Northeast Rehabilitation Hospital Network

Stroke CPG Summary

NORTHEAST REHABILITATION HOSPITAL NETWORK

www.NortheastRehab.com

Stroke CPG Summary

Northeast Rehabilitation Hospital has adopted these Stroke Clinical Practice Guidelines to guide the clinical care that is provided by our Rehab Team. Items with a "*" apply to all patients with a diagnosis of stroke. The remaining items should be considered for each patient individually.

Organization of Poststroke Rehabilitation Care

*Patient should receive organized, coordinated, interprofessional care

*Qualified patients should receive treatment in an IRF in preference to a SNF

*Care in the outpatient or home-based setting is recommended

Early supported discharge may be reasonable for people with mild to moderate disability

Rehabilitation Interventions in the IP Hospital Setting

*Early rehab should be provided in environments with organized, interprofessional stroke care.

*Stroke survivors should receive rehab at an intensity commensurate with anticipated benefit and tolerance.

*High-dose early mobilization within 24 hours onset of stroke is NOT recommended.

Prevention of Skin Breakdown and Contractures

*Conduct regular skin assessments with objective scales of risk, such as the Braden scale

*Minimize or eliminate skin friction or skin pressure

*Provide appropriate support surfaces

*Avoid excess moisture

*Maintain adequate nutrition and hydration

*Provide regular turning and good skin hygiene

Use specialized mattresses, wheelchair cushions and seating

Position hemiplegic shoulder in max external rotation in sitting or supine for 30 minutes daily

Resting hand splints along with regular stretching and spasticity management may be considered

Serial casting or static adjustable splints may be considered for elbow and wrist contractures

Surgical release may be considered for substantial elbow contractures with pain

Resting ankle splints used at night and during assisted standing may be considered for prevention of ankle contracture

Prevention of DVT

Prophylactic dose subcutaneous heparin (UFH or LMWH) *(see CPG for dosing and duration details)*

In ischemic stroke, it may be reasonable to use intermittent pneumatic compression over no prophylaxis during acute hospitalization

In ICH, it may be reasonable to use intermittent pneumatic compression devices over no prophylaxis

*In ischemic stroke and ICH it is NOT useful to use elastic compression stockings

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Treatment of Bowel and Bladder Incontinence

*Assessment of urological issues and cognitive awareness

Bladder scanning or intermittent catheterization for assessment of urinary retention

Removal of the Foley catheter within 24 hours after admission

Prompted voiding, pelvic floor muscle training

*Assessment of stool consistency, frequency, timing, and bowel practices before the stroke

Assessment, Prevention, and Treatment of Hemiplegic Shoulder Pain

*Assessment including: musculoskeletal, spasticity, subluxation assessment and sensory changes can be useful

Ultrasound may be considered as a diagnostic tool

NMES may be considered for shoulder pain

Botulinum toxin can be useful to reduce severe hypertonicity

A trial of neuromodulating pain medication is reasonable for patients who fit criteria

Use of positioning and supportive devices and slings for shoulder subluxation is reasonable

Suprascapular nerve block may be considered

Surgical tenotomy of muscles may be considered for patients with severe hemiplegia and restrictions in ROM

Overhead pulley exercises are **NOT** recommended

Usefulness of acupuncture is UNCERTAIN

Usefulness of subacromial or glenohumeral corticosteroid injection for patients with inflammation in these locations is **NOT** well established

Central Pain after Stroke

Diagnosis based on diagnostic criteria

Pharmacologic agents individualized to the patient's needs and response to therapy and any side effects

First line pharmacological treatments—amitriptyline and lamotrigine

Second line pharmacological treatments—pregabalin, gabapentin, carbamazepine, phenytoin

Interprofessional pain management is probably useful in conjunction with pharmacotherapy

Standardized measures may be useful to monitor response to treatment

Motor cortex stimulation might be reasonable in carefully selected patients

TENS has **NOT** been established as an effective treatment

Deep brain stimulation has **NOT** been established as an effective treatment

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Prevention of Falls

*Formal fall prevention program during hospitalization

Community exercise programs with balance training

Annual fall risk assessment

Tai Chi training may be reasonable

Seizures

Standard management approach (reversible cause, potential use of antiepileptic drugs)

Routine seizure prophylaxis is NOT recommended

Poststroke Depression, including Emotional and Behavioral State

*Routine screening with structured depression inventory (PHQ)

Periodic reassessment of depression, anxiety and other psychiatric symptoms may be useful

Consultation by a qualified psychiatrist or psychologist can be useful

Combing pharmacological and non-pharmacological treatment may be considered

Counseling and social support may be considered

Exercise program of at least 4 weeks duration may be considered

Early treatment of depression may have an positive effect on Rehab outcome

Efficacy of individual psychotherapy alone is unclear

No recommendation for the use of any particular class of antidepressants is made (see full CPG for specific medication recommendations)

