

# A study of functional outcome of conservative versus steroid injection in the patients of tennis elbow

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## Abstract

**Background:** Tennis elbow, also known as lateral epicondylalgia (LE) and often referred to as epicondylitis or tendinopathy clinically. **Aims and Objective:** To Study Functional outcome of Conservative versus Steroid injection in the patients of Tennis Elbow. **Material and Methods:** This study was carried out in the department of orthopedics of a tertiary health care center, during the year Jan 2015 to Jan 2016, in the patients with pain at lateral epicondyle extensor tendons associated with pain on forced dorsiflexion of the wrist and middle finger within 3 months were assessed for the diagnosis of Tennis elbow all such patients with the consent with their choice were enrolled for Conservative and Steroid injection groups 20 in each respectively. The statistical analysis was done by un-paired t-test. **Result:** The majority of the patients were in the age group of 30-40 i.e. 30 % followed by 40-50 i.e. 22.5%, 50-60 were 17.5% and in 20-30 were 17.5 %, in >60 were 12.5. This condition found more common in females as compared Males i.e.55.00% and 45.00% respectively. The pain as assessed by VAS was Significantly higher in Conservative group than Steroid (Mean  $\pm$  SD). i.e.  $5.92 \pm 2.91$  and  $3.2 \pm 2.1$  respectively ( $P < 0.0016$ ,  $t = 3.38$ ,  $df = 38$ ) and Functional Disability was significantly higher in Conservative i.e.  $5.36 \pm 2.5$  as compared to Steroid group i.e.  $3.9 \pm 1.82$  ( $P < 0.04$ ,  $t = 2.11$ ,  $df = 38$ ). **Conclusion:** It can be concluded from our study that Steroid injection group was found superior over Conservative treatment group with reference to fast pain relief and improvement in functional outcomes.

**Key Words:** Tennis Elbow, lateral epicondylalgia (LE), Visual Analogue Scale (VAS).

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## INTRODUCTION

Tennis elbow, also known as lateral epicondylalgia (LE) and often referred to as epicondylitis or tendinopathy clinically,<sup>1</sup> has a complex underlying pathophysiology which is not well understood but is characterized by uncomplicated signs of localized pain over the lateral epicondyle which is made worse with resisted wrist extension and grip.<sup>2</sup> The term epicondylitis has recently

been considered a misnomer because a lack of inflammatory signs. The annual incidence of tennis elbow is 4 to 7 cases per 1000 patients, predominantly in patients aged 35 to 55 years.<sup>3,4</sup> The condition affects between 1% and 3% of the population,<sup>5,6</sup> is usually self-limiting, and lasts between 6 and 24 months.<sup>4</sup> Twenty percent of cases persist for more than a year.<sup>7</sup> Repetitive manual tasks, or handling of heavy loads (>20 kg) or heavy tools (>1 kg).<sup>8</sup> Risk is increased by a working posture of arms raised in front of the body, coupled with repetitive forearm twisting or rotating motions. The risk is further increased by high gripping force.<sup>9</sup> LE is also associated with computer use of more than 20 hours per week, a risk that increases in line with years of use.<sup>10</sup> Tennis elbow can produce a long lasting economic crisis for a patient due to inability to work and hence treatment with symptomatic relief in the shortest possible time is the need of the hour.<sup>11</sup> There has always been a conflict of interest in the management of this condition with few studies showing good results with physiotherapy while

few other studies have shown that local steroid injection provides better results. However, for the Orthopaedician this is a challenging situation as a patient presenting with this condition expects complete recovery within a short period of time to carry out their occupation<sup>12</sup>.

