PMR BUZZ

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Uphill treadmill walking plus physical therapy versus physical therapy alone in the management of individuals with knee osteoarthritis: a randomized clinical trial.

Parisa Sedaghatnezhad, Mohsen Shams, Noureddin Karimi & Leila Rahnama.
Disability and Rehabilitation. 2021; 43(18): 2541-2549.

Abstract

Purpose

This study aims to compare the effectiveness of uphill walking and physical therapy versus physical therapy alone on knee pain, excursion ranges, stride length, and walking speed in individuals with knee osteoarthritis.

Methods

In this randomized clinical trial, 30 patients with knee osteoarthritis participated. Both control and intervention groups received 10-session physical therapy. Moreover, the intervention group received an 8-degree treadmill walking at a speed of 1.1□m/s for 30□min in each session. Outcome measures, including pain, excursion ranges, stride length, and walking speed, were measured at baseline, post-treatment, and a 20-day follow-up.

Results

Significant improvements in stride length and walking speed were observed just in the intervention group from baseline to post-treatment ($p \leq 0.001$) and from baseline to follow-up ($p \leq 0.001$). Furthermore, significant improvement in excursion ranges was observed just in the intervention group from baseline to follow-up ($p < 0.05$).

Conclusions

This study revealed that the addition of uphill walking to physical therapy results in stride length and walking speed improvements and that it also has persistent effects on knee ranges, stride length, and walking speed as compared with physical therapy alone.

This clinical trial was registered at irct.ir (study ID: IRCT20171115034920N1).

- Implications for Rehabilitation
- Stretching exercises are recommended to correct knee flexion contracture and uphill treadmill walking is a form of functional stretching.
- This study shows 10 sessions of combined uphill treadmill walking and physical therapy provided superior improvements in stride length and walking speed at 10-session or 20-day follow-up, and active and passive excursion ranges at 20-day follow-up compared with physical therapy alone.
- Physical therapist may consider uphill treadmill walking when designing a physical therapy for patients with knee osteoarthritis to promote the results of the rehabilitation programs.

Immediate effect of prefabricated and UCBL foot orthoses on alignment of midfoot and forefoot in young people with symptomatic flexible flatfoot: A radiographic evaluation.

Zahra Mahdiyar, Hassan Saeedi, Behnoosh Vasaghi-Gharamaleki, Vahid.Abdollah,
Prosthetics and Orthotics International. 2021 Aug; 45(4): 336-342.

Abstract

Background

Radiographic imaging has been considered the gold standard in evaluating the skeletal alignment of the foot in static weightbearing. The effects of foot orthoses on the alignment of foot bones have been mostly evaluated using lateral view x-rays. The posterior–anterior view has not been investigated extensively.

Objectives

To investigate the effects of 2 foot orthoses: University of California Biomechanics Laboratory Orthosis (UCBL) and a prefabricated orthosis (P-FFO) on the alignment of foot bones on anterior–posterior x-rays in young people with symptomatic flexible flatfoot (SFF).

Study Design

This is a randomized, crossover study.

Methods

Fifteen participants (mean [SD], 23.67 ± 2 years) with SFF were randomly imaged in 3 different conditions: shoes only, shoes + P-FFO, and shoes + UCBL. The talonavicular coverage, the first and the second talometatarsal angles, the intermetatarsal angle, and the cuboid abduction angle (CAA) were measured on weightbearing, anterior–posterior x-ray images for each condition.

Results

Both orthotic designs demonstrated a significant reduction in the talonavicular coverage, the first and the second talometatarsal angles, and the CAA compared with the shoe-only condition ($P < .001$). The talonavicular coverage angle reduced by ~11% using P-FFO compared with UCBL ($P < .005$). No significant differences were observed for other angles between the 2 orthotic conditions.

Conclusions

Both orthotic conditions improved the talonavicular coverage, first and the second talometatarsal angle, and CAA in young people with SFF. The walls of the UCBL orthosis did not result in further correction of the talonavicular coverage angle compared with the prefabricated FFO design.

The Role of Active Rehabilitation in Concussion Management: A Systematic Review and Meta-analysis.

Carter KM, Pauhl AN, Christie AD. Med Sci Sports Exerc. 2021 Sep 1;53(9):1835-1845.
Medicine & science in sports and exercise

Purpose

This study aimed to conduct a systematic review and meta-analysis of active rehabilitation on concussion management. We also examined moderator variables that may contribute to differences across studies: symptom scale, physical activity type, time of injury to recruitment, and mechanism of injury.

Methods

The standardized effect size of physical activity on concussion management was computed for 23 studies (29 effect sizes). Effect sizes were coded as positive when studies reported an improvement in symptom scores, which was represented by a decrease in postconcussive symptom scores.

