

Table of Contents

2. LBP 6

Effect of the Abdominal Hollowing and Bracing Maneuvers on Activity Pattern of the Lumbopelvic Muscles During Prone Hip Extension in Subjects With or Without Chronic Low Back Pain: A Preliminary Study..... 6

4. INJECTIONS 7

Comparison of transforaminal and interlaminar epidural steroid injections for the treatment of chronic lumbar pain. 7

7. PELVIC ORGANS/WOMAN’S HEALTH 8

Delivery Outcomes of Patients with Acute Migraine in Pregnancy: A Retrospective Study. 8

Psychotherapy with somatosensory stimulation for endometriosis-associated pain: The role of the anterior hippocampus 9

 Methods..... 9

 Results 9

Dietary Inflammatory Index, Bone Mineral Density and Risk of Fracture in Postmenopausal Women: Results from the Women's Health Initiative. 10

 Author information 10

 Abstract..... 10

Effect of aromatherapy massage on pain in primary dysmenorrhea: A meta-analysis..... 11

 Methods..... 11

 Results 11

8. VISCERA 12

Anthropometric measures and prevalence trends in adolescents with coeliac disease: a population based study..... 12

 Author information 12

 Abstract..... 12

Prevalence of Restless Legs Syndrome in Patients with Inflammatory Bowel Disease... 13

10 A. CERVICAL SPINE..... 14

Measurement of outcomes for patients with centralising versus non-centralising neck pain 14

12 B. CERVICAL SURGERIES 15

A 5- to 8-year randomized study on the treatment of cervical radiculopathy: anterior cervical decompression and fusion plus physiotherapy versus physiotherapy alone. 15

13. CRANIUM/TMJ 16

Condylar angle 16

ABSTRACTS

Greater Mandibular Horizontal Condylar Angle is Associated with TMJ Osteoarthritis	16
TMJ OA and hand OA	17
Frequency of temporomandibular osteoarthritis and related symptoms in a hand osteoarthritis cohort.	17
Bruxism and TMD	18
Effects of localized versus widespread TMD pain on sleep parameters in patients with bruxism: A single-night polysomnographic study	18
Abstract	18
Results	18
Long-term side effects on the temporomandibular joints and orofacial function in patients with obstructive sleep apnea treated with a mandibular advancement device.....	19
14. HEADACHES	20
Serotonergic mechanisms of trigeminal meningeal nociception: Implications for migraine pain.....	21
Myofascial Trigger Points and Migraine-related Disability in Women With Episodic and Chronic Migraine.	22
16. CONCUSSIONS.....	23
Lower Extremity Stiffness Changes after Concussion in Collegiate Football Players.....	23
Challenging Concussed Athletes: The Future of Balance Assessment in Concussion.....	24
20 A. ROTATOR CUFF.....	25
Open vs. arthroscopic.....	25
Effectiveness of open and arthroscopic rotator cuff repair (UKUFF): a randomised controlled trial.	25
23. SURGERY	26
Immediate effects of cervical unilateral anterior-posterior mobilisation on shoulder pain and impairment in post-operative arthroscopy patients.	26
32 A. KNEE/ACL.....	27
The Cost-Effectiveness of Anterior Cruciate Ligament Reconstruction in Competitive Athletes.	27
The effectiveness of pre-operative exercise physiotherapy rehabilitation on the outcomes of treatment following anterior cruciate ligament injury: a systematic review.	28
34. PATELLA.....	29
Tibiofemoral chondromalacia treated with platelet-rich plasma and hyaluronic acid ..	29
35. KNEE/TOTAL.....	30
Supervised neuromuscular exercise prior to hip and knee replacement: 12-month clinical effect and cost-utility analysis alongside a randomised controlled trial.	30
37. OSTEOARTHRITIS/KNEE.....	31

ABSTRACTS

Qualitative Development of a Discrete Choice Experiment for Physical Activity Interventions to Improve Knee Osteoarthritis.....	31
The effects of therapeutic exercises on pain, muscle strength, functional capacity, balance and hemodynamic parameters in knee osteoarthritis patients: a randomized controlled study of supervised versus home exercises.....	32
Does Kinesio Taping of the Knee Improve Pain and Functionality in Patients with Knee Osteoarthritis?: A Randomized Controlled Clinical Trial.	33
38 B. FOOT TYPES	34
Utility outcome assessment of pes planus deformity.....	34
Highlights	34
Abstract	34
40. ANKLE SPRAINS AND INSTABILITY	35
Treatment and prevention of acute and recurrent ankle sprain: an overview of systematic reviews with meta-analysis.	35
45 A. MANUAL THERAPY LUMBAR & GENERAL.....	36
A systematic review of orthopaedic manual therapy randomized clinical trials quality ..	36
Stabilization exercise compared to general exercises or manual therapy for the management of low back pain: A systematic review and meta-analysis.....	37
45 B. MANUAL THERAPY CERVICAL.....	38
Measurement of outcomes for patients with centralising versus non-centralising neck pain	38
Do Subjects with Whiplash-Associated Disorders Respond Differently in the Short-Term to Manual Therapy and Exercise than Those with Mechanical Neck Pain?.....	39
Immediate effects of cervical unilateral anterior-posterior mobilisation on shoulder pain and impairment in post-operative arthroscopy patients.	40
Efficacy of manual therapy on anxiety and depression in patients with tension-type headache. A randomized controlled clinical trial	41
Abstract	41
45 D. MANUAL THERAPY EXTREMITIES	42
Effects of Talocrural Mobilization with Movement on Ankle Strength, Mobility, and Weight-Bearing Ability in Hemiplegic Patients with Chronic Stroke: A Randomized Controlled Trial.....	42
48 A. STM	43
Exercises and Dry Needling for Subacromial Pain Syndrome: A Randomized Parallel-Group Trial.....	43
Comparing Trigger Point Dry Needling and Manual Pressure Technique for the Management of Myofascial Neck/Shoulder Pain: A Randomized Clinical Trial.....	44

ABSTRACTS

Contribution of Dry Needling to Individualized Physical Therapy Treatment of Shoulder Pain: A Randomized Clinical Trial.....	45
Abstract.....	45
51. CFS/BET.....	46
Associations between Measures of Structural Morphometry and Sensorimotor Performance in Individuals with Nonspecific Low Back Pain.	46
Differences in kinematics of the lumbar spine and lower extremities between people with and without low back pain during the down phase of a pick up task, an observational study.....	47
Highlights.....	47
Abstract.....	47
53. CORE.....	48
Effect of the Abdominal Hollowing and Bracing Maneuvers on Activity Pattern of the Lumbopelvic Muscles During Prone Hip Extension in Subjects With or Without Chronic Low Back Pain: A Preliminary Study.....	48
Stabilization exercise compared to general exercises or manual therapy for the management of low back pain: A systematic review and meta-analysis.....	49
59. PAIN.....	50
An overview of treatment approaches for chronic pain management.	50
Linguistic Indicators of Pain Catastrophizing in Patients with Chronic Musculoskeletal Pain.	51
Increasing optimism protects against pain-induced impairments in task shifting performance.	52
Effects of aerobic exercise on pain sensitivity, heart rate recovery, and health-related quality of life in patients with chronic musculoskeletal pain.	53
60. COMPLEX REGIONAL PAIN.....	54
Complex regional pain syndrome: medical and legal ramifications of clinical variability and experience and perspective of a practicing clinician.....	54
62 A. NUTRITION/VITAMINS.....	55
Extra virgin olive oil consumption reduces the risk of osteoporotic fractures in the predimed trial.....	55
Peripheral skeleton bone strength is positively correlated with total and dairy protein intakes in healthy postmenopausal women.....	56
Effect of black tea consumption on radial blood pulse spectrum and cognitive health....	57
63. PHARMACOLOGY.....	58
Opioid use in chronic pain.....	58
Patient-Reported Outcomes and Opioid Use In Outpatients with Chronic Pain.	58

ABSTRACTS

Medication Overuse in Chronic Pain.....	59
Antipsychotic meds increase risk of fracture.....	60
Use of antipsychotics increases the risk of fracture: a systematic review and meta-analysis.....	60
65. NEUROLOGICAL CONDITIONS.....	61
Effect of kinesiology taping on hemiplegic shoulder pain and functional outcomes in subacute stroke patients: A randomized controlled study.....	61

2. LBP**Abdominal hollowing**

J Manipulative Physiol Ther. 2016 Dec 22. pii: S0161-4754(16)30276-7. doi: 10.1016/j.jmpt.2016.10.009.

Effect of the Abdominal Hollowing and Bracing Maneuvers on Activity Pattern of the Lumbopelvic Muscles During Prone Hip Extension in Subjects With or Without Chronic Low Back Pain: A Preliminary Study.

Kahlaee AH¹, Ghamkhar L², Arab AM².

Author information

Abstract

OBJECTIVE:

The purpose of this study was to compare the effect of abdominal hollowing (AH) and abdominal bracing (AB) maneuvers on the activity pattern of lumbopelvic muscles during prone hip extension (PHE) in participants with or without nonspecific chronic low back pain (CLBP).

METHODS:

Twenty women with or without CLBP participated in this cross-sectional observational study. The electromyographic activity (amplitude and onset time) of the contralateral erector spinae (CES), ipsilateral erector spinae (IES), gluteus maximus, and biceps femoris muscles was measured during PHE with and without abdominal maneuvers. A 3-way mixed model analysis of variance and post hoc tests were used for statistical analysis.

RESULTS:

Between-group comparisons showed that the CES onset delay during PHE alone was greater ($P = .03$) and the activity level of IES, CES, and biceps femoris in all maneuvers ($P < .05$) was higher in patients with CLBP than in asymptomatic participants. In asymptomatic participants, PHE + AH significantly decreased the signal amplitude (AMP) of IES ($P = .01$) and CES ($P = .02$) muscles. In participants with CLBP, IES muscle AMP was lower during PHE + AH compared with PHE + AB and PHE alone. With regard to onset delay, the results also showed no significant difference between maneuvers within either of the 2 groups ($P > .05$).

CONCLUSIONS:

Performance of the AH maneuver decreased the erector spinae muscle AMP in both groups, and neither maneuver altered the onset delay of any of the muscles in either group. The low back pain group showed higher levels of activity in all muscles (not statistically significant in gluteus maximus during all maneuvers). The groups were similar according to the onset delay of any of the muscles during either maneuver.

4. INJECTIONS

Transforaminal as good as interlaminar

Braz J Anesthesiol. 2017 Jan - Feb;67(1):21-27. doi: 10.1016/j.bjane.2015.06.003. Epub 2016 Mar 19.

Comparison of transforaminal and interlaminar epidural steroid injections for the treatment of chronic lumbar pain.

Beyaz SG¹.

Author information

Abstract

STUDY DESIGN:

A cross-sectional study.

OBJECTIVE:

We compared the 12 month outcomes of fluoroscopically guided transforaminal epidural steroid injections with interlaminar epidural steroid injections for the treatment of chronic lumbar spinal pain. Chronic lower back pain is a multifactorial disorder with many possible etiologies. The lifetime prevalence of spinal pain is reportedly 65-80% in the neck and lower back. Epidural injection of corticosteroids is a commonly used intervention for managing chronic spinal pain.

METHODS:

Patients who did not benefit from previous treatments were included in this study. Injections were performed according to magnetic resonance imaging findings at the nearest level of lumbar pathology; 173 patients received interlaminar epidural steroid injections and 126 patients received transforaminal epidural steroid injections. All of the patients were regularly followed up for 12 months using a verbal numeric rating scale. Magnetic resonance imaging findings, complications, verbal numeric rating scale, and satisfaction scores were recorded.

RESULTS:

Lumbar disk pathology was the most frequently encountered problem. The interlaminar epidural steroid injections were preferred at the L4-L5 intervertebral level. Verbal numeric rating scale scores significantly decreased during the 12-month period compared to basal scores ($p < 0.001$). Significant differences between the two groups according to verbal numeric rating scale and satisfaction scores were not observed ($p > 0.05$). There were no major complications; however, the interlaminar epidural steroid injections group had 22 (12.7%) minor complications, and the transforaminal epidural steroid injections group had 12 (9.5%) minor complications.

CONCLUSIONS:

This study showed that interlaminar epidural steroid injections can be as effective as transforaminal epidural steroid injections when performed at the nearest level of lumbar pathology using fluoroscopy in 12-month intervals.

7. PELVIC ORGANS/WOMAN'S HEALTH

HA's and delivery

Headache. 2017 Jan 18. doi: 10.1111/head.13023.

Delivery Outcomes of Patients with Acute Migraine in Pregnancy: A Retrospective Study.

Grossman TB¹, Govindappagari S², Dayal AK², Robbins MS³.

Author information

Abstract

OBJECTIVE:

To describe labor and delivery outcomes in pregnant patients presenting to the hospital setting with an acute severe migraine headache attack earlier in the same gestation.

METHODS:

We retrospectively reviewed pregnancy and delivery records from a database of consecutive inpatient neurology consultations for acute headache in pregnant women over a 5 year period.

RESULTS:

We identified 86 pregnant women with acute migraine. The mean age was 29.3 (\pm 6.4) years. Nearly half had migraine with aura (35/86 [40.7%]), 12.8% (12/86) had chronic migraine, and 31.4% (27/86) presented in status migrainosus. Complication rates included 54.7% ([41/75], 95% CI 29.87, 52.13) for at least one adverse outcome, 28.0% ([21/75], 95% CI 11.78, 30.22) for preterm delivery, 21.3% ([16/75], 95% CI 7.7, 24.3) for preeclampsia, 30.6% ([23/75] 95% CI 13.48, 32.52) for cesarean delivery, and 18.7% ([14/75] 95% CI 6.15, 21.85) for low birthweight.

CONCLUSIONS:

Pregnant women seeking treatment for acute migraine headache experienced a higher rate of preterm delivery, preeclampsia, and low birthweight but a lower rate of cesarean delivery than the local and general populations. More than half (54.7% [41/75] 95% CI 29.87, 52.13) of the study patients experienced some type of adverse birth outcome, suggesting that pregnancies in migraine patients presenting to an acute care setting may benefit from more intense surveillance.

