PMR BUZZ

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The association between hematologic parameters and intracranial injuries in pediatric patients with traumatic brain injury.

Eser P, Corabay S, Ozmarasali AI, Ocakoglu G, Taskapilioglu MO
Brain Injury. 2022 May;36(6):740-9.

Objective

Analyzing the association between hematologic parameters and abnormal cranial computerized tomography (CT) findings after head trauma.

Material and Methods

A total of 287 children with isolated traumatic brain injury (TBI) were divided into the 'normal' (NG), 'linear fracture' (LFG) and 'intraparenchymal injury' groups (IPG) based on head CT findings. Demographical / clinical data and laboratory results were obtained from medical records.

Results

The neutrophil-lymphocyte ratio was markedly higher in the LFG ($p = 0.010$ and $p = 0.016$, respectively) and IPG ($p = 0.004$ and $p < 0.001$, respectively) compared with NG. Lower lymphocyte-monocyte ratio ($p = 0.044$) and higher red cell distribution width-platelet ratio (RPR) ($p = 0.030$) were associated with intraparenchymal injuries. Patients requiring neurosurgical intervention had higher neutrophil-lymphocyte ratio ($p = 0.026$) and RPR values ($p = 0.031$) and lower platelet counts ($p = 0.035$). Lower levels of erythrocytes ($p = 0.005$), hemoglobin ($p = 0.003$) and hematocrit ($p = 0.002$) were associated with severe TBI and unfavorable outcome ($p = 0.012$, $p = 0.004$ and $p = 0.006$, respectively).

Conclusions

Hematologic parameters are useful in predicting the presence of abnormal cranial CT findings in children with TBI in association with injury severity; surgery need and clinical outcome.

Readmission following hospitalization for traumatic brain injury: a nationwide study.

Kelly DJ, Thibault D, Tam D, Liu LJ, Cragg JJ, Willis AW, Crispo JA.
The Journal of Head Trauma Rehabilitation. 2022 May;37(3):E165-74.

Objective

To determine whether sociodemographic and clinical factors were associated with nonelective readmission within 30 days of hospitalization for traumatic brain injury (TBI). Secondary objectives were to examine the effects of TBI severity on readmission and characterize primary reasons for readmission.

Setting

Hospitalized patients in the United States, using the 2014 Nationwide Readmission Database.

PARTICIPANTS

All patients hospitalized with a primary diagnosis of TBI between January 1, 2014, and November 30, 2014. We excluded patients (1) with a missing or invalid length of stay or admission date, (2) who were nonresidents, and 3) who died during their index hospitalization.

Design

Observational study; cohort study.

Main Measures

Survey weighting was used to compute national estimates of TBI hospitalization and nonelective 30-day readmission. Associations between sociodemographic and clinical factors with readmission were assessed using unconditional logistic regression with and without adjustment for suspected confounders.

Results

There were 135 542 individuals who were hospitalized for TBI; 8.9% of patients were readmitted within 30 days of discharge. Age (strongest association for 65-74 years vs 18-24 years: adjusted odds ratio [AOR], 2.57; 95% CI: 2.02-3.27), documentation of a fall (AOR, 1.24; 95% CI: 1.13-1.35), and intentional self-injury (AOR, 3.13; 95% CI: 1.88-5.21) at the index admission were positively associated with readmission. Conversely, history of a motor vehicle (AOR, 0.69; 95% CI: 0.62-0.78) or cycling (AOR, 0.56; 95% CI: 0.40-0.77) accident was negatively associated with readmission. Females were also less likely to be readmitted following hospitalization for a TBI (AOR, 0.87; 95% CI: 0.82-0.92).

Conclusions

Many sociodemographic and clinical factors were found to be associated with acute readmission following hospitalizations for TBI. Future studies are needed to determine the extent to which readmissions following TBI hospitalizations are preventable.

The minimal clinically important difference in Berg Balance Scale scores among patients with early subacute stroke: a multicenter, retrospective, observational study.