Results

The overall effect size of physical activity on concussion recovery was large and positive (g = 1.03). Subthreshold aerobic activity provided the largest effect size (g = 1.71), whereas multimodal interventions had a moderate effect size (g = 0.70). All other moderator variables produced positive effect sizes ranging from g = 0.59 to g = 1.46.

Conclusions

This systematic review and meta-analysis demonstrates that current evidence supports the notion that physical activity is beneficial in decreasing postconcussive symptoms in both the acute and chronic phases after concussion. The results indicate that unimodal subthreshold aerobic activity may be the best course of action compared with multimodal interventions. Despite this growing body of evidence, additional research is needed to determine the optimal intensity, duration, and time to initiation of aerobic exercise after concussion.

A Comparison of Quadriceps Tendon Autograft With Bone-Patellar Tendon-Bone Autograft and Hamstring Tendon Autograft for Primary Anterior Cruciate Ligament Reconstruction: A Systematic Review and Quantitative Synthesis.

Ajrawat P, Dwyer T, Whelan D, Theodoropoulos J, Murnaghan L, Bhargava M, Ogilvie-Harris D, Chahal J.
Clin J Sport Med. 2021 Jul 1;31(4):392-399. Clinical Journal of Sports Medicine

Objective

There is growing enthusiasm for the increased use of quadriceps tendon (QT) autograft for primary anterior cruciate ligament reconstruction (ACLR). The purpose of this analysis was to synthesize and quantitatively assess the available evidence comparing QT autograft with hamstring tendon (HT) and bone-patellar tendon-bone (BPTB) autografts, regarding functional outcomes, knee stability, anterior knee pain, and revision rates.

Data Sources

A search in MEDLINE, EMBASE, PubMed, and the Cochrane Central Register of Controlled Trials for eligible studies up to May 2018 was conducted. Two reviewers selected studies based on inclusion criteria and assessed methodological quality. Outcomes analyzed were anterior knee pain, graft failure rates, knee stability, functional outcomes, and adverse events. Pooled analyses were performed for continuous and dichotomous variables where appropriate.

Main Results

Ten studies (1 randomized trial and 9 nonrandomized cohorts) met our inclusion criteria, which included 1398 patients. The analysis showed no statistical difference in anterior knee pain when comparing QT and HT autografts, but a significant difference between QT and BPTB autografts [odds ratio, 0.15 (95% confidence interval, 0.08-0.27); $P < 0.001$]. There were no differences between all 3 autografts in revision rates, knee stability, and patient-reported functional outcomes.

Conclusions

Quadriceps tendon autograft is a suitable graft alternative for primary ACLR, as it achieves good clinical outcomes with a low incidence of anterior knee pain. Given the limited quality of the included studies, there is a need for a well-designed multicenter randomized control trial comparing QT autograft with other primary ACL autografts to confirm our findings.

Fidelity, tolerability and safety of acute high-intensity interval training after hospitalisation for COVID-19: a randomised cross-over trial.

Foged F, Rasmussen IE, Bjørn Budde J, Rasmussen RS, Rasmussen V, Lyngbæk M, Jønck S, Krogh-Madsen R, Lindegaard B, Ried-Larsen M, Berg RMG, Christensen RH. BMJ Open Sport Exerc Med. 2021 Sep 1;7(3):e001156.
BMJ open sport and exercise medicine

Objectives

Many patients with COVID-19 suffer from persistent symptoms, many of which may potentially be reversed by high-intensity interval training (HIIT). Yet, the safety and tolerability of HIIT after COVID-19 is controversial. This study aimed to investigate the fidelity, tolerability and safety of three different HIIT protocols in individuals that had recently been hospitalised due to COVID-19.

Methods

The study was a randomised cross-over trial. We compared three supervised HIIT protocols (4×4, 6×1, 10-20-30) in 10 individuals recently discharged after hospitalisation for severe COVID-19. Each HIIT protocol had a duration of 38 min and was performed with a 1-week washout between them. Outcomes included adverse events, exercise training intensity and tolerability assessed by the Likert scale (1–10).

Results

All 10 participants aged 61 (mean, SD 8) years (5 males) completed all three HIIT protocols with no adverse events. High intensities were achieved in all three protocols, although they differed in terms of time spent with a heart rate ≥85% of maximum (mean (SD); 4×4: 13.7 (6.4) min; 10-20-30: 12.1 (3.8) min; 6×1: 6.1 (5.6) min; p=0.03). The three protocols were all well tolerated with similar Likert scale scores (mean (SD); 4×4: 8 (2), 10-20-30: 8 (2), 6×1: 9 (2), p=0.72).

