

The history of lateral epicondylalgia health and social care essay



Lateral epicondylalgia or (Tennis Elbow) is a painful and weaken musculoskeletal condition that impacts substantially on society and challenges the health care industry. It is degenerative or failed healing tendon response characterized by increase of fibroblasts, vascular hyperplasia and disorganized collagen in the origin of extensor carpi radialis brevis, the most frequently affect structure. It is commonly due to more quick, monotonous, cyclic eccentric contractions and wrist gripping activities. It commonly affects the dominant arm, with a prevalence of 1-3% in the general population, but the incidence rapidly increases to 19% between 30-60 years of age and seems to be more severe and long-standing in women . The average period of an episode of lateral epicondylitis ranges between 6 months and 2 years. In tennis elbow, . microscopic and macroscopic lesions can be found in the extensor carpi radialis brevis. Cyriax summarized the different types of tennis elbow as teno periosteal tendinous and musculotendinous. The most common the teno-periosteal tendinous. The onset can be either gradual or sudden. Main complaints of lateral epicondylitis include pain and decrease grip strength affects activities of daily living. Diagnosis is simple and be confirmed by tests that reproduce the pain , resisted wrist extension, resisted middle finger extension and passive wrist flexion. Management of lateral epicondylitis includes medical, surgical and physiotherapy management. Conservative management includes rest, NSAIDs, cortisone injection, ice, activity modification. Surgical Management of Lateral epicondylitis is often recommended when conservative strategies fail to relieve lateral epicondylitis symptoms after six to 12 months. Only about one in 10 people with tennis elbow need surgery. Surgery involves either trimming the inflamed tendon, or surgically releasing and then

<https://assignbuster.com/the-history-of-lateral-epicondylalgia-health-and-social-care-essay/>

reattaching the tendon to relieve pain. Physiotherapy Management for lateral epicondylitis are activity modification, correction of mechanics, electrotherapeutic modalities such as ultrasound therapy, cryotherapy, laser, phonophoresis and iontophoresis, physiotherapeutic techniques such as concentric and eccentric strengthening exercises, stretching exercises, range of motion exercises, mulligan's mobilization with movement, cyriax physiotherapy such as deep transverse friction massage, mill's manipulation, taping techniques, orthotics such as Counter force bracing such as tennis strap or wrist splint. ultrasound therapy have thermal and mechanical effects on the target tissue resulting in an increased local metabolism, circulation , extensibility of connective tissue and tissue regeneration in lateral epicondylitis. cyriax physiotherapy includes deep transverse friction followed by mill's manipulation. Deep transverse friction is a specific type of connective tissue massage applied precisely to the soft tissue structures such as tendons. It has a local pain diminishing effects and results in better alignment of connective tissue fibrils. Following friction massage, mills manipulation is done to elongate the scar tissue by rupturing adhesions within the tenoosseous junction, making the affected area mobile and pain free.

NEED OF THE STUDY

Based on previous literature, cyriax physiotherapy and ultrasound therapy, were significantly effective in the treatment of lateral epicondylitis. This study aimed to compare the effectiveness of cyriax physiotherapy with ultrasound therapy and ultrasound therapy alone on pain and function in patients with chronic lateral epicondylitis.

1. 2 AIMS AND OBJECTIVES OF THE STUDY

AIMS

To study the effect of cyriax physiotherapy on pain and function in patients with chronic lateral epicondylitis.

OBJECTIVES

To study the effect of cyriax physiotherapy with ultrasound therapy on pain and function in patients with chronic lateral epicondylitis. To study the effect of ultrasound therapy alone on pain and function in patients with chronic lateral epicondylitis. To compare the effect of cyriax physiotherapy with ultrasound therapy and ultrasound therapy alone on pain and function in patients with chronic lateral epicondylitis.

1. 3 HYPOTHESIS

NULL HYPOTHESIS

There is no significant difference between the effect of cyriax physiotherapy with ultrasound therapy and ultrasound therapy alone on pain and function in patients with chronic lateral epicondylitis.

ALTERNATE HYPOTHESIS

There is significant difference between the effect of cyriax physiotherapy with ultrasound therapy and ultrasound therapy alone on pain and function in patients with chronic lateral epicondylitis.

II. REVIEW OF LITERATURE

LATERAL EPICONDYLITIS

Ciccotti et al., (2007)

Stated that the over use of the extensor mechanism results in lateral epicondylitis. The causes are poor mechanics, poor condition, limited elasticity, or fatigue leads to increased transmission of both concentric and eccentric contractile loading forces. These forces lead to degenerative changes at the muscular tendinous junction and degeneration, angio fibroblastic change, and an inadequate reparative response, leading to tendinitis and tearing.

