

The Study of Corticosteroid Injection Therapy in Patients with Lateral Epicondylitis

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Conflict of interest: Nil

Abstract:

Background: To the study of corticosteroid injection therapy in patients with lateral epicondylitis

Methods: This study was conducted on outpatient in the Department of Physical Medicine and Rehabilitation, Mahatma Gandhi Hospital Banswara (Rajasthan). Age between 18 and 65 years of age insidious onset of lateral elbow pain lasting for 3 months. Inclusion criteria were pain over the lateral humeral epicondyle with pain severity by visual analogue scale (VAS) provoked by at least 2 of the following.

Results: The mean VAS Score of patients who receive Inj. Corticosteroid at the time of presentation was 7.20. After the Inj. given the mean VAS score was decreased to 2.41 and 0.53 at one and three months respectively. This change was statistically significant. The mean Pain free grip strength of patients who receive Inj. Corticosteroid at the time of presentation was 19.21 after the inj. given the mean pain free grip strength was decreased to 20.45 and 20.97 at one and three months respectively. This change was statistically significant.

Conclusion: We concluded that shown significant improvement in their outcome i.e. in PRTEE score, VAS score and pain free grip strength but better improvement of symptoms is seen in the steroid injection group.

Keywords: VAS, LE, Corticosteroid, PRTEE.

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Introduction

Lateral epicondylitis (LE) was first reported in the literature by Runge in 1873, and later in 1896 by bernhardt.[1] Lateral epicondylitis, commonly known as 'tennis elbow' a common condition, affecting between 1% and 3% of the population and up to 10% among females of around 40 years of age.[2,3] The peak incidence have observed between 35-45 year of age affecting slightly more women than men and having a higher prevalence for the dominant side.[4] Lateral epicondylitis (LE) is one of the most frequently encountered lesions of myoskeletal system. Extensor carpi radialis brevis (ECRB) is the most commonly affected muscle[5] but supinator and other wrist extensors such as extensor carpi radialis longus, extensor digitorum, extensor digiti minimi and extensor carpi ulnaris can be involved.

It is a condition that cause significant functional impairment in working- age by any activity of recurrent mechanical overuse or overloading of these muscles for example tennis, playing an instrument, typing and manual work.[6] The identified possible risk factors were increasing age longer duration of employment in strenuous jobs and female gender, smoking and obesity and occupations with high incidence rates, including

labourers nursery school cooks.[3,7] The most frequently used intervention in Lateral epicondylitis is corticosteroid injections.

Compared with physical therapy, corticosteroid injections have some clear advantages for the general practitioner injection are easy to administer, rapid action, reduction in pain, referral is not necessary and the treatment is relatively cheap.[8]

Material and Method

Study Location:

Outpatient in the Department of Physical Medicine and Rehabilitation, Mahatma Gandhi Hospital Banswara(Rajasthan).

Study Design:

An interventional longitudinal study.

Inclusion Criteria:

Age between 18 and 65 years of age insidious onset of lateral elbow pain lasting for 3 months.

Inclusion criteria were pain over the lateral humeral epicondyle with pain severity by visual analogue scale (VAS) provoked by at least 2 of the following

- Pain on gripping

- Resisted extension of middle finger
- Resisted extension of wrist
- Stretching of forearm extensor muscles with reduced pain free grip.
- Tender on palpation

- Previous surgical intervention at the elbow
- Cervical radiculopathy
- Same side shoulder or wrist pain
- Raynaud’s disease or syndrome
- Rheumatoid arthritis
- H/O taking Corticosteroid injection <1 month.
- Radiology findings of calcification of extensor tendon.

Exclusion Criteria:

- Traumatic onset of pain if duration < 2 week
- Concurrent of primary medial epicondylitis

Results

Table 1: Socio-demographic profile of study subjects

Age in yrs	40.59 ± 10.40 yrs
Female : Male	25:9
Duration of symptoms (months)	5.91 ± 2.25 months
Handedness (left:Right)	12:22
Tenderness (present : absent)	4:30

Table 2: VAS score at different follow up time

Time	VAS (Mean ± SD)	P value Compared to baseline
Baseline	7.20 ± 1.12	-
1 month	2.41 ± 1.08	<0.001 (S)
3 months	0.53 ± 0.75	<0.001 (S)

The mean VAS Score of patients who receive Inj. Corticosteroid at the time of presentation was 7.20. After the Inj. given the mean VAS score was decreased to 2.41 and 0.53 at one and three months respectively. This change was statistically significant.

