

Physical Therapy Department for Musculoskeletal Disorder and Its Surgery

Doctoral Degree
2016

Author	:	Dina Othman Shokri Morsi Galal
Title	:	Effect of pulsed shortwave diathermy on peak torque of quadriceps muscle in normal subjects.
Dept.	:	Physical Therapy Department for musculoskeletal disorder and its Surgery.
Supervisors	1.	Ibrahim Magdy Elnaggar
	2.	Haytham Mohammed Elhafez
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Degree	:	Doctoral.
Year	:	2016.
Abstract	:	
<p>Temperature is an important determinant of skeletal muscle function, the effect of a change in muscle temperature on the efficiency of muscle contraction in vivo has received little attention. Purpose: The first purpose of this study was to investigate the effect of using pulsed shortwave diathermy on isometric and isokinetic peak torque of quadriceps muscle in normal subject. The second purpose of this study was to investigate the effect of using pulsed shortwave diathermy prior to isometric and isokinetic exercises on isometric and isokinetic peak torque of quadriceps muscle in normal subjects. Methods: Ninety normal male and female subjects with age ranged from 20-35 years and body mass index ranged from 22-26.5 kg/cm² participated in this study. Subjects were randomly assigned into six equal groups. The first group received pulsed shortwave diathermy for the quadriceps; the second group received isometric training of quadriceps while the third group received pulsed shortwave diathermy followed immediately by isometric training of the quadriceps muscle. For each one of these groups the isometric peak torque of quadriceps at 60° of knee flexion before and after each procedure was done. The fourth group received pulsed shortwave diathermy for the quadriceps ; the fifth group received isokinetic exercise training of quadriceps in the form of concentric-eccentric training at 60°/sec while the sixth group received pulsed shortwave diathermy followed immediately by isokinetic training in the form of concentric-eccentric training of quadriceps muscle. For each one of this groups the isokinetic (concentric-eccentric) peak torque of quadriceps at 60°/sec before and after each procedure was done. The Biodex system 3 isokinetic dynamometer was used for assessment and training procedures. Results: There was no significant effect of using pulsed shortwave diathermy on isometric average peak torque if this thermal agent used alone or prior to exercises. There was also no significant effect of using this thermal agent on isokinetic average peak torque prior to isokinetic exercises. On the other hand there was significant effect of using pulsed shortwave on concentric and eccentric average peak torque of quadriceps muscle. Conclusion: It was concluded that the isometric average peak torque of quadriceps is not influenced by single session of pulsed shortwave diathermy if used alone or prior to quadriceps exercises. Isokinetic average peak torque of quadriceps is not influenced by single session of pulsed shortwave diathermy if used prior to quadriceps exercises while there was significant effect of using pulsed shortwave on concentric and eccentric average peak torque of quadriceps muscle.</p>		
Key words	1.	Shortwave diathermy
	2.	Quadriceps muscle
	3.	Heating, Temperature
	4.	Peak Torque
	5.	Isometric
	6.	normal subjects.
Classification number	:	
Pagination	:	142 p.
Arabic Title Page	:	تأثير النفاذية الحرارية للموجة القصيرة النابضة على أقصى عزم للمعضلة ذات الرؤوس الأربعة في الأشخاص الطبيعيين
Library register number	:	5199-5200.

