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Clinical profile of patients with lateral epicondylitis admitted at a tertiary care hospital

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Abstract

The incidence of tennis elbow is 1 to 3% in the general population per annum. Tennis elbow typically affects the individuals ranging from ages of 35 to 50 years with a median of 41 years and it affects equally both males and females. The dominant arm is affected in more than half of the patients. Populations at high risk are workers whose occupations require frequent rotary motion of the forearm like carpenter, gardener, computer workers, knitting workers, weight lifting workers and construction workers. All patients seen and clinically diagnosed as lateral epicondylitis and satisfying the inclusion criteria are selected. After obtaining written consent by simple random sampling alternatively patient received steroid injections and platelet rich plasma injections under strict aseptic precautions and were divided into group A group B respectively. In this study PRP and Corticosteroid treated groups had pre injection VAS of 66.5 and 67.5 respectively which was not statistically significant ($p=0.4$). Post injection at 1 month follow up VAS showed a significant decrease in Corticosteroid group (1.92) as compared to PRP group (45.3). At the end of 3 months, the VAS remained same in Corticosteroid group (45.5) and further decreased in PRP group (38.9).

Keywords: clinical profile, lateral epicondylitis, VAS

Introduction

Tennis elbow was first described by Runge in 1873 and by Major in 1883. It was named as lawn tennis arm by Morris. Later on, this name has become common for all painful condition at lateral elbow. This condition is usually related to working habits and mostly occurs in non athletes (95%)^[1].

Elbow joint is a complex joint formed between lower end of humerus and upper end of radius and ulna. The ulnare humeral articulation is a modified hinge joint that permits flexion and extension movement. The radiohumeral articulation is a combined hinge and pivot joint that allows flexion and extension movement and also rotary movement of radial head on the capitulum^[2].

The shaft of humerus which is triangular in cross section at its middle, becomes flattened anteroposteriorly and broadened transversely as its distal end is approached to form medial epicondyle, trochlea, capitulum and lateral epicondyle. The elbow is enveloped in a fibrous capsule that is attached proximally to the humerus just above the olecranon and coronoid fossa, distally to the ulna just beyond the greater sigmoid notch and to the neck of radius and lesser sigmoid notch. Both the epicondyles lie outside the synovial cavity of elbow. The main support for the elbow joint is given by various muscles, ligaments and tendons that present around the elbow. The common extensor group originate from the lateral epicondyle of the humerus and the common flexor group originate from the medial epicondyle of the humerus^[3, 4].

The incidence of tennis elbow is 1 to 3% in the general population per annum. Tennis elbow typically affects the individuals ranging from ages of 35 to 50 years with a median of 41 years and it affects equally both males and females. The dominant arm is affected in more than half of the patients. Populations at high risk are workers whose occupations require frequent rotary motion of the forearm like carpenter, gardener, computer workers, knitting workers, weight lifting workers and construction workers. 95% of lateral epicondylitis occurs in non tennis players and 10 to 50% of regular tennis players are affected by lateral epicondylitis symptoms.

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Lateral epicondylitis has three histological changes of tendinosis. They are fibroblastic change, vascular granulation and abnormal collagen fibers formation. Mechanical overload or a trauma causes fibroblastic granulation, which is the early response in elbow tendinosis. Tensile, varus and valgus stress within the tendon activate the mechanoreceptors (integrins) on the surface of the resting tenocyte and affect these cells, when a cleavage plane is created between the tendon fascicles [5, 6].

Methodology

All patients seen and clinically diagnosed as lateral epicondylitis and satisfying the inclusion criteria are selected. After obtaining written consent by simple random sampling alternatively patient received steroid injections and platelet rich plasma injections under strict aseptic precautions and were divided into group A group B respectively

All patients were prospectively evaluated by visual analogue score, mayo elbow score, DASH score and grip strength. The scores were recorded on initial presentation and post treatment follow-up visit at 1st month, 3rd month and 6th month

Inclusion Criteria

- Patients with persistent symptoms (more than 6 weeks) typical to lateral epicondylitis with clinically diagnosed as suffering from lateral epicondylitis.
- Patients above 20 years.

Exclusion Criteria

- Symptoms less than 6 weeks.
- Patients suffering from elbow pain due to other causes like rheumatoid arthritis, osteochondritis dissecans, crystal arthropathies like gout, radial tunnel syndrome, cervical lesions, shoulder pathology.
- Patients already treated by steroid injection.
- Patients already undergone surgical intervention.
- Any local skin pathology at injection site.