Table 3: Pain free grip strength (Kg) in at different follow up time

Time	Pain free grip strength (Mean ± SD)	P value Compared to baseline
Baseline	19.21 ± 13.72	-
1 month	20.45 ± 14.01	<0.001 (S)
3 months	20.97 ± 14.46	<0.001 (S)

The mean Pain free grip strength of patients who receive Inj. Corticosteroid at the time of presentation was 19.21 after the inj. given the mean pain free grip strength was decreased to 20.45 and 20.97 at one and three months respectively. This change was statistically significant.

Table 4: PRTEE (Pain) at different follow up time

Time	PRTEE (Pain) (Mean ± SD)	P value Compared to baseline
Baseline	33.15 ± 4.34	-
1 month	14.15 ± 5.97	<0.001 (S)
3 months	4.35 ± 5.48	<0.001 (S)

The mean PRTEE Score of patients who receive Inj. Corticosteroid at the time of presentation was 33.15 after the injection, given the mean PRTEE score was decreased to 14.15 and 4.35 at one and three months respectively. This change was statistically significant.

Table 5: PRTEE (functional) at different follow up time

Time	PRTEE (functional)(Mean ± SD)	P value Compared to baseline
Baseline	66.77 ± 11.44	-
1 month	24.97 ± 10.10	<0.001 (S)
3 months	12.97 ± 7.74	<0.001 (S)

The mean PRTEE SCORE of patients who receive Inj. Corticosteroid at the time of presentation was 66.77 after the inj. given the mean PRTEE was decreased to 24.97 and 12.97 at one and three months respectively. This change was statistically significant.

annually and is associated with risk factors such as smoking, obesity, increased age, repetitive movements, and movements with high physical load.[1–3] Overuse of the extensor muscles results in degenerative tendinopathy, most commonly that of the extensor carpi radialis brevis. This can result in tenderness of the lateral epicondyle and proximal wrist extensor muscle mass, painful resisted extension of the wrist with a flexed elbow, or painful passive flexion of the wrist with an

Discussion

Lateral epicondylitis (LE), commonly known as “tennis elbow,” affects 1% to 3% of the population

extended elbow—impairments which can markedly hinder work-related and daily living activities.[4–7] Poorer prognoses are associated with severe pain at presentation, concomitant neck pain, greater daily physical demands, and higher levels of baseline pain because such risk factors are associated with a longer duration of symptoms and greater pain scores 1 year from disease onset.[8,9] Treatment of LE entails nonsurgical treatment such as activity modification, bracing treatment, NSAIDs, corticosteroid (CS) injections, and physical therapy (PT); surgery is rarely needed because most patients have symptom resolution within 1 year.[9–12]

There remains a lack of consensus regarding the preferred method of nonsurgical treatment of this condition.[17] Among the most common of these nonsurgical practices is CS injections.[13] Early studies demonstrated the effectiveness of CS in reducing LE pain 6 weeks after injection. However, more recent studies report an increased rate of relapse of LE pain and functional impairment, as indicated by measures of grip strength and pain rating, in patients who received CS injections compared with those who did not, with no notable benefit compared with controls at 3 months after treatment.[14] Additional findings suggest that although CS can relieve acute LE symptoms, they are contraindicated for long-term cases, as evidenced by decreased rates of symptom improvement or resolution among patients receiving CS compared with those receiving other nonsurgical treatments.[15] Additional concerns around increased rates of postoperative infection, need for revision surgeries, and the suggestion that CS injections may be less cost-effective than other nonsurgical treatments have been documented.[16]

Conclusion

We concluded that shown significant improvement in their outcome i.e. in PRTEE score, VAS score and pain free grip strength but better improvement of symptoms is seen in the steroid injection group.

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