Poststroke Osteoporosis

Evaluation for calcium and Vitamin D supplementation (in long term care facilities)

*Follow US Preventive Services Task Force for osteoporosis screening

Increased levels of physical activity are probably indicated to reduce risk

Assessment of Disability and Rehabilitation Needs

*Formal assessment of ADL, IADL, communication, and functional mobility

*Post discharge assessment of ADL and IADL

*Functional assessment by a clinician with expertise in stroke rehabilitation is recommended

*Determination of post acute rehab needs is based on multiple factors *(see full CPG for details)*

*Formal follow-up on ADL, IADL, communication abilities, and functional mobility within 30 days of discharge

Routine administration of standardized measure can be useful.

Standardized measure of balance and gait speed may be considered

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Assessment of Motor Impairment, Activity, and Mobility

Assessments of muscle strength, tone, finger movement, and coordination with standardized tools may be helpful

UE activity/function assessment with a standardized tool may be useful

Balance assessment with a standardized tool may be useful

Use of standardized questionnaires to assess stroke survivor perception may be considered (ABC)

Use of technology (pedometers, activity monitors) to assess real world activity may be considered

Periodic assessments with the same standardized tools may be useful

Assessment of Communication Impairment

*Communication assessment should consist of: interview, conversation, observation, standardized tests, nonstandardized items, assess speech, language, cog-communication, pragmatics, reading, and writing

*Assessment should identify strengths, weaknesses, and identify compensatory strategies

Telerehabilitation is reasonable when face-to-face is impossible or impractical

Communication assessment may consider the individuals unique priorities using the ICF framework, including quality of life.

Assessment of Cognition and Memory

*Screening for cognitive deficits is recommended prior to discharge home

When screening reveals cognitive deficits, a more detail neuropsychological evaluation to identify areas of strength and weakness may be beneficial

Sensory Impairments (touch, vision, hearing)

*Evaluation of sensory impairments is probably indicated

Dysphagia Screening, Management and Nutritional Support

*Early dysphagia screening is recommended

*Dysphagia screening is reasonable by a SLP or other trained healthcare provider

*Assessment of swallowing before the patient begins eating, drinking, or receiving oral meds is recommended

An instrumental evaluation is probably indicated for patients with suspected aspiration

Selection of instrumental study may be based on availability or other consideration

*Oral hygiene protocols should be implemented

Enteral feedings should be initiated within 7 days for patients who cannot safely swallow

Nasogastric tube feeding should be used for short term (2-3 weeks)

Percutaneous gastrostomy tubes should be placed in patients with chronic inability to safely swallow

Nutritional supplements are reasonable to consider

Incorporating principles of neuroplasticity into dysphagia rehab is reasonable

Behavioral interventions may be considered; Acupuncture may be considered

Drug therapy, NMES, pharyngeal e-stim, physical stimulation, tDCS, and transcranial magnetic stimulation are **NOT** currently recommended

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Non-drug Therapies for Cognitive Impairment, including Memory

Enriched environments are recommended

Use of cognitive rehabilitation is reasonable

Use of cognitive training strategies for increasing independence is reasonable

Compensatory strategies may be considered to improve memory functions (visual imagery, spaced practice, external memory assistive technology)

Specific memory training is reasonable (promoting global processing in visual-spatial memory, constructing a semantic framework for language-based memory)

Errorless learning technique may be effective

Music therapy may be reasonable

Exercise may be considered

Virtual reality training may be considered

Anodal tDCS remains experimental

Use of Drugs to Improve Cognitive Impairments, including Attention

Donepezil is **NOT** well established

Rivastigmine is **NOT** well established

Antidepressants is **NOT** well established

Dextroamphetamine, methylphenidate, modafinil, and atomextine is UNCLEAR

Limb Apraxia

Strategy training or gesture training may be considered

Task practice with and without mental rehearsal may be considered

Hemispatial Neglect or Hemi-Inattention

Repeated top-down and bottom-up interventions (virtual reality, mental imagery, visual scanning, etc.) is reasonable

Right visual field testing may be considered

Repetitive transcranial magnetic stimulation may be considered

Cognitive Communication Disorders

Should target overt communication deficit affecting prosody, comprehension, expression of discourse, and pragmatics

Should target accompanying cognitive deficits (attention, memory, executive functions)

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Aphasia

Speech and language therapy is recommended

Include communication partner training

Intensive treatment is recommended

Computerized treatment may be considered as a supplement to ST

A variety of treatment approaches may be useful

Group treatment may be useful

Pharmacotherapy may be considered on an individual basis

Brain stimulation techniques are **NOT** currently recommended

Motor Speech Disorders: Dysarthria and Apraxia of Speech

Should target physiological support for speech (respiration, phonation, articulation, resonance)

