

Rehabilitation: Make Stroke Patient's Independent Activity

C. Vasantha Kalyani

Assistant Professor, College of Nursing, AIIMS, Rishikesh.

Abstract

Rehabilitation which is major technique for a victim to restore the lifestyle functions as possible utilize for daily activities. The patients with stroke are in need of rehabilitation. The stroke rehabilitation can start at the right time will helpful patients with stroke can do best possibilities as early as possible without dependence.

Keywords: Stroke; Rehabilitation; Rehabilitation Team; Rehabilitation Nurse.

Introduction

Stroke is one of the leading causes of long-term adult disability.. Stroke survivors and their families can find workable solutions to most difficult situations by approaching every problem with patience, ingenuity, perseverance and creativity. Early recovery and rehabilitation can improve functions and sometimes remarkable recoveries for someone who suffered a stroke.

Incidence

Developing countries like India are facing a double burden of communicable and non-communicable diseases. Stroke is one of the leading causes of death and disability in India. The estimated adjusted prevalence rate of stroke range, 84-262/100,000 in rural and 334-424/100,000 in urban areas. The incidence rate is 119-145/100,000 based on the recent population based studies. The prevalence of stroke in India shows a huge variation of 147-922/100,000 across diverse community-based studies According to the India stroke factsheet updated in 2012, the estimated age-adjusted prevalence rate for stroke ranges between

84/100,000 and 262/100,000 in rural and between 334/100,000 and 424/100,000 in urban areas.

Stroke Rehabilitation

In stroke, the brain cells may be only temporarily damaged, not killed, and may resume functioning over time. In other cases, the brain can reorganize its own functioning

General Recovery Guidelines

- 10% of stroke survivors recover almost completely
- 25% recover with minor impairments
- 40% experience moderate to severe impairments requiring special care
- 10% require care in a nursing home or other long-term care facility
- 15% die shortly after the stroke

Rehabilitation actually starts in the hospital as soon as possible following a stroke. In patients who are stable, rehabilitation may begin within two days after the stroke has occurred, and should be continued as necessary after release from the hospital.

Depending on the Severity of the Stroke, Rehabilitation Options can Include

- A rehabilitation unit in the hospital with

Reprint Request: C. Vasantha Kalyani, Assistant Professor, College of Nursing, AIIMS, Rishikesh, Shivaji Nagar, Veerbhadra, Uttarakhand 249202.

E-mail: vasantharaj2003@gmail.com

inpatient therapy

- A subacute care unit
- A rehabilitation hospital with individualized inpatient therapy
- Home therapy
- Returning home with outpatient therapy
- A long-term care facility that provides therapy and skilled nursing care

The long-term goal of stroke rehabilitation is to improve function of the stroke patients to become as independent as possible. This must be accomplished in a way that preserves and motivate to relearn basic skills that the stroke may have impaired - skills like bathing, eating, dressing and walking.

Stroke Rehabilitation Team

- Neurologist. Specializes in the prevention, diagnosis and treatment of stroke and other diseases of the brain and spinal cord
- Rehabilitation Nurse. Specializes in helping people with disabilities; helps stroke patients to manage health problems that affect stroke (diabetes, high blood pressure) and adjust to life after stroke
- Physical Therapist (PT). Helps stroke patients with problems in moving and balance; suggests exercises to strengthen muscles for walking, standing and other activities
- Occupational Therapist (OT). Helps stroke patients learn strategies to manage daily activities such as eating, bathing, dressing, writing or cooking
- Speech-Language Pathologists (SLP). Helps stroke patients re-learn language skills (talking, reading and writing); shares strategies to help with swallowing problems
- Dietician. Teaches patients and family members about healthy eating and special diets (low salt, low fat, low calorie)
- Social Worker. Helps stroke patients make decisions about rehab programs, living arrangements, insurance, and support services in the home
- Neuropsychologist. Diagnoses and treats stroke patients who may be facing changes in thinking, memory, and behavior after stroke

