

An Interventional Prospective Study of Combined Steroid and Lignocaine Injection for Tennis Elbow

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Abstract:-

➤ Background

Tennis elbow, also known as lateral epicondylitis, is a persistent painful condition that frequently responds poorly to traditional treatment. In tennis elbow cases, we assessed the advantages of a steroid and lignocaine injection given together.

➤ Materials and Methods:

In our prospective, interventional trial, we recruited patients with lateral epicondylitis who were resistant to analgesics and physical treatment. A visual analog scale (VAS) was used to measure pain, and patients with a baseline VAS of >4 were included. By using the peppering approach, triamcinolone 40mg (1ml) and lignocaine 2% (1ml) were applied locally to each patient's sore area. The change in VAS from the baseline at 7 and 42 days was the primary result. Depending on whether the VAS score has decreased by 3, 2, or 1, respectively, the improvement is categorized as good, moderate, or mild. The data were analyzed using descriptive statistics and applicable tests.

➤ Results:

The study population (n = 48; male: female 27:21) was 37.4 ± 8.3 years and the duration of illness was 17.9 ± 4.2 weeks. In the first week, 40 patients showed good improvement, 4 showed moderate improvement, 2 showed mild improvement, and 2 did not show any improvement. The improvement persisted till 42 days in all the patients.

➤ Conclusion:

The local infiltrations of steroids and lignocaine positively impacted the tennis elbow.

I. INTRODUCTION

Tennis elbow, also known as lateral epicondylitis, is a severe rheumatic disease that has a high morbidity rate in its victims. One of the most prevalent painful illnesses that family doctors see in clinical practice is this one [1]. Though virtually little is known about its natural history, it is associated with overusing the forearm extensor tendons.[2] Tenderness at the epicondyle is a symptom of the condition. The pathophysiological underpinnings, which include the degenerative process, damage, inflammation, and healing mechanisms, are poorly understood.[3] Free nerve endings in the aponeurosis, granulation tissue around the lateral

epicondyle, elevated substance P receptor levels, and elevated glutamate levels have all been suggested as potential sources of pain.[4,5,6,7,8] Nevertheless, steroid injections only provide temporary symptom alleviation, and after a year, the results are no better or worse than those of waiting it out or receiving physiotherapy.[9,10] Through the application of inflammatory cells to the affected area, several therapeutic approaches are suggested to promote the repair of the sick tendon. A study on extracorporeal shockwave (ECSW) therapy showed that it can significantly reduce pain in people as well as induce an inflammatory response in rabbit tendons.[11,12,13] Both platelet-rich plasma and autologous blood injections have been investigated as interventions to provide inflammatory mediators to initiate a healing cascade, and both methods have been demonstrated to reduce patient discomfort.[14,15] We are aware of no prior evaluations of combination steroid and anaesthetic drugs. We, therefore, conducted this experiment to evaluate the response of local infiltration of steroids and lidocaine in lateral epicondylitis.

II. MATERIAL AND METHODS

➤ Study Setting

Between January 2022 and December 2022, the Department of Orthopaedics at Government Medical College, Srinagar, undertook this prospective, interventional study. Patients with tennis elbow who were older than 20 years old, had the condition for longer than four months, and had a VAS baseline pain level greater than four were included in the study. Patients who had experienced localized trauma, neoplastic lesions, or previous local steroid injection therapy were all disqualified. Every patient underwent a VAS on a scale of 0 to 10, and those who had a score of at least 4 were included in the study. The change in VAS at the conclusion of 7 and 42 days was our study's main finding. Within 42 days, no patient in our research received a second injection. Prior to receiving parenteral therapy, all patients provided written informed permission that was authorized by the local ethical committee.

➤ Study Interventions

Triamcinolone 40 mg and lignocaine 2% were topically administered to the patient's tendon location. In order to generate the greatest amount of effective local infiltration, the peppering technique was adopted, in which numerous injections were administered at the most painful part of the elbow after changing directions.[16] After the procedure, the patient underwent a 60-minute observation period before being allowed to leave the hospital. To

minimize personal differences in injection technique, one researcher performed a tendon infiltration procedure. We kept a watchful eye out for any systemic side effects, especially fainting and dizziness. All patients received oral NSAIDS for 72 hours following the treatment and were instructed to utilize an elbow brace and rest their elbow. Based on how much the VAS score had changed, the degree of pain improvement was assessed. 3 was considered a good reduction, 2 was considered moderate, and 1 was considered a slight improvement. If the VAS score did not change from the starting point or indicated an increase in severity, there was a lack of progress.

III. STATISTICS

A signed Wilcoxon rank, a non-parametric test was used to compare the data before and after the intervention. Data are reported as mean standard deviation. IBM SPSS Statistics for Windows version 21.0, IBM Corp., Armonk, New York. was used for the statistical analysis, which was completed when p 0.05 was deemed statistically significant.