Conclusion

Our findings indicate that recently hospitalised individuals for severe COVID-19 may safely tolerate acute bouts of supervised HIIT as per protocol. This warrants future studies testing the potential of regular HIIT as a rehabilitation strategy in this context.

A more effective alternative to the 6-minute walk test for the assessment of functional capacity in patients with pulmonary hypertension

Aline marsico ,Simone dal corso , Etiene f. De carvalho , Vivian arakelian, Shane phillips, Roberto stirbulov, Igor polonio, Flavia navarro, Fernanda consolim-colombo, Lawrence p. Cahalin, Luciana m. Malosa sampaio
European Journal of Physical and Rehabilitation Medicine 2021 August;57(4):645-52

Background

The prognosis of Pulmonary Hypertension (PH) is directly correlated with the functional capacity (FC). The most common FC test is the 6-Minute Walk Test (6MWT), however, there is evidence to suggest that the 6MWT does not reflect the real FC in PH patients.

Aim

To compare physiological responses among three field walk tests and cardiopulmonary exercise testing (CPET) in patients with pulmonary hypertension (PH), and to determine the determinants of distance walked in the field walk tests.

Design

Cross sectional study.

Setting

Outpatient clinic

Population

26 volunteers (49.8±14.6 years), WHO functional class II-III and a mean pulmonary artery pressure of 45mmHg.

Methods

Patients underwent three field walk test: 6MWT, incremental shuttle walk test (ISWT), and endurance shuttle walk test (ESWT) and CPET on different, non-consecutive days. The main outcome measures were heart rate and perception of effort at the peak of exercise.

Results

The ISWT achieved maximum levels of effort without significant difference in any physiologic response compared to CPET. The physiological responses during ISWT were significantly higher than 6MWT and ESWT responses.

Conclusions

The ISWT produced the greatest physiologic response of the field tests safely for which reason it appears to be the most effective test to assess FC of PH patients.

Clinical rehabilitation impact

The self-paced characteristic of the 6MWT and lower physiologic responses compared to the CPET were the main reason for this test to be classified as submaximal in PH patients. The physiological responses during the ESWT were significantly lower than other field tests highlighting the need for more research on this test and other field test in PH patients.

Ultrasound-guided microinvasive trigger finger release technique using an 18-gauge needle with a blade at the tip: A prospective study.

Colberg RE, Jurado Vélez JA, Garrett WH, Hart K, Fleisig GS.
PM R. 2021 Jul 2. doi: 10.1002/pmrj.12665. Epub ahead of print.

Abstract

Background

Open surgical trigger finger release has limited success and the risk of complications; however, percutaneous techniques offer a successful alternative. There is limited understanding of the success of percutaneous trigger finger release.

Objective

To prospectively evaluate the functional outcomes of patients with Green classification Grade 2 to 4 trigger finger treated with an ultrasound-guided microinvasive trigger finger release using a special 18-gauge needle with a blade at the tip.

Design

Prospective, case-series study.

Setting

This study took place at an academic institution by one sports medicine physician (R.E.C.) with subspecialty training and certification in musculoskeletal ultrasound.

Patients

Sixty patients (79 cases) met criteria and agreed to participate in this study; 19 patients had multiple fingers treated. Average patient age was 62.8 years (SD 10.2). Average trigger finger severity diagnosis was Grade 3.

Interventions

Patients were treated with an ultrasound-guided microinvasive trigger finger release using a special 18-gauge needle with a blade at the tip.

Main outcome measurements

Quick Disabilities of the Arm, Shoulder, and Hand (QuickDASH), numerical rating scale (NRS), and Nirschl scores were captured preprocedure, at various time points, and at final follow-up. Changes between preprocedure and final follow-up were analyzed by paired t test ($p < .05$). Differences were also analyzed between finger, grade level, and gender by repeated measures analyses of variance ($p < .05$).

Results

No adverse events were documented perioperatively or postoperatively. Average follow-up time was 18.4 months (SD 4.6). At final follow-up, 100% of patients reported no recurrence of catching/locking, 97% had complete resolution of symptoms and significant improvement in QuickDASH scores, and 99% required no further treatment. All measurements showed a decrease in pain and symptoms over time. The improvements in QuickDASH score, NRS, and Nirschl scale and the resolution of mechanical symptoms were all statistically significant.

Conclusions

Ultrasound-guided release using the 18-gauge needle with a blade provides significant functional improvement and full resolution of mechanical symptoms with minimal adverse events.

Incidence of neurobehavioral side effects associated with levetiracetam compared to phenytoin in traumatic brain injury patients.

