The Professional Medical Journal
www.theprofesional.com

DOI: 10.17957/TPMJ/17.3823

ORIGINAL PROF-3823

LATERAL EPICONDYLE TENDINOPATHY;

COMPARISON OF ULNAR MEDIAL-LATERAL GLIDE AND RADIUS ANTERIOR GLIDE FOR IMPROVING

Muhammad Asim Arif[1], Faiza Sharif[2], Muhammad Usman Khalid[3]

1. MSOMPT, t-DPT, BSPT
Senior Lecturer,
University Institute of Physical Therapy, University of Lahore.
2. MSOMPT, t-DPT, BSPT
Senior Lecturer,
University Institute of Physical Therapy, University of Lahore.
3. PPDPT, BSPT
Senior Lecturer,
Multan College of Physiotherapy
Multan Medical & Dental College, Multan

Correspondence Address:
Muhammad Usman Khalid
Senior Lecturer,
Multan College of Physiotherapy
Multan.
Address: Dara Ch. Sharaf uddin khalid chack soma pakpattan.
dr.usman_khalid@yahoo.com

Article received on:
17/01/2017
Accepted for publication:
15/05/2017
Received after proof reading:
03/07/2017

ABSTRACT: Forearm, wrist and hand use is becoming integral part in most of occupations due to involvement of computer and other technology based gadgets at every level. This trend has resulted in high risk of cumulative repetitive soft tissue injuries such as lateral epicondyle tendinopathy. Manipulative physical therapy is of the interventions. To make it more precise and effective in terms of time and cost, effects of various manipulative techniques must be estimated. The aim of study is to compare the effect of Ulnar Medial Lateral Glide versus Radius Anterior Glide for Improving Lateral epicondyle tendinopathy. **Study Design:** It was Randomized Clinical Trial. **Setting:** Physiotherapy OPD of Nawaz Sharif Social Security Hospital, Lahore. **Period:** 1 July 2016 31 December 2016 (6 months). **Methods:** Convenience Sampling Technique is used for the study. Subjects with nonspecific lateral epicondyle tendinopathy, were randomly allocated to 2 groups; one taking ulnar medial lateral glide, other anterior radial glide. Baseline, post-intervention two readings were taken through Numeric Rating Pain Scale and lateral epicondyle tendinopathy symptoms. Data was analyzed through SPSS. Independent t test was applied. **Results:** Mean age of patient in group of medial lateral glide 32.15 SD $\pm$ 7.67 and in group of medial lateral glide 32.1471 SD+7.67. Mean Body Mass Index of patients in group of medial lateral glide 24.79 SD $\pm$ 3.574 and anterior radius glide, 24 SD + 3.172. The results show p value 0.929 and 0.819, respectively. However, within group is significant difference at pre-interventional and post-interventional assessment p-0.2 and p-0.000 respectively. **Conclusion:** There was no statistically significant difference in outcomes of ulnar medial lateral glide and anterior radial glide. Still the ulnar medial lateral glide group performed better if we consider micro statistics.

Key words: Manual Therapy, Ulnar Medial Lateral Glide, Anterior Radial Glide, Lateral Epicondylitis, Tendinopathy.

Article Citation: Arif MA, Sharif F, Khalid MU. Lateral epicondyle tendinopathy; comparison of ulnar medial-lateral glide and radius anterior glide for improving. Professional Med J 2017;24(7):981-985. **DOI:** 10.17957/TPMJ/17.3823

INTRODUCTION

Lateral epicondyle tendinopathy, or a term used "tennis elbow," is a frequently reported in medical care. This is the inflammation of the common extensor origin tendon. Pain is felt over the lateral condyle of the humerus and aggravated with resisted dorsiflexion of the wrist. The incidence in general practice is approximately 4 to 7 per 1000 patients per year with an annual incidence of 1% to 3% in the general population.[1,2]

Patient need medical attention when the pain restrict him/her to do the wrist activity due to pain. The location of pain is over the lateral aspect of the elbow, which is known as the lateral epicondyle. This area becomes tender to touch. Pain started by any activity, which places stress on the tendon, such as gripping or lifting. This pain may be localized to the lateral condyle of the humerus or travel to the forearm and hand.

