

Decrease in Pain Score after Autologous Blood Injection in patients with Lateral Epicondylitis

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ABSTRACT

Background: The most common overuse syndrome is related to excessive wrist extension and commonly referred to as “tennis elbow,” Autologous blood injections are thought to initiate an inflammatory process and promote improved healing of degenerative tissue via the relatively atraumatic injection itself as well as providing necessary cellular and humoral mediators to induce a healing cascade.

Aim: To determine the mean decrease in pain score after infiltration of autologous blood injection for treatment of lateral epicondylitis

Study type: Quasi experimental study

Place of study: Department of Orthopaedic Surgery Jinnah Hospital, Lahore

Duration of study: 6 months from 1-7-2015 to 31-12-2015

Results: In our study, out of 150 cases, 87(58%) were between 30-45 years and 63(42%) were between 46-60 years of age, mean±sd was calculated as 42.95±8.83 years, 55(36.67%) were male and 95(63.33%) were female, mean pain score after infiltration of autologous blood injection for treatment of lateral epicondylitis was recorded it showed mean pain score before treatment was calculated as 6.17±1.48 and it was reduced to 1.22±0.52, mean difference was calculated as 4.94±1.52 on VAS, p value was calculated as 0.0001 which shows a significant difference between before and after treatment pain score.

Conclusion: We concluded that the mean decrease in pain score after infiltration of autologous blood injection for treatment of lateral epicondylitis is significantly higher

Keywords: Lateral epicondylitis, management, autologous blood injection, mean decrease in pain

INTRODUCTION

Lateral epicondylitis, or tennis elbow, is a common cause of elbow pain in the general population being the second most frequently diagnosed musculoskeletal disorder in the neck and upper extremity in a primary care setting¹. It has an incidence of between four and seven per 1000 cases per year in general practice, with a peak between the ages of 35 and 54 years, and a mean age of approximately 42 years². An epidemiological study reported that 87% of cases involved the dominant arm³.

The characteristic clinical findings are pain and tenderness over the lateral epicondyle. Lateral epicondylitis has been reported to be the result of overuse from many activities. Although it is often referred to as tennis elbow, it is seen to affect non-athletes rather than athletes¹.

Once a clinical diagnosis of epicondylitis is made, our initial treatment consists of activity

modification, counter force bracing, NSAIDs if not contraindicated, and physical therapy. Persistent or worsening pain despite appropriate management often prompts imaging and additional therapies⁴. Injection of autologous blood has been reported to be effective for both intermediate and long-term outcomes for the treatment of lateral epicondylitis, with a significant decrease in pain⁶.

There have been numerous described methods for therapy. Unfortunately, there has been no single agreed-upon treatment for lateral epicondylitis. The most conservative treatment is observational, or a wait-and-see approach. Most patients will report improvement of symptoms by 1 year after initial onset. Activity modification and nonsteroidal anti-inflammatory drugs (NSAIDs) have been described for symptomatic pain relief. Other conservative treatments include various types of physiotherapy, including exercises, bracing, and ultrasound.

For those patients who do not respond to these treatment modalities, injections have been utilized prior to any surgical treatment. Historical injections included lidocaine, alcohol, and carbolic acid. Currently, the combination of corticosteroids with a local anesthetic is most widely used. However, in recent literature there have been an increasing

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number of alternate injectable substances described in randomized controlled trials (RCTs). These include botulinum toxin, autologous blood, platelet-rich plasma, hyaluronic acid, polidocanol, glycosaminoglycan, and prolotherapy.

Beyond injections, operative interventions are available for refractory cases. It is estimated that only 4% to 11% of patients will eventually progress to surgical intervention. These include open, percutaneous, or arthroscopic release of the extensor origin, debridement of the extensor origin, denervation of the lateral epicondyle, and anconeus rotation.

Once a clinical diagnosis of epicondylitis is made, our initial treatment consists of activity modification, counter force bracing, NSAIDs if not contraindicated, and physical therapy. These initial steps are discussed immediately below; persistent or worsening pain despite appropriate management often prompts imaging and additional therapies.

Autologous blood injections: Autologous Blood Injection (ABI), also known as Autologous Conditioned Plasma (ACP) Injection is a recent medical procedure whereby a patient's blood is injected into an area of the body for the purposes of healing. It is most commonly used to treat degeneration of tendons, which may occur in association with small tears. This disorder of tendons is frequently referred to as "tendinitis" by the public, however is known as tendinosis or tendinopathy in the medical profession. Autologous blood injections are thought to initiate an inflammatory process and promote improved healing of degenerative tissue via the relatively atraumatic injection itself as well as providing necessary cellular and humoral mediators to induce a healing cascade.