Author	:	Ebtessam Fawzy Gomaa
Title	:	Effect of Iliotibial Band Myofascial Release in Treatment of Knee Osteoarthritis
Dept.	:	Physical Therapy Department for musculoskeletal disorder and its Surgery.
Supervisors	1.	Nadia Abd-Elazim Fiyaz
	2.	Aly Osman El-Mofty
	3.	Lilian Albert Zaky
Degree	:	Doctoral.
Year	:	2016.
Abstract	:	
<p>Background: knee osteoarthritis (KOA) is a heterogenous progressive disease; with different clinical presentations. Symptomatic KOA patients' need comprehensive assessment and treatment techniques to address specific problems around the knee such as myofascial trigger points (MTrPs) developing in iliotibial band (ITB); creating undue joint stress & pain. Purpose: the purpose of this study was to investigate the effect of ITB myofascial release (MFR) technique on hip adduction angle, patellar mal-tracking, functional performance, WOMAC score, pressure pain threshold (PPT) of MTrPs in patients' with KOA. Design and methods: parallel group randomized controlled trial; comprised four weeks intervention period, where patients in both groups assessed before and after treatment. Subjects: patients were randomly distributed into two groups: <i>Group A (control):</i> Consisted of 17 patients who were treated by exercise program, <i>Group B (experimental):</i> Consisted of 19 patients who were treated by the same exercise program in addition to ITB MFR technique. Intervention: two MFR techniques were used in combination; the ischemic compression (IC) technique and neuromuscular technique (longitudinal strokes). Assessment measures: hip adduction angle using digital protractor, patellar lateral displacement using Herrington's clinical approach, functional performance using both step test and timed up & go test (TUG), subjective disability evaluation using WOMAC index, PPT using Wranger's algometer. Results: Both groups showed a significant improvement (P-value <0.05) in all evaluated measures to the favor of experimental group (B) which was treated by ITB MFR; although adduction angle was significantly improved post-treatment in experimental group (B); between group difference was considered statistically insignificant. Conclusion: Adding ITB MFR technique to the exercise program had a more significant effect in improving patients with KOA.</p>		
Key words	1.	Knee osteoarthritis
	2.	iliotibial band
	3.	myofascial release
Classification number	:	000.000.
Pagination	:	119 p.
Arabic Title Page	:	تأثير إنفراج النسيج الليفي العضلي للعصبة الحرقفية للساق في علاج الالتهاب العظمي المفصلي للركبة.
Library register number	:	4825-4826.

Author	:	Heba Mohamed Rashad Mohamed
Title	:	Low level laser therapy versus controlled mechanical loading on healing of tibial fracture
Dept.	:	Physical Therapy Department for musculoskeletal disorder and its Surgery.
Supervisors	1.	Lamiaa Adel Salah El -Deen
	2.	Walid Reda Awadallah
	3.	Aliaa Mohamed Rehan Mohamed Youssef
Degree	:	Doctoral.
Year	:	2016.
Abstract	:	
<p>Background Tibia is the most exposed bone in the body and vulnerable to trauma, so its fractures are common among the long bone fractures and its management needs various approaches to allow bone healing. The current study seeks to compare between low level laser therapy (LLLT) and controlled mechanical loading on healing of tibial shaft fractures immobilized with an external fixator. Material and methods: 26 patients with tibial shaft fracture immobilized with an external fixator participated in current study. They were assigned randomly into two groups with 13 patients in each. Group (A) was the laser group and group (B) was the controlled mechanical loading group. In group (A) laser applied 1st day after immobilized with an external fixator. A continuous wave 904 nm infrared laser was used at dose 4 j/cm² each point at fracture site for 9 sessions (6 session in 1st week and 3 sessions (every other day) in 2nd week), each session was 5 minutes. In group (B) static controlled mechanical loading with 25% of patient weight was applied for 36 successive cycles for 9 sessions (6 sessions in 1st week and 3 sessions (every other day) in 2nd week). Then data collected by dual energy x-ray (DEXA) which measure bone mineral content (BMC) and bone mineral density (BMD), numerical rating scale (NRS) which measure pain and lower extremity functional scale (LEFS) which measure function of lower limb. Results: the results of this study showed no significant difference in (BMC) and (BMD) between two groups but there are significant difference of numerical rating scale (NRS) & lower extremity functional scale (LEFS) in favor of group (A) when compared with group (B). Discussion and Conclusion: Based on the results obtained in this study concluded that LLLT and mechanical controlled weight bearing had the same effect on bone healing, but LLLT has a greater effect on pain and LEFS.</p>		
Key words	1.	tibial fracture
	2.	low level laser therapy.
	3.	external fixation
	4.	bone healing
	5.	mechanical loading
Classification number	:	000.000.
Pagination	:	117 p.
Arabic Title Page	:	العلاج بالليزر منخفض المستوى مقابل التحميل الميكانيكي المراقب على التئام كسر القصبة.
Library register number	:	5205-5206.

