

Post stroke rehabilitation

Background

Stroke is characterized by the sudden loss of blood circulation to an area of the brain, resulting in a corresponding loss of neurologic function. Also previously called cerebrovascular accident (CVA) or stroke syndrome, stroke is a nonspecific term encompassing a heterogeneous group of pathophysiologic causes, including thrombosis, embolism, and hemorrhage.

Frequency

United States

Incidence for first-time stroke is more than 700,000 per year, of which 20% of these patients will die within the first year after stroke. At current trends, this number is projected to jump to 1 million per year by the year 2050

Mortality/Morbidity

Stroke is the third leading cause of death and the leading cause of disability in the United States.

Cerebrovascular disease was the second leading cause of death worldwide in 1990, killing more than 4.3 million people.

Cerebrovascular disease was also the fifth leading cause of lost productivity, as measured by disability-adjusted life years (DALYs). DALYs include years of productivity lost to either death or varying degrees of disability. In 1990, cerebrovascular disease caused 38.5 million DALYs throughout the world.

Stroke neuro-rehabilitation

Knowledge of stroke and the process of recovery after stroke is in its relative infancy.

In the early 1950s, Twitchell began studying the pattern of recovery in stroke patients. He reported on 121 patients he had observed. He found that by four weeks, if there is some recovery of hand function, there is a 70% chance of making a full or good recovery. He reported that most recovery happens in the first three months, and only minor recovery occurs after six months.

Around the same time, Brunnstrom also described the process of recovery, and divided the process into seven stages. As knowledge of the science of brain recovery improves, methods of intervening have evolved. There will be a continued fundamental shift in the processes used to facilitate stroke recovery.

Stroke rehabilitation, or, in more optimistic terms, **stroke recovery**, is the process by which patients with disabling strokes undergo treatment to help them return to normal life as much as possible by regaining and relearning the skills of everyday living. It is multidisciplinary in that it involves a team with different skills working together to help the patient. These include nursing staff, physiotherapy, occupational therapy, speech and language therapy, and usually a physician trained in rehabilitation medicine. Some teams may also include psychologists, social workers and pharmacists. Patients may demand access to state of the art treatment with the help of their own doctor.

The rehabilitation team have regular meetings at which the patient and family may be present to discuss the current situation and to set goals and to ensure effective communication. In most cases the desired goal is to enable the patient to return home to independent living, although this is not always possible.

Stroke rehabilitation can last from a few days up to several months. Most return of function is seen in the first few days and weeks and then falls off, if only traditional OT, PT, TR and SLP are used. In contrast, brain repair, neurogenesis, and neural rewiring can eventually be enhanced significantly medically long after this short therapeutic window.

After a stroke, control signals from the brain often cannot reach some muscles, typically in the hand or foot. Without these signals, the level of electrical activity in these muscles is too low for them to contract adequately on their own. This causes them to become increasingly weaker.

Case Study.

78 years old male decided the test Ψ -TT diagnostic and correction method after undergoing 3 years of the most advanced methods for post stroke rehabilitation.

History of disease

- Moderate stroke 5 years ago, followed by partial paralysis of the left side
- Broad Hemorrhagic stroke 3 years ago followed by complete paralysis of the right side
- Fourth Lumbar Disk replacement

- After 3 years of rehabilitation therapy the patient had difficulty controlling his trunk and could walk very slowly and only with the support from two helpers.



Physical condition before Ψ -TI diagnostics and correction

- Patient was extremely fragile and weak
- Could not stand on his own
- Partial skeletomuscular atrophy: could not maintain his trunk straight (30-40% inclined forward).
- Edema of feet and legs
- Large dark spots on the face
- Insomnia
- Depression

Ψ -TI diagnostics revealed the following:

- Broca's area aphasia – slurred, slow speech
- Partial temporomandibular joint (TMJ) disorder (muscles of face, tongue and neck)
- Hypertensive disease
- Neurotic disorder and general weakness

Discussions:

After Ψ -TI diagnostics we have advised 12 sessions of Ψ -TC correction due to the health complexity caused by patient's age, long history of disease, general weakness, partial muscle atrophy



Pic. 2, 3, 4. Photo 1 was taken after the first session. Photo 2 and 3 were taken after 7 days of Ψ -TC correction: 2) the patient can stand up from armchair without any support, 3) he stands without assistants or walking stick.

Conclusion:

After 12 sessions of Ψ -TC correction we observed the following results, confirmed by the patient's report:

- Patient feels stronger
- Skeletomuscular improvement (as in pic.2.):
 - a) the patient can stand up from armchair without any support,
 - b) he stands without assistants or walking stick
 - c) can walk with the help of walking stick or holding the shoulder of one assistant.
- Partial balance and control of his trunk
- Temporomandibular joint (TMJ) improvement: speak faster and more comprehensive
- Heart function improvement: voice is stronger
- Edema reduction
- Skin condition looked improved
- Feels happy
- Sleeps better