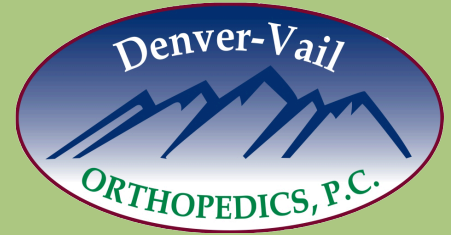


Joint Lubricants- Hyalgan



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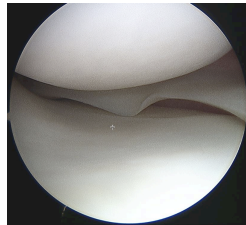
David Oster, M.D.

Hyaluronans

Hyaluronans are lubricants that can be injected into a joint to improve arthritic symptoms. These products are safe, effective and can be repeated.

The average age of the population is increasing in the United States. With this shift the incidence of knee arthritis is also increasing and in the year 2000 it was estimated that there were over 20 million people who suffered from arthritis. More than 66% of people with arthritis have some limitation in activities. Arthritis is the leading cause of work disability in the United States.

Covering the surface of the bone is articular cartilage it is smooth, white, glistening and protects the underlying bone against load. When arthritis occurs the articular cartilage begins to soften, fragment and then peel off the bony surface. When this happens bone will articulate against bone (bone on bone) and this will start to cause the symptoms. The symptoms characteristic of arthritis are swelling, stiffness, pain, crepitus (grinding), and warmth.



Treatment

There are many options to treat the symptoms associated with arthritis. Medications such as

acetaminophen (Tylenol) and non-steroidal anti-inflammatories can be used. These medications are effective in treating the pain associated with arthritis but need to be taken several times a day. Although these products are safe, like all medications, they are associated with side effects. Acetaminophen can cause damage to the liver in people with pre-existing liver disease or if one takes more than the recommended dose. It also can cause an elevation in the bleeding time in people that are on coumadin (blood thinner). Non-steroidal anti-inflammatories have many side effects such as gastrointestinal bleeding (ulcers), hypertension (high blood pressure), heart attack, stroke and kidney and liver damage. As with any medication it is best to consult with your doctor to determine if these medications are safe and the benefits outweigh the risks.

Hyaluronans

Hyaluronan is a proteoglycan which is found in all joints. These molecules help provide lubrication, nutrition and protection to the articular cartilage. In joints affected by arthritis, the concentration and size of the molecule is decreased. This has adverse effects on the biomechanical properties of joint fluid, making it less slippery and less able to resist load.



There are several products approved for use in the United States today. Initially these products were made from purified rooster combs. As technology has advanced, some HAs are now produced through bioengineering. The difference in the products available is their molecular weight (size), however, there is no data which has conclusively shown that there is an association between size and efficacy.

Efficacy

In a study on arthritic knees it was noted that if a knee is injected with HA (hyaluronan) the biomechanical properties will improve and correspondingly so will arthritic symptoms. This led to additional studies. A large US multi-center study evaluating over 500 people noted that the improvement in pain was better than with a placebo and as good as with Naprosyn. Other studies have noted similar findings.

The improvement with HA has been shown to have a duration of action of 3 to 12 months. I have had patients whose improvement has lasted for as long as 18 months. In comparison, steroids duration is 4 weeks.

Safety

HA is found in all joints and most of the products manufactured inject fluid that is similar to what is found in the joint. This makes the risk of side effects and reaction extremely small. The most significant side effect noted (22%)

in the large US study was injection site pain. These products have not been associated with any serious or life threatening adverse events.

Re-treatment

HA can be used in multiple treatment courses. In one study in which people received a series of injections every 6 months for 30 months it was noted that with each treatment course their pain improved. It was also noted that the risk of side effects did not increase over time. Other studies have noted similar results.

Experience

I have been using HA in my patients since it was introduced in the U.S. in 1997. The first product approved for use was Hyalgan. I currently use Hyalgan in the treatment of my patients, as it is the most extensively researched HA and has been used extensively around the world (over 30 million injections). It has been shown to be effective, safe and is approved for re-treatment.

The treatment course for Hyalgan is 3 or 5 weekly injections. I generally use 5 injections as this has been shown to have a longer duration of action. The injections are generally spaced a week apart (5 weeks total), however, a week or two can be missed without any effect on the results. It is also possible to shorten the injection intervals if necessary.

On the day of the injection the area just to the side of the kneecap

is cleaned with betadine (iodine soap). This area is then injected with a numbing medication and the knee joint is entered. Most people will feel the needle entering the skin and also feel when the needle passes through the joint capsule. Once in the joint, the syringe is removed from the needle (needle left in the joint) and the Hyalgan is connected and then injected. The injection of the HA should not cause pain.

After an injection, the knee is cleaned and a bandaid is applied. The day of the injection normal activities are allowed however vigorous activities should not be resumed until the following day.

FAQ's

Most patients will not note improvement until after the second or the third injection. If you happen to note improvement after the first in general that is a good sign and means that you will respond favorably.

The injections can be repeated. If one notes that they obtained greater than 3 months of improvement, then it is reasonable to repeat a course. Medicare will not approve or pay for the injections until it is 6 months from the last injection.

If you have questions about this or other knee disorders please call Dr. David Oster's office to make an appointment. (303) 214-4500 Also check the links page on my website.

