ORIGINAL ARTICLE

Efficacy of Intra-Articular Steroid Injection in the Management of Primary Frozen Shoulder

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ABSTRACT

Aim: To assess the efficacy of Intra-articular steroid injections for the management of Primary Frozen Shoulder.

Method: 100 patients were selected from orthopedic OPD of Lahore General Hospital, Lahore. University of California Los-Angeles (UCLA) score was measured at 3rd, 6th and 12th week after treatment to determine the efficacy of intra articular steroid Injection as compared to pre treatment/ at the time of base line UCLA score.

Results: in our study 63% were males and 37% were female there mean age was 45.78±9.79years. At the time of base line the average UCLA score was 12.21±3.25, on the 1st visit it increased to 20.4±5.35 and on the final visit the average UCLA Score was 30.31±4.30, 82% patient's score were between the good-excellent ranges. UCLA Score of at each visit it was found statistically significantly higher than the score of previous visit (p-value <0.001).

Conclusion: intra-articular steroid injection is an effective treatment for the management of the primary frozen shoulder. We recommend this treatment as it is not only safe and cost effective but, also as effective as manipulation under anesthesia.

Keywords: Primary Frozen Shoulder, Intra-articular Steroid Injection, Efficacy, ULCA score

INTRODUCTION

Adhesive capsulitis, commonly known as frozen shoulder[1], is characterized by inflammation of synovial lining and articular shoulder capsule, leading to pain, stiffness and restricted mobility[2]. Frozen shoulders are divided into two groups; primary i.e., patients with Idiopathic (unknown cause) frozen shoulder and secondary i.e., patients with frozen shoulder due to trauma, inflammatory disorder or medical condition like diabetes.[3] Reported incidence of frozen shoulder in general population ranges from 3-5% but, in diabetic patients the incidence was as high as 20%[4]. Usually patients report one shoulder but it's evident that one in five adhesive capsulitis effects both shoulder[2].

Many treatments are suggested by orthopaedic professionals to the patients of Frozen Shoulder Syndrome (FSS). Some suggest different non-operative treatments like physical therapy, exercises, articular stretching and pulley therapy and some suggest physical therapy with medication.[5] Intensive physical therapies including passive stretching and manual mobilization have shown average results[6]. Similarly, low oral corticosteroid has potential hyperglycemic effect[7]. But, the combination of physical therapy and medication have shown better results. In a recent study a Chinese researcher reveals that using acupuncture and physical treatment has better result than single treatment for the remedy of frozen shoulder[8].

Surgical techniques like manipulation, distention arthrography and open surgical release have also been reported successful in treating frozen shoulder. But due to invasive and anesthetic procedure these techniques are avoided. Hazel man noted that patients, who received steroid injection with physical therapy, have shown better results than the ones treated with manipulation of the glenohumeral joint[9]. In a study, Non Steroidal Anti Inflammatory Drugs (NSAIDs) and Local Glucocorticoid injections were given to diabetic patients with frozen shoulder. After 12 weeks follow up both were found effective in diabetic patients in term of range of motion (ROM) and remedy of pain. No significant difference was present in diabetic patients.

In the previous studies controversial results were found. In this study we have tried to find the efficacy of intra articular steroid in management of primary frozen shoulder.

MATERIAL AND METHODS

It was an observational, follow up study. 100 cases were selected from Outpatient Department of Orthopedics, PGMI/Lahore General Hospital, who

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were non-diabetic, effected with primary frozen shoulder and their age ranges between 30-70 years. University of California Los-Angeles (UCLA) score was measured at 3rd, 6th and 12th week after treatment to determine the efficacy of intra articular steroid Injection as compared to pre treatment UCLA score.

