ARTHRITIS AND PAIN TREATMENTS

CHONDROPROTECTIVE AGENTS

Increase joint fluid production to lubricate the joints. Can, in very early stages, help to repair cartilage surfaces, thereby slowing down the rate of progression of the arthritis. Glucosamine, chondroitin, *perna canaliculus* (Green lipped mussels) products orally and Adequan injectable. Chewable tabs, capsules, liquids, injectable. Midpriced.
Side effects: generally little to none, oral products can rarely cause GI upset. There is some thought that they can inhibit clotting enough to go off them before surgeries.
Species: cats and dogs

SULFUR COMPOUNDS

Sulfur is part of the building blocks of cartilage. Products including MSM and SAMe provide them. Granules, tablets. Midpriced.
Side effects: generally little to none. GI upset, and possible inhibition of clotting (go off pre-surgery).
Species: cats and dogs

ANTIOXIDANTS

Inflammation produces "free radicals", which in turn cause more inflammation. Antioxidants clean up the "free radicals", thereby decreasing some of the inflammation. Vitamins C and E, alpha lipoic acid, many herbal products.
Side effects: none at recommended doses. Cheap except alpha lipoic acid.
Species: cats and dogs

ANTI-ARACHIDONIC ACID

Arachidonic acid is a fatty acid (many fatty acids in a chain is fat) that causes inflammation. Omega 6 oils (plant oils) break down to this fatty acid. Omega 3 oils (marine fish oils: menhaden, sardines, salmon used most often) use a different pathway to break down, thereby decreasing the amount of arachidonic acid and inflammation. An easy way to remember which is which: 6 is a bigger number and plant/ vegetable is a longer word , and 3 is a smaller number and fish is a shorter word. NOTE: while flax does have Omega 3 oils, they are not the same as fish oils and fish oils are better. But if the animal can't/ won't take the fish, flax is a viable alternative. Liquid or liquid capsules, soft granules. Cheap.
Side effects: fish breath, gas/ flatulence may be possible. Some animals refuse to eat it.
Species: cats and dogs

ANTI-LEUKOTRIENE

Leukotrienes are produced with inflammation and attract other white cells in the blood to come and clean up, but, like a party that got out of hand, sometimes huge numbers of white cells can make the inflammation worse. Anti-leukotrienes block the white cells from receiving the leukotrienes, so they "don't get the invitation to the party". Duralactin is made from the milk of hyper-immunized cows. Relatively cheap.

Side effects: generally none, unless allergic to cow's milk. Not enough lactose to bother lactose-intolerant pets. The dog version is currently only a chewable and many dogs will not eat it. The cat version is a capsule that can be "shoved" or opened into food (a liquid version may be coming).

Species: cats and dogs

The previous treatments are constant use medications. They require weeks to months to kick in and must be given consistently to maintain effectiveness. They are not acute pain relievers. They can reduce the need for the other pain relievers, and then reduce the side effects from the other drugs.

NSAIDS

Non-steroidal anti-inflammatory drugs (in humans, this would include aspirin, ibuprofen, Aleve, Celebrex and others). NOTE: do NOT give human ones without permission, as many are NOT tolerated by animals. Cyclooxygenase (COX) causes inflammation and these inhibit them. COX 1 is a protective enzyme for the gut, liver, and kidney, among other organs. Suppressing COX1 is the cause of many of the common side effects of nsaid drugs. COX 2 is the inflammation one. Currently, products are aimed for COX 2, but there is no 100% COX 2 specific medication available, consequently, when taking these drugs consistently, we will need to monitor your pet for liver/ kidney/ and gut disease by blood tests. Will work as an acute pain reliever as well as long term. Many times on long term usage, the dose can be lowered from the initial dose (then raised on a "bad" day if needed). Generally, blood work is done pre-medication, then after 2 weeks. If all is well, then every 6 months unless symptoms of side effects noted. Products include: Rimadyl, Zubrin, Metacam, Deramaxx, Etogesic and more are being brought onto the market. They come in tablets, chewable tablets, rapidly dissolving tablets (dissolve right in the mouth), and liquid. Relatively expensive.

Side effects: GI: nausea/ vomiting/ diarrhea, not eating, ulceration=bleeding (i.e. red blood in vomit, darker/ black/ tarry stool)
Liver: jaundice, vomiting, not eating, lethargy
Kidney: nausea/ vomiting, lethargy, drinking/ urinating extra, blood in urine
See drug insert for more information.

