



Medications for Degenerative Arthritis



Degenerative joint disease is the number one cause of chronic pain in dogs and cats. This condition results when a joint endures long-term, repeated stress due to an injury or the natural development of a poorly conformed joint. Surgery is available to help in some situations, but most of the time the degeneration cannot be reversed. Treatment focuses on preventing progression of damage. Many products are available; some are best combined with others and some cannot be combined. Arthritis pain is best addressed by a multi-modal approach, which combines several approaches to yield better results than any single therapy on its own. In this discussion, we focus on medications.

Medications for arthritis pain are divided into two groups: slow-acting (non-steroidal anti-inflammatory) and fast-acting (cortisone-type). The following sections introduce and explain these different types of medications.

Slow-Acting Medications

Slow-acting drugs for arthritis ultimately improve joint function and help with pain relief, but they require a time frame of weeks to months to exert their effects. They may have disease-modifying properties such that their benefit continues even after their use has been stopped. These products are typically nutraceuticals (nutritional supplements that have medicinal properties). Most arthritis patients will benefit from their use, and they are considered a basic starting level for joint care.

- Because the FDA classifies these medications as nutraceuticals rather than as drugs, the normal rigorous testing for efficacy is not required. As a result, the optimal dosage has not been determined and almost every

product has a different dose recommendation. Some experimentation of doses with your pet may be necessary.

- These products are not likely to be helpful for spinal arthritis because the joint composition of an intervertebral disc (the joint of the spine) is different than those of other bones.
- These products may be used in both dogs and cats.
- These products often complement treatment with anti-inflammatory medications.

Glucosamine and chondroitin sulfate

These products are cartilage components harvested primarily from sea mollusks; cartilage is made up of chondroitin sulfate and glucosamine metabolites, among other things. By taking these components orally (via pills in the mouth), the patient is able to have plenty of the necessary building blocks needed to repair damaged cartilage. It is also believed that these products have some anti-inflammatory properties aside from their structural uses. Unlike anti-inflammatory medications described later in this article, these products do not produce rapid results; they must be taken for one to two months to exert significant effects. There are numerous products available that combine glucosamine, chondroitin sulfate, assorted vitamins, creatine (a muscle-building block), omega-3 fatty acids, and more. Many senior or joint-supporting diets are fortified with glucosamine.

Omega-3 fatty acids

Certain dietary fats, especially those found in cold water fish oils, have been found to have anti-inflammatory properties. While this finding has primarily been used in the treatment of itchy skin, many arthritic dogs and cats have also benefited from supplementation. It usually takes a month or more for these products to show effectiveness. Effects are usually not dramatic, but omega-3s have still shown to be helpful.

It should be noted that flaxseed oil is converted to omega-3 fatty acids in the human body; this conversion does not happen as readily in canines and felines. Only approximately 10% of flaxseed oil is converted in dogs and cats. For this reason, flaxseed oil is not recommended as an additive to pet food and fish oil pills are considered to be the best choice of supplementation.

Many brands of fish oils are available and our veterinarian can prescribe a type for your pet. The appropriate dosage amount is somewhat controversial, but the ratio of EPA:DHA should be 3:2.

MSM

Methyl sulfonyl methane (MSM) is another nutraceutical anti-inflammatory agent. MSM is in most plant and animal tissues and is a natural source of sulfur. Most MSM available for commercial sale is derived from dimethyl sulfoxide (DMSO), a solvent that comes in medical and industrial grades.

Sulfur sources are helpful for treating arthritis because a type of sulfate called glycosaminoglycans enable cartilage to soak up water and act as a cushion for articulating bones. MSM is meant to provide nutritional building blocks for cartilage repair. Beyond this, MSM appears to have anti-inflammatory properties and may act as an antioxidant.

Antioxidants and free radical scavengers

Free radicals are harmful biochemicals that can attack our bodies from external sources (eg. pollution, sunlight, foods, etc.). We also make free radicals as by-products of oxygen use. These molecules are highly reactive and attack our structural proteins, as well as cause the production of assorted inflammatory proteins. One prominent theory of aging blames free radical damage to our brain, skin, joints, etc. as the foundation of debilitation associated with increased age. Normally, our bodies use natural antioxidants such as those found in foods to inactivate free radicals; supplementing antioxidants may slow age-related damage.

Readily available antioxidants include vitamin C, vitamin E, SAME and superoxide dismutase (SOD). Oxtrin and Comfort Tabs contain SOD and are marketed for joint support. Denosyl contains SAME and is marketed for animals primarily because of its effects on the liver and its joint-related effects in humans.

Fast-Acting Medications

Non-steroidal anti-inflammatory drugs

Most pets with arthritis pain need relief immediately, not in a month or so when cartilage building blocks and nutritional anti-inflammatories have had the

chance to exert effects. A quicker mode of therapy for these situations is non-steroidal anti-inflammatory drugs (NSAIDs).

