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ORIGINAL ARTICLE

Effectiveness and Safety of Hyaluronic Acid for Chronic Shoulder Pain

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ABSTRACT

Objective: To elucidate the functional outcomes of Hyaluronic acid for chronic painful shoulder with improvement of pain and functional scores

Study Design: Descriptive study

Place and Duration: Study was conducted in Dr.Sulaimanal HabibHospital, Riyadh, KSAfor period of one year June, 2019 to June, 2020.

Methodology: Ninety patients with Tendinitis and Rotator cuff syndrome were included in this study. Patients demographics including age, sex, body mass index and complete medical profile were recorded after taking written consent. Injection was given in an aseptic technique in subacromial space in controlled setting with 1 ml of lignocaine 1 percent, 2 ml 0.5 percentmarcaine and 4 ml of hyaluronic acid. The functional outcomes were assessed by Constant Murley scoring. Follow-up was taken at 6 weeks and at 12 weeks and patients satisfaction was recorded.

Results: Out of 90 patients 54 (60%) were males while 40% were females with mean age 49.8±10.283 years. Constant Murley score at baseline was 55.18±9.70 and at 6 weeks it was increased to 63.48±7.86 and at final follow-up it was 81.9±12.46. A significant improvement was found at 6 and 12 weeks with p-value <0.05. 5 (5.56%) patients showed complications. None of the patients had severe complication. 75 (83.33%) patients were satisfied.

Conclusion: It is concluded that Hyaluronic acid action replaces the traditional form of corticosteroid treatment of chronic shoulders pain associated with Rotator cuff tear and tendinitis.

Keyword: Tendinitis, Rotator cuff syndrome, Hyaluronic acid, Range of motion,

INTRODUCTION

12-16 % of the patient with musculoskeletal symptoms complains of shoulder pain [1,2] . While there are many accepted forms of treatment like analgesia, physical activity modification and steroid injections, proven efficacy of any is still controversial.

Hyaluronic acid and its derivatives have been reported to reduce pain in knee arthritis although few studies have shown long lasting results.[3,4]. Double blind randomized controlled trials in the first large multicenter recently showed that hyaluronic acid is also effective in chronic shoulder pain.[5] Hyaluronic acid can thus prove useful in the treatment of chronic shoulder pain, such as symptoms of rotating cuff, bursitis, tendinitis and even acromioclavicular arthritis. A new meta-analysis has confirmed its efficacy[6].

We also tested the effectiveness of hyaluronic acid in chronic shoulder pain with predominant symptoms of tendinitis.

MATERIAL AND METHODS

This descriptive study was conducted at Dr.Sulaiman al Habib bone joint and spine hospital for the period of one year from June, 2019 to June, 2020. Total 90 patients with Tendinitis and Rotator cuff syndrome were included in this study. Patients detail demographics including age, sex, body mass index, and complete medical profile were recorded after taking written consent. Patients with history of Full rotator cuff tear, active epicondylitis, carpal tunnel symptoms, any advanced OA changes, any patient who had more than one corticosteroid injection, suspicion of infection or inflammatory arthropathy, previous history of sensitivity to hyalaronate products like eggs, substance abuse, alcohol abuse or psychiatric conditions, and suspicion of litigation were excluded.

All patients have been investigated and a questionnaire has been completed. A subacromial injection with aseptic precautions (1% lignocaine with 2ml 0.5% marcaine and 4 ml hyaluronic acid) is given. With 12 physical therapy appointments, the patient was referred to the physical therapy department. At six weeks and twelve weeks, these patients were then followed up and eventually tested via a questionnaire.

The functional outcomes were assessed by Constant Murley scoring. Follow-up was taken at 6 weeks and at 12 weeks. Constant Murely score of more than 80 in our study was considered good functional outcomes. Pain was analysed by visual analogue scale (VAS).Patients satisfaction was also recorded.

All the data was analysed by SPSS 24.0. The T-test was used to assess whether statistically relevant variations occur with regard to overall treatment satisfaction. P was deemed a meaningful value of <0.05.