Tamura S, Miyata K, Kobayashi S, Takeda R, Iwamoto H.
Topics in Stroke Rehabilitation. 2022;29(6):423-9.

Background

Balance dysfunction is common in stroke patients. The Berg Balance Scale (BBS) is useful for evaluating the balance function of stroke patients, and it can estimate the minimal clinically important difference (MCID) in balance. BBS scores differ among stroke patients depending on whether they require walking assistance. The MCID should thus be estimated separately for patients who require assistance and those who do not.

Objectives

To estimate the MCID of individuals who have had an early subacute stroke and require a walking aid and those who do not, to assist the clinical determination of the effectiveness of therapy.

Methods

This was a retrospective clinical analysis of 80 early subacute stroke patients. We estimated the MCID by using the Functional Ambulation Categories (FAC) as anchors for changes in BBS scores during a 1-month period. The MCID was estimated based on a cutoff score for separating the patients who achieved a FAC change ≥1 point on receiver operator characteristic curves. The area under the curve (AUC) was used to measure the discrimination accuracy. The MCID was estimated for the patients who needed walking assistance and those who did not.

Results

The estimated MCID of BBS scores in the assisted-walking group was 5 points and the AUC was 0.84 ($p < .01$); the corresponding values in the unassisted-walking group were 4 points and 0.62 ($p = .26$).

Conclusions

For early subacute stroke patients who require assistance to walk, a 5-point improvement in the BBS score is a useful indicator for reducing the amount of assistance.

Early, Intensive, Lower Extremity Rehabilitation Shows Preliminary Efficacy After Perinatal Stroke: Results of a Pilot Randomized Controlled Trial.

Hurd C, Livingstone D, Brunton K, Smith A, Gorassini M, Watt MJ, Andersen J, Kirton A, Yang JF.
Neurorehabilitation and Neural Repair. 2022 Jun;36(6):360-70.

Background

Perinatal stroke injures motor regions of the brain, compromising movement for life. Early, intensive, active interventions for the upper extremity are efficacious, but interventions for the lower extremity remain understudied.

Objective

To determine the feasibility and potential efficacy of ELEVATE—Engaging the Lower Extremity Via Active Therapy Early—on gross motor function.

Methods

We conducted a single-blind, two-arm, randomized controlled trial (RCT), with the Immediate Group receiving the intervention while the Delay Group served as a 3-month waitlist control. A separate cohort living beyond commuting distance was trained by their parents with guidance from physical therapists. Participants were 8 months to 3 years old, with MRI-confirmed perinatal ischemic stroke and early signs of hemiparesis. The intervention was play-based, focused on weight-bearing, balance and walking for 1 hour/day, 4 days/week for 12 weeks. The primary outcome was the Gross Motor Function Measure-66 (GMFM-66). Secondary outcomes included steps and gait analyses. Final follow-up occurred at age 4.

Results

Thirty-four children participated (25 RCT, 9 Parent-trained). The improvement in GMFM-66 over 12 weeks was greater for the Immediate than the Delay Group in the RCT (average change 3.4 units higher) and greater in younger children. Average step counts reached 1370-3750 steps/session in the last week of training for all children. Parent-trained children also improved but with greater variability.

Conclusions

Early, activity-intensive lower extremity therapy for young children with perinatal stroke is feasible and improves gross motor function in the short term. Longer term improvement may require additional bouts of intervention.

Concomitant Detrusor and External Urethral Sphincter Botulinum Toxin-a Injections in Male Spinal Cord Injury Patients with Detrusor Overactivity and Detrusor Sphincter Dyssynergia.

Huang, Y.-H., & Chen, S.-L. (2022).
Journal of Rehabilitation Medicine, 54, jrm00264.

Objective

To investigate the effects of concomitant injections of botulinum toxin-A (BoNT-A) into the detrusor and external urethral sphincter muscles in suprasacral spinal cord injured patients with detrusor overactivity and detrusor sphincter dyssynergia.