Overuse or repeated movements of the wrist is one of the major cause of the tennis elbow.

Repeated movements stress the extensor muscle-tendon unit, if this stress is not normal that may lead towards the strain on the tendon. These stresses can be from holding too large a racquet grip or from "repetitive" gripping and grasping activities, i.e. meat-cutting, plumbing, painting, and weaving, etc.

A direct blow to the elbow may result in swelling of the tendon that can lead to degeneration.[3] A sudden extreme action, force, or activity could also injure the tendon.

Computers users and bike riders are suffering in this problem very commonly now days. Computer work required digital long flexors and extensors to perform a task. If the task is performed in same position for prolong period with or without variation can produce similar to overuse or repetitive trauma. This trauma may produce a state of muscle guarding in common extensor tendon leading unusual stretch force on lateral epicondylitis, so, the bone is directly involved by this trauma and inflame epicondyle. This condition start the vicious circle, uncles it is corrected.

There are multiple management options include physical agents and modalities including ultrasonic therapy, infrared radiation, laser therapy, cryotherapy, electrical stimulation, transcutaneous electrical nerve stimulator and so. Conventional physical therapy include modalities along with exercise such isometric exercises, multiple angle isometric exercises, eccentric loading, tennis elbow bracing, rest, ice therapy and modification work mechanics.

Advanced therapies include mobilization and manipulative methods. There are other list of therapies but less tested and proven. Such as lateral glide of ulna or medial glide of ulna, anterior glide of radius or radial glide of radius. Other techniques include mobilization with movement that debates on derangements of bony components such as humeroradial components. They plead to improve the condition with restoring the bony relationship of bony partners.
Still there are other techniques, which debates on spontaneous recovery that may be catalyzed by functional activities.

OBJECTIVES

Objective of study was to identify that which one of the glide, ulnar medial / lateral glide and radius anterior glide improve lateral epicondyle tendinopathy.

MATERIALS AND METHODS

Convenience sampling technique is used, which comprise of 68 Patients. It was Randomized Clinical Trial. Subjects were equally distributed to two groups with use of coin toss method of randomization with head of coin to Group 1 and tail attributed to Group 2. The study was conducted in Physiotherapy OPD of Nawaz Sharif Social Security Hospital, Lahore. Inclusion Criteria, Patients having presentation of lateral epicondyle tendinopathy and clinically diagnosed at time of recruitment and they have complaints from at least 4 weeks.

Exclusion Criteria, The patients were excluded if complaints were bilateral and report decrease of pain in the previous 2 weeks, who would had received any treatment for the lateral epicondyle tendinopathy episode in the last 6 months before inclusion, and who would be unable to fill out self-evaluating outcome measures.

The 6-point scale with 1 representing complete recovery to 6 much worse. Other measures were Numeric Rating Pain Scale [NRPS]. This scale show the Inconvenience during daily activities (11-point numeric scale, 0 indicating no inconvenience and 10 severe inconvenience), pain-free grip strength; and maximum grip strength measured through manual muscle testing.

Subjects in both groups were blinded. Assessors were recruited senior physical therapists were aware with outcome measurements used in study.

RESULTS

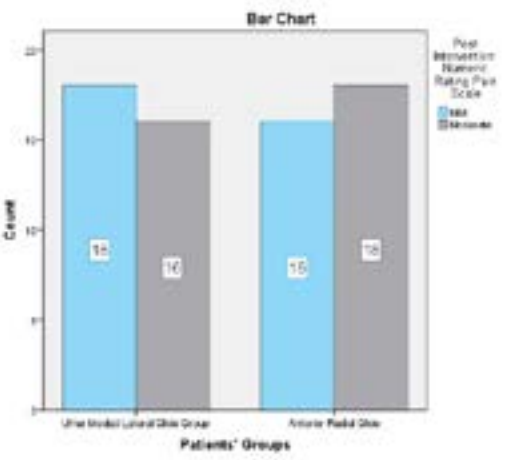
Mean age of patient in group of medial lateral glide 34.68 SD $\pm$ 8.477 and in group of anterior radius glide 32.1471 SD$\pm$7.67.Mean Body Mass Index of patients in group of medial lateral glide 24.79 SD $\pm$ 3.574 and anterior radius glide, 24 SD $\pm$ 3.172. Medial/ Lateral Glide Pre intervention scores of Numeric Rating Scale on average 3.41and SD 0.857 and Post intervention scores of Numeric Rating Scale, found to be on average 1.29 with SD 01.001. Anterior Glide group pre intervention scores of Numeric Rating Scale, found to be on average 3.53 with SD 0.615 and post intervention found to be on average 1.97 with SD 1.141.