Endometriosis pain

Psychotherapy with somatosensory stimulation for endometriosis-associated pain: The role of the anterior hippocampus

Biological Psychiatry, 01/18/2017

Beissner F, et al.

On the basis of the available data, the authors have identified a putative neurobiological mechanism underlying the potent combination of psychotherapy and somatic stimulation in treating symptoms of endometriosis.

Methods

- A randomized controlled trial was conducted.
- 67 patients with severe endometriosis-associated pain (maximum pain: 7.6 ± 2.0 , average pain: 4.5 ± 2.0 on a 10-point numeric rating scale) were incorporated in the study and randomly allocated to intervention (35 pat.) or wait-list control (32 pat.).
- Resting-state functional magnetic resonance imaging was utilized to evaluate brain connectivity of these patients at baseline, after 3 months of therapy and after 6 months.
- The analysis focused on the hippocampus.

Results

- They recognized a cortical network comprising the right anterolateral hippocampus – a region modulating the hypothalamic-pituitary-adrenal (HPA) axis – and somatosensory, viscerosensory and interoceptive brain regions.
- Regression analysis demonstrated that lessening in connectivity predicted therapy-induced improvement in patients' anxiety.

Inflammatory diet and BDM

J Bone Miner Res. 2016 Dec 26. doi: 10.1002/jbmr.3070

Dietary Inflammatory Index, Bone Mineral Density and Risk of Fracture in Postmenopausal Women: Results from the Women's Health Initiative.

Orchard T¹, Yildiz V², Steck SE³, Hébert JR³, Ma Y⁴, Cauley JA⁵, Li W⁶, Mossavar-Rahmani Y⁷, Johnson KC⁸, Sattari M⁹, LeBoff M¹⁰, Wactawski-Wende J¹¹, Jackson RD¹².

Author information

Abstract

Previous studies suggest that bone loss and fracture risk are associated with higher inflammatory milieu, potentially modifiable by diet.

The primary objective of this analysis was to evaluate the association of the dietary inflammatory index (DIITM), a measure of the inflammatory potential of diet, with risk of hip, lower-arm and total fracture using longitudinal data from the Women's Health Initiative Observational Study and Clinical Trials. Secondly, we evaluated changes in bone mineral density (BMD) and DII scores. DII scores were calculated from baseline food frequency questionnaires (FFQ) completed by 160,191 participants (mean age 63 years) without history of hip fracture at enrollment. Year 3 FFQs were used to calculate a DII change score. Fractures were reported at least annually; hip fractures were confirmed by medical records. Hazard ratios for fractures were computed using multivariable-adjusted Cox proportional hazard models, further stratified by age and race/ethnicity. Pair-wise comparisons of changes in hip BMD, measured by dual-energy X-ray absorptiometry from baseline, year 3 and 6 were analyzed by quartile (Q1 = least inflammatory diet) of baseline DII scores in a sub-group of women (n = 10,290). Mean DII score improved significantly over three years (p < 0.01), but change was not associated with fracture risk. Baseline DII score was only associated with hip fracture risk in younger White women (HR Q4:1.48; 95% CI 1.09, 2.01; p = 0.01). There were no significant associations among White women older than 63 years or other races/ethnicities. Women with the least inflammatory DII scores had less loss of hip BMD (p = 0.01) by year 6, despite lower baseline hip BMD, versus women with the most inflammatory DII scores.

In conclusion, a less inflammatory dietary pattern was associated with less BMD loss in postmenopausal women. A more inflammatory diet was associated with increased hip fracture risk only in White women younger than 63 years. This article is protected by copyright. All rights reserved.

Essential oils and dysmenorrhea

Effect of aromatherapy massage on pain in primary dysmenorrhea: A meta-analysis

Complementary Therapies in Clinical Practice , 01/18/2017

Sut N, et al.

Researchers evince that in primary dysmenorrhea, abdominal aromatherapy massage with essential oils is an effective complementary method to relieve pain.

Methods

- The researchers searched randomized controlled trials by keywords in several databases (Pubmed, ISI Web of Sciences, and Google Scholar).
- In this meta-analysis, 6 randomized controlled trials that included 362 participants with primary dysmenorrhea, comparing abdominal aromatherapy massage (n = 184) with massage with placebo oils (n = 178) were examined.
- They used the change in the visual analogue scale (VAS) pain score from the first menstruation cycle to the second cycle at the first menstruation day as the primary outcome.

Results

- The researchers found that aromatherapy massage with essential oils was superior to massage with placebo oils (standardized mean difference = -1.06 [95% CI: -1.55 to -0.55]).

8. VISCERA

CD and physical impact

Arch Dis Child. 2017 Feb;102(2):139-144. doi: 10.1136/archdischild-2016-311376. Epub 2016 Sep 26.

Anthropometric measures and prevalence trends in adolescents with coeliac disease: a population based study.

Assa A^{1,2}, Frenkel-Nir Y³, Leibovici-Weissman Y⁴, Tzur D³, Afek A^{2,5}, Katz LH^{2,3}, Levi Z^{2,4}, Shamir R^{1,2}.

Author information

Abstract

OBJECTIVES:

To investigate the impact of coeliac disease (CD) diagnosis on anthropometric measures at late adolescence and to assess trends in the prevalence of diagnosed CD over time.

DESIGN:

A population based study.

PATIENTS:

Prior to enlistment, at the age of 17 years, most of the Israeli Jewish population undergoes a general health examination. Subjects' medical diagnoses are entered into a structured database.

INTERVENTIONS:

The enlistment database was thoroughly searched for CD cases between the years 1988 and 2015. Medical records of 2 001 353 subjects were reviewed.

MAIN OUTCOME MEASURES:

Anthropometric measures at the age of 17 years.

RESULTS:

Overall, 10 566 CD cases (0.53%) were identified and analysed. Median age at data ascertainment was 17.1 years (IQR, 16.9-17.4). Multivariable analysis demonstrated that boys with CD were leaner (Body Mass Index 21.2 ± 3.7 vs 21.7 ± 3.8 , $p=0.02$) while girls with CD were shorter (161.5 ± 6 cm vs 162.1 ± 6 cm, $p=0.017$) than the general population. The prevalence of diagnosed CD increased from 0.5% to 1.1% in the last 20 years with a female predominance (0.64% vs 0.46%). CD prevalence was significantly lower in subjects of lower socioeconomic status and those of African, Asian and former Soviet Union origin.

CONCLUSIONS:

Adolescent boys with CD were leaner and girls with CD were shorter compared with the general population. However, the clinical relevance of the small differences suggests that when CD is diagnosed during childhood, final weight and height are not severely impaired. Our cohort reinforces the observed increase in diagnosed CD.

IBS and RLS

Dig Dis Sci. 2016 Dec 29. doi: 10.1007/s10620-016-4420-y.

Prevalence of Restless Legs Syndrome in Patients with Inflammatory Bowel Disease.

Takahara I¹, Takeshima F², Ichikawa T³, Matsuzaki T¹, Shibata H¹, Miuma S¹, Akazawa Y¹, Miyaaki H¹, Taura N¹, Nakao K¹.

Author information

Abstract

BACKGROUND AND AIM:

There has been increased interest in sleep disorders in patients with inflammatory bowel disease (IBD). Studies in North America and Europe reported that the prevalence of restless legs syndrome (RLS) is much higher in patients with Crohn's disease (CD) than in the general population. The aim of this study was to reveal the prevalence and clinical features of RLS in Japanese patients with IBD and investigate the influence of RLS on sleep quality and quality of life (QOL).

METHODS:

The study included 80 outpatients with IBD who visited Nagasaki University Hospital between December 2012 and July 2014. All patients completed the international RLS study group rating scale, a validated measure of the presence of RLS. Sleep quality was assessed using the Japanese version of the Pittsburgh Sleep Quality Index (PSQI), and health-related QOL was assessed using the Japanese version of the 36-item short form healthy profile (SF-36) version 2.

RESULTS:

The prevalence of RLS in patients with IBD was 20%, including rates of 21.7% in patients with ulcerative colitis (UC) and 17.6% in patients with CD. Among patients with CD, the proportion of women and serum level of CRP were higher in the RLS group than in the non-RLS group. Among those with UC, there were no differences in clinical characteristics between the RLS and non-RLS groups. Patients in the RLS group slept significantly less well than those in the non-RLS group (PSQI > 5; 62.5 vs. 34.4%, $P < 0.05$). No significant relationships were observed between QOL indices and the presence of RLS (SF-36 physical score, 46.8 vs. 50.1; mental score, 43.8 vs. 45.7; role/social score, 48.1 vs. 49.2).

CONCLUSIONS:

RLS occurs frequently in Japanese patients with UC as well as CD. RLS affects sleep quality but not QOL, and it should be considered one of the causes of sleep disturbance in patients with IBD.

10 A. CERVICAL SPINE**Centralized symptoms****Measurement of outcomes for patients with centralising versus non-centralising neck pain**

Terrence Rose, Joshua Butler, Nicholaus Salinas, Ryan Stoltzfus, Tanisha Wheatley & Ron Schenk

Pages 264-268 Accepted 01 Apr 2015, Published online: 25 May 2016

<http://dx.doi.org/10.1179/2042618615Y.0000000010>

Abstract

Objective: The purpose of this study is to determine whether individuals with neck pain who demonstrate centralisation of symptoms have more favourable outcome than individuals who do not demonstrate centralisation.

Methods: Eleven subjects with neck pain were evaluated and treated by two physical therapists certified in Mechanical Diagnosis and Therapy (MDT). Eleven physical therapy patients underwent a routine initial evaluation and were treated 2–3 times per week using MDT principles and other physical therapy interventions. The Neck Disability Index (NDI) tool was administered at the initial examination, approximately 2 weeks following the initial examination, each subsequent re-evaluation, and at discharge from the study to measure changes in functional outcomes for each subject. Patients continued with treatments until they were discharged or removed from the study. Four subjects were referred back to their physician by treating physical therapist secondary to non-centralisation (NC) and worsening of symptoms.

Results: Of the 11 subjects, six demonstrated centralisation (CEN) and five demonstrated NC. At initial evaluation, the average NDI score for the CEN group was 51.0 (SD ± 19.4) and 56.4 (SD ± 17.6) for the NC group. For the CEN group, the average change in NDI score between initial evaluation and discharge was 41.2 (SD ± 13.2) and 12.2 (SD ± 13.0) for the NC group. The correlation coefficient of CEN and change in NDI score was 0.772 and was statistically significant ($P = 0.005$).

Conclusions: In this limited sample, people with neck pain demonstrated more favourable outcomes when the CEN phenomenon was observed. Future research on CEN should be investigated with a larger sample size and with a greater number of clinicians trained in the MDT approach.

12 B. CERVICAL SURGERIES**Surgeries vs PT**

J Neurosurg Spine. 2017 Jan;26(1):19-27. doi: 10.3171/2016.6.SPINE151427. Epub 2016 Aug 26.

A 5- to 8-year randomized study on the treatment of cervical radiculopathy: anterior cervical decompression and fusion plus physiotherapy versus physiotherapy alone.

Engquist M¹, Löfgren H², Öberg B³, Holtz A⁴, Peolsson A³, Söderlund A⁵, Vavruch L², Lind B^{6,7}.

Author information

Abstract

OBJECTIVE The aim of this study was to evaluate the 5- to 8-year outcome of anterior cervical decompression and fusion (ACDF) combined with a structured physiotherapy program as compared with that following the same physiotherapy program alone in patients with cervical radiculopathy. No previous prospective randomized studies with a follow-up of more than 2 years have compared outcomes of surgical versus nonsurgical intervention for cervical radiculopathy. **METHODS** Fifty-nine patients were randomized to ACDF surgery with postoperative physiotherapy (30 patients) or to structured physiotherapy alone (29 patients). The physiotherapy program included general and specific exercises as well as pain coping strategies. Outcome measures included neck disability (Neck Disability Index [NDI]), neck and arm pain intensity (visual analog scale [VAS]), health state (EQ-5D questionnaire), and a patient global assessment. Patients were followed up for 5-8 years. **RESULTS** After 5-8 years, the NDI was reduced by a mean score% of 21 (95% CI 14-28) in the surgical group and 11% (95% CI 4%-18%) in the nonsurgical group ($p = 0.03$). Neck pain was reduced by a mean score of 39 mm (95% CI 26-53 mm) compared with 19 mm (95% CI 7-30 mm; $p = 0.01$), and arm pain was reduced by a mean score of 33 mm (95% CI 18-49 mm) compared with 19 mm (95% CI 7-32 mm; $p = 0.1$), respectively. The EQ-5D had a mean respective increase of 0.29 (95% CI 0.13-0.45) compared with 0.14 (95% CI 0.01-0.27; $p = 0.12$). Ninety-three percent of patients in the surgical group rated their symptoms as "better" or "much better" compared with 62% in the nonsurgical group ($p = 0.005$). Both treatment groups experienced significant improvement over baseline for all outcome measures. **CONCLUSIONS** In this prospective randomized study of 5- to 8-year outcomes of surgical versus nonsurgical treatment in patients with cervical radiculopathy, ACDF combined with physiotherapy reduced neck disability and neck pain more effectively than physiotherapy alone. Self-rating by patients as regards treatment outcome was also superior in the surgery group. No significant differences were seen between the 2 patient groups as regards arm pain and health outcome.

13. CRANIUM/TMJ**Condylar angle****Greater Mandibular Horizontal Condylar Angle is Associated with TMJ Osteoarthritis**

Peggy P. Lee, BDS, MSD, PhD Alexander R. Stanton Lars G. Hollender, DDS

DOI: <http://dx.doi.org/10.1016/j.oooo.2016.12.008>

Abstract**Background**

Research using MRI analysis has shown that internal temporomandibular joint derangement is associated with significantly greater horizontal condylar angle. However, the association between osteoarthritic (OA) bony changes as shown in CT and horizontal condylar angle has never been evaluated.

Objective

Investigate the relationship between mandibular condylar angle and OA degenerative changes.

