Application of Scales and Questionnaires to Assess the State of Patients After Stroke

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ABSTRACT

Acute cerebrovascular accident (ACC) is one of the most urgent problems of modern medicine and healthcare. To assess the condition of patients, it is necessary to apply certain evaluation systems - scales. The article describes the results of a study of 85 patients with stroke. A correct understanding of the condition of each patient made it possible to reasonably set strategic and tactical goals of treatment, to weigh the potential risks and benefits of individual methods of treatment in cases where the patient's condition is extremely serious and the probability of death is high. The use of scales in the practice of a neurologist makes it possible to increase the efficiency of decision-making in matters of therapy, the effectiveness of predicting stroke outcomes, and to compare treatment methods.

Keywords: stroke, quality of life, Barthel index , Waterlow scale , MMSE scale .

Introduction. Acute cerebrovascular accident (ACC) is one of the most urgent problems of modern medicine and healthcare. Incidence rates in different countries range from 0.2 to 3 cases per 1000 population [5, 7]. In Uzbekistan, the incidence of cerebral strokes ranges from 0.9 to 1.5 per 1000 population, in Tashkent - 1.5 per 1000 population [2, 4]. In Uzbekistan, more than 60 thousand cases of stroke (acute cerebrovascular accident) are registered annually. At the same time, disability after a stroke is 83.8%, and the percentage of hospital mortality is 17.3% [2, 4]. At the same time, about 75% of patients who have undergone stroke survive, but most of them develop some kind of functional limitations of varying severity [3].

As a result of a stroke, the most common manifestation of neurological deficit is hemiparesis, which, as a rule, persists in the future. The loss of motor function largely determines the physical, psychological, social and spiritual state of the patient, i.e. changes the level of many indicators of the quality of life [6]. In order to objectify the patient's condition, assess the severity and dynamics of the disease, optimize diagnosis and treatment tactics, as well as to standardize the statistical analysis of clinical material, it is necessary to use certain evaluation systems - scales. The scales make it possible to unify approaches to a comprehensive assessment of the patient's condition. In the diagnosis of stroke, a number of rating scales are currently proposed.

Purpose of the study. To study the features of using scales and questionnaires to assess the condition of patients after a stroke.

Materials and research methods. In this study, 85 patients with acute cerebrovascular accident (ACV) were under observation. Depending on the rehabilitation measures, the patients were divided into two groups - the main group (the first group) of 55 patients who received neurorehabilitation ; comparison group (second) - patients who received standard rehabilitation therapy (30 patients).

The average age of patients at the time of the examination was 61.7 ± 11 years (from 26 to 88 years), 55 (64.7%) men and 30 (35.3%) women. Data on the age and sex composition of the examined patients are presented in Table. 1.

Table 1.
Distribution of patients by sex and age

Age of patients	men		women		Total	
	bs.		bs.		bs.	
25-40 years old		.3		.2		.5
41-50 years old		2.7		0	0	1.8
51-60 years old	5	7.3		6.7	3	7
61-70 years old	4	3.6	4	6.7	8	4.7
71-80 years old		.5		0		.1
81-90 years old	our	.3		.2	ive	
Total:	5	4.7	0	5.3	5	00

To assess daily life, the Barthel scale was used , which took into account the patient's condition. The Barthel index , which evaluates daily activities, the ability to serve oneself, is based on the assessment of 10 functions, taking into account the degree of their performance [7]. When conducting this scale, it is necessary to interview the patient, his relatives or friends, and medical staff.

To assess the degree of bedsores, the Waterlow scale was used . The Waterlow scale is an effective tool for preventing the development of complications in partially paralyzed or completely bedridden patients. An individual assessment of the development of pressure ulcers on the Waterlow scale allows you to prevent complications by taking special measures to care for the patient. If necrotic changes have begun, it is possible to prescribe appropriate treatment.

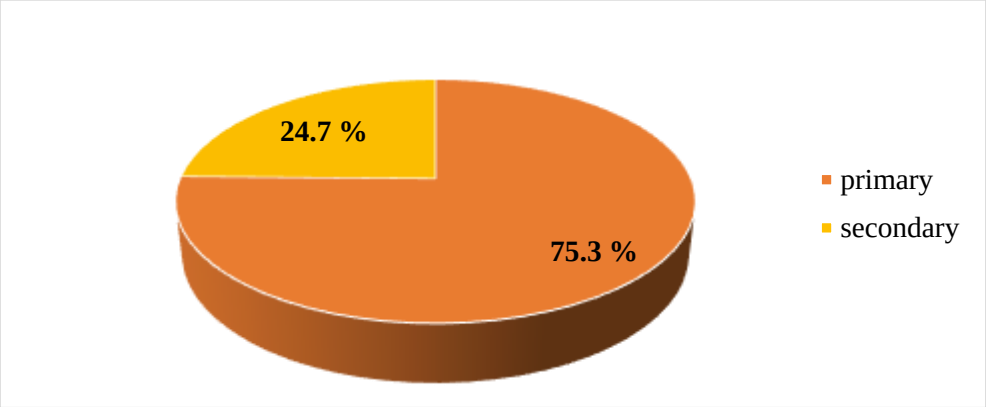
Mini-Mental Status Assessment (MMSE) . State examination) [9]. According to the results obtained on the MMSE scale, the state of cognitive functions was determined as follows: 28-30 points - no cognitive impairment, 25-27 points - moderate cognitive impairment, 20-24 points - mild dementia, 11-19 points - moderate dementia severity, 0-10 points - severe dementia; the degree of improvement in cognitive functions was determined as follows: slight improvement - an increase in the score by 1-6 points; satisfactory - by 7-13 points; pronounced improvement - by 14 or more points.

