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Original Research Article

COMPARISON THE EFFECTIVENESS OF STEROID THERAPY WITH AND WITHOUT PHYSIOTHERAPY FOR THE MANAGEMENT OF LATERAL EPICONDYLITIS

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ABSTRACT

Objective: To compare the effectiveness of steroid therapy with and without physiotherapy for the management of lateral epicondylitis (tennis elbow).

Methodology: Patients, who fulfil the inclusion criteria of selection were admitted to study in the Department of Physiotherapy PSRD, Lahore. Each patient received an informed consent. Demographic data including name, age, sex, height and weight were noted. Participating individuals were randomly allocated into two groups by lottery method. Patients of group A were treated by steroidal therapy without physiotherapy manoeuvres and the individuals of group B were treated by combination of steroidal therapy and physiotherapy. The follow-up was carried out for up to 4 weeks.All the information has been collected with pre-defined preforms.Data was interpreted and analysed through SPSS version 22.0.

Results: The overall mean age of cases was 38.90±6.97 years and 42.07±7.03 years. There were 38(63.33%) male and 22(36.67%) female in this study. Before treatment the mean pain of participating individuals of group-A and in group-B was 7.40±1.45 and 7.63±1.27 with insignificant difference. After treatment the mean pain in group-A and group-B was 3.40±1.73 and 2.53±1.57 with significantly lower pain in group-B, p-value < 0.05. When we compared mean pain before and after injection was significantly improved in both groups but the improvement was higher in group-B. The mean pain difference in group-A and group-B was 3.77±2.18 and 4.90±1.83 with higher improvement in group-A, p-value < 0.05.

Conclusion: Results of study concludesteroid injection with addition to physiotherapy was more effective in reducing pain.We must encourage orthopedic and physiotherapist teamwork to treat tennis elbow.

KEY WORD: Tennis elbow,lateral epicondylitis, Steroid, NSAIDs, physiotherapyHyaluronic Acid Injection.

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INTRODUCTION

Patients with the tennis elbow or Lateral epicondylitishave ache, inflammation, cramping, or discomfort on the outside (lateral) side of the upper arm near the elbow [1]. This type of elbow pain is commonly due to overuse activity of arm and forearm musculature. Not all tennis player affected by this elbow problem but tennis players are at risk to have tennis elbow due to their overuse activity of elbow joint musculature [2].

In the tennis elbow, the tendon that connects muscle to the bone may have partial tear. The site of the tear possibly be at or near the connection of tendon with the bone, on the lateral side of the elbow [1]. It may develops due to subtle or sudden injury of the tendon and muscle at the lateral side of the elbow. Because in the

tennis elbow problem specifically area involved is muscle and tendon at the outer side of the elbow which is called the lateral side of the elbow.The medical professionals diagnosed this condition as lateral epicondylitis. As like this term another specific medical term is "golfer's elbow", this condition have the same muscle and tendon issue but at the inner or middle side of the elbow. And the doctors diagnosed and document tis problem as medial epicondylitis. The back side of posterior aspect of the elbow may be effected by the overuse activities [2].

The role of the work-related and individual factors has not been rule out in a population study. According to a research, prevalence rate of the lateral epicondylitis or tennis elbow was 1.3%. The gender difference was not being researched for this prevalence ratio but the rate of this problem was highest in individuals aged between 45-54 years. Obesity, smoking, repetitive activities and forceful work, these all activities reveal powerful association with the golfer's elbow. This epicondylitis condition is mostly popular among working individuals in the population. Obesity, smoking and different loading factors are the risk factors that may cause epicondylitis [3].

There is little evidence of clinical trials for the support of the different treatment techniques for the tennis elbow. However the good bundle of knowledge have documented in meta-analysis, systematic reviews and RCTs regarding the effectiveness of some treatment options like injectable medicines, topical, oral medications, physiotherapy maneuvers and surgical options for lateral epicondylitis [4].

Some treatment techniques have short term effects like corticosteroid injections for the pain suppression, hand grip strength and general betterment compared to the other conservative treatment options and the placebo treatments [2,5,6]. But these treatment effects are for the short time, not beyond the six weeks. In a research comparison was made with an orthosis like non-articular, inelastic, tennis elbow strap and injection suppress the pain at 2 weeks, but the individual patient treatment outcomes shows no difference after even six months [7]. Some researches reveal that oral NSAIDs and physiotherapy maneuvers have greater benefits than corticosteroid injections used for greater than six weeks that called intermediate-term follow-up and for greater than six weeks called long term follow up respectively [8-10]. Some researches have compared the effects of various corticosteroid injections and found there were no clinically significant differences. But steroid injections have effective short-term effect, their long-term advantages and effectiveness and advantages over conservative treatment therapy are uncertain [2,6].

