Quality of Life and Negative Affectivity at the Patients with Stroke and Musculoskeletal Disorders

SZAKÁCS Juliánná1, DUICA Lavinia-Corina2,3, RACHERIU Mihaela2,4

Editor: Mihail HOTETEU, Romanian Association of Balneology, hoteteu@yahoo.com

Keywords: stroke, anxiety, quality of life, musculoskeletal conditions

I. INTRODUCTION

Stroke is considered a public health issue (1) due to its economic, medical and family consequences, the 35-70 age group being the most affected, with an annual incidence of 300 new cases / 100,000 inhabitants.

Stroke causes significant motor deficit, sensory deficit, postural control and language deficit (2). There is an increase in the number of patients who are diagnosed with stroke, mainly due to the aging of the population (3).

There are studies which show that there is a link between inflammation and an ischemic stroke, as it happens in stroke (4).

Therefore, the C-reactive protein marker is correlated with the prognosis and severity of the disease, but at the same time in connection with the degree of motor deficit quantified by the MRC scale (5, 6).

The study of Langhorne made in 2017 (7) shows that the incidence of stroke has a higher increase in males in comparison to females.

Motor recovery is mainly determined by the time parameter and in the first 3 months after the stroke shows restriction (8, 9, 10).

One of the most important goals for the recovery of a patient who suffered from stroke is to restore the function of the affected lower limb, which will first enable the patient's independence, as well as to have an orthostatic position, to achieve gait and to avoid the falling risk. In this context it is important to regain strength and motor control at this level, which is necessary to maintain stability and body posture (11).
After a complex assessment, a neuromotor recovery program can be quantified to address the members of the affected hemi body (12). It is very easy to recover the upper limb by means of an individualized physical therapy program (13). Even if the patient does not change his static balance during the gait recovery period, there are still significant improvements for the dynamic balance. For the patient diagnosed with stroke, it is very important, first of all to resume the daily activities, but also the abilities to walk, to be independent, as well as cognition and language.

All daily activities are consistent with the patients' clinical conditions at a given time, but they also depend on the severity of stroke (14, 15, 16), and on the progress made for motor activities, especially in the first weeks (1, 17,18).

Therefore, the patient's recovery occurs in a certain order: personal care, getting dressed, walking and, at the end of the first recovery period, going upstairs and downstairs. For the recovery of abilities, it is important, first of all to recover the active control at the level of the radiocarpal joints, for the extension of the fingers, useful especially in the first 72 hours after the stroke (19, 20). As for the walking ability, this is correlated with motor deficit in the foot and immobility of movement (1, 14, 21, 22, 23).

An important element is the independent balance achieved in the sitting position as well as the existing force at the level of the hemiparetic leg.

The most important factor in the resumption of the gait independence is the improvement of balance in orthostatism (24, 25). It is correlated with the motor function of the foot and independent gait.

The establishing of the prognosis in the gait recovery after stroke depends on the balance control (26, 27, 28, 29).

There are studies which show that the MBT physiotherapy device has a role in forming and training postural balance, not only in patients with stroke, but also in patients with certain musculoskeletal disorders (2).

There are some situations in which the stroke occurred and caused hemiparesis on a hemi body, and in the respective upper limb there is already a post-traumatic injury of the tendons of the flexors or of the extensors. The symptoms that are added to the existing one through the stroke are represented by pain, joint stiffness, decreased functional capacity and muscle atrophy. In this context, the patient with stroke needs the physiotherapy indicated for recovery in stroke, and, also, other recovery procedures, such as hydrotherapy and massage.

The purpose of the physiotherapy program is to enable the reintegration of the hand into the kinetic chain of the upper limb and as much as possible the mobilization of both hands. It is also possible to use laser with analgesic and trophic-vascular effect, ultrasound, as well as electrostimulation, in order to relax the spastic muscles (30).

The hand, the most important segment of the body, has a role in gestures and functionality as well as in performing daily activities. It is estimated that the incidence of this pathology is about 0.125% - 1% / year, with a prevalence of 5-15%, which affects especially females. The carpal tunnel syndrome causes disability with family, professional, economic and social consequences. Recovery is conservative (the use of ultrasound, laser, physiotherapy, orthosis), but also by surgery (31).

The patient who suffered from stroke may be an elderly person, previously diagnosed with obesity and a degenerative disease in the hip or knee. In the case of patients with neurological disease (stroke) who also have obesity accompanied by diseases of the musculoskeletal system (hip osteoarthritis, knee osteoarthritis) (32)

Recovery treatment involves the use of laser, ultrasound, physiotherapy, to enable the restoration of the agonist-antagonist muscle balance, the restoration of static and dynamic balance, as well as the increase of joint mobility (33, 34, 35, 36).

There are patients who suffered from stroke and who were previously diagnosed with low back pain for which they received treatment. The coexistence of the two diseases leads to the use of ultrasound in the lumbar area in the form of sonotherapy (37), by using locally administered pharmacological products of NSAID- type (38).

Ultrasound has been used for the effect of pain reduction, muscle relaxation and for the hyperemic effect (39, 40).

Another pathology that can be found in patients diagnosed with stroke is osteoporosis, which is a systemic disease that affects the structure and density of bones. Recovery mainly involves physical therapy associated with pharmacological treatment for long periods (41).

Ultrasound is applied in these pathologies associated with stroke, in order to reduce the pain component particularly, but also to reduce joint stiffness and muscle contracture, and for the local effect of increasing local temperature (42).