NSAIDs act quickly by suppressing the inflammatory biochemicals that cause arthritis pain and cartilage damage. None of these medications can safely be combined with one another. Human NSAIDs tend to be toxic to pets, especially cats. While aspirin has some potential use in treating joint pain, safer medications developed specifically for pet use have become the standard for joint pain management. Never use a human medication of any kind on a pet without specific instructions on how to do so from our veterinarian.

The following NSAIDs are available for pets:

- Carprofen (Rimadyl, Vetprofen)
- Deracoxib (Deramaxx)
- Etodolac (EtoGesic)
- Meloxicam (Metacam)
- Tepoxalin (Zubrin)
- Firocoxib (Previcox)

These meds work by distinguishing between two prostaglandin-producing enzymes: cyclooxygenase I and cyclooxygenase II. Older drugs, such as aspirin, inhibited both forms of cyclooxygenase to curtail production of both inflammatory prostaglandins and “good” prostaglandins that promote kidney circulation and intestinal health. Developing drugs that can distinguish between these two enzymes has made it possible to develop safe anti-inflammatories for pets. It is still important to realize that classifying prostaglandins as “good” and “bad” is an oversimplification. Blood tests are required before using an NSAID to screen for any pre-existing kidney or liver conditions. Monitoring tests typically are recommended every six months for pets on NSAIDs.

If a pet develops a condition that is incompatible with NSAIDs, an analgesic (see below) would be a good alternative.

It is important to mention that cats are uniquely sensitive to all NSAIDs, and it is tricky to find one that is appropriate. Meloxicam is the only one appropriate for long-term feline use but requires some dose modification.

Corticosteroids

The corticosteroid hormones (prednisone, dexamethasone, etc.) inhibit all production of prostaglandins and leukatrienes. These hormones inhibit widespread inflammation but also wipe out some biochemical mediators that are biologically beneficial. This provides relief for most types of inflammation, including arthritis, itchy skin, immune-mediated disease and more. Side effects are more problematic with corticosteroids and include:

- immune suppression
- poor wound healing
- inability to grow hair
- excessive thirst
- muscle weakness
- predisposition towards the development of diabetes mellitus

Using these medications to control arthritis pain is not desirable long-term, and other medications are typically recommended first.

Analgesics that are not anti-inflammatory

Sometimes the combination of a cartilage-protecting agent and an anti-inflammatory drug is not adequate for pain control. There are several appropriate pain relievers that can be used in pets. These medications are strictly analgesics and do not change the inflammation in the joint.

- **Tramadol** is a narcotic pain reliever similar in many ways to codeine. The pill size makes it a bit tricky for feline use.
- **Amantadine** is an antiviral medication found to relieve chronic pain.
- **Gabapentin**, originally an anti-seizure drug, has been found to have effects on chronic pain, especially pain from pinched or inflamed nerves.

These medications can be used in both dogs and cats and are compatible with all other medications listed. A synergism occurs when these medications are combined with NSAIDS such that the combination of both drugs produces greater results than the single use of one drug or the other.

Adequan injections

This treatment does not fit readily into the classification system described above. Adequan is an injectable cartilage component called polysulfated glycosaminoglycan (mostly chondroitin sulfate), but instead of coming from sea

mollusks it is derived from the windpipe cartilage of cattle. Adequan has numerous beneficial effects for the arthritis patient including the inhibition of harmful enzymes involving joint cartilage destruction, stimulation of cartilage repair, and increasing joint lubrication. These effects go far beyond simply providing plenty of chondroitin sulfate as a building block for damaged cartilage.

- Adequan is given as an injection and is able to reach all joints, but it appears to have a special affinity for damaged joints.
- Adequan should be avoided in patients with blood clotting abnormalities as a matter of caution. In excessive doses, normal patients have demonstrated abnormal blood clotting.
- Adequan is best given as a series of injections, twice a week or so until a response is seen. Initial dosage should not exceed eight injections. After an effect is seen, Adequan injections are given on an “as needed” basis.
- Adequan is formally approved for use in dogs and horses but may also be used in cats with good results.
- Adequan may be combined with any of the other medications listed in this document.

Conclusion

The arthritic pet has a large menu of medications to select from and while proper medication is an important part of therapy, weight control and exercise should not be forgotten. Exercise is excellent physical therapy for the arthritic pet, as it is crucial to maintain as much muscle mass as possible to support the abnormal joint. Massage and gentle flexion/extension of the joint may also help. Treatment for joint disease is likely to involve a combination of medications in addition to physical activity.

For specific recommendations for your pet, feel free to contact HousePaws Home Veterinary Care at **(651) 283-7216** or **housepawsmn@gmail.com**.

Image:

http://www.smartpawdogagility.com/userImages/oa_joint_degrading_mobile.jpg