RESULTS

Out of 90 patients 54 (60%) were males while 40% were females with mean age 49.8±10.283 years. Mean BMI was 26.36±2.48 kg/m^2. Mean duration of symptoms was 1.86±0.42 years. (table 1)

Table No 1: Baseline Details of All the Included Patients

Variables	Frequency No.	%age
Mean age (yrs)	49.8±10.283	-
Mean BMI (kg/m)	26.36±2.48	-
Symptoms Duration (yrs)	1.86±0.42	-
Gender		
Male	54	60%
Female	36	40%

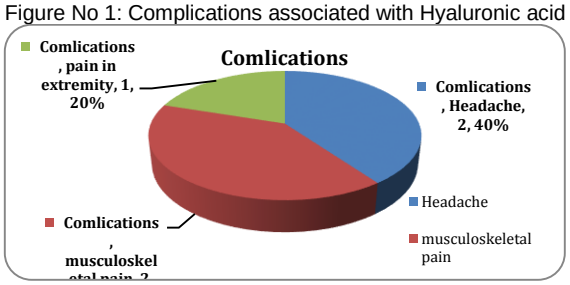
According to the Constant Murley score, at baseline it was 55.18±9.70 and at 6 weeks it was increased to 63.48±7.86 and at final follow-up it was 81.9±12.46. A significant improvement was found at 6 and 12 weeks with p-value <0.05. At baseline mean pain score was 7.28±1.44, at 6 weeks it was decreased to 4.33±1.28 and at 12 weeks mean pain score was 1.85±0.39, significant decrease was found at 6 and 12 weeks with p-value 0.001. (Table 2)

Table no 2: Functional outcomes at follow-ups

Variables	baseline	6 weeks	12 weeks	P-value
Constant Murley Score	55.18±9.70	63.48±7.86	81.9±12.46	<0.001
Pain	7.28±1.44	4.33±1.28	1.85±0.39	0.001

5 (5.56%) patients showed complications, among them 2 patients had headache, 2 patients had musculoskeletal pain and 1 patient had pain in extremity. None of the patients had severe complication. (Figure 1)

Figure No 1: Complications associated with Hyaluronic acid



8 (8.89%) patients were very satisfied, 75 (83.33%) patients were satisfiedand 7 (7.78%) were not satisfied.

DISCUSSION

Bursitis, tendinitis, rotator cuff tear, adhesive capsules, impingement syndrome, and degenerative joint disease may cause chronic shoulder pain [8]. Literature shows that Shoulder rotator cuff syndrome is one of the most commonly recorded causes of chronic shoulder pain (9.6 per cent)[9].

In most cases, the initial treatment involves activity changes and analgesic drugs. If this is not resolved or the initial presentation is serious enough, a physical therapy trial focussing on the clinical diagnosis is often considered. Combined steroid and local anaesthetic injection may be used either alone or as a physical therapy adjuvant. There is still insufficient proof that these steroid injections can effectively treat chronic shoulder pains. Non-chirurgical options for shoulder pain have hardly been supported by 20% of patients with chronic shoulder pain who have recovered fully following surgical procedure and current advice.

The use of hyaluronic acid injection for the treatment of shoulder pain associated with rotating cuff damage is limited. Meta-analysis of 9 randomized trials in randomizing (2120 participants) found that hyaluronic acid injection with local anesthesia would decrease symptoms of chronic shoulder pain. The treatment has been related to pain relief and functional score improvement [6].

Since AJ used hyaluronic acid (three sessions) in its study in 30 patients of chronic shoulder pain, and showed improved pain six months after treatment [10].

In the research carried out by Blaine T et al, in 26 weeks, intraarticular hyaluronic acid in the phosphate buffered saline solution was obtained in 660 patients with glenohumeral arthritis, rotating cuff tear and/or adhesive capsulitis. Hyaluronic injection patients had greater pain relief than control patients.[11].

Tagliafico A in his study of 93 patient of Rotator cuff arthropathy showed decreased symptoms after 4 month of follow-up of injection Hyaluronic acid[12].

We have shown 74 percent optimal shoulder score of over 80 after hyaluronic injecting ($p < 0.001$), based on functionality rather than pain alone. In addition, with less discomfort, better motion than the first visit, all other criteria are also satisfactory and reasonable power.

CONCLUSION

We concluded that Hyaluronic acid action replaces the traditional form of corticosteroid treatment of chronic shoulders pain associated with Rotator cuff tear and tendinitis. Hyaluronic acid shows good functional outcomes with fewer rate of complications. Additional randomized and polycenter trials with long follow-up are required to recommend and sustain this treatment.

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