Author	:	Hesham Ahmed Ali
Title	:	Effect Of Selected Physical Therapy Program After Non-Anatomical Repair Techniques For Anterior Shoulder Instability
Dept.	:	Physical Therapy Department for musculoskeletal disorder and its Surgery.
Supervisors	1.	Khaled Elsayed Ayaad
	2.	Aliaa Mohamed Rehan
	3.	Walid Reda Awadallah
Degree	:	Doctoral.
Year	:	2016.
Abstract	:	
<p>BACKGROUND: Anterior shoulder dislocation is common injury and may lead to joint instability. Open repair is the choice to prevent re-dislocation when there were bony loss or tissue deficiencies. Latarjet procedure is one of non-anatomical repair techniques. The reference was preserving glenoid labrum as long as it can be repaired. If not, it was removed. PURPOSE: This study investigated the effectiveness of standard rehabilitation protocol on shoulder function and proprioception acuity in patients with anterior shoulder instability. Furthermore, whether rehabilitation outcome varies with and without labrum removal. SUBJECTS & METHODS: 29 patients aged from 25 to 52 years old were enrolled in this study. All patients underwent Latarjet procedure. Based on labrum presence, patients were divided into two groups: (A) had the labrum preserved (n=15), and (B): labrums were removed (n=14). Patients received a standardized protocol designed by Brigham and Women's Hospital. Program consists of four consecutive phases; {Phase I} Immediate Post-Surgical (Weeks 1- 2); {Phase II} Intermediate/ROM (Week 3-8); {Phase III} Strengthening (Week 9-12); and {Phase IV} Overhead Activities/Return to activity (Week 13-16). ANALYSIS: Pain severity, shoulder range of motion and muscle strength was quantified using the shoulder pain score, a digital inclinometer and a manual muscle tester, respectively. Proprioception acuity was measured using the closed kinetic chain upper extremity stability test. All measurements were done at baseline before rehabilitation begins and at end of the 16th weeks of rehabilitation. Within group comparisons showed significant differences between baseline measures and after 16th weeks of rehabilitation in patients of both groups (P<0.05). Between groups comparison showed significant differences in labrum preservation patients regarding selected shoulder muscles strength and proprioception acuity (P<0.05). Labrum removal showed significant difference in pain severity (P<0.05) and external rotation range of motion (P<0.05). CONCLUSION: Labrum preservation significantly improves shoulder proprioception and strength following rehabilitation. Compared in the other hand, labrum removal, when indicated, significantly improves pain and external rotation range of motion</p>		
Key words	1.	anterior shoulder instability
	2.	shoulders rehabilitation
Classification number	:	000.000.
Pagination	:	101 p.
Arabic Title Page	:	تأثير برنامج العلاج الطبيعي المختار بعد تقنيات الإصلاح الغير تشريحي لعدم الإستقرار الأمامي لمفصل الكتف.
Library register number	:	5077 5078.

