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Efficacy of local corticosteroid injections and autologous blood injections in management of lateral epicondylitis

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Abstract

Background: The commonly used medical term for tennis elbow is lateral epicondylitis or common extensor tendinitis. The present study was conducted to compare the efficacy of local corticosteroid injections and autologous blood injections in management of lateral epicondylitis.

Materials and methods: The present study was conducted in the department of Orthopaedics. It comprised of 60 adult patients of lateral epicondylitis (Tennis elbow) of both genders. Patients were divided into 2 groups of 30 each. Group I was given autologous blood injections and group II received methylprednisolone. In all patients pain was assessed as per VAS scale. The results were assessed as excellent, good, fair and poor depending upon the point on VAS scale.

Results: Right side was involved in 18 in group I and 16 in group II, left side was involved in 12 in group I and 14 in group II. Excellent results was seen in 1 in group I and 5 in group II, good 7 in group I and 15 in group II, fair 12 in group I and 10 in group II and poor 10 in group I. The difference was significant (P < 0.05). Common complication was white discoloration of skin was seen 1 patients each in both groups and transient pain 4 in group I and 2 in group II.

Conclusion: Authors found that corticosteroid injection was more effective than autologous blood injection in improving pain and function.

Keywords: Autologous, corticosteroid, lateral epicondylitis

Introduction

Injuries are quite common especially for people who tend to be active or exercise a lot and so are with people who work a lot to acquire and master new skills in social environment ^[1]. There are injuries which are because of repetitive movements and overuse like wrist fractures, ankle sprain, shoulder dislocations, hamstrings muscle strain and many others ^[2].

Tennis elbow is classic example of repetitive strain injury which is caused with combination of chronic exhaustion and irritation in muscles and tendons on back of arm and outside of elbow which lifts (extend) the wrist and fingers ^[3]. The commonly used medical term for tennis elbow is lateral epicondylitis or common extensor tendinitis. It is a syndrome of chronic disabling pain over the lateral epicondyle due to overuse of extensor and supinator muscles for gripping and rotating activities ^[4].

Corticosteroid injections are commonly used to treat LE. The way in which they work is currently unknown; they probably help to control local inflammatory response and pain mediation. Corticosteroid injections seem to be superior to NSAIDs at four weeks, but no differences are observed at a later stage.⁵ Cortisone injections should be avoided in all cases, unless a short-term good result is advisable (such as a professional tennis player in mid-season), as most patients improve without corticosteroids and better long-term results can be achieved without them ^[6]. The present study was conducted to compare the efficacy of local corticosteroid injections and autologous blood injections in management of lateral epicondylitis.

Materials and Methods

The present study was conducted in the department of Orthopaedics. It comprised of 60 adult patients of lateral epicondylitis (Tennis elbow) of both genders. All were informed and their consent was obtained.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 30 each. Group I was given autologous blood injections 2mL of autologous blood was drawn from the ipsilateral upper extremity and mixed with 1 mL of 2% lignocaine. Group 2 received local steroid injections as a single dose of 40 mg methylprednisolone mixed with 2 cc of 2% lignocaine, 3 such dosages was given at intervals of two weeks. In all patients pain was assessed as per VAS scale. The results were assessed as excellent, good, fair and poor depending upon the point on VAS scale at different follow. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

| Table | 1: | Distribution | of patients |
|-------|----|--------------|-------------|
| ranc | 1. | Distribution | or patients |

| Groups | Group 1 | Group 2 |
|--------------|-----------------------------|--------------------|
| Treatment | Autologous blood injections | Methylprednisolone |
| Male: Female | 20:10 | 18:12 |

Table 1 shows that group 1 received autologous blood injections and group 2 patients received Methylprednisolone. There were 20 males and 10 females in group 1 and 18 males and 12 females in group 2.

| Sido | Group I | | Group II | |
|-------|---------|-----|----------|------|
| Side | No | % | No | % |
| Right | 18 | 60 | 16 | 53.3 |
| Left | 12 | 40 | 14 | 46.7 |
| Total | 30 | 100 | 20 | 100 |

Table 2 shows that right side was involved in 18 in group 1 and 16 in group 2, left side was involved in 12 in group 1 and 14 in group 2.