Tomlinson (2004)

The main complains are pain and decreased function, both affects activities of daily living. Diagnosis can be confirmed by tests that reproduces pain, such as palpation over the facet of the lateral epicondyle, resisted middle finger extension and passive wrist flexion.

Capelo et al., (2003)

Stated that lateral epicondylitis is caused by repeated contraction of the forearm extensor muscles, particularly at the origin of the ECRB, which results in micro tearing with subsequent degeneration, immature repair, and tendinosis. In addition to the mechanical forces that lead to excessive varus stress on the ECRB, its unique anatomic position against the lateral aspect of the capitulum places the tendon at risk for repeated undersurface abrasion during elbow extension. The lack of vascularity at the undersurface of the tendon further contributes to degeneration and tendinosis. At gross

examination, the affected tendon appears gray and friable. Epicondylitis was initially believed to originate from an inflammatory process involving the radial humeral bursa, synovium, periosteum, and annular ligament.

Krausharr et al., (1999)

Stated that the Lateral epicondylitis appears to be a chronic overuse injury with degenerative changes to the common extensor tendon with the extensor carpi radialis brevis cited as the most commonly involved structure. Histological studies suggest that lateral epicondylitis involves a degenerative process, citing the presence of disorganized collagen as opposed to inflammatory cells. Waugh (2005)

Carol et al., (1997)

Stated that Conventional treatment for tennis elbow has focused primarily on the pain management by anti-inflammatory medication, ultrasound, phonophoresis or iontophoresis

Vincenzino et al., (1996)

Stated that the Lateral epicondylitis, commonly referred to as tennis elbow, is one of the most common lesions of the arm. It is usually defined as syndrome of pain in the area of the lateral epicondyle. The condition is a degenerative or failed healing tendon response characterized by the increased presence of fibroblasts, vascular hyperplasia and disorganized collagen in the origin of the extensor carpi radialis brevis (ECRB), the most commonly affected structure. It is generally a work related or sport related pain disorder, usually caused by excessive, quick, monotonous, repetitive eccentric contractions and gripping activities of the wrist.

Verharr (1994)

Stated that the dominant arm is commonly affected with prevalence of 1-3% in the general population and the peak prevalence is between 30 and 60 years. Lateral epicondylitis appear to be of longer duration and severity in women.

Haker (1993)

Stated that the main clinical presentation and the chief complaints in tennis elbow are decreased grip strength , decreased functional activities, and increased pain, which may have significant impact on activities of daily living . The diagnosis of tennis elbow can be made simple , and it may be confirmed by test which would elicit the pain , tenderness over on the facet of the lateral epicondyle on palpation , resisted wrist extension, resisted middle finger extension, and passive wrist flexion

Nirschl et al., (1979)

Stated that epicondylitis represents a degenerative process involving the origin of the extensor tendons at the lateral elbow and the flexor-pronator muscle group at the medial elbow. It is thought that repetitive stress and overuse lead to tendinosis with micro trauma and partial tearing that may progress to a full-thickness tendon tear.

Hooper (1975)

Stated that due to the intimate association of extensor carpi radialis muscle to the capsule of the elbow, irritation of the free nerve endings in the capsule has been postulated as a cause of joint involvement.

ULTRASOUND THERAPY

Wong et al., (2007)

Stated that the conducted a study to examine the opinions of physical therapists with advanced competency in orthopedics about the use and perceived clinical importance of Ultrasound therapy in managing commonly encountered orthopedic impairments. Four hundred fifty-seven physical therapists who were orthopedic certified specialists from the Northeast/Mid-Atlantic regions of the United States were invited to participate. A 77-item survey instrument was developed. After face and content validity were established, the survey instrument was mailed to all subjects. Two hundred seven usable survey questionnaires were returned (response rate= 45. 3%) According to the surveys, the respondents indicated that they were likely to use US to decrease soft tissue inflammation (eg, tendinitis, bursitis) (83. 6% of the respondents), increase tissue extensibility (70. 9%), enhance scar tissue remodeling (68. 8%), increase soft tissue healing (52. 5%), decrease pain (49. 3%), and decrease soft tissue swelling (eg, edema, joint effusion) (35. 1%). The respondents used US to deliver medication (phonophoresis) for soft tissue inflammation (54. 1%), pain management (22. 2%), and soft tissue swelling (19. 8%). They concluded that Ultrasound continues to be a popular adjunctive modality in orthopedic physical therapy.

