GENERAL PRINCIPLES OF GERIATRIC REHABILITATION

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ABSTRACT

This paper is an overview of the geriatric rehabilitation, focusing on the particularities that differentiate it from the recovery of younger adults. Elderly patients present an increased prevalence of progressive disabling chronic conditions requiring rehabilitation and they are also more exposed to acute disability events due to a chronic disease. Rehabilitation is an essential component of geriatric care and therapy and it can make a critical difference in the life quality of elderly people, even though the process is much more difficult and the progress may be slower than in younger adults. The goal of the geriatric rehabilitation is the recovery and the development of personal independence and the ability to do as many as possible daily living activities. Special programs must be designed for the older people involving an interdisciplinary approach because geriatric rehabilitation must be adapted to 1) the physiological age related decline including sensory impairments, mental status deficiency, depression or dementia, physical inactivity, lack of endurance, impaired balance 2) multiple coexisting chronic diseases and 3) constrained finances, 4) lack of social and sometimes family support.

Keywords: geriatric rehabilitation, elderly patients, personal independence

Rehabilitation is an essential component of geriatric care and therapy and it can make a critical difference in the life quality of elderly people. The recovery of younger adults is different from the geriatric rehabilitation and has some particularities. It is a more difficult and slow progressive process and it must be adapted to the physiological age related decline and comorbidities. The goal of rehabilitation in older people is the development of physical independence and the ability to do as many as possible daily living activities. [1]

The following aspects must be taken into account in the rehabilitation of geriatric patients:

- Reactivation - immobilized elderly persons must develop their autonomy as much as possible and must acquire the ability to take care of themselves, focusing on restitutio ad optimum and not on restitutio ad integrum as the younger patients.
- Social reintegration – Elderly patients must return to family and friends, avoiding isolation
- Reinstatement into society, participating to moderate professional activities, other low physical demand activities (walking, hand crafts) or hobbies (e.g. gardening) corresponding to their residual capacity.

The geriatric rehabilitation program starts with episodes of acute care, followed by the transfer of the patient in rehabilitation services and ends with release from all care.

Without continued physical activity, the patient is at risk for decline, deconditioning, disuse and use of acute care again.

Curative recovery in the elderly can be rarely achieved in order to allow the return to the usual life style. In patients with chronic diseases or stabilized disabilities the aim is to improve or to prevent further degradation by conservative recovery. In patients with self-service capability jeopardized, preventive recovery can stop the deteriorative process.

The general indications of geriatric rehabilitation are:

- acute reversible or partially reversible insults e.g. amputation
- chronic progressive disabling diseases e.g. ostheoarthritis, Parkinson disease
- acute disabiling event due to a chronic disease e.g. stroke due to cerbrovascular disease or hip fracture due to osteoporosis.

Patients unlikely to benefit from rehabilitation are:

- the terminal care patients
- medically unstable patients, requiring frequent medical review, investigations or changing treatments
- irrecoverable mental changes, rehabilitation being a cooperation and learning process
- acute febrile illnesses or exacerbation of chronic diseases
- neoplasias
- cachectic states,
- pacemaker wearers
- hemorrhagic states
- chronic diseases at the limit of organ failure

1. The first principle of geriatric recovery is primum non nocere. Some features of the elderly patients have to be known for a better implementation of the recovery therapy, the most important being:

a) Progressively diminishing of the capacity to adapt due to the physiological involution that characterizes senescence

b) Increasing individual variations

c) Presence of the comorbidities

a) Physiological aging is a degenerative progressive process with functional decline of all systems that must be taken into account when a recovery program is established for a condition that left infirmity, physical, mental or intellectual sequelae. The main functional deficits seen in the elderly that may be important limiting factors for the recovery are:

- Lung deficiency with decreased pulmonary ventilation and increased residual volume
- Cardiac deficiency decreasing the capacity of adaptation to effort
- Nervous deficiency with decreased nerve conduction, prolonged reaction time and, consequently, significantly reduced speed of movements.
- Muscular hypertonia and loss of muscle strength
- Osteoporosis with an increased risk of fractures and trophic damage of periarticular structures and with an increased risk of stretching, rupture, and limited mobility
- Trophicity tissue loss with increased risk of bedsores
- Sensorial deficiency
- Mental and psychological deficiency; the existence of a previous state of depression or a reactive one to illness or intellectual deterioration have a major influence on patient participation to the recovery process.

b) There are important differences between elderly individuals, so age is a relative criterion. Biological age should be taken into account more than the chronological age. Also there are differences at the same person between the rate of aging of various organs and systems. Anyway aging itself is not a disease and does not cause symptoms. If the symptoms occur, a careful clinical and laboratory examination is required in order to achieve an early diagnosis and treatment of various conditions.

c) Comorbidities impose additional functional limitations to the physiological

aging decline. In general, polipathology is present; mostly there are chronic diseases with frequent complications and exacerbations that may cause rapid deterioration and prolonged convalescence by loss of physiological reserves. [2] Comorbidities can interfere with the rehabilitation process by delaying or interrupting services and therefore require a systematic approach to screening, prevention and management of those conditions. In addition, these chronic conditions require adaptation of the rehabilitation plan and current medication. For example, increased physical activity in diabetic patients will require lower doses of insulin or oral hypoglycemic agents, and in patients with coronary heart disease, antianginal medication adjustment.

The presence of a disabling condition in the context of physiological decline and comorbidities can make elderly patients to become incapable of even basic autonomy (such as washing, performing daily activities, getting dressed, eating, going to the toilet). This is why the main purpose of the geriatric rehabilitation is to achieve the transition from physical dependence to physical independence with a significant improvement in the quality of life.

2. The many dimensions of geriatric rehabilitation require a multidisciplinary care team formed by physician, physiotherapist, psychologist, rehabilitation nurse, social worker, nutritionist, optometrist, and, if necessary, orthotist or prosthetist. The health professionals who work with geriatric patients should have a basic geriatric training, knowledge of clinical and geriatric psychology and appropriate bioethics and special human qualities: tact, patience, calm and understanding. [3]

3. Efficient communication between the care team and the patient and also between the team members is an important principle of geriatric rehabilitation.

The practitioner must ensure that the patient understands how physical therapy can help the prognosis of his disabling condition, how to perform each exercise and he must motivate the elderly to continue the exercises for the long term. [4]A positive and optimistic attitude improves the patient's expectations and encourages independence because the team members can bring arguments that all should be given a chance and very frail and disabled elderly people do well. The patient must believe that small improvements are always possible, whatever the condition and the time needed.

4. Another principle is the conscious and active participation of the patient in the recovery process. The patient and his family are in the centre of the rehabilitation team and they must be informed and consulted. Their choices, desires, preferences and expectations must be placed in the recovery program.

Rehabilitation is an active hard work process done by the patient and not to him. Because of the chronic nature of many disabilities in elderly (arthritis, diabetes, hypertension, congestive heart failure), at some point, the patients and their families will have to take over their own rehabilitation program including self-monitoring and personal control over prevention and management practices.

5. A basic principle of geriatric rehabilitation is the individualization of the treatment with adaptation of the physiotherapy programs for each patient regarding the following aspects:

- Age-related functional deficiencies
- Coexisting diseases and the associated treatment
- Remaining capacity, reserves and ability to adapt to exercise
- Previous physical training
- Everyday gestures that the patient can do by himself

- Psychological and intellectual capabilities
- Profession and Hobbies
- Living conditions and social factors
- Financial possibilities

In order to establish the goals and methods of the rehabilitation for a specific disease, the team must get to know the patient on different levels before the beginning of the process, so the patient must be evaluated through anamnesis and clinical examination. The programs must be targeted to the patient's needs and guided by the individual's goals.