Nguyen JV, Yaw T, Gratton H.
Brain injury. 2021 Aug 23:902-906.

Background

Phenytoin is recommended for seizure prophylaxis in traumatic brain injury (TBI). Levetiracetam has been proposed as an alternative agent. The purpose of this study was to determine whether there is a difference in the incidence of neurobehavioral side effects in patients with TBI receiving levetiracetam compared to those receiving phenytoin for seizure prophylaxis.

Design

Prospective study of twenty participants with mTBI (10 women; 22.10 ± 2.97 years; 70.9 ± 22.31 days post-injury), and 20 sex- and age-matched control participants (10 women; 22.55 ± 2.72 years).

Methods

This was a retrospective cohort study conducted at a level 1 trauma center from June 2008 to April 2014. Patients with TBI aged 16 years and older who received levetiracetam or phenytoin for seizure prophylaxis were evaluated and incidence of neurobehavioral side effects were compared for the two groups.

Results

Of the 200 patients who met inclusion criteria, 95 (47.5%) received phenytoin and 105 (52.5%) received levetiracetam. Incidence of neurobehavioral side effects was not statistically different between groups (76 [80%] vs. 75 [71.4%], p = .189). The two groups were well matched.

Conclusion

In patients with TBI, receipt of levetiracetam for seizure prophylaxis did not appear to be associated with increased neurobehavioral side effects compared to receipt of phenytoin.

Effect of Transcutaneous Electrical Stimulation in Chronic Poststroke Patients with Oropharyngeal Dysphagia: 1-Year Results of a Randomized Controlled Trial.

Arreola V, Ortega O, Álvarez-Berdugo D, Rofes L, Tomsen N, Cabib C, Muriana D, Palomera E, Clavé P.
Neurorehabilitation and Neural Repair. 2021 Jul; 17:778-779.

Background

Chronic poststroke oropharyngeal dysphagia (CPSOD) is associated with impaired oropharyngeal sensory/motor function. We aimed to assess effect of sensory (SES) and motor (NMES) transcutaneous electrical stimulation (TES) on safety of swallow and clinical outcomes in patients with CPSOD in a one-year follow-up randomized controlled trial.

Methods

Ninety patients (74.1 ± 11.5 y, modified Rankin score 2.6 ± 1.7) with CPSOD and impaired safety of swallow were randomized to (a) compensatory treatment (CT), (b) CT + SES, and (c) CT + NMES. Patients were treated with up to two cycles (6 months apart) of 15 × 1 hour TES sessions over two weeks and followed up with 4-5 clinical and videofluoroscopic assessments during one year.

Key Results

Baseline penetration–aspiration scale (PAS) was 4.61 ± 1.75, delayed time to laryngeal vestibule closure (LVC) 396.4 ± 108.7 ms, and impaired efficacy signs 94.25%. Swallowing parameters significantly improved between baseline and 1-year follow-up in SES and NMES groups for prevalence of patients with a safe swallow ($P < .001$), mean PAS ($P < .001$), time to LVC ($P < .01$), and need for thickening agents ($P < .001$). Patients in the CT presented a less intense improvement of signs of impaired safety of swallow without significant changes in time to LVC. No differences between groups were observed for 1-year mortality (6.1%), respiratory infections (9.6%), nutritional and functional status, QoL, and hospital readmission rates (27.6%). No significant adverse events related to TES were observed.

Conclusions And Inferences:

Transcutaneous electrical stimulation is a safe and effective therapy for older patients with CPSOD. After 1-year follow-up, TES greatly improved the safety of swallow and reduced the need for fluid thickening in these patients.

Asymmetric atrophy of the multifidus in persons with hemiplegic presentation post-stroke.

Park W, Kim J, Kim M, Min K.
Topics in Stroke Rehabilitation. 2021 Jul; 23:519-530.

Objective

To identify the asymmetry of fatty infiltration and cross-sectional areas (CSAs) of individual paravertebral muscles in persons with hemiplegic presentation post-stroke.

Methods

We retrospectively reviewed 26 patients with unilateral hemiplegia who underwent lumbar magnetic resonance imaging post-stroke. CSAs and functional CSAs (FCSAs) of individual paraspinal muscles (multifidus, erector spinae, quadratus lumborum, and psoas major) at the mid-disc level were bilaterally measured from L1-L2 to L5-S1 on T2-weighted lumbar axial images. The FCSA-to-total CSA ratio of each paraspinal muscle was also calculated. These parameters were compared between the more-affected and less-affected sides, and between the less chronic and chronic phases.