Klaiman et al (1998)

Stated that the study of phonophoresis versus ultrasound in the treatment of common musculoskeletal conditions among forty-nine subjects with soft tissue injuries including epicondylitis and tendinitis. Both groups received 8 min of continuous ultrasound at 1. 5 w/cm², three times per week for 3 week

. for the phonophoresis group a gel containing 0. 05% fluocinocide was used as a coupling agent . the addition of PH with fluocinocide does not augment the benefits of ultrasound used alone. They concluded that ultrasound results in decreased pain and increased pressure tolerance in soft tissue injuries.

Ann Thomson et al., (1996)

Stated that the ultrasound therapy is often successful at dosages of 1 W/cm², continuous mode, for 10 minutes before frictions

Louis et al., (1994)

Stated the Ultrasound may induce thermal and non-thermal physical effects in tissues. Non-thermal effects can be achieved with or without thermal effects. Thermal effects of ultrasound upon tissue may include increased blood flow, reduction in muscle spasm, increased extensibility of collagen fibers and a pro-inflammatory response. It is estimated that thermal effects occur with elevation of tissue temperature to 40–45°C for at least 5 min

Prentice et al., (1994)

Stated that the ultrasound may induce thermal and non-thermal physical effects in tissues. Non-thermal effects can be achieved with or without thermal effects. Thermal effects of ultrasound upon tissue may include increased blood flow, reduction in muscle spasm, increased extensibility of collagen fibers and a pro-inflammatory response. It is estimated that thermal effects occur with elevation of tissue temperature to 40–45°C for at least 5 minutes.

Draper et al., (1993)

Stated that, following 10 minutes of 1-MHz continuous ultrasound at an intensity of 1.5 W/cm² with a 20-cm² transducer applied to a skin area of 80 cm², the temperature in the gastrocnemius muscle at a depth of 3 cm was increased by 5°C. These researchers emphasized the necessity of limiting the area treated, and they considered it necessary to give ultrasound for at least 7 or 8 minutes in order to achieve a rise in temperature.

Byle et al., (1993)

Stated that increased collagen deposition following ultrasound treatment. Ultrasound on an alternative days for a period of 1 or 3 weeks improves arterial blood flow.

Falconer et al., (1990)

Stated that ultrasound appears to be effective in relieving pain and increasing range of motion in acute periarticular inflammatory conditions

Harvey et al., (1975)

Stated that the continuous ultrasound applied at 1.5 W/cm² for 3 to 5 minutes for 10 treatments over a 3 week period followed by exercise has been found to be more effective than exercise alone in relieving pain and increasing range of motion in patients with shoulder pain

CYRIAX PHYSIOTHERAPY**Rajadurai viswas et al., (2012)**

Conducted a study to compare the effectiveness of supervised exercise program and cyriax physiotherapy in patients with tennis elbow or lateral

epicondylitis. This study was done with 20 patients, 10 in each group, group A treated with supervised exercise program, group B treated with cyriax physiotherapy. All patients treated by 3 treatment sessions a week for 4 weeks. Outcome measures were visual analog scale and tennis elbow function scale. They concluded that both supervised exercise program and cyriax physiotherapy were found significantly effective in reduction of pain and improve function.

Amit et al., (2005)

Conducted a study to compare cyriax physiotherapy, phonophoresis and with supervised exercise program in subjects with lateral epicondylalgia. 60 patients with lateral epicondylalgia between age group of 30-60 patients were included. Control group received phonophoresis with supervised exercise and experimental group received deep transverse friction massage with mill's manipulation. All the patients underwent 3 treatment sessions a week for 4 weeks. Outcome measures were visual analog scale, pain free grip strength and functional status measured with the tennis elbow function scale. They concluded that cyriax physiotherapy is a superior treatment than phonophoresis with exercise in management with lateral epicondylalgia.

Stasinopoulos et al., (2004)

Stated that the mechanism of mills manipulation is the expansion of scar tissue, follow the rupture of adhesions due to manipulation. This increased length decreases tension on the scar leading to less pain. The resulting gap is filled with fibrous tissue, resulting in permanent lengthening and abolition of pain. The application of friction massage is said to provide the patient with analgesia prior to the manipulation as well as softening the scar.

