

Stroke

Current Awareness Bulletin

September 2024

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New from NICE

New drug recommended to treat acute ischaemic strokes

A new clot-busting drug we've recommended could help save the NHS millions of pounds. Our guidance recommends tenecteplase as an option for treating acute ischaemic stroke in adults. Clinical evidence showed it was as effective as alteplase, which we also recommend, but costs the NHS less to administer.

It is estimated around 100,000 people in England are admitted to hospital with a stroke annually. The majority of these, around 85%, have had an ischaemic stroke.

1. Golden Hour Intravenous Thrombolysis for Acute Ischemic Stroke: A Systematic Review and Meta-Analysis

Authors: Al-Ajlan, Fahad S.;Alkhiri, Ahmed;Alamri, Aser F.;Alghamdi, Basil A.;Almaghrabi, Ahmed A.;Alharbi, Abdullah R.;Alansari, Nayef;Almilibari, Ahmed Z.;Hussain, M. S.;Audebert, Heinrich J.;Grotta, James C.;Shuaib, Ashfaq;Saver, Jeffrey L. and Alhazzani, Adel

Publication Date: 2024

Journal: Annals of Neurology

2. What influences provision of information about recovery on stroke units? A focused ethnographic case study

Authors: Burton, Louisa-Jane;Forster, Anne;Johnson, Judith;Crocker, Thomas F.;Tyson, Sarah F. and Clarke, David J.

Publication Date: 2024

Journal: Patient Education & Counseling

3. Coming home in the context of very early supported discharge after stroke – An interview study of patients' experiences

Authors: Carlsson, Gunnel E.;Törnbom, Karin;Nordin, Åsa and Stibrant Sunnerhagen, Katharina

Publication Date: 2024

Journal: Journal of Stroke & Cerebrovascular Diseases

4. Alternating Hot-Cold Water Immersion Facilitates Motor Function Recovery in the Paretic Upper Limb After Stroke: A Pilot Randomized Controlled Trial

Authors: Chiu, Yu-Ting;Liang, Chung-Chao;Yu Cheng, Hung-;Lin, Chun-Hsiang and Chen, Jia-Ching

Publication Date: 2024

Journal: Archives of Physical Medicine & Rehabilitation

Abstract: To assess the effectiveness of alternating hot-cold water immersion (AHCWI) in patients with acute stroke. A single-blind pilot randomized controlled trial. Department of Rehabilitation Medicine of a medical center. Early stroke survivors (N=24) with moderate-to-severe arm paresis. In addition to conventional rehabilitation, eligible patients were randomly assigned to an AHCWI group (n=12, for AHCWI) or a control group (n=12, for upper limb UL] cycling exercises) 5 times per week for 6 weeks. The Fugl-Meyer Assessment motor-UL (FMA-UL) score, Motricity Index-UL (MI-UL) score, modified Motor Assessment Scale (MMAS; including its UL sections, MMAS-UL) score, Berg Balance Scale score, Barthel Index (BI), and modified Ashworth Scale score were assessed by the same uninvolved physical therapist at baseline and after 4 and 6 weeks of intervention. Compared with the control group, the AHCWI group performed better, with significant group effects ($P < .05$), and exhibited significant improvements in FMA-UL, MI-UL, and MMAS-UL scores at 4 and 6 weeks ($P < .05$). Although the remaining outcomes were not significantly different, they favored the AHCWI group. Notably, a significant difference was observed in the BI at 4 weeks ($P = .032$). Significant changes in the muscle tone or adverse effects were not observed in either group after the intervention. AHCWI with stroke rehabilitation is feasible and may facilitate motor function recovery of the paretic UL after a stroke.

5. Exploring facilitators and barriers associated with oral care for inpatients with dysphagia post-stroke

Authors: Curtin, Claire;Barrett, Anne;Burke, Francis M.;McKenna, Gerald;Healy, Liam and Hayes, Martina

Publication Date: 2024

Journal: Gerodontology

6. The association between lipoprotein(a) levels and ischemic stroke in children: A case-control study

Authors: de Boer, Lotte M.;Wiegman, Albert;van Gemert, Robert L. A.;Hutten, Barbara A. and Klaassen, Irene L. M.

