



Comparison between the Outcomes of Physiotherapeutic Interventions and Corticosteroid Injections in Treatment of Lateral Epicondylitis (Tennis Elbow) At Short Term Follow Up

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ABSTRACT

Objective: the aim of this study is to observe the efficiency of physiotherapeutic Interventions in comparison with corticosteroid injections in the treatment of lateral epicondylitis (tennis elbow) at short term follow up.

Methods: Patients with lateral epicondylitis were diagnosed in the rheumatology clinic at Princess Rashed Hospital. Only 60 eligible patients were randomly distributed into equal three test groups; P (The physiotherapy group who received ultrasound and ice massage), C (The corticosteroid injections group who received the injections in the lateral epicondyle), and N (The control group who kept with no treatment). All groups exposed to short term follow up after 6 weeks of receiving the treatment to screen out the outcomes. Outcome measures were observed before and after receiving the treatment including the pressure pain threshold, elbow disability and grip strength. General improvement was detected by calculating the success rate. Data analysis was done using SPSS and one way ANOVA test for multiple variables.

Results: Corticosteroid injections were considerably superior to other treatment choices for all outcome measures. Success rates were 90% (18) compared with 45% (9) for P group and 30% (6) for N group. P had better results than N group, but differences were not significant.

Conclusions: The results of this study suggest that corticosteroid injections are superior to physiotherapeutic interventions in the treatment of lateral epicondylitis (tennis elbow) at short term follow up. Additional researches are required, with greater highlighting on the efficacy of corticosteroid injections in combination with physiotherapeutic interventions.

Keywords: *Tennis Elbow, Physiotherapy, Corticosteroid Injections.*

1. INTRODUCTION

Lateral epicondylitis, frequently termed tennis elbow, is one of the commonly occurred problems among the elbow lesions [1] [2]. It can be described as an overload injury affects the extensor muscles of the forearm, usually subsequent to minor or micro-trauma [3][4]. Even though the word epicondylitis reveals that the disease is inflammatory in origin, the inflammation actually occurs only in the very early stages of the disease [4] and [5]. Lateral epicondylitis mostly considered as a soft tissue lesion involving the tendinous origin of the wrist extensor muscles leading to lateral elbow pain [5] [6]. As a consequence, the more accurate name of this elbow problem is lateral epicondylosis [7].

The occurrence of lateral epicondylitis varies from 1 to 3% on the whole population [8] [9]. With the highest percentage in the 30 to 55 years age group [10] [11]. It frequently affects the dominant arm [11] [12]. In concern to the adult group, the younger patients are mostly occupied with athletic activities, while the older patients with occupational activities [13]. As mentioned before, lateral epicondylitis typically result in lateral elbow pain that frequently radiates along the forearm.

Infrequently, the patients can summon up a particular trauma to the region, but usually the pain is of slow, subtle onset [14]. Grip strength weakness and holding objects difficulties are the most common complains of these patients [15] [16]. Several non operative interventions are of use for the treatment of this disease such as pain relieving drugs, physiotherapy, corticosteroid injections, and elbow supports [17] [18][19][20][21]. Several studies confirmed that the efficiency of these interventions fluctuate between the short and long term [6] [17] [22] [23] [24?]. Surrounded by this study, the aim is to observe the efficiency of physiotherapeutic interventions in comparison with corticosteroid injections in the treatment of lateral epicondylitis at short term follow up.

2. METHODS

Many patients with symptoms of lateral epicondylitis attend the rheumatology clinic at Princess Rashed Hospital. Our study started in the period from April to September 2012. About 185 patients were diagnosed with the condition during this period.

All patients with lateral epicondylitis were carefully examined by rheumatologist to determine the case members according to a well planned inclusion and exclusion criteria.

The inclusion criteria comprises; Age between 18–70 years old, Pain at the lateral aspect of the elbow, increased pain upon pressure on the lateral epicondyle region, wrist dorsiflexion resistant and informed consent.

whereas the exclusion criteria includes; treatment of elbow pain with physiotherapy or injections through the previous 6 months, bilateral elbow pain, indicative symptoms of a different disorder of elbow and corticosteroids contraindications.

Only 60 eligible patients were matched with the inclusion criteria. The study members were randomly distributed into equal three groups; P (The physiotherapy group which received ultrasound and ice massage), C (The injection group which received the corticosteroid injections in the lateral epicondyle), and N (The control group which kept with no treatment).