<https://assignbuster.com/the-history-of-lateral-epicondylalgia-health-and-social-care-essay/>

Johnson 2004

Stated that the use of deep transverse friction massage in combination with mill's manipulation for the tennis elbow . in order to label the treatment intervention as cyriax physiotherapy, both the treatment components mentioned above must be used jointly in the sequence specified . in this protocol, person must adhere to this intervention 3 times a week for duration of 4 weeks.

Gregory et al., (2003)

Stated that pain relief during and after deep transverse friction may be due to modulation of the nociceptive impulses at the level of the spinal cord: the " gate control theory". The centripetal projection into the dorsal horn of the spinal cord from the nociceptive receptor system is inhibited by the concurrent activity of the mechanoreceptors located in the same tissue.

Kesson et al., (1998)

Stated that deep transverse friction massage is applied for 10 minutes after the numbing effect has been achieved, every other day or at a minimum interval of 48 hours, because of the traumatic hyperemia induced, to prepare the tendon for the manipulation

Randolph et al., (1996)

Stated that friction massage for chronic conditions of soft tissues usually tendons, ligaments, or muscles arising from abnormal modeling of fibrous elements in response to fatigue stresses or accompanying resolution in disorder including tennis elbow.

Cyriax 1992

Stated that the friction massage produce relative hyperemia at the scar that is to be ruptured, thus acting as a local analgesics . it also softens it

Goats et al., (1989)

Stated that the mechanism of reduction in pain may be achieved is through diffuse noxious inhibitory controls, a pain suppression mechanism that releases endogenous opiates. The latter are inhibitory neurotransmitters which diminish the intensity of the pain transmitted to higher centre.

Kushner et al., (1986)

Stated that the aim of the mills manipulation is to elongate the scar tissue by rupturing adhesions within the tenoosous junction, making the affected area mobile and pain free

Debruijn (1984)

Stated that deep transverse friction massage is also leads to increased destruction of pain provoking metabolites, such as Lewis's substances. This metabolite, if present in too high a concentration, causes ischemia and pain. It has also been suggested that a 10 minute deep transverse friction treatment of a localized area may give rise to lasting peripheral disturbance of nerve tissue, with local anesthetic effect.

Walker (1984)

Stated that deep transverse friction massage produces vasodilatation and increased blood flow to the area. This may facilitate the removal of chemical

irritants and increase the transportation of endogenous opiates, resulting in a decrease in pain.

Cyriax (1983)

Stated that deep transverse friction massage must be applied transversely to the specific tissue involved, unlike superficial massage given in the longitudinal direction parallel to the vessels, which enhances circulation and return of fluids

Noel et al., (1932)

Stated that the deep transverse friction applied for 5-10 min can restore mobility and stretch adhesions

VISUAL ANALOG SCALE

Fiona Macmillan et al., (2004)

The visual analogue scale has a 10-cm horizontal line has been shown produce a more uniform distribution than a vertical line with, anchor words of " no pain" and " worst pain".

Stratford et al., (1984)

Stated that VAS is considered a responsive outcome measure for lateral epicondylitis because mean pain VAS change scores were greater in subjects who successfully responds to treatment of lateral epicondylitis than in those whose treatment was considered a failure (success 23. 2 Vs failure -2. 5)

Price et al., (1983)

The VAS consists of, 10 cm line with 0 cm for the " least pain imaginable" 10 cm the " worst pain imaginable". Patients were instructed to intersect the

<https://assignbuster.com/the-history-of-lateral-epicondylgia-health-and-social-care-essay/>

Scale with a vertical line based on their current level of pain. The visual analogue scale has been found to be a valid and reliable method of measuring perceived pain.

TENNIS ELBOW FUNCTION SCALE

Lowe 1999

Stated that the TEFS assessment tool has been found to have high test - retest reliability and moderate construct validity

Portney et al., (1993)

Stated that measures with reliability coefficient above 0.75 have good reliability and those with coefficients below 0.75 have poor to moderate reliability. A measure with a reliability coefficient of 0.75 may be acceptable for studies. The 95% confidence interval, a calculation of measurement error for the ICC (intra class correlation coefficient), indicated that the true value of the TEFS reliability coefficient falls within a range considered high. Thus the analysis of reliability using the ICC indicates the TEFS has good reliability and should be suitable for clinical trials investigating LE and assessing within patient changes.

Mathiowetz (1985)

Stated that the changes in TEFS were related to changes in the pain VAS, function VAS and PFF (pain free function). The relationship were lower than the predicted correlation of ($r \geq 0.5$). Despite this, the validity of the TEFS to measure change is supported because it is responsive to changes in Lateral epicondylitis.