The objective of the study was to determine the mean decrease in pain score after infiltration of autologous blood injection for treatment of lateral epicondylitis

MATERIALS AND METHODS

This Quasi experimental study was conducted in the Department of Orthopaedic Surgery, Jinnah Hospital, Lahore for a period of 6 months from 1-7-15 to 31-12-15. Sample size of 150 cases calculated with 95% confidence level, $d=0.15$ and taking expected mean±sd of mean decrease in pain score i.e. 2.0 ± 0.8^8 (after 3 months follow up) of autologous blood injection for treatment of lateral epicondylitis. Non-Probability Purposive Sampling technique was used. Both male and female patients between age of 30-60 years with the diagnosed cases of lateral epicondylitis (as per operational definition) were included in the study. While patients receiving steroid

injections in the three months prior to study treatment with the history of substantial trauma and having previous surgery for lateral epicondylitis were excluded from the study. Presence of other causes of elbow pain such as osteochondritis dessicans of capitellum, epiphyseal plate injuries, lateral compartment arthrosis, varus instability, radial head arthritis, posterior interosseous nerve syndrome, cervical disc syndrome, synovitis of radiohumeral joint, cervical radiculopathy, fibromyalgia, osteoarthritis of elbow, or carpal tunnel syndrome.

RESULTS

A total of 150 cases fulfilling the inclusion/exclusion criteria were enrolled to determine the mean decrease in pain score after infiltration of autologous blood injection for treatment of lateral epicondylitis.

Mean pain score after infiltration of autologous blood injection for treatment of lateral epicondylitis was recorded in Table 1, where mean pain score before treatment was calculated as 6.17 ± 1.48 and it was reduced to 1.22 ± 0.52 , mean difference was calculated as 4.94 ± 1.52 on VAS, p value was calculated as 0.0001 which shows a significant difference between before and after treatment pain score (Table 1).

Table 1: Mean pain score after infiltration of autologous blood injection for treatment of lateral epicondylitis (n=150)

Mean pain score		
Before treatment	After treatment	Mean Difference
6.17±1.48	1.22±0.52	4.94±1.52

P value=0.0001

Table 2: Stratification for age (n=150)

Age (yrs)	Mean Pain Score			P value
	Before treatment	After treatment	Mean Difference	
30-45	6.20±1.47	1.21±0.52	4.98±1.40	0.00
46-60	6.13±1.51	1.24±0.57	4.94±1.28	0.00

DISCUSSION

The most common overuse syndrome is related to excessive wrist extension and commonly referred to as "tennis elbow," but it is actually more common in non-tennis players. Autologous blood injections are thought to initiate an inflammatory process and promote improved healing of degenerative tissue via the relatively atraumatic injection itself as well as providing necessary cellular and humoral mediators to induce a healing cascade.

We planned this study to determine the mean pain score after infiltration of autologous blood injection for the treatment of lateral epicondylitis so that the discrepancy among other studies.

In our study, out of 150 cases, 87(58%) were between 30-45 years and 63(42%) were between 46-60 years of age, mean±sd was calculated as 42.95±8.83 years, 55(36.67%) were male and 95(63.33%) were female, mean pain score after infiltration of autologous blood injection for treatment of lateral epicondylitis was recorded it showed mean pain score before treatment was calculated as 6.17±1.48 and it was reduced to 1.22±0.52, mean difference was calculated as 4.94±1.52 on VAS, p value was calculated as 0.0001 which shows a significant difference between before and after treatment pain score.

Our findings are in agreement with a study⁸ reveals 5.0±3.1 at pre-infiltrative and 3.0±2.3 even at 6 months follow up, mean decrease in pain score was 2.0±0.8, which shows a significant discrepancy among the results, our findings are in agreement with the above study.

Our results are contrary with Dojode CM³ who observed the efficacy of autologous blood for treatment of Lateral Epicondylitis and recorded mean pain score on VAS improved from preinfiltrative 7.7±1.3 to 0.5±1.9 on 6 months follow up and mean decrease in pain scores was 7.2±0.6, which is shows a great mean reduction.

We are of the view that autologous blood injection demonstrated statistically significant lower pain compared with before administration of the injection. The limitation of this study was that we did not compare this injection with local corticosteroid injection being most commonly use in our setup, but our results are showing significant difference for mean pain score before and after treatment

CONCLUSION

We concluded that the mean decrease in pain score after infiltration of autologous blood injection for

treatment of lateral epicondylitis is significantly higher.

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