Materials & Methods

This is a retrospective study using cone beam computed tomography (CBCT) images and reports from 60 patients with unilateral OA degenerative changes and 43 control patients with no OA-affected joints.

Results

Condylar angles in the joints of control patients and the unaffected joints in OA patients were not significantly different. The average horizontal condylar angle in the unilaterally OA-affected joints ($29.5^{\circ} \pm 10.5^{\circ}$) was larger than in the contralateral unaffected joints ($22.5^{\circ} \pm 7.7^{\circ}$) ($p < .001$). In the OA-affected joints, flattening and erosion of the articular eminence was associated with a greater condylar angle ($p < 0.05$).

Conclusions

Moderate to severe degenerative temporomandibular joint change is associated with greater condylar angle.

TMJ OA and hand OA

Osteoarthritis Cartilage. 2017 Jan 5. pii: S1063-4584(17)30002-X. doi: 10.1016/j.joca.2016.12.028.

Frequency of temporomandibular osteoarthritis and related symptoms in a hand osteoarthritis cohort.

Abrahamsson AK¹, Kristensen M², Arvidsson LZ³, Kvien TK⁴, Larheim TA⁵, Haugen IK⁶.
Author information

Abstract

OBJECTIVE:

The prevalence of osteoarthritis (OA) in the temporomandibular joints (TMJs) in hand OA patients is largely unknown. Our aims were to explore (1) The frequency of TMJ-related symptoms and clinical findings; (2) The TMJ OA frequency defined by cone beam computed tomography (CBCT); and (3) The relationship between TMJ-related symptoms/clinical findings and CBCT-defined TMJ OA, in a hand OA cohort.

METHODS:

We calculated the frequencies of TMJ-related symptoms, clinical findings and diagnosis of TMJ OA by CBCT and clinical examination in 54 patients from the Oslo hand OA cohort (88% women, mean (range) age 71 (61-83) years). Participants with and without CBCT-defined TMJ OA were compared for differences in proportions (95% confidence interval (CI)) of symptoms and clinical findings. Sensitivity and specificity of the clinical TMJ OA diagnosis were calculated using CBCT as reference.

RESULTS:

Self-reported symptoms and clinical findings were found in 24 (44%) and 50 (93%) individuals (93%), respectively, whereas 7 (13%) had sought healthcare. Individuals with CBCT-defined TMJ OA (n = 36, 67%) reported statistically significantly more pain at mouth opening (22%, 95% CI 4-40%), clicking (33%, 95% CI 14-52%) and crepitus (25%, 95% CI 4-46%). By clinical examination, only crepitus was more common in TMJ OA (33%, 95% CI 29-77%). Clinical diagnosis demonstrated low sensitivity (0.42) and high specificity (0.93).

CONCLUSIONS:

CBCT-defined TMJ OA was common in hand OA patients, suggesting that TMJ OA may be part of generalized OA. Few had sought healthcare, despite high burden of TMJ-related symptoms/findings. Clinical examination underestimated TMJ OA frequency.

Bruxism and TMD**Effects of localized versus widespread TMD pain on sleep parameters in patients with bruxism: A single-night polysomnographic study**

José Tadeu Tesseroli de Siqueira Cinara Maria Camparis Silvia Regina Dowgan Tesseroli de Siqueira Manoel Jacobsen Teixeira Lia Bittencourt Sérgio Tufik

DOI: <http://dx.doi.org/10.1016/j.archoralbio.2016.06.027>

Abstract**Objective**

The purpose of this study was to investigate whether the presence of concomitant widespread pain could influence the polysomnographic characteristics of patients with Sleep Bruxism(SB) and chronic masticatory muscle pain(TMD).

Methods

20 SB/TMD patients (17 women and 3 men) were evaluated according to the RDC/TMD questionnaire; and were divided into two groups according to the absence (Group A) or presence (Group B) of widespread pain. They were evaluated in a one night polysomnography paradigm.

Results

Group B had lower sleep efficiency ($p = 0.034$) and higher mean age ($p = 0.000$) than Group A. Self-reported orofacial pain complaints, clinical and emotional aspects (RDC/TMD Axis I and II), and SB PSG parameters were similar in both groups; all patients had masticatory myofascial pain and the pain characteristics were bilateral location (95.0%) and tightness/pressure quality (70.0%).

Conclusions

At a single-night PSG, SB/TMD patients with widespread pain presented lower PSG sleep efficiency and higher mean age.

Sleep apnea

J Oral Rehabil. 2017 Jan 17. doi: 10.1111/joor.12485.

Long-term side effects on the temporomandibular joints and orofacial function in patients with obstructive sleep apnea treated with a mandibular advancement device.

Knappe SW¹, Bakke M², Svanholt P¹, Petersson A³, Sonnesen L¹.

Author information

Abstract

Patients with obstructive sleep apnea (OSA) in long-term treatment with a mandibular advancement device (MAD) to increase the upper airway space, may develop changes in the temporomandibular joint (TMJ) and the orofacial function due to the protruded jaw position during sleep.

The aim was to investigate the influence of long-term MAD treatment on the TMJs, orofacial function and occlusion. This prospective study included 30 men and 13 women (median age 54) with OSA (Apnoea-Hypopnoea Index (AHI): 7-57). They were examined with the Nordic Orofacial Test Screening (NOT-S), the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) and cone beam computed tomography (CBCT) of the TMJs. The examination was performed before MAD treatment (T0), and 3-6 months (T1, no CBCT), 1 year (T2) and 3 years (T3) after treatment start.

The results were analyzed as long-term (T0-T3, n=14) and short-term (T0-T2, n=24) by t-test, Fisher's exact test, and ANOVA. Both long- and short-term analysis revealed a reduction in AHI ($p<0.002$). Significant long-term were increased scores in the NOT-S Interview ($p<0.045$), reduced vertical overbite ($p<0.031$), and increased jaw protrusive movement ($p<0.027$).

TMJ changes were found as joint sounds in terms of reciprocal clicking and crepitus, short-term as a decrease and subsequently recurrence ($p<0.053$; $p<0.037$). No significant radiological changes were found. In conclusion MAD treatment is beneficial to some OSA patients, but might induce changes in the TMJs, the orofacial function and the occlusion. However, these changes seemed to be less harmful than previously reported with careful adaptation, control and follow-ups. This article is protected by copyright. All rights reserved.

14. HEADACHES

Vit D

Vitamin D deficiency increases risk of chronic headache

University of Eastern Finland News, 01/17/2017

Vitamin D deficiency may increase the risk of chronic headache, according to a new study from the University of Eastern Finland. The findings were published in the journal *Scientific Reports*.

The Kuopio Ischaemic Heart Disease Risk Factor Study, KIHD, analysed the serum vitamin D levels and occurrence of headache in approximately 2,600 men aged between 42 and 60 years in 1984–1989. In 68% of these men, the serum vitamin D level was below 50 nmol/l, which is generally considered the threshold for vitamin D deficiency. Chronic headache occurring at least on a weekly basis was reported by 250 men, and men reporting chronic headache had lower serum vitamin D levels than others.

When the study population was divided into four groups based on their serum vitamin D levels, the group with the lowest levels had over a twofold risk of chronic headache in comparison to the group with the highest levels. Chronic headache was also more frequently reported by men who were examined outside the summer months of June through September. Thanks to UVB radiation from the sun, the average serum vitamin D levels are higher during the summer months.

The study adds to the accumulating body of evidence linking a low intake of vitamin D to an increased risk of chronic diseases. Low vitamin D levels have been associated with the risk of headache also by some earlier, mainly considerably smaller studies.

In Finland and in other countries far from the Equator, UVB radiation from the sun is a sufficient source of vitamin D during the summer months, but outside the summer season, people need to make sure that they get sufficient vitamin D from food or from vitamin D supplements.

No scientific evidence relating to the benefits and possible adverse effects of long-term use in higher doses yet exists. The Finnish Vitamin D Trial, FIND, currently ongoing at the University of Eastern Finland will shed light on the question, as the five-year trial analyses the effects of high daily doses of vitamin D on the risk factors and development of diseases. The trial participants are taking a vitamin D supplement of 40 or 80 micrograms per day. The trial also investigates the effects of vitamin D supplementation on various pain conditions.

Serotonin and HA's

Neuropharmacology. 2016 Dec 23;116:160-173. doi: 10.1016/j.neuropharm.2016.12.024.

Serotonergic mechanisms of trigeminal meningeal nociception: Implications for migraine pain.

Kilinc E¹, Guerrero-Toro C², Zakharov A³, Vitale C⁴, Gubert-Olive M⁵, Koroleva K⁶, Timonina A⁷, Luz LL⁸, Shelukhina I⁹, Giniatullina R¹⁰, Tore F¹¹, Safronov BV¹², Giniatullin R¹³.

Author information

Abstract

Serotonergic mechanisms play a central role in migraine pathology. However, the region-specific effects of serotonin (5-HT) mediated via multiple types of receptors in the nociceptive system are poorly understood.

Using extracellular and patch-clamp recordings, we studied the action of 5-HT on the excitability of peripheral and central terminals of trigeminal afferents. 5-HT evoked long-lasting TTX-sensitive firing in the peripheral terminals of meningeal afferents, the origin site of migraine pain. Cluster analysis revealed that in majority of nociceptive fibers 5-HT induced either transient or persistent spiking activity with prevailing delta and theta rhythms. The 5-HT₃-receptor antagonist MDL-72222 or 5-HT_{1B/D}-receptor antagonist GR127935 largely reduced, but their combination completely prevented the excitatory pro-nociceptive action of 5-HT. The 5-HT₃ agonist mCPBG activated spikes in MDL-72222-dependent manner but the 5HT-1 receptor agonist sumatriptan did not affect the nociceptive firing. 5-HT also triggered peripheral CGRP release in meninges, which was blocked by MDL-72222. 5-HT evoked fast membrane currents and Ca²⁺ transients in a fraction of trigeminal neurons. Immunohistochemistry showed expression of 5-HT_{3A} receptors in fibers innervating meninges. Endogenous release of 5-HT from degranulated mast cells increased nociceptive firing. Low pH but not histamine strongly activated firing. 5-HT reduced monosynaptic inputs from trigeminal A δ - and C-afferents to the upper cervical lamina I neurons and this effect was blocked by MDL-72222. Consistent with central inhibitory effect, 5-HT reduced CGRP release in the brainstem slices.

In conclusion, 5-HT evokes powerful pro-nociceptive peripheral and anti-nociceptive central effects in trigeminal system transmitting migraine pain.

Trigger points in migraine sufferers

Clin J Pain. 2017 Feb;33(2):109-115. doi: 10.1097/AJP.0000000000000387.

Myofascial Trigger Points and Migraine-related Disability in Women With Episodic and Chronic Migraine.

Ferracini GN¹, Florencio LL, Dach F, Chaves TC, Palacios-Ceña M, Fernández-de-Las-Peñas C, Bevilaqua-Grossi D, Speciali JG.

Author information

Abstract

OBJECTIVE:

The aim of this study was to investigate the differences in the presence of head and neck-shoulder trigger points (TrPs) between women with episodic or chronic migraine and their association with migraine-related disability.

MATERIALS AND METHODS:

One hundred forty-three women, aged 18 to 60 years, with migraine were recruited to participate in this study. Migraine-related disability was evaluated with the Migraine Disability Assessment Questionnaire. TrPs were explored bilaterally within the masseter, temporalis, suboccipital, sternocleidomastoid, upper trapezius, and splenius capitis muscles.

RESULTS:

Ninety-eight women exhibited episodic migraine, whereas 45 had chronic migraine. Women with chronic migraine reported a higher related disability than those with episodic migraine ($P=0.045$). Women with episodic migraine had a similar number of TrPs (total number: 4.3 ± 3.3 ; active TrPs: 3.0 ± 2.9 ; and latent TrPs: 1.3 ± 2.1) to those with chronic migraine (total number: 4.8 ± 3.2 ; active TrPs: 3.4 ± 2.9 ; and latent TrPs: 1.4 ± 1.9). No linear association was observed between the number of TrPs and migraine-related disability in women with episodic or chronic migraine.

CONCLUSIONS:

Women with episodic and chronic migraine had a similar number of TrPs. TrPs may be considered a trigger factor that can facilitate the onset of migraine or also can potentially be a promoting factor for pain once the migraine attack has started and hence may contribute to related disability. Nevertheless, we observed that the number of TrPs in the head and neck-shoulder muscles in an interictal state was not associated with the degree of migraine-related disability, suggesting a multifactorial nature of self-perceived disability in this population.

16. CONCUSSIONS**Increased LE stiffness**

Med Sci Sports Exerc. 2017 Jan;49(1):167-172.

Lower Extremity Stiffness Changes after Concussion in Collegiate Football Players.

Dubose DF¹, Herman DC, Jones DL, Tillman SM, Clugston JR, Pass A, Hernandez JA, Vasilopoulos T, Horodyski M, Chmielewski TL.

Author information

Abstract

PURPOSE:

Recent research indicates that a concussion increases the risk of musculoskeletal injury. Neuromuscular changes after concussion might contribute to the increased risk of injury. Many studies have examined gait postconcussion, but few studies have examined more demanding tasks. This study compared changes in stiffness across the lower extremity, a measure of neuromuscular function, during a jump-landing task in athletes with a concussion (CONC) to uninjured athletes (UNINJ).

METHODS:

Division I football players (13 CONC and 26 UNINJ) were tested pre- and postseason. A motion capture system recorded subjects jumping on one limb from a 25.4-cm step onto a force plate. Hip, knee, and ankle joint stiffness were calculated from initial contact to peak joint flexion using the regression line slopes of the joint moment versus the joint angle plots. Leg stiffness was (peak vertical ground reaction force [PVGRF]/lower extremity vertical displacement) from initial contact to peak vertical ground reaction force. All stiffness values were normalized to body weight. Values from both limbs were averaged. General linear models compared group (CONC, UNINJ) differences in the changes of pre- and postseason stiffness values.