Starting with P group which received six physiotherapy treatments consisted of pulsed ultrasound and ice massage over 2 weeks intervention phase. The treatment was performed by highly trained physiotherapists. Pulsated ultrasound (20% duty cycle) was given with an intensity of 2 W/cm² for 5 minutes per session. Concerning the C group, patients were treated by the rheumatologist with local infiltration of 1 mL triamcinoloneacetone (10 mg/mL) and 1 mL lidocaine 2%. The injection was in the tenderest point of the lateral epicondyle. Through the intervention phase, a maximum of one injection was recommended. Ending with the N group, Patients visited the rheumatology clinic once during the intervention phase. Actions that aggravated pain should be avoided. If considered necessary, pain killers such as paracetamol (2000–4000 mg daily) or non-steroidal anti-inflammatory drugs (NSAIDs, naproxen 1000 mg daily) were given.

All groups exposed to the treatments within 2 weeks intervention phase. A short term follow up was done after 6 weeks of receiving the treatment to screen out the outcomes. Outcome measures were observed before and after receiving the treatment including the pressure pain threshold, elbow disability, grip strength. The study researchers prepared a questionnaire to help in information gathering. It consists of two parts; before and after treatment; and same three issues for each part with three choices of each issue (high, low and nothing). The questionnaires were filled by the rheumatologist based on the examination process along with the patient answers. All the questionnaires were carefully completed and reviewed before secure documentation.

All information collected from the questionnaires was computerized using Microsoft Office Word (2007) after understandable numbering of the cases, issues and choices. With the note that the numbering of the grip strength choices was inversed, so the success rate can be measured easily. Differences in outcomes between the study groups were analyzed by means of one-way ANOVA test with SPSS (version 8.0). P values less than 0.05 were significant.

3. RESULTS

The data of our study demonstrated that the major complain of the study members was the high pain upon pressure on the lateral aspect of the epicondyle with 90% (54). while the minor one was the grip strength with 55% (33).

The success rate for the short term follow up was measured by calculating the difference between the values of the answered choices before and after receiving the treatment. The success rate considered high if the value calculated equals 2, while it is considered fail if it equals -2. Accordingly, the general improvement can be assessed. Regarding test groups of current study, the P group success rate was the highest for grip strength improvement with 75% (15) and elbow disability and lowest for pressure pain relieve with 55% (11). About the C group, the success rate was high for all outcome measures; pressure pain relieve with 90%, elbow disability improvement with 80% and grip strength with 80% (18, 16, and 16 respectively). While the success rate for N group was the highest for pressure pain relieve with 75% (15) and the lowest for elbow disability improvement with 55% (11) and grip strength with ().

In general, the results of this study show that Corticosteroid injections were considerably superior to other treatment choices for all outcome measures at short term follow up. The success rate for C group was the highest. It was 90% (18) compared with 45% (9) for P group and 30% (6) for N group. Although the P group had higher success rate than N group, differences were not significant between the two groups ($p < 0.05$).

4. DISCUSSION

Regarding result interpretation, the P group improvement was the highest for grip strength and lowest for pressure pain. These results are matched with previously performed researches [[13,14]. [18,22]. this could be explained by a study done by waugh and his colleagues in 2004, they documented that patients who exhibit nerve symptoms are more likely to experience unfavorable short-term outcomes after physiotherapy treatment [6].

About C group, the success rate was high for all outcome measures [22].this matched with previous studies [1].

And lastly, N group's success rate was higher for pain pressure, because of taking pain killer [22].

According to the results of this study, Corticosteroid injections are the superlative short term treatment option of patients with lateral epicondylitis. This fact is matching with smidt and his colleagues results in their study which was done in 2002[22] by the side of many other researches [24][25]. The explanation of this could be that lateral epicondylitis is inflammatory in the first stage and corticosteroids act on stopping the inflammatory process, thus the pain is relived [5]. The differences compared with physiotherapy intervention were clinically significant for all outcome measures. However, these beneficial effects only persisted for a short time. [13?]

In concern of the current study, the study member assessment was performed by rheumatologists. Selection bias was minimized by the applying of a strictly planned criteria and randomization process. The authors recommended that long-term studies of treatment outcomes should be carried out, directing special attention to the features of patients with full improvement and of those with recurrences.

5. CONCLUSION

The recent study demonstrated that the major complain with lateral epicondylitis (tennis elbow) was the high pain upon pressure on the lateral aspect of the epicondyle. Corticosteroid injections are superior to physiotherapeutic interventions in the treatment of lateral epicondylitis at short term follow up. Additional researches are required, with greater highlighting on the efficacy of corticosteroid injections in combination with physiotherapeutic interventions.

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Tennis elbow and Golfer's elbow

Review Article

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A. McMurtrie, A.C. Watts

Clin Sports Med 23 (2004) 677– 691Lateral epicondylitis
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