Results

FCSA ($p = .049$) and FCSA-to-total CSA ratio ($p = .044$) were significantly smaller at the L5-S1 multifidus on the more-affected side than on the less-affected side in the chronic phase. Other muscles showed no meaningful changes. The erector spinae on the more-affected side and the multifidus on the less-affected side significantly increased in size in the chronic phase compared with the less chronic phase.

Conclusions

Persons with hemiplegic presentation may have unilateral atrophy and fatty infiltration of the multifidus on the more-affected side during the chronic phase. The comparison between the less chronic and chronic phases suggested that the recovery pattern of the trunk muscles could differ between sides in unilateral hemiplegia: increased size of the multifidus, a tonic stabilizer, on the less-affected side and of the erector spinae, a phasic muscle, on the more-affected side. This finding could be applied to trunk rehabilitation strategies for persons post-stroke.

Pharmacological Treatment of Agitation and/or Aggression in Patients With Traumatic Brain Injury: A Systematic Review of Reviews.

Rahmani E, Lemelle TM, Samarbafzadeh E, Kablinger AS.
The Journal of Head Trauma Rehabilitation. 2021 Aug; 36:E262-E283.

Objective

To systematically review the available literature on the pharmacological management of agitation and/or aggression in patients with traumatic brain injury (TBI), synthesize the available data, and provide guidelines.

Design

Systematic review of systematic reviews.

Main Measures

A literature review of the following websites was performed looking for systematic reviews on the treatment of agitation and/or aggression among patients with TBI: PubMed, CINAHL, DynaMed, Health Business Elite, and EBSCO (Psychology and behavioral sciences collection). Two researchers independently assessed articles for meeting inclusion/exclusion criteria. Data were extracted on year of publication, reviewed databases, dates of coverage, search limitations, pharmacological agents of interest, and a list of all controlled studies included. The included controlled studies were then examined to determine potential reasons for any difference in recommendations.

Results

The literature review led to 187 citations and 67 unique publications after removing the duplicates. Following review of the title/abstracts and full texts, a total of 11 systematic reviews were included. The systematic reviews evaluated the evidence for safety and efficacy of the following medications: amantadine, amphetamines, methylphenidate, antiepileptics, atypical and typical antipsychotics, benzodiazepines, □-blockers, and sertraline.

Conclusions

On the basis of the results of this literature review, the authors recommend avoiding benzodiazepines and haloperidol for treating agitation and/or aggression in the context of TBI. Atypical antipsychotics (olanzapine in particular) can be considered as practical alternatives for the as-needed management of agitation and/or aggression in lieu of benzodiazepines and haloperidol. Amantadine, □-blockers (propranolol and pindolol), antiepileptics, and methylphenidate can be considered for scheduled treatment of agitation and/or aggression in patients with TBI.

Epidural Injections for Lumbar Radiculopathy or Sciatica: A Comparative Systematic Review and Meta-Analysis of Cochrane Review.

Joshua A. Hirsch, MD, Alaa Abd-Elsayed, MD, Mahendra R. Sanapati, MD, Srinivasa Thota, MD, Emilija Knezevic, Nebojsa Nick Knezevic, MD, PhD, and Laxmaiah Manchikanti, MD.
Pain Physician 2021; 24:E539-E554.

Background

Epidural injections are one of the commonly performed procedures in managing low back and lower extremity pain. In the past, Pinto et al and Chou et al performed systematic reviews and meta-analyses with a recent update from Oliveira et al showing lack of effectiveness of epidural steroid injections in managing lumbar radiculopathy. In contrast, multiple other systematic reviews and meta-analyses have supported the efficacy and use of epidural injections utilizing fluoroscopic guidance.

Study Design

A systematic review and meta-analysis of randomized controlled trials (RCTs) of epidural injections in managing chronic low back and lower extremity pain with sciatica or lumbar radiculopathy.

Objectives

To assess the efficacy of 3 categories of epidural injections for lumbar radiculopathy or sciatica performed utilizing saline with steroids, local anesthetic alone, or steroids with local anesthetic.

Methods

In this systematic review and meta-analysis, RCTs with a placebo control or an active control design, performed under fluoroscopic guidance, with at least 6 months of follow-up were included. The outcome measures were pain relief and functional status improvement. Significant improvement was defined as 50% or greater pain relief and functional status improvement.

Literature search was performed through January 2021. Methodological quality assessments were performed. Evidence was summarized utilizing principles of best evidence synthesis.

Results

In this analysis, a total of 21 RCTs were utilized with at least 6 months of follow-up and performed under fluoroscopic guidance. However, only 6 of 25 trials from Cochrane review met inclusion criteria for this review. Based on qualitative analysis, of the 21 trials included in the present analysis, there was only one placebo-controlled trial found to be negative.