Stroke Rehabilitation Activities

- Organizing health and social care for people needing rehabilitation after stroke

- Planning and delivering stroke rehabilitation
- Providing support and information
- Cognitive functioning
- Emotional functioning
- Vision
- Swallowing
- Communication
- Movement
- Self-care
- Long-term health and social support

Organising Health and Social care for People Needing Rehabilitation after Stroke

- a dedicated stroke rehabilitation environment
- a core multidisciplinary team
- ☆ access to other services that may be needed, like: dietetics, electronic aids (for example, remote controls for doors, lights and heating, wheelchair services and communication aids)
- a multidisciplinary education programme.
- Review family members' and carers' training and support needs regularly
- people after stroke and their families and carers feel adequately informed, prepared and supported.

Planning and Delivering Stroke Rehabilitation Screening and Assessment

On admission assess the patient below said aspects and start management

- Orientation
- Positioning, moving and handling
- Swallowing
- Transfers (for example, from bed to chair)
- Pressure area risk
- Continence
- Communication, including the ability to understand and follow instructions and to convey needs and wishes
- Nutritional status and hydration

Perform a full medical assessment of the person with stroke, including cognition (attention, memory, spatial awareness, apraxia, perception), vision, hearing, tone, strength, sensation and balance.

A Comprehensive Assessment of a Person with Stroke

should Take into Account

- their previous functional abilities
- impairment of psychological functioning (cognitive, emotional and communication)
- impairment of body functions, including pain
- activity limitations and participation restrictions
- environmental factors (social, physical and cultural).
- Barthel Index.
- Provide information and support person with stroke and their family member or care giver to participate in the development of stroke rehabilitation plan.

Important Documentations

- basic demographic details
- diagnosis and relevant medical information
- list of current medications, including allergies
- standardised screening assessments
- the person's rehabilitation goals
- multidisciplinary progress notes
- contact from the stroke rehabilitation team discharge planning information (including accommodation needs, aids and adaptations)
- follow-up appointments.

Intensity of Stroke Rehabilitation

initially at least 45 minutes of each relevant stroke rehabilitation therapy for a minimum of 5 days per week to people who have the ability to participate.

Providing Support and Information

Working with the person with stroke and their family or carer, identify their needs. Pace the information to the person's emotional adjustment.

Provide information about local resources

Cognitive Functioning

Provide education and support for people with stroke and their families and care givers to help them understand the extent and impact of cognitive deficits after stroke.

Visual Neglect

- Interventions to help people scan to the neglected side, such as brightly coloured lines or

highlighter on the edge of the page

- Alerting techniques such as auditory cues
- Repetitive task performance such as dressing
- Altering the perceptual input using prism glasses.

Memory function

- Increasing awareness of the memory deficit
- Enhancing learning using errorless learning and elaborative techniques (making associations, use of mnemonics, internal strategies related to encoding information such as 'preview, question, read, state, test')
- External aids (for example, diaries, lists, calendars and alarms)
- Environmental strategies (routines and environmental prompts).

Attention Function

Attention training for people with attention deficits after stroke as managing the environment and providing prompts relevant to the functional task.

Emotional Functioning

To restore the emotional functioning any intervention chosen should take into consideration the type or complexity of the person's neuropsychological problem and relevant personal history.

Vision

Screen people after stroke for visual difficulties.

Refer people with persisting double vision after stroke for formal orthoptic assessment.

Offer eye movement therapy to people who have persisting hemianopia after stroke and who are aware of the condition.

Swallowing

Offer swallowing therapy at least 3 times a week to people with dysphagia after stroke who are able to participate, for as long as they continue to make functional gains. Swallowing therapy could include compensatory strategies, exercises and postural advice.

Ensure that effective mouth care is given to people

with difficulty swallowing after stroke, in order to decrease the risk of aspiration pneumonia.

