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A Systematic Way of Ordering Hyaluronic Acid for Knee Injections in the Primary Care Setting

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A Systematic Way of Ordering, And Studying the Effects of, Hyaluronic Acid for Knee Injections In the Primary Care Setting.

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Background

Osteoarthritis (OA) is one of the most common forms of arthritis affecting a significant population which often lead to long term disability.

Osteoarthritic joints contain synovial fluid that has become less concentrated and viscous over time which often leads to less absorption and protection. Synovial fluid also contains Hyaluronic Acid (HA).

Although the mechanism is unclear, HA seems to inhibit inflammation, decrease cartilage degradation, and promote cartilage development.

It has been proposed that HA injections may help preserve OA joints and act as an acceptable alternative treatment option versus corticosteroid injections, NSAIDs, or opioids.

Project Purpose, Design, and Hypothesis

Hyaluronic Acid (HA) Injections have been identified as a valuable treatment option; however, the ability to order and perform these injections at our family medicine clinic faces constraints due to cost/storage as well as staff and resident training requirements.

Due to the limited amount of injections performed annually, ordering the medication in bulk is not a viable option due to risk of waste and unavailable storage space.

Formulating a standardized protocol for performing the HA injections and providing additional training to staff and residents was required.

Patient acceptance of this treatment is also a challenge, seeing that less invasive options such as NSAIDs or opioid medications are sometimes preferred to control pain.

After systems were in place to order the medication, it was hypothesized that self-reported pain and symptoms would improve after receiving HA injections.

Methods

A pre-ordering system was implemented to obtain injections at a lower cost, avoid issues with storage, and prevent waste.

Patient selection was determined through both physical examinations and surveys.

Candidates who qualify must also receive insurance approval before the medication orders can be submitted.

The timing of the treatment must be coordinated between the staff and patient, concurrent with when the medication orders are submitted.

Staff and resident experience levels with HA injections were assessed throughout the study using surveys.

To address knowledge gaps in applying and using HA injections, a lecture on treatment options for OA highlighting HA injection as well as a wet lab were provided to residents.

Furthermore, codes for the medication and procedure were posted on the whiteboard in our resident office for convenience and easy-access.

After patients were identified, the Koos knee survey was administered prior to and after receiving HA injection as a measure to assess effectiveness of HA injections.

Surveys

Resident Project Survey

On a scale of 1-10, how comfortable are you with giving knee injections overall?

On a scale of 1-10, how comfortable are you with giving Hyaluronic Acid injections for the knee?

Have you given HA injections in the residency clinic?

Have you given HA injections in other clinics?

What barriers, if any, prevent you from using HA knee injections more?

If the process were more efficient, would you be more likely to utilize HA injections in the treatment of osteoarthritis?

Patient Surveys

- For our patient survey we used the standardized KOOS questionnaire for knee pain.
- This questionnaire focuses on Symptoms, Pain, Functions of daily living, Function of sports and recreational activities, and quality of life over the last week.
- Patients will fill this out prior to starting injections and then 4 weeks after completing the last injection.

Office Application

Worked with our office manager to obtain Supartz injection codes which are provided below:

- Medication Code: J7321
- Procedure Code: 20610
- Codes were provided for reference on a white board in our resident room.
- After insurance approval was obtained, the medication would be ordered as well as coordinating a time with both the staff and patient on when the injection series would start.
- Supartz injection series:
 - Weekly injections for 5 weeks. These injections can be repeated once yearly if beneficial.
 - Medication would be safely stored by the staff at our clinic.
- A pre-ordering system was implemented to obtain injections at a lower cost, avoid storage issues, and prevent waste.

Resident Training

The training course was provided by Dr. Czapp, PGY3 on October 18, 2017. The ability to order and perform injections were made available at the beginning of November 2017.

October Training:

8-9 am: Background and Treatment of OA

- Highlighted role for HA injections
- Discussed ordering process

9-10 am: Wet Lab

- Injections used had similar viscosity to resemble accurate injections.

Lectures were made available immediately via Dropbox for future reference and further review.

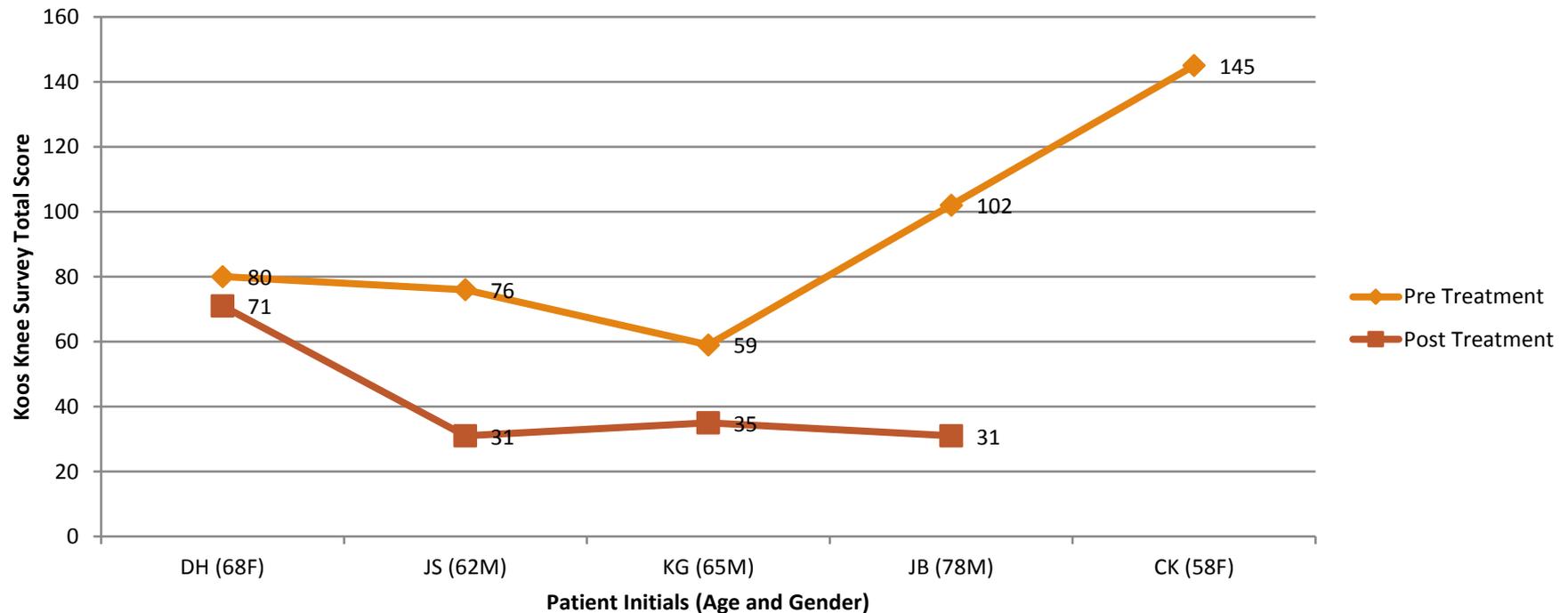
Results

Five patients received HA injections. Four of these patients completed both pre and post injection Koos Knee Surveys.

The mean score prior to injection was 79.25 with a standard deviation of 17.69 compared to a mean after injection of 42.00 with a standard deviation of 19.43.

The p value was 0.0697.

Koos Knee Survey Results Pre and Post Supartz Injection



Future Studies

Future goals will be to expand the number of patients in the study and continue to follow Koos Knee Surveys to evaluate the effectiveness of HA injections.

Associated with this goal will be to continue to educate residents on the indications and benefits of HA injections.