined by a veterinarian as soon as possible.

Articular cartilage degeneration does not occur with the corticosteroids triamcinolone acetonide or betamethasone esters. Steroid-induced laminitis is typically not a concern in modern veterinary practice due to increased knowledge surrounding the potential detriments.

Similarly, steroid-induced articular chondropathy (cartilage degeneration) is less of a problem today than in the past because intra-articular steroids can be used judiciously, often in combination with hyaluronic acid, to maximize the athletic career of the horse in question. ◀

REFERENCES

1. Oke, S. Pros and cons of joint injections. TheHorse.com/12796.
2. Wenzholz, S.D. Joint injections: A good idea? TheHorse.com/5160.
3. Oke, S. Managing joint health. TheHorse.com/pdf/january2009/joint-health.pdf. Pfizer Animal Health. Intra-Articular Joint Injections In Horses <http://cal.vet.upenn.edu/projects/eqjoint/index.html>.
4. Product press release. TheHorse.com/12289.

Authored by Stacey Oke, DVM, MSc;
reviewed by Fairfield T. Bain, DVM, Dipl. ACVIM, ACVP, ACVECC.

DR. ROBIN PETERSON ILLUSTRATION

The first oral supplement specifically designed for use following joint injection & post-arthroscopic procedures.

TANDEM ORAL

Hyaluronic Acid + Chondroitin sulfates C4 & C6 + N-acetyl-D-glucosamine
Nutritional Supplement for Horses

Oral support for the maintenance of joint health:

- In conjunction with Polyglycan Sterile Solution
- For young and developing horses
- For all horses in training or competition
- For older horses with arthritic conditions

Redefining Joint TherapySM

Supports:

- Viscoelastic properties of synovial fluid
- Structural lubrication of articulating joints
- Reduced enzymatic degradation in traumatized joints
- Post-injection & post-surgical arthroscopic joint procedure recovery

Why choose TANDEM ORAL?

- ✓ **Bioavailable hyaluronic acid**
Specifically selected over all other commonly used oral H.A. sources, based on successful absorption trial results. Important in promoting viscoelasticity of the synovial fluid.
- ✓ **N-acetyl-D-glucosamine**
Provides the fuel for synoviocytes and chondrocytes that are key to normal synthesis of endogenous hyaluronic acid and chondroitin sulfate.
- ✓ **1:1 Chondroitin C4 & C6**
Mimics the normal ratio found in synovial fluid. C4 is important in the young & growing horse's cartilage development and to help guard against enzymatic degradation, especially in traumatized joints.

C6, important as cartilage becomes more structurally sound, supports formation of the matrix and is vital for healthy joint cartilage function.

See
your Vet!



UP TO
120
DAY
SUPPLY

ARTHRODYNAMICTM
TECHNOLOGIES, INC.

www.arthrodynamic.com
1-800-943-1149

From the makers of
POLYGLYCAN
Sterile Solution