The most commonly used instrument is the EuroQOL questionnaire (EQ -5 D -5 L). It is a standardized health assessment methodology developed by the EuroQOL group as a simple, general-purpose method for a wide range of settings and samples [10]. The time it takes to complete this questionnaire is approximately 18 minutes. This scale assesses 5 aspects of health - mobility, self-care ability, daily activity, pain/discomfort, and anxiety/depression. The state for each parameter is assessed by the patient on a 3-point ordinal selection scale. This is accompanied by a visual analogue scale (VAS) for the patient's self-reported health from 0 (worst health) to 100 (best health) [11]. EQ -5 D -5 L differs from other techniques in its simplicity and accessibility for the patient [8].

Statistical data processing was carried out using the statistical software package Statistical package for Social Science (SPSS) 23.0 for Windows . The following measures were used to represent the data: mean, standard error of the mean , standard

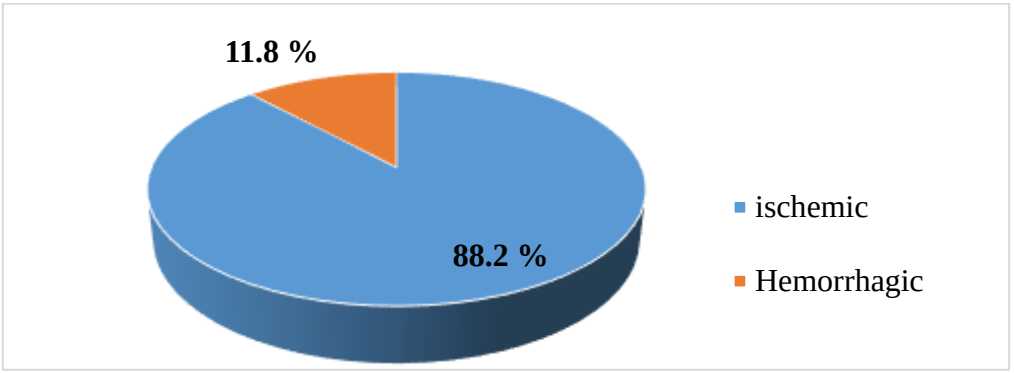
deviation, and percentages. For pairwise comparisons of nonparametric characteristics, a two-tailed 5% ($p<0.05$) t-test was used. Tables and graphs show average results with 95% confidence intervals.

Results and its discussion. According to the results of this study, primary stroke was detected in 64 (75.3%) patients, and recurrent was detected in 21 (24.7%) patients.



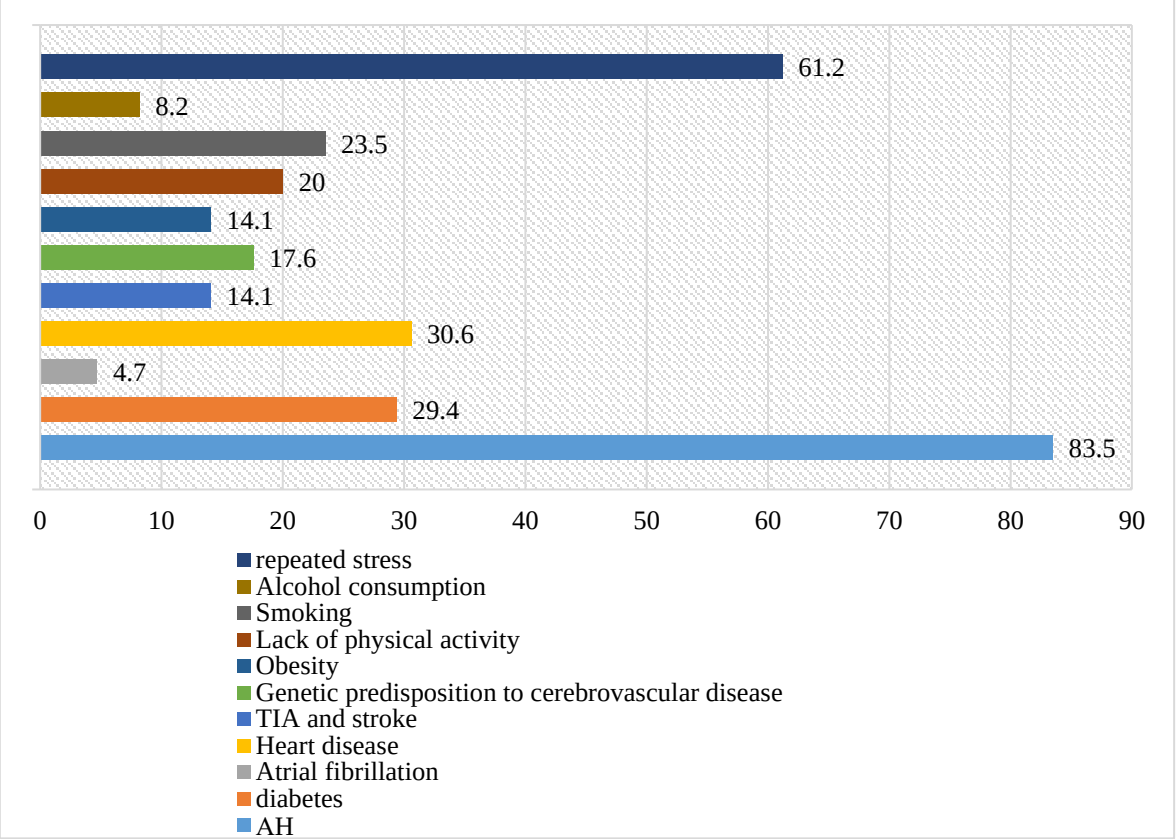
Rice. 1. Detection of stroke in patients