Design

An open treatment trial with pre- and posttreatment evaluations.

Subjects

Male suprasacral spinal cord injury patients (n = 20) with neurogenic detrusor overactivity and detrusor sphincter dyssynergia who emptied their bladder by reflex voiding and were unwilling to increase the frequency of intermittent catheterization.

Methods

Cystoscopic guidance of 200 U BoNT-A injections into the detrusor muscle and 100 U into external urethral sphincter muscles were applied. The urodynamic parameters, voiding diaries and quality of life scores using Urinary Distress Inventory, Short Form (UDI-6) and Incontinence Impact Questionnaire, Short Form (IIQ-7) were compared.

Results

All participants experienced a significant mean reduction in maximal detrusor pressure and maximal urethral pressure profile, and a mean significant increase in maximal cystometric bladder capacity 12 weeks after concomitant injections. Bladder diaries demonstrated persistently increased spontaneous voided volume, but no increase in post-void residual ratio, daily clean intermittent catheterization (CIC) frequency and diaper pad use from baseline to 24 weeks. UDI-6 scores were significantly improved at 4 and 12 weeks and IIQ-7 scores improved only at 12 weeks.

Conclusion

Concomitant detrusor and external urethral sphincter BoNT-A injections may decrease detrusor and urethral pressure without increasing postvoid residual ratio and diaper pad use. For spinal cord injury patients with neurogenic detrusor overactivity and detrusor sphincter dyssynergia who are unwilling, or for whom it is inconvenient, to increase CIC frequency and who want to preserve spontaneous voiding, this treatment may provide an optional alternative.

Association of Physical Activity with Incidence of Dementia is Attenuated by Air Pollution.

Raichlen DA, Furlong M, Klimentidis YC, Sayre MK, Parra KL, Bharadwaj PK, Wilcox RR, Alexander GE.
Med Sci Sports Exerc. 2022 Jul 1;54(7):1131-1138.

Introduction

Physical activity (PA) is recognized as one of the key lifestyle behaviors that reduces risk of developing dementia late in life. However, PA also leads to increased respiration, and in areas with high levels of air pollution, PA may increase exposure to pollutants linked with higher risk of developing dementia. Here, we investigate whether air pollution attenuates the association between PA and dementia risk.

Methods

This prospective cohort study included 35,562 adults 60 yrs and older from the UK Biobank. Average acceleration magnitude (ACC ave) from wrist-worn accelerometers was used to assess PA levels. Air pollution levels (NO, NO 2 , PM 10 , PM 2.5 , PM 2.5–10 , and PM 2.5 absorbance) were estimated with land use regression methods. Incident all-cause dementia was derived from inpatient hospital records and death registry data.

Results

In adjusted models, ACC ave was associated with reduced risk of developing dementia (HR = 0.71, 95% confidence interval [CI] = 0.60–0.83), whereas air pollution variables were not associated with dementia risk. There were significant interactions between ACC ave and PM 2.5 (HR interaction = 1.33, 95% CI = 1.13–1.57) and PM 2.5 absorbance (HR interaction = 1.24, 95% CI = 1.07–1.45) on incident dementia. At the lowest tertiles of pollution, ACC ave was associated with reduced risk of incident dementia (HR PM 2.5 = 0.66, 95% CI = 0.49–0.91; HR PM 2.5 absorbance = 0.60, 95% CI = 0.44–0.81). At the highest tertiles of these pollutants, there was no significant association of ACC ave with incident dementia (HR PM 2.5 = 0.88, 95% CI = 0.68–1.14; HR PM 2.5 absorbance = 0.79, 95% CI = 0.60–1.04).

Conclusions

PA is associated with reduced risk of developing all-cause dementia. However, exposure to even moderate levels of air pollution attenuates the benefits of PA on risk of dementia.

A Novel Pivot Ankle/foot Prosthesis Reduces Sound Side Loading and Risk for Osteoarthritis: A Pragmatic Randomized Controlled Trial.

Runciman P, Cockcroft J, Derman W.
Prosthet Orthot Int. 2022 Jun 1;46(3):258-266.

Background

Individuals with unilateral transtibial amputation are at risk of abnormal mechanical joint loading and development of osteoarthritis on sound side joint structures.

Objectives

This study describes the spatiotemporal and kinetic and kinematic parameters related to osteoarthritis in participants while using (A) a solid-ankle cushioned-heel prosthesis (SACH), (B) a conventional energy storage and return (ESAR) foot prosthesis, and (C) a novel ESAR (N-ESAR) foot prosthesis.

Study design

A pragmatic randomized controlled trial.

Methods

K3-K4 ambulators used three feet in a 2-week randomized cross-over order. Kinetics of vertical ground reaction forces (vGRFs) and 3D kinematics of joint angles were integrated to provide normalized parameters. Data were analyzed using one way and mixed model Analysis of variance (ANOVAs) ($p < 0.05$) and Cohen d statistic.

Results

Twenty participants, aged 40 ± 16 years with body mass index of 24.7 ± 3.6 kg/m2, experienced minimal change in the spatiotemporal parameters between feet. Participants using the N-ESAR foot prosthesis experienced reduced peak knee external adduction moment ($p = 0.030$), peak vGRFs ($p < 0.001$), and peak loading rate of vGRFs ($p = 0.030$). Peak knee flexion moments only changed when using the solid-ankle cushioned-heel prosthesis, in a positive direction ($p = 0.014$). Using the N-ESAR prosthesis also increased peak distal shank power during late stance phase ($p < 0.001$).

Conclusions

A novel ankle/foot ESAR prosthesis reduces loading on the sound side. With extended use of the N-ESAR foot prosthesis, these findings may provide the prosthesis user with improved outcomes related to sound side loading and development of osteoarthritis.

Local vibration training improves the recovery of quadriceps strength in early rehabilitation after anterior cruciate ligament reconstruction: A feasibility randomised controlled trial.

Claire Coulondre, Robin Souron, Alexandre Rambaud, Étienne Dalmais, Loïc Espeit, Thomas Neri, Alban Pinaroli, Gilles Estour, Guillaume Y. Millet, Thomas Rupp, Léonard Feasson, Pascal Edouard, Thomas Lapole.
Annals of Physical and Rehabilitation Medicine,Volume 65, Issue 4, 2022.

Background

After anterior cruciate ligament reconstruction (ACLR), quadriceps strength must be maximized as early as possible.

Objectives

We tested whether local vibration training (LVT) during the early post-ACLR period (i.e., ∼10 weeks) could improve strength recovery.

Methods

This was a multicentric, open, parallel-group, randomised controlled trial. Thirty individuals attending ACLR were randomised by use of a dedicated Web application to 2 groups: vibration (standardised rehabilitation plus LVT, n = 16) or control (standardised rehabilitation alone, n = 14). Experimenters, physiotherapists and participants were not blinded. Both groups received 24 sessions of standardised rehabilitation over ∼10 weeks. In addition, the vibration group received 1 hour of vibration applied to the relaxed quadriceps of the injured leg at the end of each rehabilitation session. The primary outcome — maximal isometric strength of both injured and non-injured legs (i.e., allowing for limb asymmetry measurement) — was evaluated before ACLR (PRE) and after the 10-week rehabilitation (POST).

Results

Seven participants were lost to follow-up, so data for 23 participants were used in the complete-case analysis. For the injured leg, the mean (SD) decrease in maximal strength from PRE to POST was significantly lower for the vibration than control group (n = 11, −16% [10] vs. n = 12, −30% [11]; P = 0.0045, Cohen's d effect size = 1.33). Mean PRE–POST change in limb symmetry was lower for the vibration than control group (−19% [11] vs. −29% [13]) but not significantly (P = 0.051, Cohen's d effect size = 0.85).

Conclusion

LVT improved strength recovery after ACLR. This feasibility study suggests that LVT applied to relaxed muscles is a promising modality of vibration therapy that could be implemented early in ACLR.

Radial shock-wave therapy for frozen shoulder patients with type 2 diabetes mellitus: a pilot trial comparing two different energy levels.

Tülay Ç. Saldiran, Pelin Yagzan, Ahmet c. AKGOl, Fatma K. Mutluay.
European Journal of physical and Rehabilitation Medicine 2022 June; 58(3): 412-22.

Background

Extracorporeal shock-wave therapy (ESWT) is highly recommended for the management of orthopedic shoulder pathologies. Yet, the clinical relevance of the dose difference effect of radial ESWT approaches in the management of frozen shoulder patients with type 2 diabetes mellitus remains uncertain.

Aim

The aim was to examine the short-term effects of medium-and high-energy levels of radial ESWT (rESWT) in the treatment of frozen shoulder patients with type 2 diabetes mellitus.

Design

Prospective clinical pilot study.

Setting

This study was conducted in an outpatient clinic.

Population

Thirty-nine patients who had frozen shoulder untreated for at least 3 months, diagnosed with type 2 diabetes mellitus for ≥3 years were included.

Methods

The patients were randomly allocated to receive either high-energy rESWT (hrESWT), or medium-energy rESWT (mrESWT) or placebo at 8 Hz twice a week for six weeks. The primary outcome measure was pain, evaluated by the Visual Analog Scale (VAS) Score. Secondary outcome measures were function evaluated by the Shoulder Pain and Disability Index (SPADI) Score, and shoulder active range of motion (AROM). The mechanical properties of the deltoid and trapezius muscles were assessed using the MyotonPRO (Myoton AS, Tallinn, Estonia).

Results

The mrESWT resulted in statistically significant reductions in night pain at 6 weeks ($\eta p2=0.27$, $P=0.003$). Significantly improved function (SPADI scores: -35.42±21.29 vs.-29.59±22.60; $\eta p2=0.39$, $P<0.001$) was found in both hrESWT and mrESWT group by 6 weeks. Significantly higher mean shoulder AROM values were recorded for external rotation ($\eta p2=0.53$, $P<0.001$), and internal rotation ($\eta p2=0.21$, $P=0.020$), in the hrESWT group at the 6th week. A significantly improved resting tone ($\eta p2=0.58$) and stiffness of deltoid muscle ($\eta p2=0.62$) were found in the mrESWT group ($P<0.001$). The trapezius muscle resting tone reduced with hrESWT ($\eta p2=0.17$, $P=0.033$).

Conclusions

Regardless of the energy levels, rESWT appears to be an effective therapeutic intervention for frozen shoulder patients with type 2 diabetes mellitus in the short-term results.

Clinical rehabilitation impact

Our results suggest that this rESWT can be a useful strategy for the rehabilitation of frozen shoulder patients with type 2 diabetes mellitus. This is the first study on dose difference effectiveness in terms of the clinical significance of rESWT which is key to transfer research evidence into practice.

Guideline for the management of neurogenic bowel dysfunction in spinal cord injury/disease.

Kurze, I., Geng, V. & Böthig, R.
Spinal Cord 2022; 60, 435–443 (2022).

Introduction

Almost all people with spinal cord injury/disease (SCI/D) suffer from neurogenic bowel dysfunction (NBD), with a considerable impact on quality of life. The Association of the Scientific Medical Societies in Germany (AWMF e.V.) guideline for NBD in SCI/D aims to provide practice-oriented support for the care of patients with NBD resulting from congenital or aquired SCI/D. The guideline describes the diagnosis and bowel management of NBD in people with SCI/D. Thus, treatment processes in acute medical care and rehabilitation as well as for lifelong aftercare are presented.

Methods

The present guideline was developed under the leadership of the German-speaking Medical Society for Paraplegiology in a multiprofessional interdisciplinary guideline team. To exceed the level of expert recommendations, consensus was reached within the framework of a structured nominal group process in defined steps under neutral moderation considering the criteria of the German guideline development instrument (DELBI).