Post Intervention: Global Measure of Improvement						
Patients' Groups			**Frequency**	**Percent**	**Valid Percent**	**Cumulative Percent**
Medial/ Lateral Glide Group	Valid	Completely Recovered	14	41.2	41.2	41.2
		Much Improved	15	44.1	44.1	85.3
		Little Improved	5	14.7	14.7	100.0
		Total	34	100.0	100.0	
Anterior Radial Glide	Valid	Completely Recovered	10	29.4	29.4	29.4
		Much Improved	10	29.4	29.4	58.8
		Little Improved	13	38.2	38.2	97.1
		Not Changed	1	2.9	2.9	100.0
		Total	34	100.0	100.0	

Post intervention scores measurement with Global Measure of Improvement showed that 57 percent subjects in medial lateral group Much Improved, 23 percent little improved and 19 percent not changed their status. At final reading, Post intervention scores measurement with Global Measure of Improvement showed that 42 percent subjects in medial lateral group completely recovered, 43 percent much improved and 13 percent little changed their status. Post intervention scores measurement with Global Measure of Improvement showed that 19 percent subjects in anterior glide group Much Improved, 48 percent little improved and 33 percent not changed their status.

Independent Samples Test- Post Treatment Assessment										
		Levene's Test for Equality of Variances		**t-test for Equality of Means**						
		F	**Sig.**	**t**	**df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**	**95% Confidence Interval of the Difference**	
									Lower	**Upper**
Post Treatment Assessment at reading	Equal variances assumes	.017	.896	-.089	72	.929	-.07571	.84708	-1.76394	1.61251
	Equal variances not assumes			-.089	71.471	.929	-.07571	.84770	-1.76578	1.61435

Furthermore, the result shows inter group comparison at first assessment for tennis elbow. Assuming equal variances, the significance value-0.896 showed that there was no statistically significant difference in outcomes of both treatments i.e. ulnar medial lateral glide and anterior radial glide. Sig (2-tailed) p-0.929, value much higher than 0.05, further verifies this fact. The mean difference found was 0.0757. Degree of freedom was 72. However, within group is significant difference at pre-interventional and post-interventional assessment (p-0.2 and p-0.000 respectively).



DISCUSSION

Manual therapy is one of the major part in physical therapy to solve the wide range of musculoskeletal, neuromuscular problem.so, this technique is less supported due to lack of evidences. The specific indications and predictive rules are yet to be determined.

Wrist is used to perform multi task activity freely and frequently so; the chance of injury or overuse injury is higher in this area and muscles, who perform these activities.

All the subjects improved in both of groups, but the subjects in ulnar medial lateral glide group showed complete recover as compare to other group.

There is less literature found on effects of medial lateral glide and anterior radial glide comparison, some of the studies have discussed this technique regarding the musculoskeletal problem but with lack of evidence. Many studies outcome measuring tool is numeric rating pain scale because it is considered a good tool to measure pain intensity now a days. Other best tool is visual analogue scale.

Different studies show that the NSAID therapy is effective for tendinopathy and other inflammatory Process.[11] There is no supportive evidence either topical or oral NSAIDS are the treatment option for common extensor tendinopathy. Pattanittum et al. 2013 reviewed 15 trials comparing topical NSAIDs or oral NSAIDS versus placebo.[12] They reported minimum effect of the topical NSAIDS in reducing pain than placebo. But the oral NSAIDS have mixed results than from placebo. The gastrointestinal problem incidence rate is high with the use of NSAIDS. These results are consistent with a previous review by Green et al. in 2002.[13]

CONCLUSION

There was no statistically significant difference in outcomes of ulnar medial lateral glide and anterior radial glide. However, there was statistically significant pre-treatment and post treatment outcomes at all two levels of post assessment. Still the ulnar medial lateral glide group performed better if we consider micro statistics.