With conventional meta-analysis, there was no significant difference among the studies because all of the studies were active control with local anesthetic or local anesthetic and steroids. Further, with single-arm analysis, of the 5 trials included in that portion of the study, significant improvement was seen with local anesthetic alone compared to local anesthetic and steroids. There was a tendency for better improvement with steroids in terms of both pain relief and functional status.

The level of evidence is Level I or strong for local anesthetic with steroids and Level I to II or moderate to strong for local anesthetic as a single agent based on multiple relevant high quality RCTs.

Limitations

Despite multiple trials available, there is a paucity of true RCTs performed under fluoroscopic guidance with any of the approaches.

Conclusion

Epidural injections with or without steroids for radiculopathy showed significant effectiveness with Level I or strong evidence for local anesthetic with steroids and Level II to I or moderate to strong evidence with local anesthetic alone.

Combination of Pain Location and Pain Duration is Associated with Central Sensitization-Related Symptoms in Patients with Musculoskeletal Disorders: A Cross-Sectional Study.

Tanaka K, Nishigami T, Mibu A, Imai R, Manfuku M, Tanabe A.
Pain Practice 2021 Jul;21(6):646-652.

Abstract

Objectives

Increased evidence indicates that pain location affects central sensitization (CS)-related symptoms. In addition, pain location and pain duration may be intricately related to CS-related symptoms. However, these factors have been investigated separately. This study aimed to investigate the association between CS-related symptoms and pain location and/or pain duration in patients with musculoskeletal disorders.

Methods

Six hundred thirty-five participants with musculoskeletal disorders were included in this cross-sectional study. All participants were assessed for pain location, pain duration, central sensitization inventory (CSI), EuroQol-5 dimension, and brief pain inventory. The participants were categorized into 3 groups based on pain location (spinal, limb, and both spinal and limb pain) and into 2 groups based on pain duration (acute and chronic pain).

Results

The interaction between pain location and pain duration were not significant on CSI score ($P > 0.05$). The odds ratio for higher CSI score (≥ 40) in patients with both spinal and limb pain vs. those with spinal or limb pain was 2.64 ($P < 0.01$) and that in patients with chronic pain vs. those with acute pain was 1.31 ($P = 0.52$). In addition, the prevalence of higher CSI scores in the combination of chronic and "both spinal and limb" pain was high (23.1%, adjusted residual = 4.48).

Conclusions

Pain location independently influenced CSI scores, and the combination of both spinal and limb pain and chronic pain indicated high CSI scores. The combination of pain location and pain duration is an important clue that points to CS-related symptoms.

Incidence and predictive factors for developing vesicoureteric reflux in individuals with suprasarcral spinal cord injury: a historical cohort study.

Sirasaporn P, Saengsuwan J.
Spinal Cord. 2021 Jul;59(7):753-760.

Abstract

Study design

A historical cohort study OBJECTIVES: The aim of the study was to examine the incidence of and predictive factors for VUR in individuals with suprasacral spinal cord injury (SCI).

Setting

Srinagarind Hospital, Khon Kaen University, Thailand

Methods

Medical records were reviewed for all individuals with SCI and neurogenic bladder admitted for urological check-up between 1996 and 2016. The primary outcome was the cumulative incidence of VUR. The statistical tests used included the Nelson-Aalen Estimator and Cox Proportional Hazard Ratio. Harrell's C concordance statistic was used to evaluate the discrimination ability of the predictive model.

Results

293 participants with SCI (102 tetraplegic and 191 paraplegic) were included. Most participants were male (67%), and the median age was 52 years. The overall incidence of VUR was 7.5 cases per 100 person-years (95% CI, 6.15-9.4). In the multivariate analysis, the predictive factors for VUR were: (1) maximum detrusor pressure at first visit $\geq$ 75 cm of water (HRadj: 2.4 [95% CI: 1.4-4.1]); (2) indwelling urethral catheterization (IUC) (HRadj: 11.1 [95% CI: 3.9-31.7]) and clean intermittent catheterization (CIC) (HRadj: 6.5 [95% CI: 2.2-18.7]); (3) age $\geq$ 60 years at onset of SCI (HRadj: 1.7 [95% CI: 1.1-2.8]); and, (4) absence of antimuscarinic medication (HRadj: 3.8 [95% CI: 2.4-6.1]). The predictive model had an overall C-index of 0.78.

Conclusions

The incidence of VUR was high up to 12 years after SCI. High maximum detrusor pressure, IUC, age $\geq$ 60 years and absence of antimuscarinic medication were predictive factors for VUR.