Publication Date: 2024

Journal: Pediatric Blood & Cancer

7. Exploring post-stroke fatigue from the perspective of stroke survivors: what strategies help? A qualitative study

Authors: Delbridge, Alex; Davey, Julie; Galloway, Margaret; Drummond, Avril; Lanyon, Lucette; Olley, Natasha; Mason, Gillian; English, Coralie and Simpson, Dawn B.

Publication Date: 2024

Journal: Disability & Rehabilitation

Abstract: Purpose: Post-stroke fatigue is a research priority for stroke survivors and health professionals but there is limited evidence to guide management. We aimed to explore (1) the experience of post-stroke fatigue from the perspective of stroke survivors and their caregivers and (2) fatigue management strategies that are used. Materials and methods: This was a qualitative study using semi-structured interviews. People with self-reported post-stroke fatigue and caregivers were recruited using maximum variation sampling. Analysis was done via the framework approach. Results: We recruited 17 stroke survivors, nine male (53%), most under 65 years (n = 12, 76%), and greater than 1-year post-stroke (n = 16, 94%, range 10-months to 22-years). One-third of participants self-reported having aphasia (n = 5, 36%). We also recruited eight caregivers, most of whom were female (n = 7, 88%). We identified four themes: (1) fatigue is unexpected after stroke and symptoms vary; (2) the individual experience of fatigue is complex, influenced by multifactorial and biopsychosocial factors; (3) learning to adapt and accept fatigue; and (4) Strategies to manage fatigue and personal approaches to rest. Conclusions: Post-stroke fatigue experience varies presenting cognitively, physically, and psychologically according to a complex interplay of biopsychosocial factors and personal triggers. Self-management strategies are individualised and include organisation, medications, lifestyle modifications, and peer support. IMPLICATIONS FOR REHABILITATION: Post-stroke fatigue is a complex individual experience involving biopsychosocial factors, and stroke survivors need assistance to identify their triggers and support from family, peers, and the stroke community to live well with fatigue. Fatigue is not commonly discussed by health professionals and stroke survivors need simple, practical advice over the long-term to reduce fear and distress. There are a range of strategies that may be helpful. Stroke survivors may benefit from adopting problem-solving approaches, trial pacing, lifestyle modifications and planning, and find forms of rest that work for them.

8. Cutoff values of motor and cognitive measures for predicting and discriminating levels of activities of daily living after stroke: a scoping review

Authors: Fujita, Takaaki; Kasahara, Ryuichi; Tsuchiya, Kenji and Iokawa, Kazuaki

Publication Date: 2024

Journal: International Journal of Rehabilitation Research

Abstract: The various assessments performed by rehabilitation professionals not only indicate the patient's current functional status but can also help determine the future status (prediction) or the ability to perform untested tasks (discrimination). In particular, the cutoff values are the simplest predictive and discriminative tool that can be widely used in clinical practice. The purpose of this scoping review was to summarize the current literature on cutoff values of

motor and cognitive function for predicting or discriminating levels of activities of daily living after stroke. A literature search was conducted using the PubMed, CINAHL, and Scopus databases. The creation of the search criteria, primary screening of titles and abstract, and secondary screening by full-text review were performed by two rehabilitation professionals. A total of 54 articles were included. The summary of the cutoff values for prediction based on longitudinal studies revealed that an NIHSS score ≤ 8 and mRMI score ≥ 19 at acute hospitalization can predict good functional independence and walking independence, respectively, indicating reliable cutoff values. Cutoff values for predicting specific ADLs, such as toilet use or dressing, were not reported, which was a potential research gap identified in this review. Alternatively, the summary of the cutoff values for discrimination based on cross-sectional studies revealed that 288--367.5 m on the 6-min walk test and 25.5--27.6 points on the FMA-LL can discriminate community and noncommunity walkers. Considering the difference between prediction and discrimination, the reliable predicted cutoff values revealed in this review are useful for planning an intervention based on early prediction. Conversely, cutoff values for discrimination can estimate different performances with simpler test, or use as target values during rehabilitation.