Communication

Screen people after stroke for communication difficulties within 72 hours of onset of stroke symptoms.

Each stroke rehabilitation service should devise a standardised protocol for screening for communication difficulties in people after stroke.

Provide appropriate information, education and training to the multidisciplinary stroke team to enable them to support and communicate effectively with the person with communication difficulties and their family or care giver.

- Provide direct impairment-based therapy for communication impairments (for example, aphasia or dysarthria)
- Help the person with stroke to use and enhance their remaining language and communication abilities
- Teach other methods of communicating, such as gestures, writing and using communication props
- Coach people around the person with stroke (including family members, care givers and health and social care staff) to develop supportive communication skills to maximise the person's communication potential
- Help the person with aphasia or dysarthria and their family or care giver to adjust to a communication impairment
- Support the person with communication difficulties to rebuild their identity
- Support the person to access information that enables decision-making.

Movement

Provide physiotherapy for people who have weakness in their trunk or upper or lower limb, sensory disturbance or balance difficulties after stroke that have an effect on function.

Treatment for people with movement difficulties after stroke should continue until the person is able to maintain or progress function either independently or with assistance from others.

Strength Training

Consider strength training for people with muscle weakness after stroke. This could include progressive

strength building through increasing repetitions of body weight activities (for example, sit-to-stand repetitions), weights (for example, progressive resistance exercise), or resistance exercise on machines such as stationary cycles.

Fitness Training

Encourage people to participate in physical activity after stroke.

Assess people who are able to walk and are medically stable after their stroke for cardiorespiratory and resistance training appropriate to their individual goals.

Cardiorespiratory and resistance training for people with stroke should be started and continues the programme by a physiotherapist with the aim that the person independently based on the physiotherapist's. This information may take the form of written instructions, telephone conversations or a joint visit with the provider and the person with stroke, depending on the needs and abilities of the exercise provider and the person with stroke.

Hand and Arm Therapies – Orthoses for the Upper Limb

- Maintain joint range, soft tissue length and alignment
- Increase soft tissue length and passive range of movement
- Facilitate function (for example, a hand splint to assist grip or function)
- Aid care or hygiene (for example, by enabling access to the palm)
- Increase comfort (for example, using a sheepskin palm protector to keep fingernails away from the palm of the hand).

Electrical Stimulation: Upper Limb

Do not routinely offer people with stroke electrical stimulation for their hand and arm.

Consider a trial of electrical stimulation in people who have evidence of muscle contraction after stroke but cannot move their arm against resistance.

If a trial of treatment is considered appropriate, ensure that electrical stimulation therapy is guided by a qualified rehabilitation professional.

Constraint-Induced Movement Therapy

Consider constraint-induced movement therapy for people with stroke who have movement of

20 degrees of wrist extension and 10 degrees of finger extension. Be aware of potential adverse events (such as falls, low mood and fatigue).

Shoulder Pain

Provide information for people with stroke and their families and care givers on how to prevent pain or trauma to the shoulder if they are at risk of developing shoulder pain (for example, if they have upper limb weakness and spasticity).

Repetitive Task Training

Offer people repetitive task training after stroke on a range of tasks for upper limb weakness (such as reaching, grasping, pointing, moving and manipulating objects in functional tasks) and lower limb weakness (such as sit-to-stand transfers, walking and using stairs).

Walking therapies: treadmill with or without body weight support

Offer walking training to people after stroke who are able to walk, with or without assistance, to help them build endurance and move more quickly.

Consider treadmill training, with or without body weight support, as one option of walking training for people after stroke who are able to walk with or without assistance.

Electromechanical Gait Training

Offer electromechanical gait training to people after stroke only in the context of a research study.

Ankle-Foot Orthoses

Consider ankle-foot orthoses for people who have difficulty with swing-phase foot clearance after stroke (for example, tripping and falling) and/or stance-phase control (for example, knee and ankle collapse or knee hyper-extensions) that affects walking.