Nonsteroidal anti-inflammatory drugs (Diclofenac) have been administered locally by sonophoresis, and in combination with decontracting medication, antispasmodics, massage and physical therapy, especially neuroproprioceptive facilitation techniques. It is useful in people diagnosed with stroke and other musculoskeletal disorders, in acute, subacute and chronic stages (43, 44, 45).

Patients with stroke may have other types of neurological disorders: Parkinson's disease, depression, Alzheimer's disease (46, 47).

The purpose of this study was to assess the anxiety of patients diagnosed with stroke and who had other musculoskeletal disorders.
Material and method.
The study was cross-sectional and was conducted on an outpatient basis. It included 150 patients who were diagnosed with stroke, but who were previously diagnosed with musculoskeletal disorders such as hand, spine or degenerative diseases of the lower limbs. Thus, there were 4 groups according to the presented condition. The State Trait Anxiety Inventory (S.T.A.I.) scale was used to assess anxiety, which includes two self-assessment scales to assess and measure two distinct concepts of anxiety, namely anxiety as a state (S.T.A.I.-X1) and anxiety as a trait (S.T.A.I.-X2).

In order to assess the patients' quality of life, the QOL (Quality of life) scale was used, which assesses the physical and mental health with the help of the 16 items. The minimum value is 16 and the maximum value is 112.

1st Group, which is the group of patients diagnosed with stroke and osteoporosis, included 14 people, distributed by age groups as follows: a person in the age group 41-50, 4 people in the age group 51-60, 7 people in the age group 61-70 and 2 people in the age group over 71.

The group of patients diagnosed with stroke and degenerative diseases of the lower limbs included 80 people.

Group 3 is the group of patients diagnosed with stroke and who had low back pain. It included 23 women and 13 men.

There were 20 patients diagnosed with stroke and hand disorders (group 4), of which 11 were male and 9 were female (Table no.1).

Results
In patients diagnosed with stroke and who had osteoporosis, the quality of life was assessed by using the QOL scale at 83.92% of the maximum value.

Anxiety as a condition was rated on average at 50.5, which means that anxiety caused by the disease is slightly perceived. As a trait, anxiety was rated at an average of 45, meaning that patients experience anxiety occasionally but persistently.

For patients diagnosed with stroke and degenerative hip disease, the quality of life was assessed at 75.89% in comparison to the maximum value on the QOL scale.

Anxiety as a condition, caused by the disease, had an average of 48 which shows that patients slightly feel anxiety related to the diseases they have. The average value of 47 for anxiety as a trait shows that patients sometimes feel anxiety or fear.

For patients with stroke and hand disease, the quality of life was assessed at 88.83% of the maximum value on the QOL scale.

Anxiety as a condition recorded an average value of 48 in these patients, the patients slightly feel the disease. Anxiety as a trait recorded an average value of 51, which indicates that from time to time they have certain conditions that fall into anxiety as a trait (Chart no.1).

Table no.1 Distribution of patients

<table>
<thead>
<tr>
<th>Group</th>
<th>Disease associated with stroke</th>
<th>Gender</th>
<th>Number of patients</th>
<th>Age group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Group</td>
<td>Osteoporosis</td>
<td>Female</td>
<td>14</td>
<td>41-50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>51-60</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>61-70</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>&gt;71</td>
</tr>
<tr>
<td>2nd Group</td>
<td>Coxarthrosis (Degenerative diseases at the lower limbs)</td>
<td>Female</td>
<td>11</td>
<td>41-50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12</td>
<td>51-60</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>61-70</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>&gt;71</td>
</tr>
<tr>
<td>3rd Group</td>
<td>Low back pain</td>
<td>Female</td>
<td>23</td>
<td>41-50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11</td>
<td>51-60</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13</td>
<td>61-70</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td>&gt;71</td>
</tr>
<tr>
<td>4th Group</td>
<td>Hand diseases</td>
<td>Female</td>
<td>9</td>
<td>41-50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>51-60</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>61-70</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>&gt;71</td>
</tr>
</tbody>
</table>

Chart no. 1 Assessment of the quality of life and anxiety

Discussions
For these patients diagnosed with stroke and other musculoskeletal disorders, the quality of life recorded values between 75.89% and 88.83% of the maximum value assessed by the QOL scale, but patients with low back pain, those with gonarthrosis and those with hip osteoarthritis recorded higher values.
Anxiety as a condition caused by the disease recorded average values between 48 and 65 when applying the S.T.A.I. X1 scale, with lower values, i.e., a lower perception of this condition in patients diagnosed with low back pain and hand disorders and with a higher value for patients with knee osteoarthritis. Anxiety as a trait assessed by using the S.T.A.I. X2 scale recorded average values between 45 and 63 with low values for patients diagnosed with osteoporosis and low back pain in addition to stroke, and the maximum value also in patients with knee osteoarthritis. Therefore, patients diagnosed with stroke and knee osteoarthritis have anxiety as a condition and as a trait with higher values.

Conclusions
Overall, the lowest score of quality of life registered at the patient diagnosed with stroke and hip osteoarthritis (75.89% of the maximum value).
This association converges with the dynamic of the body because the superposition of these two medical conditions can explain a reduced functionality. The value of anxiety as a state and, also, as a trait was higher at the patients with stroke and knee osteoarthritis (65, respectively 63). The last result is understandable since it is well known the intense pain and, thus the discomfort related with knee osteoarthritis.

Author contributions.
All the authors had the same contribution.

Accordance to ethics standards.
The study complies with the rules of ethics and deontology according to the legislation in force.

REFERENCES:


