The Recovery of Motor Function in Post stroke Patients

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Purpose: The purpose of the paper was to assess physical recovery in post stroke patients. Work method. Prospective cohort study was conducted. The study involved 30 post stroke patients from the city of Nis, aged 40-69. To assess the functional status of the Barthel index (BI) was used. Functional status and BI scores were determined by two times, on admission to the Clinic for rehabilitation and three months after discharge from the Clinic. Work results. A total number of patients was 30 (20 men and 10 women). There were twice more men than women (66.7% vs 33.3%, p<0.001). The average age of all patients was 58.93±6.86. The majority of patients, were from the age group 60 to 69 years. Left-side hemiparesis had 23(77.7%) of all patients (16 men and 7 women). Right-side hemiparesis had 7 (23%) patients (4 men and 3 women). Ischemic as a cause of stroke was found in 92% of patients and hemorrhage in 8%. The values of BI score on admission ranged from 30 to 100, with a mean BI score in all patients on admission to the Clinic was the 57. Three months after discharge from rehabilitation in all patients there was an increase in BI score in relation to the value of BI on admission. The average value of BI score was 79. The determined difference is statistically significant (p<0.01). Discussion. All the patients achieved an increase in BI score indicating their improved status after the applied rehabilitation treatment. Conclusion. At the end of the study 57% of the patients could move independently. Patients with a left-sided lesions had better self care of patients with right-sided lesions. Mobility was better in patients with left-sided lesions at the start of rehabilitation. On completion of the rehabilitation, patients with right-sided lesions still needed external help. Key words: stroke, motor recovery, Barthel index.

1. INTRODUCTION

Stroke is a leading cause of death and a serious long-term disability among men and women in developed countries (1). In Serbia, stroke is the first cause of morbidity and mortality among women aged 55 to 64 years and the second one in men of the same age (2).

There are much of the research and literature on stroke and stroke rehabilitation has focused on physical functional recovery as the predominant measure of outcome (3-5). Integration with regard to family and social roles and community involvement is increasingly emphasized in post stroke rehabilitation guidelines, standards of care, and evidence based reviews of stroke rehabilitation (3, 6, 8).

Recovery of function to pre stroke level of motor ability and independence in activities of daily living has long been the gold standard by which success in rehabilitation after stroke is measured (3).

The primary goals for management of stroke rehabilitation care are to prevent complications, to minimize (functional) impairments, and to maximize function. Roth et al. (2003) defined stroke rehabilitation as a multidimensional process that includes facilitation of psychosocial coping and adaptation by the patient and family, promotion of community reintegration, and enhancing quality of life for stroke survivor.

The aim of stroke rehabilitation include helping patients to achieve a level of functioning that allows them to make the same choices and to enjoy a lifestyle similar to that they had before stroke (9).

The purpose of the paper was to assess the recovery of motor function in post stroke patients.

Method and material. A prospective cohort study was conducted. The study involved post stroke patients from the city of Nis, aged 40-69. The study was beginning at March 1st in 2009 and it was ending at June 30th in 2009 on Clinic for physical medicine and rehabilitation in Nis.

Etiological diagnosis of stroke was made according to the findings of nuclear magnetic imaging (NMI).

2. PERSONAL DATA OF PATIENTS

Data about the patients were obtained from the medical records. Per-
sonal data for each patient: name of patient (code), age, sex, educational level, job.

To assess the functional status of the Barthel index (BI) was used. BI of daily activities is a direct measure of activity that the patient can perform and, based on the estimates as a limitation, or dysfunction exists (10). This index includes ten categories: feeding, personal hygiene, bathing, dressing, controlling bladder emptying, discharging control of colon, moving from wheelchair to bed invalidism and back, climbing up and down the stairs, going to the toilet, walking on a flat (or if not able to walk using a wheelchair), climbing up and down the stairs.

Each question is scored separately, depending on whether the patient is independent in carrying out certain actions or needs help of another person. Scoring is from 0 (worst score) to 100 (best score). Levels of disability to be next to the 0-24-full incapacitation; 25-49-significant; 50-74 medium, 75-90-mild; 91-99-minimal (7,8).

Functional status and BI scores were determined by two times, on admission to the Clinic for physical medicine and rehabilitation and three months after discharge from the Clinic.

Etiological diagnosis of stroke was made according to the findings of nuclear magnetic imaging (NMI).

3. STATISTICAL ANALYSIS
A standard deviation (SD), the average score of BI and Student t-test were calculated Statistical analysis was performed in a computer program Microsoft Excel. Statistical significance was set at p<0.05.

4. RESULTS
A total number of patients was 30 (20 men and 10 women). There were twice more men than women (66.7% vs 33.3%, p<0.001). The average age of all patients was 58.93±6.86.