RESULTS:

Average time from concussion to postseason testing was 49.9 d. The CONC group showed an increase in hip stiffness ($P = 0.03$), a decrease in knee ($P = 0.03$) and leg stiffness ($P = 0.03$), but no change in ankle stiffness ($P = 0.65$) from pre- to postseason.

CONCLUSION:

Lower extremity stiffness is altered after concussion, which could contribute to an increased risk of lower extremity injury. These data provide further evidence of altered neuromuscular function after concussion.

Management of

QJM. 2016 Dec 30. pii: hcw228. doi: 10.1093/qjmed/hcw228.

Challenging Concussed Athletes: The Future of Balance Assessment in Concussion.

Johnston W^{1,2}, Coughlan GF³, Caulfield B^{1,2}.

Author information

Abstract

The assessment and management of sports related concussion has become a contentious issue in the field of sports medicine. The current consensus in concussion evaluation involves the use of a subjective examination, supported by multifactorial assessment batteries designed to target the various components of cerebral function. Balance assessment forms an important component of this multifactorial assessment, as it can provide an insight into the function of the sensorimotor subsystems post-concussion. In recent times, there has been a call to develop objective clinical assessments that can aid in the assessment and monitoring of concussion.

However, traditional static balance assessments are derived from neurologically impaired populations, are subjective in nature, do not adequately challenge high functioning athletes and may not be capable of detecting subtle balance disturbances following a concussive event. In this review, we provide an overview of the importance of assessing motor function following a concussion, and the challenges facing clinicians in its assessment and monitoring. Additionally, we discuss the limitations of the current clinical methods employed in balance assessment, the role of technology in improving the objectivity of traditional assessments, and the potential role inexpensive portable technology may play in providing objective measures of more challenging dynamic tasks.

20 A. ROTATOR CUFF**Open vs. arthroscopic**

Bone Joint J. 2017 Jan;99-B(1):107-115. doi: 10.1302/0301-620X.99B1.BJJ-2016-0424.R1.

Effectiveness of open and arthroscopic rotator cuff repair (UKUFF): a randomised controlled trial.

Carr A¹, Cooper C¹, Campbell MK², Rees J¹, Moser J³, Beard DJ¹, Fitzpatrick R⁴, Gray A⁴, Dawson J⁵, Murphy J⁵, Bruhn H², Cooper D², Ramsay C².

Author information

Abstract

AIMS:

The appropriate management for patients with a degenerative tear of the rotator cuff remains controversial, but operative treatment, particularly arthroscopic surgery, is increasingly being used. Our aim in this paper was to compare the effectiveness of arthroscopic with open repair of the rotator cuff.

PATIENTS AND METHODS:

A total of 273 patients were recruited to a randomised comparison trial (136 to arthroscopic surgery and 137 to open surgery) from 19 teaching and general hospitals in the United Kingdom. The surgeons used their usual preferred method of repair. The Oxford Shoulder Score (OSS), two years post-operatively, was the primary outcome measure. Imaging of the shoulder was performed at one year after surgery. The trial is registered with Current Controlled Trials, ISRCTN97804283.

RESULTS:

The mean OSS improved from 26.3 (standard deviation (sd) 8.2) at baseline, to 41.7 (sd 7.9) two years post-operatively for arthroscopic surgery and from 25.0 (sd 8.0) to 41.5 (sd 7.9) for open surgery. Intention-to-treat (ITT) analysis showed no statistical difference between the groups at two years (difference in OSS score -0.76; 95% confidence interval (CI) -2.75 to 1.22; p = 0.452). The confidence interval excluded the pre-determined clinically important difference in the OSS of three points. The rate of re-tear was not significantly different between the two groups (46.4% for arthroscopic and 38.6% for open surgery; 95% CI -6.9 to 25.8; p = 0.256). Healed repairs had the most improved OSS. These findings were the same when analysed per-protocol.

CONCLUSION:

There is no evidence of difference in effectiveness between open and arthroscopic repair of rotator cuff tears. The rate of re-tear is high in both groups, for all sizes of tear and ages and this adversely affects the outcome. Cite this article: Bone Joint J 2017;99-B:107-15.

23. SURGERY**AP mob helps shoulder pain**

J Back Musculoskelet Rehabil. 2016 Dec 23. doi: 10.3233/BMR-160566.

Immediate effects of cervical unilateral anterior-posterior mobilisation on shoulder pain and impairment in post-operative arthroscopy patients.

Hauswirth J^{1,2,3}, Ernst MJ², Preusser ML^{2,4}, Meichtry A², Kool J^{2,5}, Crawford RJ^{6,7}.

Author information

Abstract

BACKGROUND:

Lateral gliding cervical spine mobilisation is shown to improve shoulder pain, disability and function. However, despite common clinical-use, no study reports the effect of unilateral anterior-posterior (A-P) cervical mobilisation on shoulder pain and function, and particularly in patients after arthroscopic shoulder surgery.

OBJECTIVE:

Examine the immediate effect of single-level Grade III cervical unilateral A-P mobilisation on shoulder pain, flexion and abduction range of motion (ROM) and external rotator strength compared to placebo cervical unilateral A-P light touch pressure.

METHODS:

Single session intervention with a crossover design in 32 (15 women) postoperative arthroscopic shoulder patients.

RESULTS:

Immediate and superior treatment effects were shown for A-P cervical mobilisation in improving flexion ROM, isometric strength of external rotation, and pain intensity during flexion (all $p < 0.05$) when compared to the placebo. However, effects may not be considered clinically meaningful.

CONCLUSION:

Unilateral A-P mobilisation applied to the cervical spine shows a tendency toward positively influencing post-arthroscopy shoulder pain and function. Further study examining cervical mobilisations directed in different planes to influence shoulder motion appear warranted.

32 A. KNEE/ACL**Surgery is cost effective in athletes**

Am J Sports Med. 2017 Jan;45(1):23-33. doi: 10.1177/0363546516664719. Epub 2016 Sep 30.

The Cost-Effectiveness of Anterior Cruciate Ligament Reconstruction in Competitive Athletes.

Stewart BA¹, Momaya AM², Silverstein MD³, Lintner D⁴.
Author information

Abstract

BACKGROUND:

Competitive athletes value the ability to return to competitive play after the treatment of anterior cruciate ligament (ACL) injuries. ACL reconstruction has high success rates for return to play, but some studies indicate that patients may do well with nonoperative physical therapy treatment.

PURPOSE:

To evaluate the cost-effectiveness of the treatment of acute ACL tears with either initial surgical reconstruction or physical therapy in competitive athletes.

STUDY DESIGN:

Economic and decision analysis; Level of evidence, 2.

METHODS:

The incremental cost, incremental effectiveness, and incremental cost-effectiveness ratio (ICER) of ACL reconstruction compared with physical therapy were calculated from a cost-effectiveness analysis of ACL reconstruction compared with physical therapy for the initial management of acute ACL injuries in competitive athletes. The ACL reconstruction strategy and the physical therapy strategy were represented as Markov models. Costs and quality-adjusted life-years (QALYs) were evaluated over a 6-year time horizon and were analyzed from a societal perspective. Quality of life and probabilities of clinical outcomes were obtained from the peer-reviewed literature, and costs were compiled from a large academic hospital in the United States. One-way, 2-way, and probabilistic sensitivity analyses were used to assess the effect of uncertainty in variables on the ICER of ACL reconstruction.

RESULTS:

The ICER of ACL reconstruction compared with physical therapy was \$22,702 per QALY gained. The ICER was most sensitive to the quality of life of returning to play or not returning to play, costs, and duration of follow-up but relatively insensitive to the rates and costs of complications, probabilities of return to play for both operative and nonoperative treatments, and discount rate.

CONCLUSION:

ACL reconstruction is a cost-effective strategy for competitive athletes with an ACL injury.

Pre-operative ex helpful

Clin Rehabil. 2017 Jan;31(1):34-44. doi: 10.1177/0269215516628617. Epub 2016 Jul 10.

The effectiveness of pre-operative exercise physiotherapy rehabilitation on the outcomes of treatment following anterior cruciate ligament injury: a systematic review.

Alshewaier S^{1,2}, Yeowell G¹, Fatoye F¹.

Author information

Abstract

OBJECTIVE:

To evaluate the effectiveness of pre-operative exercise physiotherapy rehabilitation on the outcomes of treatment following anterior cruciate ligament injury.

METHODS:

The following databases were searched: PubMed, Ovid, The Cochrane Library and Web of Science. Studies published between the inception of the databases and December 2015 were sought using appropriate keywords in various combinations. This search was supplemented with a manual search of the references of selected studies. Studies were assessed for methodological quality using the Physiotherapy Evidence Database scale.

RESULTS:

A total of 500 studies were identified, of which eight studies met the inclusion criteria and were included in the present review. The average Physiotherapy Evidence Database score for the studies included was 5.8, which reflects an overall moderate methodological quality. The eight studies investigated a total of 451 subjects of which 71% (n=319) were males. The age of the participants in the eight studies ranged from 15 to 57 years. The duration of the intervention in the studies ranged from 3 to 24 weeks. This review found that pre-operative physiotherapy rehabilitation is effective for improving the outcomes of treatment following anterior cruciate ligament injury, including increasing knee-related function and improving muscle strength. However, whilst there was a significant improvement in quality of life from baseline following intervention, no significant difference in quality of life was found between the control and intervention groups.

CONCLUSIONS:

There is evidence to suggest that pre-operative physiotherapy rehabilitation is beneficial to patients with anterior cruciate ligament injury.

34. PATELLA**CMP and PRP**

Current Orthopaedic Practice:
January/February 2017 - Volume 28 - Issue 1 - p 58–65
doi: 10.1097/BCO.0000000000000457

Original Research

Tibiofemoral chondromalacia treated with platelet-rich plasma and hyaluronic acid

Hart, Radek MD, PhD, FRCS; Safi, Adel MD; Jajtner, Pavel MD, MBA; Puskeiler, Miloš MD; Hartová, Petra MD; Komzák, Martin MD

**Abstract**

Background: The objective of the present study was to determine if platelet rich plasma (PRP) can increase tibiofemoral cartilage regeneration and improve knee function.

Methods: Forty consecutive and strictly selected patients affected by grade II or III chondromalacia underwent 1 yr of treatment (nine injections) with autologous PRP in a liquid form with 2.0 to 2.5-fold platelet concentration (20 cases) or with hyaluronic acid (HA) (20 patients). Outcome measures included the Lysholm, Tegner, International Knee Documentation Committee (IKDC), Western Ontario and McMaster (WOMAC) Osteoarthritis Index, and Short Form (SF)-36 scores. MRI arthroscopic and histologic assessment were used to evaluate cartilage thickness and degree of degeneration before and after treatment (1 yr after the primary arthroscopy).

Results: The study demonstrated significant improvement in Lysholm, Tegner, IKDC, WOMAC, and SF-36 scores in both groups. Cartilage assessment revealed no significant macroscopic or microscopic structural regeneration as well as no cartilage height increase in either group. Higher content of chondrocytes and proteoglycans in cartilage was proven in both groups after treatment without a statistically significant difference between the groups. There were no adverse events observed.

Conclusions: PRP and HA significantly reduced pain and improved quality of life in patients with a low degree of cartilage degeneration. MRI and arthroscopic assessment did not confirm any significant cartilage structural improvement. The content of chondrocytes and proteoglycans in cartilage was higher in the PRP group than in the HA group after the treatment but did not reach statistical significance.

35. KNEE/TOTAL**Pre-exercise helps**

BMC Musculoskelet Disord. 2017 Jan 6;18(1):5. doi: 10.1186/s12891-016-1369-0.

Supervised neuromuscular exercise prior to hip and knee replacement: 12-month clinical effect and cost-utility analysis alongside a randomised controlled trial.

Fernandes L^{1,2}, Roos EM³, Overgaard S^{4,5}, Villadsen A⁴, Sjøgaard R^{6,7}.

Author information

Abstract

BACKGROUND:

There are indications of beneficial short-term effect of pre-operative exercise in reducing pain and improving activity of daily living after total hip replacement (THR) and total knee replacement (TKR) surgery. Though, information from studies conducting longer follow-ups and economic evaluations of exercise prior to THR and TKR is needed. The aim of the study was to analyse 12-month clinical effect and cost-utility of supervised neuromuscular exercise prior to THR and TKR surgery.

METHODS:

The study was conducted alongside a randomised controlled trial including 165 patients scheduled for standard THR or TKR at a hospital located in a rural area of Denmark. The patients were randomised to replacement surgery with or without an 8-week preoperative supervised neuromuscular exercise program (Clinical Trials registration no.: [NCT01003756](#)). Clinical effect was measured with Hip disability and Osteoarthritis Outcome Score (HOOS) and Knee injury and Osteoarthritis Outcome Score (KOOS). Quality adjusted life years (QALYs) were based on EQ-5D-3L and Danish preference weights. Resource use was extracted from national registries and valued using standard tariffs (2012-EUR). Incremental net benefit was analysed to estimate the probability for the intervention being cost effective for a range of threshold values. A health care sector perspective was applied.

RESULTS:

HOOS/KOOS quality of life [8.25 (95% CI, 0.42 to 16.10)] and QALYs [0.04 (95% CI, 0.01 to 0.07)] were statistically significantly improved. Effect-sizes ranged between 0.09-0.59 for HOOS/KOOS subscales. Despite including an intervention cost of €326 per patient, there was no difference in total cost between groups [€132 (95% CI -3942 to 3679)]. At a threshold of €40,000, preoperative exercise was found to be cost effective at 84% probability.

CONCLUSION:

Preoperative supervised neuromuscular exercise for 8 weeks was found to be cost-effective in patients scheduled for THR and TKR surgery at conventional thresholds for willingness to pay. One-year clinical effects were small to moderate and favoured the intervention group, but only statistically significant for quality of life measures.

37. OSTEOARTHRITIS/KNEE**Physical activities**

Arch Phys Med Rehabil. 2016 Dec 27. pii: S0003-9993(16)31331-4. doi: 10.1016/j.apmr.2016.11.024.

Qualitative Development of a Discrete Choice Experiment for Physical Activity Interventions to Improve Knee Osteoarthritis.

