Comparative study between local corticosteroid injection and diclofenac sodium in initial treatment of tennis elbow

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Abstract

This is a prospective study done to compare the effectiveness of local corticosteroid injection versus non-steroidal anti-inflammatory drug (diclofenac sodium) for initial treatment of new episode of tennis elbow.The patients were evaluated with a pain score (0 to 9) and clinical examination before and 4 weeks after treatment.The selection of cases was done randomally.

18 patients were included in this study who attend orthopedics outpatient clinic in Samarra general hospital during the period from 1-1-2013 to 1-11-2013.The first group include 9 patients were given an injection of 2o mg methylpredinsolone plus 0.5 ml lidocaine and the second group also include 9 patients were given diclofenac sodium 100mg daily for 2 weeks.

After 4 weeks ; 8 patients (88%) in the injection group were completely better compared with 4 patients (44%) in the diclofenac sodium group($p < 0.05$) regarding pain scores also in the assessment of elbow function 5 patients (56%) had complete recovery in group of steroid injection while only one patient had complete recovery in the group treated with dicofenac sodium(11%) the p value < 0.05.

Introduction

Pain and tenderness over the lateral epicondyle of the elbow is common complaint among tennis player – but even more common in non- players who perform similar activities involving forceful repetitive wrist extension.It is the extensor carpi radialis tendon which is pathological in tennis elbow(1).

There is pain at the lateral aspect of the elbow , often radiating down the back of the fore arm(2).Lateral epicondylagia , also known as tennis elbow , is a musculoskeletal disorder characterized by pain over the lateral epicondyle associated with gripping or manual tasks that require manipulation of the hand; with annual incidence of 1-3% within the general population(3).

Some investigators believe that the natural history of lateral epicondylitis is that of resolution of symptoms within 6 months of treatment(4).

Regardless of the underlying cause , nonoperative treatment is successful in 95% of patients with tennis elbow(5).The aim of this study is to compare two nonoperative methods in treatment of lateral epicondylitis –cortecosteroid injection versus non –steroidal anti-inflammatory drug(diclofenac sodium) as initial treatment.

Patients and methods

18 patients were included in this study.The selection of cases was done

random ally . 10 males with mean age of 42 years(range:20-60) and 8 females with mean age of 40 years (range:25-50) who attended to orthopaedic outpatients clinic in Samarra general hospital during the period from 1-1-2013 to 1-11-2013 with pain and tenderness in the lateral region of the elbow and diagnosed as tennis elbow.

Exclusion criteria were systemic musculoskeletal disorders or gross structural abnormality of the elbow; contraindication to non-steriodal anti-inflammatory drugs or local injection; breast feeding or pregnant women.

The patients were divided into two groups; the first group composed of 9 cases(6 males and 3 females) received local steroid injection plus local anesthetic drug treatment and the second group composed similar number(9 cases) and include 4 males and 5 females received non-steriodal anti-inflammatory drug(diclofenac sodium 100 mg single daily dosage) for 2 weeks and standard advice was given to take the drug with food and about potential side effects especially on gastrointestinal system.

The first group were given a local steroid injection of methylpredinsolone 20 mg and 0.5 ml 1% lignocane.The injection was performed with patient arm resting flexed on firm surface to the area of the greatest tenderness distal to the lateral epicondyle under aspetic technique.

The occupations 0f our patients were six workers,five teachers ,five house wifes and two self employed.

Those patients had baseline assessment when they attended Orthopaedic out patients clinic for the first time and the second assessment was done after four weeks depending on pain severity (9 point Likert scale) and patients global assessment of change measured on a 5 point scale(complete recovery,improved,no change, worse,much worse) show fig.(1).

Results

The results of this study was in favorites for the injection group. Eight (5 males & 3 females) of nine patients in the group of local corticosteroid and local anesthetic mixture injection revealed complete relief of pain (88%) while one patient remained complain from pain.