Rationale of this research is to compare the effects of steroid therapy with and without physiotherapy as physiotherapy is very much effective in terms of pain relief achieved earlier. We are conducting this study to implement physiotherapy as an additional treatment with steroid therapy in management of lateral epicondylitis (Tennis elbow).

METHODOLOGY

Randomized controlled trail clinical study was conducted after ethical considerations atDepartment of Physiotherapy, PSRD Lahore.Non-Probability, convenience sampling with sample size of 60 cases; thirty cases in each group is calculated with 95% confidence level, 3% margin of error, taking prevalence of tennis elbow that is. 1.3% in population. Age 30 and above, inclusion criteria was both genders and exclusion criteria was the individual with the history of the previous surgical treatment of the elbow, any previous history of the steroidal drug usage and the patient with the diagnosed osteoarthritis and osteoporosis. Participants were randomly divided in two groups; group A and group B by the lottery method. SPSS version 22.0 was used for the data entry and analysis of the data. Qualitative variables were presented by the frequency tables and percentages. Patients were divided randomly into two groups by lottery method. Data was entered and analysed through SPSS version 22.0all qualitative variables was presented in the form of frequency tables and percentages. All quantitative variables was presented in the form of mean±SD. Paired sample t-test was applied to compare the mean pain before and after treatment. Independent sample t-test was applied to compare mean pain in both study groups.P-value$\leq$0.05 was taken as significant.

RESULT

Age groups		Study Groups							
		A	B	Mean		Standard deviation		Total	P value
				A	B	A	B		
Mean		38.9	42.07					40.78	
Standard deviation		6.97	7.03					7.12	
Minimum		30	30					30	
Maximum		65	66					66	
Gender	Male	18	20					38	
		60.00%	66.70%					63.30%	
	Female	12	10					22	
		40.00%	33.30%					36.76%	
Hypertension		6(20%)	4(13.3%)						>0.05
Diabetes Mellitus		4(13.3%)	6(20%)						>0.05
Forceful activity		29(96.7%)	26(86.7%)						>0.05
Pain	Before	7.40±1.45	7.63±1.27						<0.001
	P value	0.511							
	After	3.40±1.73	2.53±1.57						<0.001
	P value	0.047							
Pain Difference				3.77	4.9	2.18	1.83		0.03
Total				4.33		2.07			

The mean age in group-A and group-B was 38.90 ± 6.97 years and 42.07±7.03 years, p-value 0.085. The overall mean age of cases was 38.90±6.97 years and 42.07±7.03 years.

Chi-square = 0.592

p-value = 0.287

The gender distribution is same in both study groups .In group-A 6(20%) cases and in group-B 4(13.3%) had had hypertension, p-value > 0.05. There were 4(13.3%) cases in group-A and 6(20%) cases in group-B who had diabetes mellitus, p-value > 0.05. Forceful activity was assessed in 29(96.7%) in group-A and 26(86.7%) in group-B, p-value > 0.05. Before treatment the mean pain in group-A (without physiotherapy) and in group-B was 7.40±1.45and 7.63±1.27 with insignificant difference. After treatment the mean pain in group-A and group-B was 3.40±1.73 and 2.53±1.57 with significantly lower pain in group-B, p-value < 0.05. When we compared mean pain before and after injection was significantly improved in both groups but the improvement was higher in group-B. The mean pain difference in group-A and group-B was 3.77±2.18 and 4.90±1.83 with higher improvement in group-A, p-value < 0.05.

DISCUSSION

Tennis elbow has the ache at the lateral side of the elbow due to the overuse activities of the extensor musculature of the forearm. The lateral epicondylitis is associated with chronic tears in the tendon of the extensor carpi radialisbravis and degenerative changes [11]. it commonly effects individual at the age of the 40-60 years [12]. A research documented average age of the individual was 49±12 years [13]. The mean age in this study was38.90±6.97 years and 42.07±7.03 years that is lower mean age when make comparison with the previous researches above.