Copyright© 15 May, 2017.

REFERENCES

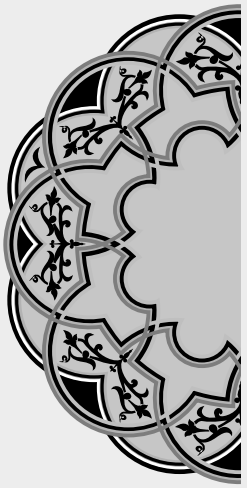
1. Gliedt JA, Daniels CJ. **Chiropractic treatment of lateral epicondylitis: a case report utilizing active release techniques.** J Chiropr Med. 2014; 13(2):104-9.
2. Hoogvliet P, Randsdorp MS, Dingemanse R, Koes BW, Huisstede BM. **Does effectiveness of exercise therapy and mobilisation techniques offer guidance for the treatment of lateral and medial epicondylitis?** A systematic review. Br J Sports Med. 2013; 47(17):1112-9.
3. MacDermid JC, Silbernagel KG. **Outcome Evaluation in Tendinopathy: Foundations of Assessment and a Summary of Selected Measures.** J Orthop Sports Phys Ther. 2015; 15:1-34.
4. Menta R, Randhawa K, Cote P, Wong JJ, Yu H, Sutton D, et al. **The Effectiveness of Exercise for the Management of Musculoskeletal Disorders and Injuries of the Elbow, Forearm, Wrist, and Hand: A Systematic Review by the Ontario Protocol for Traffic Injury Management (OPTIMa) Collaboration.** J Manipulative Physiol Ther. 2015; 38(7):507-20.
5. Loew LM, Brosseau L, Tugwell P, Wells GA, Welch V, Shea B, et al. **Deep transverse friction massage for treating lateral elbow or lateral knee tendinitis.** Cochrane Database Syst Rev. 2014; 8(11).
6. McLean S, Naish R, Reed L, Urry S, Vicenzino B. **A pilot study of the manual force levels required to produce manipulation induced hypoalgesia.** Clin Biomech. 2002; 17(4):304-8.
7. Slater H, Arendt-Nielsen L, Wright A, Graven-Nielsen T. **Effects of a manual therapy technique in experimental lateral epicondylalgia.** Man Ther. 2006; 11(2):107-17.
8. Vicenzino B, Wright A. **Effects of a novel manipulative physiotherapy technique on tennis elbow: a single case study.** Man Ther. 1995; 1(1):30-5.
9. Viswas R, Ramachandran R, Korde Anantkumar P. **Comparison of effectiveness of supervised exercise program and Cyriax physiotherapy in patients with tennis elbow (lateral epicondylitis): a randomized clinical trial.** ScientificWorldJournal. 2012; 939645(10):2.
10. Weber C, Thai V, Neuheuser K, Groover K, Christ O. **Efficacy of physical therapy for the treatment of lateral epicondylitis: a meta-analysis.** BMC

Musculoskelet Disord. 2015; 16(223):015-0665.

11. Newcomer KL, Laskowski ER, Idank DM, McLean TJ, Egan KS. **Corticosteroid injection in early treatment of lateral epicondylitis.** Clin J Sport Med. 2001; 11:214–222.

12. Khan KM, Cook JL, Bonar F, Harcourt P, Astrom M. **Histopathology of common tendinopathies. Update and implications for clinical management.** Sports Med. 1999; 27:393–408.

13. Green S, Buchbinder R, Barnsley L, Hall S, White M, Smidt N, et al. **Non-steroidal anti-inflammatory drugs (NSAIDs) for treating lateral elbow pain in adults.** Cochrane Database Syst Rev. 2002.



"Children must be taught how to think. Not what to think."

Margaret Mead

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Muhammad Asim Arif	Data collection, Manuscript writing, literature review, statistical analysis	
2	Faiza Sharif	Data collection, Statistical analysis	
3	Muhammad Usman Khalid	Corressponding Author	