Pinto D¹, Danilovich M², Hansen P³, Finn DJ⁴, Chang RW⁵, Holl JL⁶, Heinemann AW⁷, Bockenholt U⁸.
Author information

Abstract

OBJECTIVE:

To describe the qualitative process used to develop attributes and attribute levels for inclusion in a discrete choice experiments (DCE) for older adult physical activity interventions.

DESIGN:

Five focus groups (a total of 41 participants) were conducted, grounded in the Health Action Process Approach framework. Discussion emphasized identification and prioritization attributes for a DCE on physical activity. Semi-structured interviews (n=6) investigated attribute levels and lay-language for the DCE. A focus group with physical activity researchers and health care providers was the final stakeholder group used to establish a comprehensive approach for the generation of attributes and levels. A DCE pilot test was then conducted with individuals of the target patient population. All transcripts were analyzed using a constant comparative approach.

SETTING:

General community and university-based research setting **PARTICIPANTS:** Volunteers with age greater than 45 years and knee pain, aches or stiffness for at least one month over the previous 12 months.

INTERVENTIONS:

Not applicable.

MAIN OUTCOME MEASURES:

Interview guides, attributes, attribute levels, discrete choice experiment.

RESULTS:

The most influential identified attributes for physical activity were time, effort, cost, convenience, enjoyment, and health benefits. Each attribute had three levels that were understandable in the pilot test of the DCE.

CONCLUSIONS:

The identification of six physical activity attributes that are most salient to adults with knee osteoarthritis resulted from a systematic qualitative process including attribute-ranking exercises. A DCE will provide insight into the relative importance of these attributes for participating in physical activity, which can guide intervention development.

Benefits of exercise

Rheumatol Int. 2017 Jan 11. doi: 10.1007/s00296-016-3646-5.

The effects of therapeutic exercises on pain, muscle strength, functional capacity, balance and hemodynamic parameters in knee osteoarthritis patients: a randomized controlled study of supervised versus home exercises.

Kuru Çolak T¹, Kavlak B², Aydoğdu O², Şahin E², Acar G², Demirbüken İ², Sarı Z², Çolak İ³, Bulut G³, Polat MG².

Author information

Abstract

The aim of the study was to compare the effects of low-intensity exercise programs for lower extremities, either supervised or at home, on pain, muscle strength, balance and the hemodynamic parameters of knee osteoarthritis (OA) patients.

This randomized study included 78 patients with knee OA in 2 groups of supervised and home-based exercise program. Exercises were applied to the first group in the clinic as a group exercise program and were demonstrated to the second group to be performed at home. Before and after the 6-week exercise program, assessment was made of pain, quadriceps and hamstring muscle strengths, 6-min walk test (6MWT), and non-invasive hemodynamic parameters.

Results of the 78 patients, 56 completed the study. Pain, muscle strength, and 6MWT scores showed significant improvements in both groups. There were also significant differences in the amount of change in pain and muscle strength (pain: $p = 0.041$, Rqdc: 0.009, Lqdc: 0.013, Rhms: 0.04) which indicated greater improvements in the supervised group. The balance scores of supervised group showed a significant improvement ($p = 0.009$). No significant change was determined in hemodynamic parameters of either group.

Conclusion according to the results of this study showed that low-intensity lower extremity exercises conducted in a clinic under the supervision of a physiotherapist were more effective than home-based exercises in reducing post-activity pain levels and improving quadriceps and right hamstring muscle strength. Both the supervised and home exercise programs were seen to be effective in reducing rest pain and increasing 6 MW distance in knee osteoarthritis patients.

Kinesio taping helps

Am J Phys Med Rehabil. 2017 Jan;96(1):25-33.

Does Kinesio Taping of the Knee Improve Pain and Functionality in Patients with Knee Osteoarthritis?: A Randomized Controlled Clinical Trial.

Kaya Mutlu E¹, Mustafaoglu R, Birinci T, Razak Ozdincler A.
Author information

Abstract

OBJECTIVE:

This study investigated the effect of Kinesio taping on the functionality, pain, range of motion (ROM), and muscle strength in patients with knee osteoarthritis compared with a placebo Kinesio tape (KT) application.

DESIGN:

Forty-two consecutive patients were randomized to a KT group and a placebo taping group. The assessments were performed at baseline, after the initial KT application, the third KT application, and 1 month later. The functional status of patients was evaluated using the Aggregated Locomotor Function score and the Western Ontario and McMaster Universities Osteoarthritis scale. Pain level, muscle strength, and active ROM were measured using the Visual Analog Scale (VAS), a handheld dynamometer, and digital goniometer, respectively.

RESULTS:

Patients receiving the KT application demonstrated large decrease in VAS activity and walking task scores compared with the placebo taping group from the initial taping application to after the third taping application ($P = 0.009$ and $P < 0.001$, respectively) to the 1-month follow-up ($P = 0.007$ and $P < 0.001$, respectively). The KT group exhibited short-term improvement in VAS night and knee-flexion ROM after the 1-month follow-up ($P < 0.05$). There was no statistically significant difference in outcome measures in ROM and muscle strength between 2 groups.

CONCLUSIONS:

This study demonstrates that Kinesio taping resulted in superior short-term effects on walking task, pain, and knee-flexion ROM compared with placebo taping in patients with knee osteoarthritis.

38 B. FOOT TYPES**Pes planus****Utility outcome assessment of pes planus deformity**

Sultan Aldebeyan, MD, MSc Hanı Sinno, MD, FRCSC Mohammed Alotaibi, Asim M. Makhdom, MD, MSc, Reggie C. Hamdy, MD, FRCS

DOI: <http://dx.doi.org/10.1016/j.fas.2016.12.005>

Highlights

- Participants were willing to sacrifice 3.6 years of life to attain perfect health.
- Participants would take a 12% mortality risk to correct the deformity.
- The perceived burden of flatfeet is comparable to other debilitating conditions.
- Logistic regression showed that age was inversely proportional to the TTO.

Abstract**Background**

Despite being a common condition, there are no objective measures in the literature to reflect the burden of pes planus on affected individuals. Our primary objective was to evaluate this burden by recruiting a sample from the general population using validated utility outcome measures.

Methods

Participants were recruited online and filled a questionnaire to help measure the health burden of pes planus. Three recognized utility outcome scores were used to compare the health burden of monocular blindness, binocular blindness, and pes planus. These included the standard gamble (SG), time trade-off (TTO), and visual analogue score (VAS). Paired *t* test, independent *t* test, and linear regression were used for statistical analysis.

Results

Ninety-two participants were included in the final analysis. The utility outcome scores (VAS, TTO, SG) for pes planus were 73 ± 17 , 0.90 ± 0.08 , and 0.88 ± 0.12 , respectively. The linear regression analysis showed that age was inversely proportional to the time trade-off. However, race, educational level, and income were not significant predictors of utility outcome score for pes planus.

Conclusions

This study shows that the perceived burden of living with pes planus is comparable to living with some debilitating conditions. Our participants were willing to sacrifice 3.6 years of life, and have a procedure with a theoretical 12% mortality risk to attain perfect health.

40. ANKLE SPRAINS AND INSTABILITY

Evidence for care

Br J Sports Med. 2017 Jan;51(2):113-125. doi: 10.1136/bjsports-2016-096178. Epub 2016 Oct 8.

Treatment and prevention of acute and recurrent ankle sprain: an overview of systematic reviews with meta-analysis.

Doherty C¹, Bleakley C², Delahunt E^{3,4}, Holden S³.

Author information

Abstract

BACKGROUND:

Ankle sprains are highly prevalent with high risk of recurrence. Consequently, there are a significant number of research reports examining strategies for treating and preventing acute and recurrent sprains (otherwise known as chronic ankle instability (CAI)), with a coinciding proliferation of review articles summarising these reports.

OBJECTIVE:

To provide a systematic overview of the systematic reviews evaluating treatment strategies for acute ankle sprain and CAI.

DESIGN:

Overview of intervention systematic reviews.

PARTICIPANTS:

Individuals with acute ankle sprain/CAI.

MAIN OUTCOME MEASUREMENTS:

The primary outcomes were injury/reinjury incidence and function.

RESULTS:

46 papers were included in this systematic review. The reviews had a mean score of 6.5/11 on the AMSTAR quality assessment tool. There was strong evidence for bracing and moderate evidence for neuromuscular training in preventing recurrence of an ankle sprain. For the combined outcomes of pain, swelling and function after an acute sprain, there was strong evidence for non-steroidal anti-inflammatory drugs and early mobilisation, with moderate evidence supporting exercise and manual therapy techniques. There was conflicting evidence regarding the efficacy of surgery and acupuncture for the treatment of acute ankle sprains. There was insufficient evidence to support the use of ultrasound in the treatment of acute ankle sprains.

CONCLUSIONS:

For the treatment of acute ankle sprain, there is strong evidence for non-steroidal anti-inflammatory drugs and early mobilisation, with moderate evidence supporting exercise and manual therapy techniques, for pain, swelling and function. Exercise therapy and bracing are supported in the prevention of CAI.

45 A. MANUAL THERAPY LUMBAR & GENERAL**Quality of research****A systematic review of orthopaedic manual therapy randomized clinical trials quality****Sean P. Riley**, Brian Swanson, Jean-Michel Brismée & Steven F. SawyerPages 241-252 | Published online: 09 Feb 2016 <http://dx.doi.org/10.1080/10669817.2015.1119372>**Abstract***Study Design:* Systematic review and meta-analysis.

Objectives: To conduct a systematic review and meta-analysis of randomized clinical trials (RCTs) in the orthopaedic manual therapy (OMT) literature from January 2010 to June 2014 in order to determine if the CONSORT checklist and Cochrane Risk of Bias (RoB) assessment tools: (1) are reliable; (2) have improved the reporting and decreased the risk of bias in RCTs in the OMT literature; (3) differ based on journal impact factor (JIF); and (4) scores are associated with each other.

Background: The CONSORT statement is used to improve the accuracy of reporting within RCTs. The Cochrane RoB tool was designed to assess the risk of bias within RCTs. To date, no evaluation of the quality of reporting and risk of bias in OMT RCTs has been published.

Methods: Relevant RCTs were identified by a literature review from January 2010 to June 2014. The identified RCTs were assessed by two individual reviewers utilizing the 2010 CONSORT checklist and the RoB tool. Agreement and a mean composite total score for each tool were attained in order to determine if the CONSORT and RoB tools were reliable and varied by year and impact factor.

Results: A total of 72 RCTs in the OMT literature were identified. A number of categories within the CONSORT and RoB tools demonstrated prevalence-adjusted bias-adjusted kappa (PABAK) scores of less than 0.20 and from 0.20 to 0.40. The total CONSORT and RoB scores were correlated to each other ($r = 0.73$; 95% CI 0.60 to 0.82; $p < 0.0001$). There were no statistically significant differences in CONSORT or RoB scores by year. There was a statistically significant correlation between both CONSORT scores and JIF ($r = 0.64$, 95% CI 0.47 to 0.76; $p < 0.0001$), and between RoB scores and JIF ($r = 0.42$, 95% confidence interval 0.21–0.60; $p < 0.001$). There was not a statistically significant correlation between JIF and year of publication.

Conclusion: Our findings suggest that the CONSORT and RoB have a number of items that are unclear and unreliable, and that the quality of reporting in OMT trials has not improved in recent years. Improvements in reporting are necessary to allow advances in OMT practice.

Level of Evidence: 1A

Core vs. MT for LBP

Phys Ther Sport. 2017 Jan;23:136-142. doi: 10.1016/j.pts.2016.08.004. Epub 2016 Aug 18.

Stabilization exercise compared to general exercises or manual therapy for the management of low back pain: A systematic review and meta-analysis.

Gomes-Neto M¹, Lopes JM², Conceição CS², Araujo A², Brasileiro A³, Sousa C², Carvalho VO⁴, Arcanjo FL².

Author information

Abstract

AIM:

We performed a systematic review with a meta-analysis to examine the efficacy of stabilization exercises versus general exercises or manual therapy in patients with low back pain.

DESIGN:

We searched MEDLINE, Cochrane Controlled Trials, Scielo, and CINAHL (from the earliest date available to November 2014) for randomized controlled trials that examined the efficacy of stabilization exercises compared to general exercises or manual therapy on pain, disability, and function in patients with low back pain. Weighted mean differences (WMD) and 95% confidence intervals were calculated.

RESULTS:

Eleven studies met the inclusion criteria (413 stabilization exercises patients, 297 general exercises patients, and 185 manual therapy patients). Stabilization exercises may provide greater benefit than general exercise for pain reduction and improvement in disability. Stabilization exercise improved pain with a WMD of -1.03 (95% CI: -1.29 to -0.27) and improved disability with a WMD of -5.41 (95% CI: -8.34 to -2.49). There were no significant differences in pain and disability scores among participants in the stabilization exercise group compared to those in the manual therapy group.

CONCLUSIONS:

Stabilization exercises were as efficacious as manual therapy in decreasing pain and disability and should be encouraged as part of musculoskeletal rehabilitation for low back pain.

45 B. MANUAL THERAPY CERVICAL**MDT and centralization****Measurement of outcomes for patients with centralising versus non-centralising neck pain**

Terrence Rose, Joshua Butler, Nicholaus Salinas, Ryan Stoltzfus, Tanisha Wheatley & Ron Schenk

Pages 264-268 Accepted 01 Apr 2015, Published online: 25 May 2016

<http://dx.doi.org/10.1179/2042618615Y.0000000010>

Abstract

Objective: The purpose of this study is to determine whether individuals with neck pain who demonstrate centralisation of symptoms have more favourable outcome than individuals who do not demonstrate centralisation.

Methods: Eleven subjects with neck pain were evaluated and treated by two physical therapists certified in Mechanical Diagnosis and Therapy (MDT). Eleven physical therapy patients underwent a routine initial evaluation and were treated 2–3 times per week using MDT principles and other physical therapy interventions. The Neck Disability Index (NDI) tool was administered at the initial examination, approximately 2 weeks following the initial examination, each subsequent re-evaluation, and at discharge from the study to measure changes in functional outcomes for each subject. Patients continued with treatments until they were discharged or removed from the study. Four subjects were referred back to their physician by treating physical therapist secondary to non-centralisation (NC) and worsening of symptoms.