Drugs Used

- 1ml autologous platelet rich plasma taken with 1ml of xylocaine (2%).
- 1ml Methyl prednisolone (40mg/ml) taken with 1ml of xylocaine (2%).
- Platelet Rich Plasma Preparation:

Results

Table 1: Gender Distribution

| Gender | Steroid (n=30) | Prp (n=30) |
|--------|----------------|------------|
| Male | 16 | 13 |
| Female | 14 | 17 |

In this study it was found that 51.67% of cases were females and 48.3% were males. STEROID group (n = 30) contain 46.67% of females, 53.3% of males.

PRP group (n = 30) contain 56.67% of females, 43.3% of males.

Table 2: Age distribution among subjects (Groups)

| Age | Steroid | PRP | Total |
|------------|---------|-----|-------|
| 20-30year | 1 | 3 | 4 |
| 31-40years | 19 | 14 | 33 |
| 41-50years | 8 | 11 | 19 |
| 50-60years | 2 | 2 | 4 |
| Total | 30 | 30 | 60 |

The study included 50 patients with lateral epicondylitis on the right elbow of which 24 are of steroid group and 26 are of PRP group and 10 patients with symptoms on the left elbow of which 6 are of steroid group and 4 are of PRP group.

Table 3: Visual Analogue Score

| Vas | Steroid (n=30) | | Prp (n=30) | |
|---------------|----------------|-----|------------|-----|
| | Mean | S.D | Mean | S.D |
| Pre Injection | 66.5 | 1 | 67.5 | 0.7 |
| 1 Month | 45.3 | 0.5 | 51.6 | 0.8 |
| 3 Month | 45.5 | 0.9 | 38.9 | 1.1 |
| 6 Month | 48.7 | 0.9 | 27.9 | |

In this study PRP and Corticosteroid treated groups had pre injection VAS of 66.5 and 67.5 respectively which was not statistically significant (p=0.4). Post injection at 1 month follow up VAS showed a significant decrease in Corticosteroid group (1.92) as compared to PRP group (45.3). At the end of 3 months, the VAS remained same in Corticosteroid group (45.5) and further decreased in PRP group (38.9). At the end of 6 months, the PRP group (27.9) showed significant reduction in VAS compared to Corticosteroid group (48.7). This shows that Corticosteroid is more effective for short term relief and PRP is more effective for long term relief.

The difference between two group was statistically significant at 1 month (p=0.001), 3rd month (p=0.001) and 6th month (p = 0.001)

Discussion

We conducted this study to compare the effectiveness of intralesional corticosteroid versus autologous platelet rich plasma injection in the treatment of chronic lateral epicondylitis which is a very common musculo skeletal problem encountered in orthopaedic day to day practice. Elbow pain or lateral epicondylitis when acute or chronic is quite a disabling condition. It certainly affects the day to day quality of life of patients.

Nonoperative methods like oral NSAIDS, strapping, physiotherapy are the mainstay of treatment being effective in more than 95% of acute cases.

Corticosteroid injections have been extensively used but their efficacy is still conflicting. Platelet rich plasma which is a good source of many growth factors & cytokines is one of the new way of treating this painful & disabling condition [7, 8].

In this study 60 painful elbows were screened and evaluated. Among this 30 patients Studied in PRP group and 30 patients studied in steroid group.

STEROID group (n =30) contain 46.67% of females, 53.33% of males with mean age 39.63 ± 7.44 years, right elbow affected in 80% of patients & left elbow affected in 20% of patients.

PRP group (n= 30) Contain 56.67% of females, 43.33% of males with mean age 40.5 ± 6.67 years, right elbow affected in 86.67% of patients & left el affected in 13.33% of patients.

In this study the base line characteristics age, gender, side affected does not alter the outcome of the study statistically

In the study by Gosen *et al.* march 2011, compared the effectiveness of autologous platelet rich plasma injection to steroid injection therapy in lateral epicondylitis, it is proved that platelet rich plasma injection is safe and easy [9, 10].

Concerning functional impairment, the corticosteroid group showed better results during the initial period and then declined to baseline level. Whereas in platelet rich plasma group symptoms improved progressively. There was a significant difference in decrease of pain and functional impairment after

platelet rich plasma application even after one year

Conclusion

The mean patient age was 47 years. There were 48 men and 52 women. The study included 63 patients with lateral epicondylitis on the right elbow and 37 patients with symptoms on the left elbow

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