9. Application of immersive virtual reality mirror therapy for upper limb rehabilitation after stroke: a scoping review

Authors: Gebreheat, Gdiom;Antonopoulos, Nick and Porter-Armstrong, Alison

Publication Date: 2024

Journal: Neurological Sciences

10. Effect of insole on postural control and gait of stroke patients: a systematic review and meta-analysis

Authors: Hozein, Menna;Mortada, Hossam;Hamed, Maged;Abdelhaleem, Naglaa and Elshennawy, Shorouk

Publication Date: 2024

Journal: International Journal of Rehabilitation Research

Abstract: This systematic review aims to examine the evidence of adding postural insole to traditional physical therapy to improve weight distribution, gait, mobility, balance, and postural control in stroke survivors. Five databases were searched to retrieve all related randomized controlled trials examining the effect of insole on stroke patients. Two independent authors checked the potential articles against eligibility criteria according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta- Analyses) guidelines. A meta-analysis was conducted for available outcomes and the statistical heterogeneity was examined using the I² test. Of 762 articles, only 15 with 448 patients were included after they met the inclusion criteria with most of them including participants exceeding 6 months of stroke incidence. When insole was used as compelled body weight shifting method, pooled statistical analysis revealed significant improvement in gait velocity standardized mean difference (SMD) = 0.67; 95%

confidence interval (CI): 0.31, 1.02; $P = 0.0003$], cadence (SMD = 0.67; 95% CI: 0.16, 1.18; $P = 0.01$) and stride length (SMD = 1.11; 95% CI: 0.57, 1.65; $P < 0.0001$), while no significant effect on step length (SMD = 0.48; 95% CI: -0.37, 1.33; $P = 0.27$). Pooled statistical analysis of balance outcomes revealed significant improvement in weight-bearing symmetry balance (SMD = 0.82; 95% CI: 0.25, 1.39; $P = 0.005$) and long-term improvement in Berg Balance Scale (SMD = 1.19; 95% CI: 0.19, 2.20; $P = 0.02$), while no difference was observed in balance confidence (SMD = 0.44; 95% CI: -0.15, 1.04; $P = 0.14$) and sensorimotor functions (SMD = 0.36; 95% CI -0.39, 1.11; $P = 0.35$). Insoles significantly improved spatiotemporal gait parameters, gait symmetry, and static balance compared with traditional physical therapy alone.

11. Tenecteplase versus alteplase for the treatment of acute ischemic stroke: a meta-analysis of randomized controlled trials

Authors: Huang, Jian;Zheng, Hui;Zhu, Xianfeng;Zhang, Kai and Ping, Xiaofeng

Publication Date: 2024

Journal: Annals of Medicine

Abstract: Objectives: Tenecteplase, a modified variant of alteplase with greater fibrin specificity and longer plasma half-life, may have better efficacy and safety than alteplase in patients with acute ischemic stroke (AIS). We aimed to compare the benefits and risks of tenecteplase versus alteplase in the treatment of AIS.; Methods: Electronic databases were searched up to 10 February 2023 for randomized controlled trials evaluating the effect of tenecteplase versus alteplase in the treatment of AIS. The primary outcome was functional outcome at 90 days, and secondary outcomes including the symptomatic intracranial haemorrhage (SICH), and major neurological improvement. Subgroup analysis was performed based on the different dosage of tenecteplase.; Results: Ten studies with a total of 5123 patients were analysed in this meta-analysis. Overall, no significant difference between tenecteplase and alteplase was observed for functional outcome at 90 days (excellent: OR 1.08, 95%CI 0.93-1.26, $I^2 = 26\%$; good: OR 1.04, 95%CI 0.83-1.30, $I^2 = 56\%$; poor: OR 0.95, 95%CI 0.75-1.21, $I^2 = 31\%$), SICH (OR 1.12, 95%CI 0.79-1.59, $I^2 = 0\%$), and early major neurological improvement (OR 1.26, 95%CI 0.80-1.96, $I^2 = 65\%$). The subgroup analysis suggested that the 0.25 mg/kg dose of tenecteplase had potentially greater efficacy and lower symptomatic intracerebral haemorrhage risk compared with 0.25 mg/kg dose tenecteplase.; Conclusions: Among AIS patients, there was no significant difference on clinical outcomes between tenecteplase and alteplase. Subgroup analysis demonstrated that 0.25 mg/kg doses of tenecteplase were more beneficial than 0.4 mg/kg doses of tenecteplase. Further studies are required to identify the optimal dosage of tenecteplase.

12. Long-term risk factors of recurrent stroke, myocardial infarction and death in patients leaving hospital with a diagnosis of ischemic stroke or TIA

Authors: Hviid Hornnes, Agnete;Valentin, Jan Brink;Boysen, Gudrun;Groes Larsen, Klaus and Johnsen, Søren Paaske

Publication Date: 2024

Journal: Scandinavian Cardiovascular Journal

Abstract: Objectives: The prevalence of patients with prior stroke is increasing globally. Accordingly, there is a need for up-to-date evidence of patient-related prognostic factors for stroke recurrence, post stroke myocardial infarction (MI) and death based on long-term follow-up of stroke survivors. For this purpose, the RIALTO study was established in 2004. Design. A prospective cohort study in which patients diagnosed with ischemic stroke (IS) or transient ischemic attack (TIA) in three Copenhagen hospitals were included. Data were collected from medical records and by structured interview. Data on first stroke recurrence, first MI and all-cause death were extracted from the Danish National Patient Registry and the Danish Civil Registration System. Results: We included 1215 patients discharged after IS or TIA who were followed up by register data from April 2004 to end of 2018 giving a median follow-up of 3.5-6.9 years depending on the outcome. At the end of follow-up 406 (33%) patients had been admitted with a recurrent stroke, 100 (8%) had a MI and 822 (68%) had died. Long-term prognostic predictors included body mass index, diabetes, antihypertensive and lipid lowering treatment, smoking, a sedentary lifestyle as well as poor self-rated health and psychosocial problems. Conclusions: Long-term risk of recurrent stroke and MI remain high in patients discharged with IS or TIA despite substantial improvements in tertiary preventive care in recent decades. Continued attention to the patient risk profile among patients surviving the early phase of stroke, including comorbidities, lifestyle, and psychosocial challenges, is warranted.

13. Gamified exercise for the distal upper extremity in people with post-stroke hemiparesis: feasibility study on subjective perspectives during daily continuous training

Authors: Ito, Kazuki;Uehara, Shintaro;Yuasa, Akiko;Ushizawa, Kazuki;Tanabe, Shigeo and Otaka, Yohei

Publication Date: 2024

Journal: Annals of Medicine

Abstract: Introduction: Dose (number of repetitions) has been suggested as a key element in the effectiveness of rehabilitation exercises to promote motor recovery of the hemiparetic upper limb. However, rehabilitation exercises tend to be monotonous and require significant motivation to continue, making it difficult to increase the exercise dose. To address this issue, gamification technology has been implemented in exercises to promote self-engagement for people with hemiparesis in continuing monotonous repetitive movements. This study aimed to investigate how subjective perspectives, specifically enjoyability, motivation to continue, and expectancy of effectiveness, change through continuous daily exercise using a developed gamified exercise system.; Materials and Method: Ten people with stroke suffering upper limb dysfunction underwent daily gamified exercise for seven days. The gamified exercise consisted of an electromyography (EMG)-controlled operating system that enabled users to play virtual games using repetitive finger movements. The participants performed conventional self-exercise on the same day as the control exercise, and rated their subjective perspectives on both exercises on a numerical rating scale on each exercise day.; Results: Ratings for enjoyability and motivation to continue consistently showed significantly higher scores for the gamified exercise than for conventional self-exercise on all exercise days. A similar trend was

observed in the ratings for the expectancy of effectiveness. No changes over time were found in any of the ratings throughout the exercise period.; Conclusions: Exercise using the developed EMG-controlled gamified system may have the potential to maintain motivation and enjoyment in people with stroke to continue monotonous repetitive finger movements.

14. The effect of 30-day adequate transitions of acute stroke care on 90-day readmission or death

Authors: Johnson, Karlon H.;Gardener, Hannah;Gutierrez, Carolina;Marulanda, Erika;Campo-Bustillo, Iszet;Gordon Perue, Gillian;Brown, Scott C.;Ying, Hao;Zhou, Lili;Bishop, Lauri;Veledar, Emir;Fakoori, Farya;Asdaghi, Negar;Romano, Jose G. and Rundek, Tatjana

Publication Date: 2024

Journal: Journal of Stroke & Cerebrovascular Diseases

15. Therapeutic effect of adjuvant therapy added to constraint-induced movement therapy in patients with subacute to chronic stroke: a systematic review and meta-analysis

Authors: Kaneko, Takao;Maeda, Masanori;Yokoyama, Hiroki;Kai, Shinsuke;Obuchi, Kohei;Takase, Shun;Horimoto, Takumi;Shimada, Ryuichi;Moriya, Takashi;Ohmae, Hiroshi;Amanai, Masahiro;Okita, Yuho and Takebayashi, Takashi

Publication Date: 2024

Journal: Disability & Rehabilitation

Abstract: Purpose: This review investigated the effectiveness of adjuvant therapy combined with constraint-induced movement therapy (CIMT) in improving the paretic upper limb functionality in adults with stroke sequelae during the subacute to chronic rehabilitation phase. Materials and methods: In this systematic review and meta-analysis of randomized controlled trials (RCT), electronic databases, including PubMed, Web of Science, CINAHL, and MEDLINE, were searched. We included RCTs that investigated the outcomes of adjuvant therapy (i.e. other therapies) added to CIMT compared with CIMT alone. Key trial findings were qualitatively synthesized and analyzed. This meta-analysis examined variables, such as mean scores and standard deviations, using the following outcome measures: Fugl-Meyer Assessment (FMA) upper limb items, Action Research Arm Test (ARAT), Amount of Use (AOU) of Motor Activity Log (MAL), and Quality of Movement (QOM) of MAL. Results: Eighteen eligible RCTs were included in the analysis. Adding CIMT to adjunctive therapy significantly improved FMA compared with CIMT alone (mean difference MD] 4.02, 95% confidence interval CI] 2.60–5.44; I² = 85%; 15 studies; 330 participants). Similarly, the ARAT and MAL-AOU scores improved significantly. Conclusions: CIMT combined with several adjunctive therapies effectively improved upper limb function. IMPLICATIONS FOR REHABILITATION: In recent years, clinical trials combining other therapies with Constraint-induced movement therapy (CIMT) have become increasingly common. This study shows that combining CIMT with adjuvant therapy improves upper limb function. Different protocols of the CIMT in each study could be factor that impacted the results of Motor Activity Log. In clinical

practice, the findings of this study into their treatment protocols to improve patient outcomes and ensure the effective application of evidence-based rehabilitation strategies.

16. Community Participation Transition After Stroke (COMPASS) Randomized Controlled Trial: Effect on Adverse Health Events

Authors: Krauss, Melissa J.; Holden, Brianna M.; Somerville, Emily; Blenden, Gabrielle; Bollinger, Rebecca M.; Barker, Abigail R.; McBride, Timothy D.; Hollingsworth, Holly; Yan, Yan and Stark, Susan L.

Publication Date: 2024

Journal: Archives of Physical Medicine & Rehabilitation

Abstract: To compare adverse health events in intervention versus control group participants in the Community Participation Transition After Stroke trial to reduce barriers to independent living for community-dwelling stroke survivors. Randomized controlled trial. Inpatient rehabilitation (IR) to home and community transition. Stroke survivors aged ≥ 50 years being discharged from IR who had been independent in activities of daily living prestroke (N=183). Participants randomized to intervention group (n=85) received home modifications and self-management training from an occupational therapist over 4 visits in the home. Participants randomized to control group (n=98) received the same number of visits consisting of stroke education. Death, skilled nursing facility (SNF) admission, 30-day rehospitalization, and fall rates after discharge from IR. Time-to-event analysis revealed that the intervention reduced SNF admission (cumulative survival, 87.8%; 95% confidence interval [CI], 78.6%-96.6%) and death (cumulative survival, 100%) compared with the control group (SNF cumulative survival, 78.9%; 95% CI, 70.4%-87.4%; $P = .039$; death cumulative survival, 87.3%; 95% CI, 79.9%-94.7%; $P = .001$). Thirty-day rehospitalization also appeared to be lower among intervention participants (cumulative survival, 95.1%; 95% CI, 90.5%-99.8%) than among control participants (cumulative survival, 86.3%; 95% CI, 79.4%-93.2%; $P = .050$) but was not statistically significant. Fall rates did not significantly differ between the intervention group (5.6 falls per 1000 participant-days; 95% CI, 4.7-6.5) and the control group (7.2 falls per 1000 participant-days; 95% CI, 6.2-8.3; incidence rate ratio, 0.78; 95% CI, 0.46-1.33; $P = .361$). A home-based occupational therapist-led intervention that helps stroke survivors transition to home by reducing barriers in the home and improving self-management could decrease the risk of mortality and SNF admission after discharge from rehabilitation.

17. Acceptability of two mobile applications to support cross-sectoral, person-centred and empowering stroke rehabilitation - a process evaluation

Authors: Marwaa, Mille Nabsen; Guidetti, Susanne; Ytterberg, Charlotte and Kristensen, Hanne Kaae

Publication Date: 2024

Journal: Annals of Medicine

Abstract: Aim: To evaluate the acceptability of two co-designed mobile applications [Mit Sygehus a knowledge-based solution] and Genoptræn.dk a self-training solution] to support a cross-sectoral, person-centred and empowering stroke rehabilitation.; Setting: The applications were implemented and tested throughout two stroke rehabilitation trajectories in Southern Denmark, comprising two acute, two sub-acute and two municipal stroke rehabilitation settings.; Methods, Participants and Analysis: A process evaluation focusing on acceptability was conducted. Individual and dyadic interviews were performed with ten stroke survivors (three women and seven men, aged 50-84) with moderate stroke and seven significant others (five women and two men, aged 50-78) post-rehabilitation. A constructivist Grounded Theory analysis was used to explore what, why, when, and how the apps worked or did not work throughout the stroke rehabilitation trajectory and if adaptations were needed.; Results: Participants found that Mit Sygehus provided adequate and sufficient knowledge and was easy to use, however, acceptability of Mit Sygehus declined throughout the rehabilitation process. Also, knowledge on 'return-to-work' and 're-gaining driver's license/permission to drive' needed to be developed. The content in Genoptræn.dk was perceived as acceptable, through content being person-centred, motivating and meaningful. Genoptræn.dk furthermore, supported the transfer between rehabilitation settings, provided a sense of progress throughout the rehabilitation process, facilitated positive habits regarding self-training, and relieved the burden on significant others. Genoptræn.dk was perceived most acceptable in the sub-acute rehabilitation setting and declined when rehabilitation continued in the municipal setting.; Conclusion: Stroke survivors and their significant others found Mit Sygehus and Genoptræn.dk acceptable to support cross-sectoral, person-centred and empowering stroke rehabilitation, however acceptability declined throughout the rehabilitation process. Further investigations are required to determine how cognitive rehabilitation can play a greater role in app-supported stroke rehabilitation and how the need for more long-term follow-up can be supported.

18. The effect of professional reintegration of stroke survivors on their quality of life: A scoping review: Professional Integration and QoL after stroke

Authors: Matos, Joana Isabel Ferreira;Teixeira, Filipa and Alves, Elisabete

Publication Date: 2024

Journal: Journal of Stroke & Cerebrovascular Diseases

19. Cost-Effectiveness Analysis of Rehabilitation Methods for Stroke Survivors

Authors: Miri, Farzaneh;Jahanmehr, Nader and Goudarzi, Reza

Publication Date: 2024

Journal: Middle East Journal of Rehabilitation & Health Studies

20. Orofacial dysfunction after stroke—A multidisciplinary approach

Authors: Skott, Pia;Åkesson, Elisabet;Johansson, Kerstin;Dalum, Jesper;Persson, Emmelie;Karlsson, Åsa;Seiger, Åke;McAllister, Anita and Sandborgh-Englund, Gunilla

Publication Date: 2024

Journal: Gerodontology

21. The cutoff values of functional independence measure scores for predicting discharge destination in the early stroke phase

Authors: Toi, Kennosuke;Ishiyama, Daisuke;Aoyagi, Yoichiro;Suzuki, Kentaro;Takayama, Toshiyuki;Yazu, Hitomi;Yoshida, Madoka and Kimura, Kazumi

Publication Date: 2024

Journal: International Journal of Rehabilitation Research

Abstract: This study aimed to determine cutoff values of functional independence measure (FIM) scores to predict the discharge destinations of patients with acute stroke. The sample included 318 patients with acute stroke (mean age, 72.0 years; women, 39%). The discharge destination was categorized into three groups: home, postacute rehabilitation (hospital with convalescent rehabilitation wards), and postacute care (institution without convalescent rehabilitation wards). We assessed FIM after lifting bed restriction. Multinomial logistic regression analyses were used to estimate odds ratios (OR) and 95% confidence intervals (CI) of the FIM scores for predicting discharge destinations, with postacute rehabilitation as a reference. Cutoff values of motor and cognitive FIM scores for distinguishing home from postacute rehabilitation and postacute care from postacute rehabilitation were determined using receiver operating characteristic curves. The proportion of home, postacute rehabilitation, and postacute care were 34.6%, 41.8%, and 23.6%, respectively. After adjustments for clinical variables, the ORs (95% CIs) for motor and cognitive FIM scores for home versus postacute rehabilitation were 1.08 (1.04--1.11) and 1.05 (0.98--1.12). Furthermore, those for postacute care versus postacute rehabilitation were 1.01 (0.98--1.04) and 0.92 (0.87--0.98). The cutoff values of the motor and cognitive FIM scores for distinguishing home from postacute rehabilitation were 37.5 (sensitivity: 0.92; specificity: 0.64) and 23.5 (sensitivity: 0.78; specificity: 0.67). Furthermore, those for distinguishing postacute care from postacute rehabilitation were 15.5 (sensitivity, 0.81; specificity, 0.51) and 12.5 (sensitivity, 0.74; specificity, 0.64). The identified cutoff values may serve as early indicators for predicting discharge destinations from acute stroke care.

22. Effects of Hand Motor Interventions on Cognitive Outcomes Post-stroke: A Systematic Review and Bayesian Network Meta-analysis

Authors: Valenzuela-López, Laura;Moreno-Verdú, Marcos;Cuenca-Zaldívar, Juan Nicolás and Romero, Juan Pablo

Publication Date: 2024

Journal: Archives of Physical Medicine & Rehabilitation

Abstract: • Hand motor interventions improve cognition post-stroke according to meta-analysis. • Robot-assisted and strength training are probably the most effective approaches. • Virtual reality and conventional rehabilitation were less effective. • There is limited evidence on their effects on specific cognitive domains. To synthesize the evidence on the effects of hand rehabilitation (RHB) interventions on cognition post-stroke and compare their efficacy. PubMed, Embase, Cochrane, Scopus, Web of Science, and CINAHL were searched from inception to November 2022. Randomized controlled trials conducted in adults with stroke where the effects of hand motor interventions on any cognitive domains were assessed. Data were extracted by 2 independent reviewers. A Bayesian Network Meta-analysis (NMA) was applied for measures with enough studies and comparisons. Risk of bias was assessed with the Cochrane Risk of Bias tool. Fifteen studies were included in qualitative synthesis, and 11 in NMA. Virtual reality (VR) (n=7), robot-assisted (n=5), or handgrip strength (n=3) training were the experimental interventions and conventional RHB (n=14) control intervention. Two separate NMA were performed with MoCA (n=480 participants) and MMSE (n=350 participants) as outcome measures. Both coincided that the most probable best interventions were robot-assisted and strength training, according to SUCRA and rankogram, followed by conventional RHB and VR training. No significant differences between any of the treatments were found in the MoCA network, but in the MMSE, robot-assisted and strength training were significantly better than conventional RHB and VR. No significant differences between robot-assisted and strength training were found nor between conventional RHB and VR. Motor interventions can improve MoCA/MMSE scores post-stroke. Most probable best interventions were robot-assisted and strength training. Limited literature assessing domain-specific cognitive effects was found.

23. Comparing the effects of different acupoint-stimulating therapies in mitigating post-stroke spasticity and motor dysfunction in older stroke survivors: A network meta-analysis of randomized trials

Authors: Zhu, Guan-Cheng; Chen, Kuei-Min and Belcastro, Frank

Publication Date: 2024

Journal: Maturitas