Results: Of the 11 subjects, six demonstrated centralisation (CEN) and five demonstrated NC. At initial evaluation, the average NDI score for the CEN group was 51.0 (SD ± 19.4) and 56.4 (SD ± 17.6) for the NC group. For the CEN group, the average change in NDI score between initial evaluation and discharge was 41.2 (SD ± 13.2) and 12.2 (SD ± 13.0) for the NC group. The correlation coefficient of CEN and change in NDI score was 0.772 and was statistically significant ($P = 0.005$).

Conclusions: In this limited sample, people with neck pain demonstrated more favourable outcomes when the CEN phenomenon was observed. Future research on CEN should be investigated with a larger sample size and with a greater number of clinicians trained in the MDT approach.

MT and ex for whiplash disorder

Pain Med. 2016 Dec 29. pii: pnw266. doi: 10.1093/pm/pnw266.

Do Subjects with Whiplash-Associated Disorders Respond Differently in the Short-Term to Manual Therapy and Exercise than Those with Mechanical Neck Pain?

Castaldo M^{1,2,3}, Catena A¹, Chiarotto A⁴, Fernández-de-Las-Peñas C^{2,5}, Arendt-Nielsen L⁶.

Author information

Abstract

OBJECTIVE : To compare the short-term effects of manual therapy and exercise on pain, related disability, range of motion, and pressure pain thresholds between subjects with mechanical neck pain and whiplash-associated disorders.

METHODS : Twenty-two subjects with mechanical neck pain and 28 with whiplash-associated disorders participated. Clinical and physical outcomes including neck pain intensity, neck-related disability, and pain area, as well as cervical range of motion and pressure pain thresholds over the upper trapezius and tibialis anterior muscles, were obtained at baseline and after the intervention by a blinded assessor. Each subject received six sessions of manual therapy and specific neck exercises. Mixed-model repeated measures analyses of covariance (ANCOVAs) were used for the analyses.

RESULTS : Subjects with whiplash-associated disorders exhibited higher neck-related disability ($P = 0.021$), larger pain area ($P = 0.003$), and lower pressure pain thresholds in the tibialis anterior muscle ($P = 0.009$) than those with mechanical neck pain. The adjusted ANCOVA revealed no between-group differences for any outcome (all $P > 0.15$). A significant main effect of time was demonstrated for clinical outcomes and cervical range of motion with both groups experiencing similar improvements (all $P < 0.01$). No changes in pressure pain thresholds were observed in either group after treatment ($P > 0.222$).

CONCLUSIONS : The current clinical trial found that subjects with mechanical neck pain and whiplash-associated disorders exhibited similar clinical and neurophysiological responses after a multimodal physical therapy intervention, suggesting that although greater signs of central sensitization are present in subjects with whiplash-associated disorders, this does not alter the response in the short term to manual therapy and exercises.

AP mob helps shoulder pain

J Back Musculoskelet Rehabil. 2016 Dec 23. doi: 10.3233/BMR-160566.

Immediate effects of cervical unilateral anterior-posterior mobilisation on shoulder pain and impairment in post-operative arthroscopy patients.

Hauswirth J^{1,2,3}, Ernst MJ², Preusser ML^{2,4}, Meichtry A², Kool J^{2,5}, Crawford RJ^{6,7}.

Author information

Abstract

BACKGROUND:

Lateral gliding cervical spine mobilisation is shown to improve shoulder pain, disability and function. However, despite common clinical-use, no study reports the effect of unilateral anterior-posterior (A-P) cervical mobilisation on shoulder pain and function, and particularly in patients after arthroscopic shoulder surgery.

OBJECTIVE:

Examine the immediate effect of single-level Grade III cervical unilateral A-P mobilisation on shoulder pain, flexion and abduction range of motion (ROM) and external rotator strength compared to placebo cervical unilateral A-P light touch pressure.

METHODS:

Single session intervention with a crossover design in 32 (15 women) postoperative arthroscopic shoulder patients.

RESULTS:

Immediate and superior treatment effects were shown for A-P cervical mobilisation in improving flexion ROM, isometric strength of external rotation, and pain intensity during flexion (all $p < 0.05$) when compared to the placebo. However, effects may not be considered clinically meaningful.

CONCLUSION:

Unilateral A-P mobilisation applied to the cervical spine shows a tendency toward positively influencing post-arthroscopy shoulder pain and function. Further study examining cervical mobilisations directed in different planes to influence shoulder motion appear warranted.

HA's anxiety

December 2016 Volume 22, Pages 11–20

Efficacy of manual therapy on anxiety and depression in patients with tension-type headache. A randomized controlled clinical trial

Gemma Victoria Espí-López Laura López-Bueno M. Teófila Vicente-Herrero Francisco M. Martínez-Arnau Lucas Monzani

DOI: <http://dx.doi.org/10.1016/j.ijosm.2016.05.003>

Abstract**Introduction**

Tension-type headache (TTH) is a highly prevalent disorder with a significant socio-economic impact. The purpose of this study was to test the efficacy of three manual therapy treatments for reducing TTH-related anxiety and depression.

Subjects and methods

A clinical trial was conducted on 84 participants diagnosed with tension-type headache forming 4 groups: the first group received suboccipital soft tissue treatment (ST); the second group was treated with articulatory techniques (AT); the third group underwent a combination of both techniques (ST and AT), while the fourth group was the control group. Treatment sessions were administered over four weeks, with post-treatment assessment, and follow-up at one month. We conducted repeated measures analysis of covariance (RM-MANCOVA) to evaluate the effect of treatment on between and within-subject conditions and their interaction on reported depression and anxiety.

Results

All treatments resulted in a 'moderate' reduction of psychological symptoms associated with TTH (Cohen's $f = .31$ for anxiety trait; $f = .35$ for anxiety state and $f = .35$ for depression). However, their efficacy varied across treatments, TTH types and the elapsed time between measurements.

Conclusion

Treatments including an articulatory technique showed a greater efficacy than a soft tissue technique, or a combination of both, for the reduction of TTH-related anxiety and depression levels in these participants

45 D. MANUAL THERAPY EXTREMITIES**MWM helps hemi's ankle**

J Stroke Cerebrovasc Dis. 2017 Jan;26(1):169-176. doi: 10.1016/j.jstrokecerebrovasdis.2016.09.005. Epub 2016 Oct 17.

Effects of Talocrural Mobilization with Movement on Ankle Strength, Mobility, and Weight-Bearing Ability in Hemiplegic Patients with Chronic Stroke: A Randomized Controlled Trial.

An CM¹, Jo SO².

Author information

Abstract

BACKGROUND AND OBJECTIVE:

In general, adequate movement of the ankle joint is known to play an important role in functional activities. Stroke survivors frequently have limited range of motion of the ankle, leading to dysfunctional weight transfer toward the paretic lower limb during standing or gait. The purpose of this study was to investigate the effects of talocrural mobilization with movement (MWM) on ankle strength, dorsiflexion passive range of motion (DF-PROM), and weight-bearing ability on the paretic limb during standing or gait in stroke patients with limited ankle dorsiflexion.

METHODS:

Twenty-six participants with chronic hemiplegia (>6 months post stroke) were divided into 2 groups: MWM group (n = 13) and control group (n = 13). Both groups attended conventional physiotherapy sessions 3 times a week for 5 weeks. Additionally, the MWM group underwent talocrural MWM 3 times a week for 5 weeks. Isokinetic ankle strength, DF-PROM, and weight-bearing ability measures included the limit of stability (LOS); gait parameters were evaluated before and after interventions.

RESULTS:

Plantarflexors peak torque and DF-PROM significantly increased in the MWM group. In addition, forward and forward-paretic direction LOS significantly increased in the MWM group. Paretic direction LOS, single-limb support phase of the paretic limb significantly increased and double limb support phase significantly decreased within the MWM group.

CONCLUSIONS:

This study demonstrates that talocrural MWM has an augmented effect on ankle strength, mobility, and weight-bearing ability in chronic stroke patients with limited ankle motion when added to conventional therapy.

48 A. STM**Dry needling helps shoulder pain**

J Pain. 2017 Jan;18(1):11-18. doi: 10.1016/j.jpain.2016.08.013. Epub 2016 Oct 5.

Exercises and Dry Needling for Subacromial Pain Syndrome: A Randomized Parallel-Group Trial.

Arias-Buría JL¹, Fernández-de-Las-Peñas C², Palacios-Ceña M³, Koppenhaver SL⁴, Salom-Moreno J³.

Author information

Abstract

This randomized clinical trial investigated the effectiveness of exercise versus exercise plus trigger point (TrP) dry needling (TrP-DN) in subacromial pain syndrome. A randomized parallel-group trial, with 1-year follow-up was conducted. Fifty subjects with subacromial pain syndrome were randomly allocated to receive exercise alone or exercise plus TrP-DN. Participants in both groups were asked to perform an exercise program of the rotator cuff muscles twice daily for 5 weeks. Further, patients allocated to the exercise plus TrP-DN group also received dry needling to active TrPs in the muscles reproducing shoulder symptoms during the second and fourth sessions. The primary outcome was pain-related disability assessed using the Disabilities of the Arm, Shoulder, and Hand questionnaire. Secondary outcomes included mean current pain and the worst pain experienced in the shoulder during the previous week. They were assessed at baseline, 1 week, and 3, 6, and 12 months after the end of treatment. Analysis was according to intention to treat with mixed analysis of covariance adjusted for baseline outcomes. At 12 months, 47 patients (94%) completed follow-up. Statistically larger improvements (all, $P < .01$) in shoulder disability was found for the exercise plus TrP-DN group at all follow-up periods (post: Δ -20.6 [95% confidence interval (CI) -23.8 to -17.4]; 3 months: Δ -23.2 [95% CI -28.3 to -18.1]; 6 months: Δ -23.6 [95% CI -28.9 to -18.3]; 12 months: Δ -13.9 [95% CI -17.5 to -10.3]). Both groups exhibited similar improvements in shoulder pain outcomes at all follow-up periods. The inclusion of TrP-DN with an exercise program was effective for improving disability in subacromial pain syndrome. No greater improvements in shoulder pain were observed.

PERSPECTIVE:

This study found that the inclusion of 2 sessions of TrP-DN into an exercise program was effective for improving shoulder pain-related disability at short-, medium-, and long-term; however, no greater improvement in shoulder pain was observed.

Dry needling vs. manual pressure

J Manipulative Physiol Ther. 2017 Jan;40(1):11-20. doi: 10.1016/j.jmpt.2016.10.008.

Comparing Trigger Point Dry Needling and Manual Pressure Technique for the Management of Myofascial Neck/Shoulder Pain: A Randomized Clinical Trial.

De Meulemeester KE¹, Castelein B², Coppieters I², Barbe T², Cools A², Cagnie B².

Author information

Abstract

OBJECTIVE:

The aim of this study was to investigate short-term and long-term treatment effects of dry needling (DN) and manual pressure (MP) technique with the primary goal of determining if DN has better effects on disability, pain, and muscle characteristics in treating myofascial neck/shoulder pain in women.

METHODS:

In this randomized clinical trial, 42 female office workers with myofascial neck/shoulder pain were randomly allocated to either a DN or MP group and received 4 treatments. They were evaluated with the Neck Disability Index, general numeric rating scale, pressure pain threshold, and muscle characteristics before and after treatment. For each outcome parameter, a linear mixed-model analysis was applied to reveal group-by-time interaction effects or main effects for the factor "time."

RESULTS:

No significant differences were found between DN and MP. In both groups, significant improvement in the Neck Disability Index was observed after 4 treatments and 3 months ($P < .001$); the general numerical rating scale also significantly decreased after 3 months. After the 4-week treatment program, there was a significant improvement in pain pressure threshold, muscle elasticity, and stiffness.

CONCLUSION:

Both treatment techniques lead to short-term and long-term treatment effects. Dry needling was found to be no more effective than MP in the treatment of myofascial neck/shoulder pain.

Dry needling vs PT

J Orthop Sports Phys Ther. 2017 Jan;47(1):11-20. doi: 10.2519/jospt.2017.6698. Epub 2016 Dec 10.

Contribution of Dry Needling to Individualized Physical Therapy Treatment of Shoulder Pain: A Randomized Clinical Trial.

Pérez-Palomares S, Oliván-Blázquez B, Pérez-Palomares A, Gaspar-Calvo E, Pérez-Benito M, López-Lapeña E, de la Torre-Beldarraín ML, Magallón-Botaya R.

Abstract

Study Design Multicenter, parallel randomized clinical trial.

Background Myofascial trigger points (MTrPs) are implicated in shoulder pain and functional limitations. An intervention intended to treat MTrPs is dry needling.

Objectives To investigate the effectiveness of dry needling in addition to evidence-based personalized physical therapy treatment in the treatment of shoulder pain.

Methods One hundred twenty patients with nonspecific shoulder pain were randomly allocated into 2 parallel groups: (1) personalized, evidencebased physical therapy treatment; and (2) trigger point dry needling in addition to personalized, evidence-based physical therapy treatment. Patients were assessed at baseline, posttreatment, and 3-month follow-up. The primary outcome measure was pain assessed by a visual analog scale at 3 months, and secondary variables were joint range-of-motion limitations, Constant-Murley score for pain and function, and number of active MTrPs. Clinical efficacy was assessed using intention-to-treat analysis.

Results Of the 120 enrolled patients, 63 were randomly assigned to the control group and 57 to the intervention group. There were no significant differences in outcome between the 2 treatment groups. Both groups showed improvement over time.

Conclusion Dry needling did not offer benefits in addition to personalized, evidencebased physical therapy treatment for patients with nonspecific shoulder pain. Level of Evidence Therapy, level 1b. Registered February 11, 2009 at www.isrctn.com (ISRCTN30907460). J Orthop Sports Phys Ther 2017;47(1):11-20. Epub 9 Dec 2016. doi:10.2519/jospt.2017.6698.