Four patients (3 females & 1 male) of nine patients in the group treated with diclofenac sodium revealed complete relief from pain (44%). The p value is <0.05 for injection versus diclofenac sodium.

In assessment of elbow function ; complete recovery was achieved in five cases (4 males & one males) and there was some improvement in three cases (1 male & 2 females) and there was no change in elbow function in only one case in the injection group.

While assessment of the group treated with diclofenac sodium revealed that only one case achieved complete recovery of the elbow function ; four cases achieved some improvement ; three cases had no change in elbow function and one case got worse elbow function.The p value is <0.05 for injection group versus group treated with diclofenac sodium regarding improvement in elbow function, shown in tables (1,2,3).

Discussion

The results of this study are in favor of use of local corticosteroid injection as an initial treatment of lateral epicondilitis of the elbow ; it is provide a simple way of controlling pain of this condition and improve over all function of the elbow provided that , the injection is precise to the affected area .This method of treatment lessen the risk of the side effects of using non- steroidal anti inflammatory drugs on the gastrointestinal tract.

In this study the dominant side (right side) was affected more than the non-dominant side ; that to say , the side which is more prone to repeted strain which was similar to other studies(7,8).

The results of this study are identical to the results of Elaine et al. regarding the short term results of steroid injection compared to Naproxin .But in the study of Elaine et al. by 12 months ; most patients with tennis elbow had improved irrespective of the initial treatment(9).

In the study of Serder Toker et al. concerning the use of anti-inflammatory alone or in combination with steroid injection ; they found superior results in the use of combination treatment (p value=o.o36) in examination of the patients after four weeks of the treatment(10).

Conclusion

The use of corticosteroid injection as initial treatment of lateral epicondylitis of the elbow is effective and simple method of treatment.

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Table 1.Number of patients with tennis elbow who were better(pain score <3) at follow compared with baseline according to treatment group

Follow up	Injection(no. of patients)	Diclofenac sodium(no. of patients)
Baseline	9	9
4 weeks	8	4

Table 2 Median (interquartile range) pain scores in patients with tennis elbow according to treatment group

Time of assessment	Injection	Diclofenac sodium
Elbow pain		
Baseline	5(4-6.5)	4(3-6.5)
4 weeks	1(0.5-3)	4(2.5-6)

Table 3 Outcome at four weeks after intervention according to treatment group.Values are numbers and percentage of patients

Change in elbow	Injection(n=9)	Diclofenac sodium(n=9)	Total(n=18)
Complete recovery	5(56%)	1(11%)	6(33%)
Some improvement	3(33%)	4(44%)	7(39%)
No change	1(11%)	3(33%)	4(22%)
Worse	0(0%)	1(11%)	1(6%)
Much worse	0(0%)	0(0%)	0(0%)

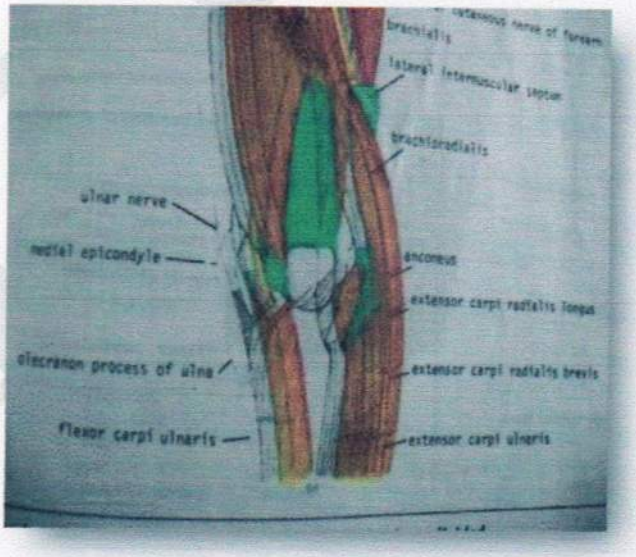

Fig 1-shows the origin of the extensor muscles from the lateral epicondyle of the elbow(6)