When make comparison between male and female the results showed that epicondylitiseffects women more than the men(14). Prevalence rate of the tennis elbow among general population is approximately 1.0–1.3% in men and 1.1–4.0% in women and that of golfers elbow is nearly 0.3–0.6% in men and 0.3–1.1% in women. Incidence rate of the medical professionals has been predicted at 0.3–1.1 for tennis elbowand 0.1 for golfers elbow per year per 100 subjects of general practice populations [14,15]. Results also reveal that men have higher rate 38(63.33%) than female 22(36.67%) in this study.

The tennis elbow (lateral epicondylitis) is the inflammatory problem and if it is treated by the steroidal injections so that treatment have localized anti-inflammatory effect. Pathological understanding of the tennis elbow has got evolution, it reveal that tennis elbow have the

good effective effects of steroidal injections. The individual suffering from the tennis elbow have the few numbers of inflammatory cells, researches reveal that the number of the neurokinin-1, receptors and level of substances P was more in the patient of the lateral epicondylitis [16].

This shows the possible neurogenic reason of the pain in the patient of the lateral epicondylitis. Steroidal injections have been shown to lessen the level of the substances P in other areas of body, so it is to be believed that injections of steroid have beneficial effects in the reduction of the neurogenic pain in the patient with the tennis elbow. This exhibits a possible neurogenic reason of ache in tennis elbow [17].

There are many steroids that can be used to treat the ache and inflammatory effects of the tennis elbow. A comparison was made between the hydrocortisone and two different doses of the triamcinolone, first dose is 10 mg and second one is 20 mg, these both doses of triamcinolone have more beneficial effects than the hydrocortisone in the first eight weeks. Many randomized control trials have compared the steroidal injection with the saline and local anesthetic injections, and also with the Physiotherapy, NSAIDs and a wait-and-see protocol. Upon follow up of the patients receiving the steroidal drugs have more improvements in the visual analogue scale (VAS) in the acute stage of the problem and individual also having improvements in the functional scoring during the two to sixth week after steroidal injections [9]. Some other researchers have no found any comparable difference between placebo injections and injections of the steroids [18].

Lindenhovius and colleagues [18] have done a double-blind randomized control trial by having sixty-four patients were treated by the steroidal drugs or anesthetic drug as lidocaine the data shows there was no any difference in pain score and Disability of the arm, shoulder and hand (DASH) at one to six months follow-up. There is a double blinded Randomized control trial that have compared the steroidal injection with bupivacaine in thirty nine individuals, Newcomer and colleagues [19] documented no difference in outcome from eight weeks to six months. For the prolonged usage of the steroidal drug may have harmful effect in the patient with the lateral epicondylitis. Smidt and colleagues [8] have done a research Randomized control trial by taking 185 patient and with follow up of 1 year, this research have made a comparison between steroidal injection, the physiotherapy maneuvers and a wait-and-see strategy. They have found success as individuals with lateral epicondylitishave been rated themselves as in a RCT which included one-eighty five patients and follow them for 1 year, as that RCT have long follow-up time period, and make comparison between wait-and-see strategy and physiotherapy with corticosteroid injections. Those participating patient have rated themselves as much better and with much improved condition after receiving that treatment. The response of symptoms of tennis elbow was better to the corticosteroid injection than Physiotherapy treatment and wait and see model as six weeks (92% vs 47% and 32% success, respectively), these individuals were worse at fifty-two weeks (69% vs 91% and 83% success, respectively). Researchers have concluded that steroidal injections have used for long term may weaken tendons and make patient more vulnerable to get tendinitis with initial benefits of reduction of pain. Steroidal injections must have some risks after usage [8]. In our study we found that the mean pain difference in group-A (steroid injection without PT) and group-B (steroid injection with PT) was 3.77±2.18 and 4.90±1.83 with higher improvement in group-A, p-value < 0.05.

In meta-analysis ofGaujoux-Vialaave includedseven forty four individuals having injections for elbow and shoulder tendonitis, 10.7% of patients had short period ache after application of injection, and 4.0% of patients had skin atrophy or depigmentation.(20)there was no infection and tendon rupture in the large study group, showing their existence is rare.[20, 21] but generally steroidal injections for the treatment of tennis elbow have good effects in ache reduction for the short term, almost averaging six weeks for many individuals. But there is no any evidence based term that individuals perform in good aspect with steroidal injections than with placebo or no treatment beyond six to eight weeks.

CONCLUSION

According to the results of this study we found that steroid injection with addition of physiotherapy was more effective in reducing pain. We should encourage the team work of Orthopedicians and physiotherapist to treat such cases mutually so that they can return to their activities of daily life.

Conflicts of interest: None

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