Should target global aspects of speech production (loudness, rate, prosody)

Augmentative and alternative communication devices should be used to supplement speech

Telerehabilitation may be useful when face-to-face is impossible or impractical

Environmental modifications may be considered

Activities to facilitate social participation and promote psychosocial well-being may be considered

Spasticity

Botulinum toxin is recommended to improve ROM, dressing, hygiene, limb position, and gait

Oral antispasticity agents can be useful

Physical modalities (NMES, vibration) may be reasonable to improve spasticity temporarily

Intrathecal baclofen therapy may be useful for severe hypertonia

Splints and taping are **NOT** recommended for prevention of spasticity

Balance and Ataxia

Balance training program

Assistive device or orthosis

*Evaluate for balance, balance confidence, and fall risk (Berg, ABC)

Postural training and task-oriented therapy may be considered

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Mobility

*Intensive, repetitive, mobility-task training is recommended

AFO to compensate for foot drop

Group therapy with circuit training is reasonable

Improving cardiovascular exercise is reasonable

NMES is reasonable as an alternative to AFO

Practice walking with a treadmill or overground may be reasonable

Robot assisted movement training may be considered

Mechanically assisted walking may be considered

Virtual reality may be beneficial

UNCERTAIN, INSUFFICIENT evidence, or UNCLEAR benefits: Acupuncture, TENS, rhythmic auditory stimulation, electromyography biofeedback, NDT and PNF, fluoxetine, other SSRI, levodopa, water based exercise

Use of dextroamphetamine or methylphenidate is **NOT** recommended

UE Activity including ADLs, IADLs, Touch, and Proprioception

*Functional tasks, task-specific training, repeated practice with progression of difficulty on a frequent basis

*ADL training and IADL training

CIMT or modified CIMT, robotic therapy, NMES, mental practice, strengthening, virtual reality are reasonable to consider

Somatosensory training and bilateral training may be useful

Acupuncture is **NOT** recommended

Adaptive Equipment, Durable Medical Devices, Orthotics and Wheelchairs

*Ambulatory assistive devices, AFOs, wheelchairs should be used to promote mobility, safety, and function

Chronic Care Management: Home and Community Based Participation

*Individually tailored exercise program is indicated

Treatments/Interventions for Visual Impairments

For deficits in eye movement: Eye exercises are recommended; Compensatory scanning training may be considered

For deficits in visual fields: Yoked prisms, compensatory scanning, computerized vision restoration training may be considered

For visual-spatial/perceptual deficits: Multimodal audiovisual spatial exploration training is recommended; virtual reality may be considered; Behavioral optometry using colored filters is **NOT** recommended

Hearing Loss

Audiologist referral may be reasonable

Amplification (hearing aids), communication strategies, minimizing background noise are reasonable

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Ensuring Medical and Rehabilitation Continuity through the Rehab Process and into the Community

*Individualized discharge planning

Alternative methods of communication and support are reasonable to consider for patients in rural settings (telephone visits, telehealth, web-based support)

Social and Family Caregiver Support

*Family/caregiver should be an integral part of rehab

*Provide support to family/caregiver on: education, training, counseling, development of support structure, financial assistance

*Involve family/caregiver early in decision making and treatment planning

Referral to Community Resources

*Maintain up-to-date inventories of community resources

*Consider patient/family/caregiver preferences for resources

*Provide information about local resources

*Offer contact with community resources

*Follow–up is recommended to ensure patient/family/caregiver receive necessary services

Rehabilitation in the Community

*Community or home-based rehabilitation should be considered

*Family/caregivers should be included as active partners

A formal plan for monitoring compliance with treatment activities may be useful

Sexual Function

An offer to discuss sexual issues may be useful prior to discharge and after transition to the community

Recreational and Leisure Activity

*Promote engagement in leisure and recreational pursuits

*Foster development of self-management skills

Return to Work

Vocational rehab is reasonable for patients considering return to work

Assessment of cognition, perception, physical and motor abilities may be considered

Return to Driving

Consider fitness-to-drive tests and on-the-road assessments by an authorized person

Assessment of cognition, perception, physical and motor abilities may be reasonable

Driver rehabilitation training may be reasonable

Driving simulation assessment may be considered

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Patient/Family/Caregiver Education

*Patients, staff, and caregivers should be educated about the prevention of skin breakdown.

*ROM and positioning

*Home and environmental modifications designed to reduce falls

Safety counseling related to balance and gait speed outcome measures

*Depression

*Information, advice, and the opportunity to talk about the impact of the illness on their lives.

*Self-management skill development

Training and education related to home-based rehabilitation programs

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