According to the results shown in Table 1, the majority of patients, more than one-third 15 (37.5%) was from the age group 60 to 69 years. At least the patients were from age group 40 to 49 years, only 4 (10%).

Left-side hemiparesis had 23(77.0%) of all patients (16 men and 7 women). Right-sided hemiparesis had 7 (23%) patients (4 men and 3 women). Table 1 shows the basic characteristics of patients. Two thirds of patients had a left-sided hemiparesis, and one right-sided hemiparesis one third of patients.

Thromboembolism as a cause of stroke was found in 28 (92%) of patients and hemorrhage in 2 (8%) (table 1).

Table 1 showing the distribution of patients in relation to their mobility, at the admission to the Clinic of physical medicine and rehabilitation.

At the admission to the Clinic of physical medicine and rehabilitation, 14 (47%) patients of the total number were not moving, 10 (33%) was able to move with someone else’s help, and 6 (20%) patients could be independently moving. Only 4 (12%) patients could self care individually, and without help could not be 26 (88%).

Table 2 shows the values of initial BI score at the admission to the Clinic and BI scores three months after the discharge.

The values of BI score at the admission ranged from 30 to 100. The average BI score in all patients at the admission to the Clinic was the 57.

Three months after discharge from rehabilitation in all patients there was an increase in BI score in relation to the value of BI on admission to the Clinic. The value of BI ranged from 50 to 100. The average value of BI score was 79. The determined difference is statistically significant (57 vs 79; p<0.01).

The higher increase in BI score was for patients who had lower BI scores at the admission to the Clinic, and lower in patients who had higher BI score at the admission.

5. DISCUSSION
Stroke significantly impairs the functional state of the organism and causes the patient in a state of minor or major disability (11). In everyday medical work, the recovery of patients after stroke is followed by a standard neurological examination (2, 9), and most attention is paid to the recovery of motor function, which is justified given the frequency of their damage and the importance of their recovery (10).
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From stroke suffer primarily the elderly, although 28% of total stroke occurring at younger than 65 years (12). Age was a significant risk factor for stroke, and incidence of stroke doubles for each decade after the 55 years (12).

The results of this study are consistent with results from the literature. The average age of patients was 58.93 ± 6.86 years, and over one third of patients had between 60 and 69 years. Among the patients there were twice more men than women.

The same data can be found in literature (13), and whether a different, according to which the incidence of stroke by 19% higher in men than in women (14). Significantly more patients had a left paranesis than the right, which is consistent with results from the literature (15).

Significantly more patients had an ischemic stroke than hemorrhage. These results were obtained by other researchers (2-16). Ischemia is any reduced blood flow through the brain leading to brain damage, which is clinically manifested through can the existence of focal and general neurological signs (16). This form of stroke is very difficult and the mortality is high, ranging up to 75% (12).

According to the basic of references BI score less than 40 was associated with poor prognosis for functional recovery after stroke (6 to 8.16). On admission to rehabilitation 20% of patients had a BI score less than 40. Three months after discharge from the Clinic there were patients who had a BI score less than 40.

The values of BI score of 61 and more, indicates a good prognosis for functional recovery (6-8). On admission, the BI score is greater than 61 had 13 patients (43.3%). All the BI score increased three months after discharge, but the increase was less than or the same as for patients who are at the reception we would score less than 40. There are similar results in the literature (6 to 8.16).

The prognosis is not sufficiently precise in patients with BI score of 41 to 60, (6 to 8.16). In this study, 36.7% of patients had a BI score in this range. Three months after discharge, and among them was an increase in BI score.

BI score of 100 was determined only in one patient. But it doesn’t mean that he can to perform all daily activities such as food storage, cleaning the apartment, leaving to work and so on. In the early period of recovery regardless of the high BI score, the patients need of nursing care.

According to the literature 50 to 70% of patients after stroke remain able to walk 20 to 30% remain permanently disabled more difficult (17-18). In this study of total patients, 52% were not moving and 48% were able to move, along with another person’s assistance or independently. Three months after discharge from rehabilitation, 9 more patients could move A private, for a total of 17 (57%).

Patients with left-sided hemiparesis had a better recovery of function self-care than patients with right-sided hemiparesis. Similar results have been achieved in the literature (19-21).

Conclusion. All the patients achieved an increase in BI score indicating their improved status after the applied rehabilitation. At the end of the study about 57% of patients could move independently. Patients with a left-sided lesions had better self care of patients with right-sided lesions. Mobility was better in patients with left-sided lesions at the start of rehabilitation. On completion of the rehabilitation, patients with right-sided lesions still needed external help. The results presented in the paper highlight the importance of early rehabilitation to achieve a good outcome in the first row of disturbed motor functions.

REFERENCES