Assess the effectiveness of the ankle-foot orthosis for the person with stroke, in terms of comfort, speed and ease of walking.

Electrical Stimulation: Lower Limb

Self-Care

- Restorative strategies may include:
- ❖ Encouraging people with neglect to attend to the neglected side
- ❖ Encouraging people with arm weakness to

incorporate both arms

- ❖ Establishing a dressing routine for people with difficulties such as poor concentration, neglect or dyspraxia which make dressing problematic.
- Compensatory strategies may include:
- ❖ Teaching people to dress one-handed
- ❖ Teaching people to use devices such as bathing and dressing aids.

That appropriate equipment is provided and available for use by people after stroke when they are transferred from hospital, whatever the setting (including care homes).

Return to Work

Return-to-work issues should be identified as soon as possible after the person's stroke, reviewed regularly and managed actively. Active management should include:

- Identifying the physical, cognitive, communication and psychological demands of the job (for example, multi-tasking by answering emails and telephone calls in a busy office)
- Identifying any impairments on work performance (for example, physical limitations, anxiety, fatigue preventing attendance for a full day at work, cognitive impairments preventing multi-tasking, and communication deficits)
- Tailoring an intervention (for example, teaching strategies to support multi-tasking or memory difficulties, teaching the use of voice-activated software for people with difficulty typing, and delivery of work simulations)
- Workplace visits and liaison with employers to establish reasonable accommodations, such as provision of equipment and graded return to work.

Long-Term Health and Social Support

Inform people after stroke that they can self-refer, usually with the support of a GP or named contact, if they need further stroke rehabilitation services.

Provide information so that people after stroke are able to recognise the development of complications of stroke, including frequent falls, spasticity, shoulder pain and incontinence.

Encourage People to Focus on Life after Stroke and Help them to Achieve their Goals. This may Include

- Facilitating their participation in community

activities, such as shopping, civic engagement, sports and leisure pursuits, visiting their place of worship and stroke support groups

- Supporting their social roles, for example, work, education, volunteering, leisure, family and sexual relationships

Review the health and social care needs of people after stroke and the needs of their carers at 6 months and annually thereafter. These reviews should cover participation and community roles to ensure that people's goals are addressed.

Conclusion

Stroke rehabilitation takes time. Each advance in a patient's skills and condition is a victory, and over time these small victories start to add up. For persons receiving rehabilitation services in an acute, subacute, skilled, the period of treatment often lasts from two to four weeks. After this, many patients can return home and engage therapy services over several months as they continue to recover.

Reference

1. Brown RD, Whisnant JP, Sicks JD, et al. Stroke incidence, prevalence, and survival: secular trends in Rochester, Minnesota, through 1989. *Stroke*. 1996; 27: 373-380.
2. Smith GV, Silver KHC, Goldberg AP, et al. "Task-oriented" exercise improves hamstring strength and spastic reflexes in chronic stroke patients. *Stroke*. 1999; 30: 2112-2118
3. E. Broussalis, M. Killer, M. McCoy, A. Harrer, E. Trinka, and J. Kraus, "Current therapies in ischemic stroke. Part A. Recent developments in acute stroke treatment and in stroke prevention," *Drug Discovery Today*. 2012; 17(7-8): 296-309.
4. D. L. Marsden, A. Dunn, R. Callister, C. R. Levi, and N. J. Spratt, "Characteristics of exercise training interventions to improve cardiorespiratory fitness after stroke: a systematic review with meta-analysis," *Neurorehabilitation and Neural Repair*. 2-13; 27(9): 775-788.
5. C. Pin-Barre, J. Laurin, M.-S. Felix et al., "Acute neuromuscular adaptation at the spinal level following middle cerebral artery occlusion-reperfusion in the rat," *PLoS ONE*. 2014; 9(2). article ID e89953.