RESULTS

Average age of patients was 45.78±9.79. 63% of the patients were male and 37% were females. The table 1 shows that the age was not statistically significantly different. Mean ULCA scores were significantly different in all visits. The post hoc tukey's test shows that the average scores were statistically significantly higher than the each previous visits (p-value <0.001)

Table 1; descriptive of study sample

Gender	**Male**	**Female**
Frequency	63(63%)	37(37%)
Age (mean±SD	46.92 ± 9.43	43.84±10.21
Range Min-Max	33-72	30-69

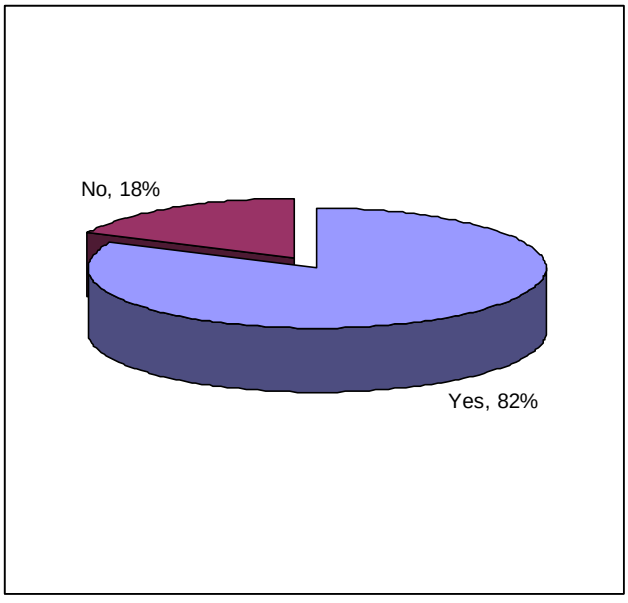
P value 0.129* *t*-test 1.29* insignificant at 0.05

Table 2: Mean ULCA Score at follow ups

ULCA score	
Baseline	12.21±3.25
1st visit at 3rd week	20.46±5.35
2nd visit at 6th week	25.35±4.61
3rd visit at 12th week	30.31±4.30

P value <0.001 ANOVA test 301.39 *significant at 0.05

Graph 1: Efficacy of intra articular injection



The graph 1 shows that at 12th week follow up ULCA score in 82% subjects was lie between 28-35 i.e., good to excellent score

DISCUSSION

Primary frozen shoulder or primary Adhesive capsulitis is a frequent disorder encountered by orthopaedic surgeons. But no specific treatment is used to treat patients with primary frozen shoulder. Some orthopaedic professionals suggest non operative procedures like physical therapies, Oral Non Steroidal Anti Inflammatory Drugs (NSAIDs), glenohumeral intra-articular corticosteroid injection or oral corticosteroid. And some suggest operative procedures like manipulation under anesthesia, arthroscopic capsular release or open surgical release[10].

In our study, we included 100 patients of frozen shoulder which were managed with intra-articular injection. The mean age of all these patients was 45.78±9.79 years. There were 63(63%) male and 37 (37%) female patients. The male to female ratio was 1.7:1. But literature showed that FS affects women more frequently than men, with a female-to-male ratio of about 1.4:1[11].

The previous studies have reported 64.3% efficacy of intra-articular corticosteroid injection whereas in our study the results were better than this study. It has also been observed in the previous studies that intra-articular corticosteroid injection are effective in pain reduction during first follow up and in later follow ups their result was not found significant. But, as a contrary, in our study ULCA score was significantly different in all follow ups[12].

Another study reveals that in diabetic patients UCLA score increases significantly in treated group [13]. It was aso reported in the study that there was no significant difference between the range of motion and duration of pain in diabetic and idiopathic frozen shoulder. Researchers evaluating the effectiveness of steroid, exercise or physical therapy found no difference in all stages in pain, disability and range of motion between the groups. They all advised corticosteroid injection as being less costly to administer. When the systematic review of randomized clinical trials of the effectiveness of corticosteroid injections for shoulder pain was assessed, it was revealed that intra-articular corticosteroid injection for adhesive capsulitis may be beneficial. Although its effect may be small and not well-maintained; there were inconsistent short-term results and limited evidence for the long-term outcome[14,15].

CONCLUSION

According to the results of our study, intraarticular injection of corticosteroid is very effective and has additive effects related to rapid pain relief. It is most effective at the end of 12 weeks. In patients with frozen shoulder who have predominant pain symptoms, intraarticular corticosteroid therapy could be advised. Now we can say that intra-articular steroid injection has proved to be an equally effective treatment as manipulation under anesthesia and is a safe and cost effective also. In future we can recommend use of intraarticular steroid injection for better management of frozen shoulder.

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