Ultrasonographic evaluation of diaphragm thickness and excursion in patients with cervical spinal cord injury.

Zhu Z, Li J, Yang D, Gao F, Du L, Yang M.
Journal of Spinal Cord Medicine 2021; 44(5): 742–747.

Objective

To evaluate the diaphragm thickness and excursion in patients with cervical spinal cord injury and reliability of diaphragmatic ultrasonography.

Design

A Pilot Case–Control Study.

Setting

China Rehabilitation Research Center (CRRC) /Beijing BO AI Hospital.

Participants

Sixty participants with cervical spinal cord injury and sixty control participants were eligible for inclusion in this study.

Interventions

Ultrasonographic evaluation of the diaphragm.

Outcome Measures

All demographic data were evaluated. Diaphragm thickness, thickening ratio, and diaphragm excursions were assessed at the end of quiet tidal breathing and maximal inspiration. The reliability of inter- and intra-ultrasonography operators were evaluated.

Results

Diaphragm thickness was significantly higher in patients with cervical spinal cord injury than the control group ($P < 0.001$). Diaphragmatic excursion of the right hemidiaphragm was significantly greater in patients with cervical spinal cord injury than the control group ($P < 0.001$) at the end of quiet tidal breathing. No difference was found in diaphragmatic excursion between two groups ($P = 0.32$) at the end of maximal inspiration. No significant difference was shown between two groups in thickening ratio. Intraclass correlation coefficients of inter-and intra-ultrasonography operators for the thickness and excursions of the diaphragm were greater than 0.93.

Conclusion

Compared with the control group the diaphragm in patients with cervical spinal cord injury is hypertrophied and the diaphragm excursion is greater. Ultrasound is a highly reliable tool for the evaluation of diaphragm thickness and excursion in patients with cervical spinal cord injury.

In Spasticity,

℞ Antispastic

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Baclofen 10/25 mg Tab

Backing Possibilities

In Cerebral Palsy,

℞ Flexi-dosing antispastic

Baclof

Baclofen 5 mg / 5 ml *Liquid*

Backing Possibilities

Supports patients initiatives programs

MAKE A MOVE AFTER STROKE

CREATING POSSIBILITIES IN CEREBRAL PALSY

Abridged Prescribing Information (BACLOF)
Active Ingredient: each tablet of BACLOF contains: baclofen 10, 25 mg, BACLOF liquid contains baclofen 5mg/5ml, 100 ml bottle. **Indication:** treatment of spasticity resulting from multiple sclerosis, particularly for the relief of flexor spasms and concomitant pain, clonus, and muscular rigidity. **Dosage:** Tablets: Initiate with a low dosage, preferably in divided doses, administered orally. Increase gradually based on clinical response and tolerability. The maximum dosage is 80 mg daily (20 mg four times a day). When discontinuing, reduce the dosage slowly. Liquid: adults: One 5ml spoonful (5mg) 3 times a day for 3 days; Two 5ml spoonfuls (10mg) 3 times a day for 3 days; Three 5ml spoonfuls (15mg) 3 times a day for 3 days; Four 5ml spoonfuls (20mg) 3 times a day for 3 days. Elderly: Small doses should be used at the start of treatment, the dose being titrated gradually against the response, under careful supervision. Paediatric population (0 to <18 years): A dosage of 0.75-2mg/kg body weight should be used. In children over ten years of age, however a maximum daily dosage of 2.5mg/kg body weight may be given. Treatment is usually started with half a 5ml spoonful (2.5mg) given 4 times daily. The recommended daily dosages for maintenance therapy are as: 12 months – 2 years: Two to four 5ml spoonfuls (10-20mg), 2 years – 6 years: Four to six 5ml spoonfuls (20-30mg); 6 years – 10 years: Six to twelve 5ml spoonfuls (30-60mg). **Contraindications:** hypersensitivity to baclofen or any component of this product. **Warning and precautions:** Abrupt discontinuation of baclofen has resulted in serious adverse reactions including death; therefore, reduce the dosage slowly when baclofen is discontinued. Neonatal withdrawal symptoms can occur; gradually reduce the dosage and discontinue baclofen before delivery. Baclofen can cause drowsiness and sedation. Patients should avoid the operation of automobiles or other dangerous machinery until they know how the drug affects them. Advise patients that the central nervous system effects of baclofen may be additive to those of alcohol and other CNS depressants. Baclofen can cause exacerbation of the following: psychotic disorders, schizophrenia, or confusional states; autonomic dysreflexia; epilepsy. Use with caution in patients with these condition. **Pregnancy & Lactation:** Pregnancy: Based on animal data, may cause fetal harm. At recommended oral doses, baclofen is present in human milk. There are no human data on the effects of baclofen on milk production and on breastfed infant. **Interaction:** CNS depressants like benzodiazepines, antihistamine, antipsychotic, and alcohol etc., may cause increased sedative effects. Morphine (epidural) may cause hypotension and dyspnea. Laboratory Test Interactions may cause false elevation of AST (aspartate aminotransferase), alkaline phosphatase, or blood glucose. **Adverse reactions:** most common drowsiness, dizziness, and weakness. **Overdose:** Symptoms: Patients may present in coma or with progressive drowsiness, lightheadedness, dizziness, somnolence, accommodation disorders, respiratory depression, seizures, or hypotonia progressing to loss of consciousness. Treatment: includes gastric decontamination, maintaining an adequate airway and respirations. (Prepared on 23rd Feb 2020. It is recommended to refer full prescribing information before prescription. For further medical information, please write to: Intas Pharmaceuticals Ltd., Corporate House, Near Sola Bridge, SG highway, Thaltej, Ahmedabad-380054, Gujarat, India. productqueries@intaspharma.com.)