Table 3: Outcome of treatment

| Grade | Group I | Group II | P value |
|-----------|---------|----------|---------|
| Excellent | 1 | 5 | 0.01 |
| Good | 7 | 15 | 0.03 |
| Fair | 12 | 10 | 0.91 |
| Poor | 10 | 0 | 0.01 |

Table 3 shows that excellent results was seen in 1 in group I and 5 in group 2, good 7 in group 1 and 15 in group 2, fair 12

in group 1 and 10 in group 2 and poor 10 in group 1. The difference was significant (P < 0.05).

 Table 4: Outcome of treatment

| Complications | Group I | Group II | P value |
|-----------------------------|---------|----------|---------|
| White discoloration of skin | 1 | 1 | 1 |
| Transient Pain | 4 | 2 | 0.01 |

Table 4, graph 1 shows that common complication was white discoloration of skin was seen 1 patients each in both groups and transient pain 4 in group I and 2 in group 2. The difference was significant (P < 0.05).





Discussion

Tennis elbow is defined as pain of the facet of lateral epicondyle which is reproduced by digital palpation on the above site with resisted wrist extension, resisted middle finger extension and gripping ^[7]. The presenting factors in etiology of tennis elbow are overuse, middle age group (35-55), constitutional factors (gout, estrogen deficiency, hereditary), inadequate conditioning, postural deficiency (thoracic kyphosis and tight shoulder adductors and internal rotators), poor technique and improper use of equipment (faulty back hand stroke, improper grip handle size, small head racquet

which is rigid and metallic)^[8]. It is also common in other sports like table tennis, badminton, and javelin throw^[9]. It has been estimated that half of all tennis players suffer at one time or another from tennis elbow. it also occurs in those occupations which demand repeated use of wrist extensor muscles for gripping and forearm rotation like massaging, needle work, screw driving, hammer beating etc.^[10]. The present study was conducted to compare the efficacy of local corticosteroid injections and autologous blood injections in producing analgesia in patients presenting with lateral epicondylitis. In present study, group 1 received autologous blood injections and group 2 patients received Methylprednisolone. There were 20 males and 10 females in group 1 and 18 males and 12 females in group 2. We found that right side was involved in 18 in group 1 and 16 in group 2, left side was involved in 12 in group 1 and 14 in group 2. Kazemi^[11] analyzed the shortterm and long-term effects of the local injection of methylprednisolone to treat medial epicondylitis. Fifty-eight patients (sixty elbows) were assigned to receive a single injection of 1 per cent lidocaine with either forty milligrams of methylprednisolone (experimental group) or saline solution (control group); both groups were also managed with physical therapy and the use of non-steroidal anti-inflammatory drugs. Six weeks after the injection, the experimental group had significantly less pain than the control group (p < 0.03), as determined with a modification of the grading system of Nirschl and Pettrone. However, the groups did not differ with regard to pain at three months and at one year. The intensity of pain, as measured on a visual-analog scale, did not differ between the two groups six weeks and one year after the injection.

We found that excellent results was seen in 1 in group 1 and 5 in group 2, good 7 in group 1 and 15 in group 2, fair 12 in group 1 and 10 in group 2 and poor 10 in group 1. Smidt et al. ^[12] conducted a study in which patients with lateral epicondylitis were allocated to treatment with corticosteroid injections, physiotherapy, or a wait-and-see policy. Outcome measures included general improvement, severity of the main complaint, pain, elbow disability, and patient satisfaction. Severity of elbow complaints, grip strength, and pressure pain threshold were assessed by a research physiotherapist who was unaware of treatment allocation. At 6 weeks, corticosteroid injections were significantly better than all other therapy options for all outcome measures. Success rates were 92% (57) compared with 47% (30) for physiotherapy and 32% (19) for wait-and-see policy. However, recurrence rate in the injection group was high. Long-term differences between injections and physiotherapy were significantly in favour of physiotherapy. Success rates at 52 weeks were 69% (43) for injections, 91% (58) for physiotherapy, and 83% (49) for a wait-and-see policy. Physiotherapy had better results than a wait-and-see policy, but differences were not significant.

We found that the common complication was white discoloration of skin was seen 1 patients each in both groups and transient pain 4 in group 1 and 2 in group 2.

The shortcoming of the study was small sample size.

Conclusion

Authors found that corticosteroid injection was more effective than autologous blood injection in improving pain and function.

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