51. CFS/BET

Morphometric changes in LBP

AJNR Am J Neuroradiol. 2017 Jan;38(1):183-191. doi: 10.3174/ajnr.A5020. Epub 2016 Nov 24.

Associations between Measures of Structural Morphometry and Sensorimotor Performance in Individuals with Nonspecific Low Back Pain.

Caeyenberghs K¹, Pijnenburg M², Goossens N³, Janssens L^{3,4}, Brumagne S³.

Author information

Abstract

BACKGROUND AND PURPOSE:

To date, most structural brain imaging studies in individuals with nonspecific low back pain have evaluated volumetric changes. These alterations are particularly found in sensorimotor-related areas. Although it is suggested that specific measures, such as cortical surface area and cortical thickness, reflect different underlying neural architectures, the literature regarding these different measures in individuals with nonspecific low back pain is limited. Therefore, the current study was designed to investigate the association between the performance on a sensorimotor task, more specifically the sit-to-stand-to-sit task, and cortical surface area and cortical thickness in individuals with nonspecific low back pain and healthy controls.

MATERIALS AND METHODS:

Seventeen individuals with nonspecific low back pain and 17 healthy controls were instructed to perform 5 consecutive sit-to-stand-to-sit movements as fast as possible. In addition, T1-weighted anatomic scans of the brain were acquired and analyzed with FreeSurfer.

RESULTS:

Compared with healthy controls, individuals with nonspecific low back pain needed significantly more time to perform 5 sit-to-stand-to-sit movements ($P < .05$). Brain morphometric analyses revealed that cortical thickness of the ventrolateral prefrontal cortical regions was increased in patients with nonspecific low back pain compared with controls. Furthermore, decreased cortical thickness of the rostral anterior cingulate cortex was associated with lower sit-to-stand-to-sit performance on an unstable support surface in individuals with nonspecific low back pain and healthy controls ($r = -0.47$, $P < .007$). In addition, a positive correlation was found between perceived pain intensity and cortical thickness of the superior frontal gyrus ($r = 0.70$, $P < .002$) and the pars opercularis of the inferior ventrolateral prefrontal cortex ($r = 0.67$, $P < .004$). Hence, increased cortical thickness was associated with increased levels of pain intensity in individuals with nonspecific low back pain. No associations were found between cortical surface area and the pain characteristics in this group.

CONCLUSIONS:

The current study suggests that cortical thickness may contribute to different aspects of sit-to-stand-to-sit performance and perceived pain intensity in individuals with nonspecific low back pain.

© 2017 by American Journal of Neuroradiology.

Variations in lifting patterns

Differences in kinematics of the lumbar spine and lower extremities between people with and without low back pain during the down phase of a pick up task, an observational study

Sara P. Gombatto Natalie D'Arpa Sarah Landerholm Cassandra Mateo Ryan O'Connor Jana Tokunaga Lori Tuttle

DOI: <http://dx.doi.org/10.1016/j.msksp.2016.12.017>

Highlights

- Group difference in lumbar spine flexion depends on upper vs. lower region.
- LBP subjects flex the lumbar spine more in early ranges of movement than controls.
- LBP subjects display more frontal plane knee movement than controls.
- There were no significant differences in kinematics among movement-based subgroups.

Abstract

Background

Limited research exists on lumbar spine and lower extremity movement during functional tasks in people with and without low back pain (LBP).

Objective

To determine differences in lumbar spine and lower extremity kinematics in people with and without LBP during the down phase of a pick up task.

Design

Cross-sectional, observational study.

Method

35 people (14 M, 21 F, 26.9 ± 10.9 years, 24.8 ± 3.2 kg/m²); 18 with and 17 without LBP were matched based on age, gender and BMI. Kinematics of the lumbar spine and lower extremities were measured using 3D motion capture, while subjects picked up an object off the floor. People with LBP were examined and assigned to movement-based LBP subgroups. Repeated measures ANOVA tests were conducted to determine the effect of group and region on lumbar spine and lower extremity kinematics. A secondary analysis was conducted to examine the effect of LBP subgroup on lumbar spine kinematics.

Results

Compared to controls, subjects with LBP displayed greater upper and less lower lumbar flexion ($P < 0.05$), and more lumbar flexion during the first 25% of the pick up task ($P < 0.01$). There were no group differences in frontal or axial plane lumbar spine kinematics. Subjects with LBP displayed more frontal plane movement at the knee than control subjects ($P < 0.01$). There were no significant effects of movement-based LBP subgroup on kinematics ($P > 0.05$).

Conclusions

When evaluating movement during a functional task, the clinician should consider regional differences in the lumbar spine, pattern of movement, and lower extremity movement.

53. CORE

Abdominal hollowing

J Manipulative Physiol Ther. 2016 Dec 22. pii: S0161-4754(16)30276-7. doi: 10.1016/j.jmpt.2016.10.009

Effect of the Abdominal Hollowing and Bracing Maneuvers on Activity Pattern of the Lumbopelvic Muscles During Prone Hip Extension in Subjects With or Without Chronic Low Back Pain: A Preliminary Study.

Kahlaee AH¹, Ghamkhar L², Arab AM².
Author information

Abstract

OBJECTIVE:

The purpose of this study was to compare the effect of abdominal hollowing (AH) and abdominal bracing (AB) maneuvers on the activity pattern of lumbopelvic muscles during prone hip extension (PHE) in participants with or without nonspecific chronic low back pain (CLBP).

METHODS:

Twenty women with or without CLBP participated in this cross-sectional observational study. The electromyographic activity (amplitude and onset time) of the contralateral erector spinae (CES), ipsilateral erector spinae (IES), gluteus maximus, and biceps femoris muscles was measured during PHE with and without abdominal maneuvers. A 3-way mixed model analysis of variance and post hoc tests were used for statistical analysis.

RESULTS:

Between-group comparisons showed that the CES onset delay during PHE alone was greater ($P = .03$) and the activity level of IES, CES, and biceps femoris in all maneuvers ($P < .05$) was higher in patients with CLBP than in asymptomatic participants. In asymptomatic participants, PHE + AH significantly decreased the signal amplitude (AMP) of IES ($P = .01$) and CES ($P = .02$) muscles. In participants with CLBP, IES muscle AMP was lower during PHE + AH compared with PHE + AB and PHE alone. With regard to onset delay, the results also showed no significant difference between maneuvers within either of the 2 groups ($P > .05$).

CONCLUSIONS:

Performance of the AH maneuver decreased the erector spinae muscle AMP in both groups, and neither maneuver altered the onset delay of any of the muscles in either group. The low back pain group showed higher levels of activity in all muscles (not statistically significant in gluteus maximus during all maneuvers). The groups were similar according to the onset delay of any of the muscles during either maneuver.

Core vs MT for LBP

Phys Ther Sport. 2017 Jan;23:136-142. doi: 10.1016/j.pts.2016.08.004. Epub 2016 Aug 18.

Stabilization exercise compared to general exercises or manual therapy for the management of low back pain: A systematic review and meta-analysis.

Gomes-Neto M¹, Lopes JM², Conceição CS², Araujo A², Brasileiro A³, Sousa C², Carvalho VO⁴, Arcanjo FL².

Author information

Abstract

AIM:

We performed a systematic review with a meta-analysis to examine the efficacy of stabilization exercises versus general exercises or manual therapy in patients with low back pain.

DESIGN:

We searched MEDLINE, Cochrane Controlled Trials, Scielo, and CINAHL (from the earliest date available to November 2014) for randomized controlled trials that examined the efficacy of stabilization exercises compared to general exercises or manual therapy on pain, disability, and function in patients with low back pain. Weighted mean differences (WMD) and 95% confidence intervals were calculated.

RESULTS:

Eleven studies met the inclusion criteria (413 stabilization exercises patients, 297 general exercises patients, and 185 manual therapy patients). Stabilization exercises may provide greater benefit than general exercise for pain reduction and improvement in disability. Stabilization exercise improved pain with a WMD of -1.03 (95% CI: -1.29 to -0.27) and improved disability with a WMD of -5.41 (95% CI: -8.34 to -2.49). There were no significant differences in pain and disability scores among participants in the stabilization exercise group compared to those in the manual therapy group.

CONCLUSIONS:

Stabilization exercises were as efficacious as manual therapy in decreasing pain and disability and should be encouraged as part of musculoskeletal rehabilitation for low back pain.

59. PAIN

Manage of chronic pain

Rheumatol Int. 2017 Jan;37(1):29-42. doi: 10.1007/s00296-016-3481-8. Epub 2016 Apr 23.

An overview of treatment approaches for chronic pain management.

Hylands-White N^{1,2}, Duarte RV³, Raphael JH^{4,5}.

Author information

Abstract

Pain which persists after healing is expected to have taken place, or which exists in the absence of tissue damage, is termed chronic pain. By definition chronic pain cannot be treated and cured in the conventional biomedical sense; rather, the patient who is suffering from the pain must be given the tools with which their long-term pain can be managed to an acceptable level. This article will provide an overview of treatment approaches available for the management of persistent non-malignant pain. As well as attempting to provide relief from the physical aspects of pain through the judicious use of analgesics, interventions, stimulations, and irritations, it is important to pay equal attention to the psychosocial complaints which almost always accompany long-term pain. The pain clinic offers a biopsychosocial approach to treatment with the multidisciplinary pain management programme; encouraging patients to take control of their pain problem and lead a fulfilling life in spite of the pain.

Language of pain

J Pain. 2017 Jan 11. pii: S1526-5900(17)30004-4. doi: 10.1016/j.jpain.2017.01.001.

Linguistic Indicators of Pain Catastrophizing in Patients with Chronic Musculoskeletal Pain.

Junghaenel DU1, Schneider S2, Broderick JE2.

Author information

Abstract

The present study examined markers of pain catastrophizing in the word use of patients with chronic pain. Patients (n = 71) completed the Pain Catastrophizing Scale and wrote about their life with pain. Quantitative word count analysis examined whether the essays contained linguistic indicators of catastrophizing. Bivariate correlations showed that catastrophizing was associated with greater use of first person singular pronouns, such as "I" (r = .27, p ≤ .05) and pronouns referencing other people (r = .28, p ≤ .05). Catastrophizing was further significantly associated with greater use of sadness (r = .35, p ≤ .01) and anger (r = .30, p ≤ .05) words. No significant relationships with positive emotion and cognitive process words were evident. Controlling for patients' engagement in the writing task, gender, age, pain intensity, and neuroticism in multiple regression, the linguistic categories together uniquely explained 13.6% of the variance in catastrophizing (p ≤ .001). First person singular pronouns (β = .24, p ≤ .05) and words relating to sadness (β = .25, p ≤ .05) were significant, and pronouns referencing other people (β = .19, p ≤ .10) were trending. The results suggest that pain catastrophizing is associated with a "linguistic fingerprint" that can be discerned from patients' natural word use.

PERSPECTIVE:

Quantitative word count analysis examined whether pain catastrophizing is reflected in patients' written essays about living with pain. Catastrophizing was associated with more first person singular pronouns, more pronouns referencing other people, and more expressions of sadness and anger. The results can help understand how catastrophizing translates into communicative behaviors.

Copyright © 2017. Published by Elsevier Inc.

Optimism and pain

J Pain. 2016 Dec 27. pii: S1526-5900(16)30365-0. doi: 10.1016/j.jpain.2016.12.007.

Increasing optimism protects against pain-induced impairments in task shifting performance.

Boselie JJ¹, Vancleef LM², Peters ML².

Author information

Abstract

Persistent pain can lead to difficulties in executive task performance. Three core executive functions that are often postulated are inhibition, updating and shifting. Optimism, the tendency to expect that good things happen in the future, has been shown to protect against pain-induced performance deterioration in the executive function updating. This study tested whether this protective effect of a temporary optimistic state by means of a writing and visualization exercise extended to the executive function shifting. A 2 (optimism: optimism vs. no-optimism) x 2 (pain: pain vs. no-pain) mixed factorial design was conducted. Participants (N=61) completed a shifting task once with and once without concurrent painful heat stimulation following an optimism or neutral manipulation. Results demonstrated that shifting performance was impaired when experimentally heat pain was applied during task execution, and that optimism counteracted pain-induced deterioration in task shifting performance.

PERSPECTIVE:

Experimentally induced heat pain impairs shifting task performance and manipulated optimism counteracted this pain-induced performance deterioration. Identifying psychological factors that may diminish the negative impact of persistent pain on the ability to function in daily life is imperative.

Exercise helps MS pain

Int J Rehabil Res. 2016 Dec 29. doi: 10.1097/MRR.0000000000000212.

Effects of aerobic exercise on pain sensitivity, heart rate recovery, and health-related quality of life in patients with chronic musculoskeletal pain.

Öte Karaca Ş¹, Demirsoy N, Günendi Z.

Author information

Abstract

We aimed to investigate the effects of aerobic exercise on pain perception, sensitivity, and health-related quality of life; to assess its effect on parasympathetic tonus by analysis of heart rate recovery; and to examine the effects of parasympathetic tone on pain sensitivity in patients with chronic musculoskeletal pain.

Fifty patients with chronic musculoskeletal pain were randomized into two groups: control group (C group) and aerobic exercise group (AE group). Both groups received conventional physical therapy for 2 weeks; the AE group performed submaximal aerobic exercise on a treadmill for 30 min additionally. Exercise test, pressure-pain threshold measurement, short form-36, and visual analog scale were administered initially and finally for evaluation. Visual analog scale scores in both groups decreased significantly after treatment ($P < 0.001$). Pressure-pain threshold sum increased significantly in the AE group, remaining unchanged in the C group. Increase in exercise test duration was significant in the AE group compared with the C group ($P = 0.0002$). Heart rate recovery did not change with therapy in the groups. For short form-36, the AE group showed alterations in role limitations because of physical problems and general health perceptions; both groups showed a significant improvement in the physical function and bodily pain subscales, but mental health significantly improved only in C group.