Species: currently only licensed for dogs, use in cats is off-label and must be

discussed with doctor, as cats are very intolerant of nsaids in general.

ACETAMINOPHEN

NOT IN CATS EVER EVER EVER==DEAD CAT

Acetaminophen is not considered an anti-inflammatory medication, but it does relieve pain. Due to it's effects on the liver, it is not a good choice for long term use in dogs. Generally, it is not used alone, but as a codeine/ acetaminophen combination. Midpriced.

Side effects: DEAD CAT !!!!! Do not use on cats!!!
Dogs: nausea/ vomiting/ diarrhea, lethargy, jaundice

Species: dogs only--DO NOT USE ON CATS

STEROIDS

Cortisone type drugs. Generalized immune suppression decreases inflammation, along with ability to fight off infections and tumors. The lower the dose, the less this is a problem. Rheumatoid arthritis is an autoimmune disease (a "self allergy",) that must be treated with immune suppression. Osteoarthritis (the normal "wear and tear" type) generally is best treated with other medications, but we do use cortisones in cats more because they don't tolerate so many of the other types. Will not relieve pain within hours, but will help within days. Available as pills and liquids and injections. Cheap.

Side effects: many : GI: nausea/ vomiting/ diarrhea, bloody colitis
kidney: drinking/ urinating more, aggravating existing kidney failure, allowing protein into urine
liver: enlargement, fatty infiltration, jaundice, lethargy
skin: thinned, blackheads, easily torn, doesn't heal well, hair loss
eyes: cataracts
mental: lethargy, out of it
immune system: suppression, leading to increased infections and decreased ability to fight tumor formation.

Species: dogs and cats

NARCOTICS

Narcotics block pain impulses from getting to the brain. The pain is there, the brain just doesn't know it. Controlled substances because of human abuse potential (not seen to be a problem in animals). Common ones are butorphanol (Torbutrol), buprenorphine (Buprenex), codeine, morphine, and fentanyl (Duragesic). Very helpful in acute pain (injuries and surgeries). In hospital, usually used as injectable forms intravenous, intramuscularly, subcutaneous, and epidural. Patch can be used in hospital or at home. Oral medications also available. Requires proper disposal (especially of patches and pills) to avoid accidental ingestion by other pets or children. Can be expensive long term.

Side effects: sedation, decreased breathing, decreased heart rate, constipation, dilated pupils (light intolerant) most common. Patches can irritate skin and, in cats, has been known to cause a fever. Some cats get extremely agitated.
Species: only butorphanol is currently licensed for dogs. All others are off label uses for cats and dogs.

LOCAL ANESTHETICS

Numb the nerve endings so pain is not felt. Essentially used only in hospital as they are injectable. Words that end in "caine" are usually local anesthetics (lidocaine, procaine, marcaine, bupivicaine, tetracaine). Used locally around nerve endings for 1 to 6 hours or used in epidurals for 12-24 hours. Not suitable for constant use.

NON-DRUG TREATMENTS

There are many complimentary treatments to medicine available. You will see the term CAM for complimentary and altnernative medicine. Complimentary is in addition to standard medications, and alternative is in place of. They include herbal and homeopathic medications as well as physical therapy, accupuncture, chiropractic, hydrotherapy, massage, heat/ cold treatments, electronic pulse therapy, magnets and even diet manipulation. Most of the time, they are in complimentary treatments, but there may be times when they are the only treatments (e.g.: if an animal is not tolerating medications). There are 2 clinics that we refer to for these, as they need special training to administer and in some cases, special equipment (treadmills, underwater treadmills, electronic pulse therapy). The doctors at these clinics will also probably teach you home therapies like massage, passive range of motion exercises, and heat/ cold treatments. All of us can discuss diet manipulation with you (for weight loss, to change the fatty acid ratios, to change the protein levels, etc). The 2 clinics we refer to are:
TOPS Veterinary Rehab with Dr. Laurie McCauley, and TheraPet at the Veterinary Specialty Clinic with Drs. Julie Mayer, Barbara Royal, and Kimberly Curtis. These clinics and doctors work together with us to formulate the best treatment protocol for your pet.

The goal of long term pain control is to have the least side effects with the best pain control. This can mean combining multiple forms of treatments, and with drugs, that can mean using lower doses than the drug as sole treatments, which greatly reduces side effects.