Results

Individual bowel management must be developed on the basis of an adequate diagnosis and considering the different lesion types. Due to the multifactorial influenceability of the intestine and the individual neurological deficit, a simple to-do checklist is not effective. Various and complex bowel management programmes are the basis of the treatment of NBD.

Conclusions

Guidelines can only be successful in so far as they are applied in everyday life. Of course, the selection and application of the measures described must always take into consideration the individual situation of the person concerned, and the correct application is always a prerequisite for success.

Accurate Prediction of Persistent Upper Extremity Impairment in Patients with Ischemic Stroke.

Havenon et al.
Arch Phys Med Rehabil 2022; 103(5); 964-69.

Objective

To develop a simple and effective risk score for predicting which stroke patients will have persistent impairment of upper extremity motor function at 90 days.

Design

Post hoc analysis of clinical trial patients hospitalized with acute ischemic stroke who were followed for 90 days to determine functional outcome.

Setting

Patient were hospitalized at facilities across the United States.

Participants

We created a harmonized cohort of individual patients (N=1653) from the NINDS tPA, ALIAS part 2, IMS-III, DEFUSE 3, and FAST-MAG trials. We split the cohort into balanced derivation and validation samples.

Interventions

Not applicable.

Main Outcome Measures

The primary outcome was persistent arm impairment, defined as a National Institutes of Health Stroke Scale (NIHSS) arm domain score of 2 to 4 at 90 days in patients who had a 24-hour NIHSS arm score of 1 or more. We used least absolute shrinkage and selection operator regression to determine the elements of the persistent upper extremity impairment (PUPPI) index, which we validated as a predictive tool.

Results

We included 1653 patients (827 derivation, 826 validation), of whom 803 (48.6%) had persistent arm impairment. The PUPPI index gives 1 point each for age 55 years or older and NIHSS values of worse arm (4), worse leg (>2), facial palsy (3), and total NIHSS (≥10). The optimal cutpoint for the PUPPI index was 3 or greater, at which the area under the curve was greater than 0.75 for the derivation and validation cohorts and when using NIHSS values from either 24 hours or in a subacute or discharge time window. Results were similar across different levels of stroke severity.

Conclusion

The PUPPI index uses readily available information to accurately predict persistent upper extremity motor impairment at 90 days poststroke. The PUPPI index can be administered in minutes and could be used as inclusion criterion in recovery-related clinical trials or, with additional development, as a prognostic tool for patients, caregivers, and clinicians.

Rehabilitation definition for research purposes. A global stakeholders' initiative by Cochrane Rehabilitation.

Stefano NEGRINI, Melissa SELB, Carlotte KIEKENS Alex TODHUNTER-BROWN, Chiara ARIENTI, Gerold STUCKI.
European Journal of Physical and Rehabilitation Medicine 2022 June;58(3):333-41.