Short-term aerobic exercise along with conventional physical therapy decreased pain sensitivity and increased aerobic capacity, with significant improvements in health-related quality of life.

60. COMPLEX REGIONAL PAIN

Variations

J Pain Res. 2016 Dec 19;10:9-14. doi: 10.2147/JPR.S119308. eCollection 2017.

Complex regional pain syndrome: medical and legal ramifications of clinical variability and experience and perspective of a practicing clinician.

Lazaro RP¹.

Author information

Abstract

OBJECTIVE:

The aim of this study was to demonstrate the ramifications of clinical variability of complex regional pain syndrome (CRPS) and how they can affect the various aspects of this condition, favorably or unfavorably, for both patients and participating medical and legal professionals.

METHODS:

Twelve patients diagnosed with CRPS at different times in the past 25 years were followed up, and their signs and symptoms were reviewed for variability. None had preexisting or ongoing medical disorders and prior injury to the peripheral nerves or musculoskeletal tissues. None had been involved in litigation. Physical traumas that triggered CRPS were job-related, vehicular accidents, and personal injuries. The presence of vasomotor symptoms (eg, swelling, skin discoloration, and temperature changes) and allodynia in the affected extremity was the basis for clinical diagnosis in all the patients. The need for imaging studies was precluded in some patients owing to the presence of vasomotor symptoms, which either fluctuated or were steady. Seven of the patients had type 1 CRPS, and five patients had type 2 CRPS.

RESULTS:

Most patients encountered delay in diagnosis and treatment and legal obstacles owing to the lack of "typical" objective signs of CRPS. The patients' symptoms fluctuated at different times of the day. Eight patients experienced spread of vasomotor symptoms and varying degree of allodynia in the opposite extremity. One patient, who developed signs and symptoms of rheumatoid arthritis, 2 months after the injury, continued to have CRPS symptoms in the injured hand. Treatment modalities administered in all the patients were essentially ineffective. All the patients, except one, were unable to return to their original line of work, and their symptoms persisted regardless of the outcome of their legal claims.

CONCLUSION:

It is likely that patients who continue to complain of pain and vasomotor symptoms followed by a physical injury have CRPS. The complex interaction between the peripheral, autonomic, and

central nervous system in this condition makes it challenging to diagnose, treat, and prognosticate.

62 A. NUTRITION/VITAMINS

Extra virgin olive oil reduces risk of fracture

Extra virgin olive oil consumption reduces the risk of osteoporotic fractures in the predimed trial

Clinical Nutrition, 01/16/2017

García-Gavilán JF, et al.

The researchers motive behind this study was to investigate the impact of chronic consumption of total olive oil and its varieties on the risk of osteoporosis-related fractures in a middle-aged and elderly Mediterranean population. The findings postulated that higher consumption of extra-virgin olive oil is correlated with a lower risk of osteoporosis-related fractures in middle-aged and elderly Mediterranean population at high cardiovascular risk.

Methods

- In this study, the researchers incorporated all members (n=870) enlisted in the Reus (Spain) centre of the PREvención con Dieta MEDiterránea (PREDIMED) trial.
- People, aged 55-80 years at high cardiovascular risk, were randomized to a MedDiet supplemented with extra-virgin olive oil, a MedDiet supplemented with nuts, or a low-fat diet.
- The present investigation was an observational cohort study nested in the trial.
- A validated food frequency questionnaire was utilized to evaluate dietary habits and olive oil consumption.
- After that, data on total osteoporotic fractures was obtained from a systematic review of medical records.
- Finally, the relationship between yearly repeated measurements of olive oil consumption and fracture risk was evaluated by multivariate Cox proportional hazards.

Results

- During a median follow-up of 8.9 years, 114 incident cases of osteoporosis-related fractures were documented.
- Findings revealed that treatment allocation had no impact on fracture risk.
- The results of this study showed that members in the highest tertile of extra-virgin olive oil consumption had a 51% lower risk of fractures (HR:0.49; 95% CI:0.29-0.81. P for

- trend = 0.004) compared to those in the lowest tertile after adjusting for potential confounders.
- According to the outcomes of this work, total and common olive oil consumption was not correlated with fracture risk.

Protein intake and BM density

Am J Clin Nutr. 2017 Jan 11. pii: ajcn134676. doi: 10.3945/ajcn.116.134676.

Peripheral skeleton bone strength is positively correlated with total and dairy protein intakes in healthy postmenopausal women.

Durosier-Izart C¹, Biver E¹, Merminod F¹, van Rietbergen B², Chevalley T¹, Herrmann FR^{1,3}, Ferrari SL¹, Rizzoli R⁴.

Author information

Abstract

BACKGROUND:

Bone mineral content (BMC) and bone mineral density (BMD) are positively correlated with dietary protein intakes, which account for 1-8% of BMC and BMD variances. However, the relation between bone strength and microstructure, which are variables that are not captured by areal bone mineral density (aBMD), and dietary protein intakes, particularly from specific dietary sources, has not been clearly established.

OBJECTIVE:

We investigated the association between the peripheral skeleton-predicted failure load and stiffness, bone microstructure, and dietary protein intakes from various origins (animal, divided into dairy and nondairy, and vegetable origins) in healthy postmenopausal women.

DESIGN:

In a cross-sectional study in 746 Caucasian women aged 65.0 ± 1.4 y, we measured the aBMD with the use of dual-energy X-ray absorptiometry, the distal radius and tibia bone microstructures with the use of high-resolution peripheral quantitative computerized tomography, and bone strength with the use of a finite element analysis, and we evaluated dietary protein and calcium with the use of a validated food-frequency questionnaire.

RESULTS:

Mean dietary calcium and protein intakes were greater than recommended amounts for this class of age. The predicted failure load and stiffness at the distal radius and tibia were positively associated with total, animal, and dairy protein intakes but not with vegetable protein intake. Failure load differences were accompanied by modifications of the aBMD and of cortical and trabecular bone microstructures. The associations remained statistically significant after adjustment for weight, height, physical activity, menopause duration, calcium intake, and the interaction between calcium and protein intake. A principal component analysis of the volumetric BMD and bone microstructure indicated that trabecular bone mainly contributed to the positive association between protein intakes and bone strength.

CONCLUSIONS:

These results, which were recorded in a very homogeneous population of healthy postmenopausal women, indicate that there is a beneficial effect of animal and dairy protein intakes on bone strength and microstructure. Specifically, there is a positive association between the bone failure load and stiffness of the peripheral skeleton and dietary protein intake, which is mainly related to changes in the trabecular microstructure. This trial was registered at www.controlled-trials.com as ISRCTN11865958.

Black tea improves central blood flow

Effect of black tea consumption on radial blood pulse spectrum and cognitive health

Complementary Therapies in Medicine, 01/16/2017

Chang CW, et al. –

Physicians designed this study to examine the influence of black tea on radial blood pressure and Pulse Spectrum. They suggested that in lowering the risk of cognitive impairment and stroke, black tea consumption increasing cerebral blood flow (CBF) might be one of the possible mechanisms.

Methods

- In separate weeks, 14 healthy subjects received water and single doses of black tea (0.05 g/Kg).
- The physicians measured radial blood pressure and pulse wave and evaluated the pressure pulses using harmonic analysis.

Results

- Comparing to water control, this report confirmed that black tea consumption (dose = 0.05 g/Kg) significantly increased third, fifth, (P < 0.1), sixth, seventh, and eighth harmonics (p < 0.05) of radial pressure wave.
- In this study, the physicians suggested that black tea may increase cerebral blood flow (CBF), which was deduced from the results and from the conclusions of previous studies.
- Also, the outcomes demonstrated that the harmonic components of pressure pulse could be the vascular kinetic index that evaluated the hemodynamic status in each time frame before and after consumption of black tea.

63. PHARMACOLOGY

Opioid use in chronic pain

J Pain. 2017 Jan 11. pii: S1526-5900(17)30002-0. doi: 10.1016/j.jpain.2016.12.018.

Patient-Reported Outcomes and Opioid Use In Outpatients with Chronic Pain.

Witkin LR¹, Zylberger D¹, Mehta N¹, Hindenlang M², Johnson C³, Kean J³, Horn SD³, Inturrisi CE⁴.

Author information

Abstract

The Weill Cornell Medical College (WCMC) Pain Registry database contains patient characteristics, treatments, and outcomes for a prospective cohort of 1159 chronic pain patients who were seen at the WCMC Pain Medicine outpatient clinic from 7/08/2011 to 12/10/2014. Patients aged 45-64 comprised 43% followed by age ≥ 65 at 37%. Fifty-eight percent were female. Average pain intensity (Brief Pain Inventory) was reported as mild by 22.3% of patients, moderate by 34.7%, and severe by 43.0%. For each pain intensity category, patient's report of average percent pain relief and health state (EQ-5D) was inversely related to average pain intensity category, while measures of pain interference, number of worst pain locations, and physical and psychological distress were directly related to pain intensity category. Seventy-seven percent of patients received an opioid at one or more clinic encounters. Median daily opioid dose in morphine equivalents (MEQs) was 55 with a range from 2 to 1145 MEQs. Regression analysis revealed that being male was associated with greater likelihood of an opioid ordered and higher average dosage than being female. The registry can identify patient characteristics and treatments that provide new insights into chronic pain management.

PERSPECTIVE:

This article describes results of analyses of patient-reported outcomes and patient-related electronic health record data collected under standard of care from a prospective cohort of chronic pain outpatients at a NYC pain management clinic. The registry provides an opportunity to learn how to improve individualized chronic pain management.

Medication overuse in chronic pain

Curr Pain Headache Rep. 2017 Jan;21(1):2. doi: 10.1007/s11916-017-0606-z.

Medication Overuse in Chronic Pain.

Hsu ES¹.

Author information

Abstract

PURPOSE OF REVIEW:

Chronic pain is usually managed by various pharmacotherapies after exhausting the conservative modalities such as over-the-counter choices. The goal of this review is to investigate current state of opioids and non-opioid medication overuse that includes NSAIDs, skeletal muscle relaxants, antidepressants, membrane stabilization agents, and benzodiazepine. How to minimize medication overuse and achieve better outcome in chronic pain management?

RECENT FINDINGS:

Although antidepressants and membrane stabilization agents contribute to the crucial components for neuromodulation, opioids were frequently designated as a rescue remedy in chronic pain since adjunct analgesics usually do not provide instantaneous relief. The updated CDC guideline for prescribing opioids has gained widespread attention via media exposure. Both patients and prescribers are alerted to respond to the opioid epidemic and numerous complications. However, there has been overuse of non-opioid adjunct analgesics that caused significant adverse effects in addition to concurrent opioid consumption. It is a common practice to extrapolate the WHO three-step analgesic ladder for cancer pain to apply in non-cancer pain that emphasizes solely on pharmacologic therapy which may result in overuse and escalation of opioids in non-cancer pain. There has been promising progress in non-pharmacologic therapies such as biofeedback, complementary, and alternative medicine to facilitate pain control instead of dependency on pharmacologic therapies. This review article presents the current state of medication overuse in chronic pain and proposes precaution to balance the risk and benefit ratio. It may serve as a premier for future study on clinical pathway for comprehensive chronic pain management and reduce medication overuse.

Antipsychotic meds increase risk of fracture

Osteoporos Int. 2017 Jan 12. doi: 10.1007/s00198-016-3881-3

Use of antipsychotics increases the risk of fracture: a systematic review and meta-analysis.

Lee SH^{1,2}, Hsu WT³, Lai CC⁴, Amin EF⁵, Tsai YW⁶, Chiu CC¹, Wang J⁷, Chang SS^{8,9}, Lee CC¹⁰.
Author information

Abstract

Our systematic review and meta-analysis of observational studies indicated that the use of antipsychotics was associated with a nearly 1.5-fold increase in the risk of fracture. First-generation antipsychotics (FGAs) appeared to carry a higher risk of fracture than second-generation antipsychotics (SGAs).

INTRODUCTION:

The risk of fractures associated with the use of antipsychotic medications has inconsistent evidence between different drug classes. A systematic review and meta-analysis was conducted to evaluate whether there is an association between the use of antipsychotic drugs and fractures.

METHODS:

Searches were conducted through the PubMed and EMBASE databases to identify observational studies that had reported a quantitative estimate of the association between use of antipsychotics and fractures. The summary risk was derived from random effects meta-analysis.

RESULTS:

The search yielded 19 observational studies (n = 544,811 participants) with 80,835 fracture cases. Compared with nonuse, use of FGAs was associated with a significantly higher risk for hip fractures (OR 1.67, 95% CI, 1.45-1.93), and use of second generation antipsychotics (SGAs) was associated with an attenuated but still significant risk for hip fractures (OR 1.33, 95% CI, 1.11-1.58). The risk of fractures associated with individual classes of antipsychotic users was heterogeneous, and odds ratios ranged from 1.24 to 2.01. Chlorpromazine was associated with the highest risk (OR 2.01, 95% CI 1.43-2.83), while Risperidone was associated with the lowest risk of fracture (OR 1.24, 95% CI 0.95-1.83).

CONCLUSIONS:

FGA users were at a higher risk of hip fracture than SGA users. Both FGAs and SGAs were associated with an increased risk of fractures, especially among the older population. Therefore, the benefit of the off-label use of antipsychotics in elderly patients should be weighed against any risks for fracture

65. NEUROLOGICAL CONDITIONS

Kinesiotape and Hemi shoulder pain

Effect of kinesiology taping on hemiplegic shoulder pain and functional outcomes in subacute stroke patients: A randomized controlled study

European Journal of Physical and Rehabilitation Medicine, 01/20/2017

Huang YC, et al.

Clinicians performed a randomized, double-blind controlled trial to evaluate the effect of kinesiology taping on hemiplegic shoulder pain, upper extremity functional outcomes, and the prevention of shoulder soft tissue injury in subacute stroke patients with hemiplegic shoulders during rehabilitation. The obtained results demonstrated that kinesiology taping may provide positive effects on shoulder flexion and decrease the occurrence of hemiplegic shoulder pain in subacute stroke patients with hemiplegic shoulders during conventional inpatient rehabilitation.