IV. RESULTS

The average age of the study population was 37.4 ± 8.3 years, and the average length of sickness was 17.9 ± 4.2 weeks (n = 48; male: female 27:21). None of the patients had bilateral atypia, and the right-to-left-sided ratio was 2:1. The baseline VAS score was 5.8 ± 0.9 , and all follow-ups showed a substantial decrease in VAS (p 0.0001). 40 patients exhibited good improvement in the first week, 4 showed moderate improvement, 2 showed modest improvement, and 2 showed no improvement at all. The rate of improvement in all patients at 42 days is shown in Figure 1. None of the patients suffered any significant post-procedure problems, and they all ceased taking their analgesic prescriptions within 72 hours after the procedure. All patients were advised to have a sling for 24 hours after injection to support the elbow.

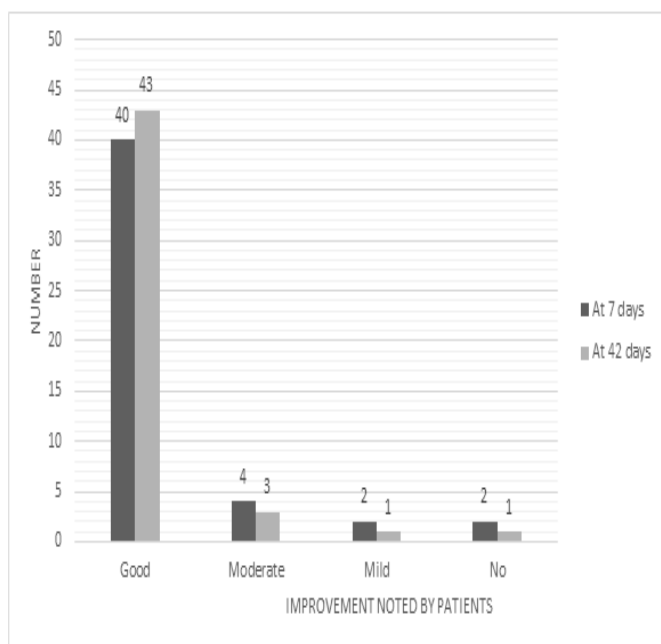


Fig 1: improvement at the 7th and 42nd day

V. DISCUSSION

Our study showed that combination therapy was effective in treating lateral epicondylitis, one of the most perplexing musculoskeletal conditions. In the first week following injection, the majority of patients displayed improvement, which lasted for 6 weeks. Previous research demonstrated that corticosteroid injections provided effective pain relief but also had a significant recurrence rate. [17,18] We demonstrated a decrease in relapse utilizing a combination of an anaesthetic drug and a corticosteroid in the sparse follow-up data of our trial. After a local injection, steroids provide good pain relief, which leads to misuse of the arm.[19] In actuality, this is one of the primary causes of the increased rates of recurrence after steroid use.[20] Thus, all patients are advised to rest the arm in a sling at least for 24-48 hours after the procedure.

Family doctors are typically the initial point of contact for persons with lateral epicondylitis.[21] They are expected to comprehend the causes of the disease, select the most effective treatment plan, and immediately refer difficult cases for professional assistance.[22] This helps to reduce morbidity caused by conditions. Additionally, lignocaine, the local anaesthetic used in our experiment, has a number of benefits that make the combo therapy interesting. Together, they boost the steroid's effects and lengthen their duration.[23] The lignocaine injection has also been used as a diagnostic marker before steroid administration.[24] An effective response to the subsequent steroid injection is predicted by a significant decrease in pain following the lignocaine injection. The researchers have also tested with growth hormones, PRP, and botulinum toxin. [25-28] The ideal treatment for chronic lateral epicondylitis has not been identified by any published trials or meta-analyses. [28] The controversy is further brought on by the lack of a clear pathogenic mechanism that might be used to identify tennis elbow. Recent literature has prioritized a degenerative process above an inflammatory process. [29] This is established despite the fact that the majority of steroid-related research have shown immediate and long-lasting benefits in the condition. Recent literature is flooded with studies showing the advantages of growth factors, PRP, or whole blood. The key mediators of the beneficial effects of blood and blood products are the growth factors produced by the platelets, which help with tissue repair and regeneration. [30] Our study, which demonstrated the value of combination therapy, had some drawbacks, including limited sample size, the use of patients from a single ethnic group, and the absence of a placebo group for comparison.

VI. CONCLUSION

We demonstrated that the local infiltrations of lignocaine and steroids had a beneficial effect on the tennis elbow. Our study is particularly relevant to underdeveloped countries because they have more limited access to and higher costs for ultrasonic therapy and botulinum toxin. Additional randomized studies with many patients are

required to determine the best course of treatment for lateral epicondylitis.

Financial support and sponsorship

Nil

Conflicts of interest

There aren't any competing interests.

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