Since its foundation, Cochrane Rehabilitation has faced challenges with rehabilitation definitions because existing definitions did not indicate what rehabilitation includes and what it excludes. We aimed to develop a comprehensive and shared rehabilitation definition for research purposes to: 1) support the conduct of primary studies and systematic reviews, and 2) identify relevant systematic reviews for knowledge translation purposes. We performed a multimodal study including seven preliminary research and discussion papers, four Consensus Meetings and three Delphi rounds with 80 rehabilitation stakeholders. The Delphi Study aimed to obtain agreement, refine and complete the items composing the definition and meanings of rehabilitation. These stakeholders covered 5 continents, representing 11 global and continental rehabilitation organizations, 11 scientific journals, 4 Cochrane Networks and 3 Cochrane Groups, and included invited experts, and representatives of low middle-income countries (LMICs) and consumers. We had a 70% to 82.5% response rate to the three Delphi rounds, during which participants responded to all items (100%) and provided relevant comments (range 5.5-50% per item). This participation led to several refinements to the rehabilitation definition through three preliminary versions, and the final items reached an agreement between 88.9% and 100%. We structured the definition using the PICO (Population, Intervention, Comparison, Outcome) framework. We concluded that "In a health care context," rehabilitation is defined as a "multimodal, person-centered, collaborative process" (Intervention-general), including interventions targeting a person's "capacity (by addressing body structures, functions, and activities/participation) and/or contextual factors related to performance" (Intervention-specific) with the goal of "optimizing" the "functioning" (Outcome) of "persons with health conditions currently experiencing disability or likely to experience disability, or persons with disability" (Population). Rehabilitation requires that all the items of the definition are satisfied. We defined a "rehabilitation intervention" as "any intervention provided within the rehabilitation process." We developed a rehabilitation definition for research purposes achieving a broad agreement with global stakeholders. This definition provides explicit criteria to define rehabilitation. Using the proposed definition will improve rehabilitation research by standardizing the description of interventions. Our definition may require revision in the future, as further research enhances understanding and communication of the essence and complexity of rehabilitation.

Key words

Rehabilitation; Evidence-based medicine; Clinical trial

Prognostic value of balance performance for improvements of community ambulation among stroke patients: a cohort study.

Francesc MEDINA-MIRAPEIX, M. José CRISOSTOMO, Rodrigo MARTÍN SAN AGUSTÍN, M. Piedad SÁNCHEZ-MARTÍNEZ.
European Journal of Physical and Rehabilitation Medicine 2022 April;58(2):171-8.

Background

Despite the positive impact of improving the level of community ambulation among stroke patients, little prognostic research has focused on this indicator.

Aim

To investigate the prognostic value of the side-by-side, semi-tandem, and tandem standing balance positions and the five-sit-stand (5STS) test for discriminating patients undergoing physical rehabilitation who improve level of functional ambulation and predicting transition time.

Design

A cohort study with assessments repeated monthly until discharge for classifying patients in a community ambulation class.

Setting

A neurological rehabilitation unit of a hospital in Spain.

Population

A consecutive sample of 109 stroke patients (68.5±12.0 years) was screened and included within four months post stroke. Of them no one refused, 3 died, and 5 were lost earlier to transition or discharge.

Methods

Balance tests, the 5STS and gait speed were measured at the center at baseline and monthly until discarge. Transition from household or limited community ambulation to a higher ambulatory capacity or class. Area under the curve (AUC) were used to compare discriminative abilities of the tests and Cox regression analysis to evaluate the association between the tests and time of transition.

Results

For household non-ambulators, the semi-tandem was the best discriminative test (AUC=0.850) and the three balance tests showed an association with time to transition. Among the limited community ambulators, the 5STS test also revealed discriminative ability (AUC: 0.822 [0.63-1.00]), with a good prognostic cut-off (14.8 seconds) and association with time to transition (Hazard Ratio: 1.22; 95%CI: 1.05-1.43).

Conclusions

Semi-tandem and the 5STS tests can discriminate patients who improve level of functional ambulation and predict transition times within three months in non-ambulators and limited community ambulation patients, respectively.

Quality improvement project of a closed catheter system to reduce catheter-associated urinary tract infections during acute inpatient rehabilitation using stepped-wedge design.

Argyrios Stampas[1], Jason Hua[1], Heather Naumann[1], Claudia I Martinez[1], DeAnn Roberts[2], Claudia Pedroza[3].
The Journal of International Society of Physical and Rehabilitation Medicine.2022;Vol.5(2);69-74.

Objective

To investigate if an indwelling catheter with a one-way valve (BioFlo® [BF]) reduces the incidence of catheter-associated urinary tract infections (CAUTIs).

Methods

Prospective quality improvement project. Design: Stepped-wedge nursing unit enrollment in acute inpatient rehabilitation facility (IRF) was conducted over 9 months. All patients admitted to IRF that used an indwelling catheter at any time during admission were included, with all days and types of voiding methods collected when in the study period. Comparisons were between BF versus usual care (Foley catheter), with incidence of CAUTI as the primary outcome measure.