### MATERIAL AND METHODS

This study was carried out in the department of orthopedics of a tertiary health care center, during the year Jan 2015 to Jan 2016, in the patients with pain at lateral epicondyle extensor tendons associated with pain on forced dorsiflexion of the wrist and middle finger within 3 months were assessed for the diagnosis of Tennis elbow all such patients with the consent with their choice were enrolled for Conservative and Steroid injection groups 20 in each respectively. For conservative treatment analgesic with physiotherapy was administered and for local steroid injection therapy were injected with 40mg of triamcinolone (Kenacort) diluted with 1% lignocaine at the insertion of extensor digitorum brevis under all aseptic precautions. Pain was evaluated by Visual Analogue Scale Patients in both groups were asked to follow-up in the outpatient department at 3 weeks Patient related tennis elbow evaluation questionnaire and visual analogue scale scores were recorded at third weeks. The statistical analysis was done by un-paired t-test.

### RESULT

**Table 1:** Distribution of the Patients as per the Age

Age group	No.	Percentage
20-30	7	17.5
30-40	12	30
40-50	9	22.5
50-60	7	17.5
>60	5	12.5
<b>Total</b>	<b>40</b>	<b>100</b>

The majority of the patients were in the age group of 30-40 i.e. 30 % followed by 40-50 i.e. 22.5 %, 50-60 were 17.5% and in 20-30 were 17.5 %, in >60 were 12.5.

**Table 2:** Distribution of the Patients as per the Sex

Sex	No	Percentage
Male	22	55.00 %
Female	18	45.00 %
<b>Total</b>	<b>100</b>	<b>100%</b>

This condition found more common in females as compared Males i.e.55.00% and 45.00% respectively.

**Table 3:** Distribution of the Patients as per the Various treatment parameters

Parameter	Treatment Group	Mean ± SD	P-value (un-paired t-test)
Pain	Conservative	5.92 ± 2.91	P<0.0016, t=3.38, df=38.
	Steroid	3.2 ± 2.1	
Functional Disability	Conservative	5.36 ± 2.5	P<0.04, t=2.11, df=38.
	Steroid	3.9 ± 1.82	

The pain as assessed by VAS was Significantly higher in Conservative group than Steroid (Mean ± SD). i.e. 5.92 ± 2.91 and 3.2 ± 2.1 respectively (P<0.0016, t=3.38, df=38) and Functional Disability was significantly higher in Conservative i.e. 5.36 ± 2.5 as compared to Steroid group i.e. 3.9 ± 1.82 (P<0.04, t=2.11, df=38.)

### DISCUSSION

Steroid injections are the most thoroughly investigated intervention. There are 4 systematic reviews,<sup>13-16</sup> the most recent reporting 18 separate analyses from 12 trials (n = 1171 patients).<sup>15</sup> Coombes *et al*<sup>14</sup> concluded that there was strong evidence for the short-term benefit of corticosteroid injections across all outcome measures. Despite heterogeneity within the included trials which prevented pooling of some data for meta-analysis, consistent large effect sizes were seen in favor of corticosteroid injections compared with no intervention (“wait and see”), non-steroidal anti-inflammatory drugs (NSAIDs), physiotherapy, orthotic devices, and platelet-rich plasma (PRP) injections (reported in a separate review). These findings are in agreement with previous meta-analyses of the same subject<sup>13,14</sup> and with a recent systematic review restricted to comparing corticosteroid injections with various (individual as opposed to combined) physiotherapy interventions.<sup>16</sup> One exception to this was the comparison with NSAIDs, in which Gaujoux-Viala *et al*<sup>14</sup> reported that corticosteroids were not better in the short term (n = 1113). In our study we have found that The pain as assessed by VAS was Significantly higher in Conservative group than Steroid (Mean ± SD). i.e. 5.92 ± 2.91 and 3.2 ± 2.1 respectively (P<0.0016, t=3.38, df=38) and Functional Disability was significantly higher in Conservative i.e. 5.36 ± 2.5 as compared to Steroid group i.e. 3.9 ± 1.82 (P<0.04, t=2.11, df=38.) this was similar to Arjun Ajith Naik *et al*<sup>17</sup> they found the functional outcome between the two modalities at a follow up found that local corticosteroid injection has proved to give faster relief from symptoms with early return to work.

### CONCLUSION

It can be concluded from our study that Steroid injection group was found superior over Conservative treatment group with reference to fast pain relief and improvement in functional outcomes.

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