6. Periodic team meetings in order to review the progress of the patient, to adjust the goals or to establish new goals are an important rule of rehabilitation in elderly patients. These meetings should consider the passive mobility of the patient, voluntary motricity, functional impairments, everyday gestures and should be communicated to all team members.

7. Geriatric rehabilitation should be started as soon as possible starting with postural education and early mobilization in order to prevent the immobilization syndrome with stiffness, contractures, ankylosis, deformations, osteoporosis, muscle atrophy. Once installed, this pathology makes the establishment of subsequent rehabilitation therapy impossible and implies a poor prognosis.

8. Grading effort is another principle of rehabilitation. If the patient was immobilized in bed, the recovery begins with postural education and respiratory gymnastics and afterwards, exercises with the unaffected extremity are performed. As the patient improves the sitting balance, he will get out of bed and transfer to an armchair, and as he improves general strength, coordination and balance, he will regain the standing position. Increased stability will allow walking recovery, initially with the aid of walking support (bars, crutches, frames). Simultaneously, autonomy in daily living activities will be initiated (eating without help, getting dressed, going to the toilet)

9. Therapeutic exercises, broadly conceived, are designed to improve physical functioning of the geriatric patients and to optimize strength, balance and endurance. The exercise program respects the principle: maximum effect - minimal risk, given the diminished cardiac reserve and risk of hypertension, tachycardia, coronary ischemic accidents. The program will include muscle exercises compatible with a charge of 75% from the capacity of the cardiovascular system, following the rule "little and often" using sequences of harmonious, rhythmic and comprehensible movements, close to the natural movements of the elderly people. The following exercises are prohibited in geriatric patients:

- exercises requiring maximal and submaximal muscular efforts,
- isometric exercises,
- extended efforts with the glottis closed,
- anaerobic exercises,
- exercises with heavy weights,
- exercises with the head down below the trunk,
- exercises with sudden changes of position.

10. Somatic rehabilitation is always accompanied by psychological recovery led by a psychologist-psychotherapist with geriatric training. Old patients with a disabling condition in the context of multiple chronic comorbidities, family abandon and financial problems are frequently depressed, with loss of self-worth, a sense of helplessness and poor motivation. Formal screens for depression and early intervention by antidepressant medication, counselling and support group are extremely useful. The best ways to stimulate and encourage the old, depressed and less cooperative patient are the discussions with other patients who completed the recovery or watching the recovery sessions of other patients. Elderly

people with serious psychiatric disorders may benefit from psychogeriatric recovery in specialized units with specific techniques: individual and group psychotherapy, animation techniques, biofeedback, autogenic training, social rehabilitation. The rehabilitation process is influenced by the cognition that can worsen during the disabling event or hospitalization. Prior mental status for reversible conditions should be assessed in all patients (hypoxia, electrolyte imbalance, infection, dehydration, medication side effects.

11. Family and social reintegration. Elderly patients must return to their families and must continue to develop complete autonomy and increase their participation in all daily activities. Appropriate social support and reinstatement into society is one of the major determinants of functional status.

CONCLUSIONS

In summary, the geriatric rehabilitation is essential, with crucial implications for prognosis and life quality of elderly people. It is a long, active and more difficult process as frail elderly are easily fatigued, have multiple coexisting conditions and are less cooperative. The goal of the geriatric rehabilitation is the recovery and the development of personal independence and the ability to do as many as possible daily living activities. Special programs must be designed for the older people involving an interdisciplinary approach because geriatric rehabilitation must be adapted to 1) the physiological age related decline including sensory impairments, mental status deficiency, depression or dementia, physical inactivity, lack of endurance, impaired balance 2) multiple coexisting chronic diseases 3) constrained finances, 4) lack of social and sometimes family support. The program must be targeted to the patient's needs and guided by the individual's goals and implies gradual physical activity along with psychological and social recovery.

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