Results

There were 227 patients: 21 using BF only, 146 using Foley only, and 60 using both. This resulted in 206 Foley users and 81 BF users. The BF group had a greater percentage of patients with CAUTI compared to the Foley group (30% vs. 17%, P = 0.021). Using generalized linear modeling and adjusting for confounders revealed an 89% increased risk of CAUTI in the BF group compared to the Foley group (odds ratio: 1.89, P = 0.033). Bayesian analysis determined that the probability of BF increasing the rate of CAUTI was 96% (95% credible interval: 0.95–2.7).

Conclusions

Maintaining a closed catheter system with BF does not reduce the rates of CAUTIs during acute inpatient rehabilitation.

Comparative Efficacy of Rotator Interval Versus Posterior Capsule Approach Intraarticular Corticosteroid Injections for Primary Frozen Shoulder: A Single-blind, Randomized Trial.

Pain Physician 2022: 25:313-321.

Background

Intraarticular (IA) corticosteroid injection is commonly performed in patients with primary frozen shoulder (PFS). However, the best administration site remains controversial.

Objectives

To compare the efficacy of rotator interval (RI) vs posterior capsule (PC) approach for ultrasound-guided corticosteroid injections into the glenohumeral joint of patients with PFS.

Study Design

A randomized, exploratory, prospective study.

Setting

A single fellowship training institution in Daegu, Republic of Korea.

Methods

This study was approved by the Institutional Review Board (2019-04-047-001). Ninety patients with PFS were randomly assigned to either RI approach (RI group, n = 43) or PC approach (PC group, n = 45) for ultrasound-guided IA corticosteroid injection. Fluoroscopic images to assess the accuracy of the injection were obtained immediately after injection by a shoulder specialist. Visual Analog Scale for pain, the American Shoulder and Elbow Surgeons score, the subjective shoulder value, and range of motion (ROM) were used to assess clinical outcomes for all patients at the time of presentation, and at 3, 6, and 12 weeks after injection.

Results

The accuracy of injection was 76.7% (33/43) and 93.3% (42/45) in the RI and PC groups, respectively; the between-group difference was statistically significant (P = .028). Significant improvements were observed in both groups in terms of all clinical scores and ROMs throughout follow-up until 12 weeks after the injection (all P < .001). At 12 weeks, better improvements in forward flexion and abduction (P = .049 and .044) were observed in the RI group than in the PC group. No adverse effect related to injection was observed in either group.

Limitations

This study had no control group receiving placebo injections and limited follow-up time.

Conclusions

Both groups showed significant pain reduction and functional improvement until 12 weeks after injection. Although no significant differences were observed in pain and functional scores between the 2 groups, the RI group showed better improvement of ROM than the PC group. These results indicate that the RI and anterior structures are a major site in the pathogenesis and treatment target of PFS.

A new technique for controlling intractable pain in lumbar spinal stenosis using steroid injection to ligamentum flavum: A case series.

Rho JH, Yoon CD, Kim G, Kang HY.
Pain Pract. 2022 May 31. doi: 10.1111/papr.13133. Epub ahead of print.

Background

Lumbar spinal stenosis is a common degenerative disease that causes low back and lower-extremity pain that increases with age. The treatment of lumbar spinal stenosis is either conservative or surgical. ESI is a commonly performed conservative treatment, but evidence of its effectiveness in lumbar spinal stenosis is limited.

Case series

We encountered the three patients with back pain and claudication due to lumbar spinal stenosis, which could not be controlled by conservative therapy including ESIs. Trimacinolone acetonide was injected into the patients' ligamentum flavum. All patients experienced dramatic improvement in their symptoms.

Conclusions

Trimacinolone acetonide injection into the ligamentum flavum may be effective for lumbar spinal stenosis that does not improve with ESIs.

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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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