Author	:	Karima Abdel Aty Hassan Mohamed
Title	:	Relationship between Hip Muscles Eccentric Strength and Static Hip Joint Alignment in Patellofemoral Pain Syndrome in Females
Dept.	:	Physical Therapy Department for musculoskeletal disorder and its Surgery.
Supervisors	1.	Khaled El Sayed Ayad
	2.	Mona Hassan Gamal Eldein
	3.	Ahmed Hazem Abdelazeem
Degree	:	Doctoral.
Year	:	2016.
Abstract	:	
<p>Background: Patellofemoral pain syndrome (PFPS) is a common musculoskeletal pain condition, especially in females. Decreased hip muscle strength has been implicated as a contributing factor. The alignment of the lower extremity is important to the forces transmitted through the lower extremity and the patellofemoral joint, yet the relationships between eccentric hip muscle strength and lower extremity alignment are not known. Objective: The purpose of this study was to investigate if there is any relationship between eccentric hip muscles torque and static hip alignment measures in patient with unilateral PFPS. Methods: Fifty one patients (one group) had participated in this study. With age ranged from eighteen to thirty five years. Each patient was assessed for static hip alignment measures (femoral neck torsion using plastic standard goniometer and pelvic tilting using PALM (PALpation Meter)) and eccentric torque of hip abductors and external rotators muscles using Biodex system 3 isokinetic dynamometer. Result: the results showed fair negative association between eccentric hip external rotators torque and femoral anteversion, but there was no significant association between eccentric hip abductors torque and (anterior pelvic tilting and femoral anteversion), and eccentric hip external rotators torque and anterior pelvic tilting in patient with unilateral PFPS. Conclusion: Increased femoral neck anteversion can predict decreased eccentric hip external rotators muscle torque in patient with PFPS. On the other hand, no association between eccentric strength of the hip musculature and anterior pelvic tilt.</p>		
Key words	1.	Patellofemoral pain syndrome
	2.	hip muscles
	3.	static hip alignment
	4.	Muscles Eccentric Strength
	5.	Females
Classification number	:	000.000.
Pagination	:	123 p.
Arabic Title Page	:	العلاقة بين قوة عضلات الفخذ الاستطالي والمحاذاة الاستاتيكية لمفصل الفخذ في متلازمة ألم الرضفة وأسفل عظمة الفخذ في الإناث .
Library register number	:	4823-4824.

Author	:	Reda Kotb Abd Elrazik Gad Elahk
Title	:	Mulligan versus Maitland Mobilisation in Treatment of Chronic Low Back Dysfunction
Dept.	:	Physical Therapy Department for musculoskeletal disorder and its Surgery.
Supervisors	1.	Lilian Albert Zaky
	2.	Mohamed Omar Soliman
	3.	Ghada Mohamed Rashad Koura
Degree	:	Doctoral.
Year	:	2016.
Abstract	:	
<p>Background: Low back dysfunction (LBD) is a common problem which affects the majority of the population. The purpose of this study was to compare between the efficacy of Mulligan and Maitland mobilisation on pain level, ROM, and functional disability in patients with chronic LBD. Subjects: Forty patients from both sexes were diagnosed with chronic LBD, aged 30 to 50 years. Method: Subjects were randomly divided into two groups; group A (n =20) received conventional physical therapy treatment in form of (infrared radiation, ultrasonic and therapeutic exercises for back and abdominal muscles) + Mulligan's technique (MWM). Whereas subjects in group B (n =20) were treated by conventional physical therapy treatment (infrared radiation, ultrasonic and therapeutic exercises for back and abdominal muscles) + Maitland's mobilisation (P-A mobilization) technique for three times / week for four weeks .patients were assessed before and after treatment by VAS for pain, Oswestry questionnaire for functional disability and modified schober test for ROM . Results: There were statistical significant differences between the two groups in level of pain, and lumbar extension ROM in favor of group A and no differences in functional disability and ROM of flexion right and left side bending Conclusion: MWM is better than P-A mobilisation in reducing level of pain and increasing lumbar extension ROM in individuals with chronic LBD and no one is superior to other in functional disability and ROM of flexion right and left side bending.</p>		
Key words	1.	Low back dysfunction
	2.	Mulligan mobilisation
	3.	Maitland mobilisation
Classification number	:	000.000.
Pagination	:	116 p.
Arabic Title Page	:	تحريك موليجن ضد تحريك ميتلاندي في علاج الخلل الوظيفي المزمن لأسفل الظهر
Library register number	:	5017-5018.