Abridged Prescribing Information (BACLOF LIQUID)
Active Ingredient: each tablet of BACLOF contains: baclofen 10, 25 mg, BACLOF liquid contains baclofen 5mg/5ml, 100 ml bottle. **Indication:** treatment of spasticity resulting from multiple sclerosis, particularly for the relief of flexor spasms and concomitant pain, clonus, and muscular rigidity. **Dosage:** Tablets: Initiate with a low dosage, preferably in divided doses, administered orally. Increase gradually based on clinical response and tolerability. The maximum dosage is 80 mg daily (20 mg four times a day). When discontinuing, reduce the dosage slowly. Liquid: adults: One 5ml spoonful (5mg) 3 times a day for 3 days; Two 5ml spoonfuls (10mg) 3 times a day for 3 days; Three 5ml spoonfuls (15mg) 3 times a day for 3 days; Four 5ml spoonfuls (20mg) 3 times a day for 3 days. Elderly: Small doses should be used at the start of treatment, the dose being titrated gradually against the response, under careful supervision. Paediatric population (0 to <18 years): A dosage of 0.75-2mg/kg body weight should be used. In children over ten years of age, however a maximum daily dosage of 2.5mg/kg body weight may be given. Treatment is usually started with half a 5ml spoonful (2.5mg) given 4 times daily. The recommended daily dosages for maintenance therapy are as: 12 months – 2 years: Two to four 5ml spoonfuls (10-20mg), 2 years – 6 years: Four to six 5ml spoonfuls (20-30mg); 6 years – 10 years: Six to twelve 5ml spoonfuls (30-60mg). **Contraindications:** hypersensitivity to baclofen or any component of this product. **Warning and precautions:** Abrupt discontinuation of baclofen has resulted in serious adverse reactions including death; therefore, reduce the dosage slowly when baclofen is discontinued. Neonatal withdrawal symptoms can occur; gradually reduce the dosage and discontinue baclofen before delivery. Baclofen can cause drowsiness and sedation. Patients should avoid the operation of automobiles or other dangerous machinery until they know how the drug affects them. Advise patients that the central nervous system effects of baclofen may be additive to those of alcohol and other CNS depressants. Baclofen can cause exacerbation of the following: psychotic disorders, schizophrenia, or confusional states; autonomic dysreflexia; epilepsy. Use with caution in patients with these condition. **Pregnancy & Lactation:** Pregnancy: Based on animal data, may cause fetal harm. At recommended oral doses, baclofen is present in human milk. There are no human data on the effects of baclofen on milk production and on breastfed infant. **Interaction:** CNS depressants like benzodiazepines, antihistamine, antipsychotic, and alcohol etc., may cause increased sedative effects. Morphine (epidural) may cause hypotension and dyspnea. Laboratory Test Interactions may cause false elevation of AST (aspartate aminotransferase), alkaline phosphatase, or blood glucose. **Adverse reactions:** most common drowsiness, dizziness, and weakness. **Overdose:** Symptoms: Patients may present in coma or with progressive drowsiness, lightheadedness, dizziness, somnolence, accommodation disorders, respiratory depression, seizures, or hypotonia progressing to loss of consciousness. Treatment: includes gastric decontamination, maintaining an adequate airway and respirations. (Prepared on 23rd Feb 2020. It is recommended to refer full prescribing information before prescription. For further medical information, please write to: Intas Pharmaceuticals Ltd., Corporate House, Near Sola Bridge, SG highway, Thaltej, Ahmedabad-380054, Gujarat, India. productqueries@intaspharma.com.)

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