According to the main classification of strokes (according to ICD-10), ischemic stroke occurred in 75 (88.2%) cases, the cause of which was a violation of blood flow, blockage of an artery by a thrombus and / or narrowing of an atherosclerotic plaque (atherothrombotic), vasospasm, and a decrease in pressure. Most often developed at the age of 50-69 years. Hemorrhagic stroke - occurred in 10 (11.8%) cases, the cause of which was a rupture of the vessel as a result of high blood pressure, atherosclerosis, vasculitis , aneurysms, clotting disorders. It most often developed at the age of 45-60 years (Fig. 2)



Rice. 2. Types of stroke in study groups

The main risk factors for stroke are shown in Figure 3.



Rice. 3. Distribution of risk factors for stroke

As can be seen from fig. 3, the main risk factors for stroke were hypertension in 71 (83.5%) cases, diabetes mellitus in 25 (29.4%) cases, atrial fibrillation in 4 (4.7%) cases, and atrial fibrillation in 26 (30.6%) cases. %) - heart disease (congenital heart disease, myocardial infarction), in 12 (14.1%) - previous TIA and primary stroke, in 15 (17.6%) - a genetic predisposition to cerebrovascular diseases, in 12 (14.1%) .1%) - obesity, in 17 (20%) - lack of physical activity, in 20 (23.5%) - smoking, in 7 (8.2%) - alcohol consumption, and in 52 (61.2%) cases, repetitive stress. It should be noted that among patients there were such combinations of risk factors as:

1) arterial hypertension with stenosis of the carotid arteries, heart failure and coronary heart disease;

2) arterial hypertension, coronary heart disease, carotid artery stenosis, smoking, alcohol consumption and repeated stress.

An integral characteristic of the degree of "safety" of the patient, his ability to self-service is the Barthel index . Indicators from 0 to 20 points corresponded to complete dependence, which was detected in 7 (12.7%) patients of the main group, and in 8 (26.7%) patients of the comparison group; from 21 to 60 points - pronounced dependence, in 29 (52.7%) of the main group and in 18 (60%) of the comparison group; from 61 to 90 points - moderate, in 12 (21.8%) of the main and in 2 (6.7%) comparison groups; from 91 to 99 points - mild addiction in everyday life in 7 (12.7%) patients of the main group and in 2 (6.7%) of the comparison group (Table 2).

Table 2 The value of points on the Barthel scale

Indicators	I (n=55)		II group (n=30)	
	abs .	%	abs .	%
from 0 to 20 points	7	12.7	8	26.7
from 21 to 60 points	29	52.7	18	60
from 61 to 90 points	12	21.8	2	6.7
from 91 to 99 points	7	12.7	2	6.7

The total score on the Waterlow scale is given in Table. 3.

Table 3

The value of the points on the scale waterlow

Indicators	I (n=55)		II group (n=30)	
	abs .	%	abs .	%
from 0 to 9 points	28	50.9	10	33.3
from 10 to 14 points	18	32.7	15	50
from 15 to 19 points	8	14.5	3	10
from 20 and more	1	1.8	2	6.7

As can be seen from Table 3, 28 (50.9%) patients of the first group and 10 (33.3%) patients of the second group had no risk of bedsores; the risk of bedsores existed in 18 (32.7%) patients of the first group and in 15 (50%) patients of the second group; the risk of developing bedsores was high in 8 (14.5%) patients of the first group and in 3 (10%) patients of the second group; a very high degree of risk was in 1 (1.8%) patient of the first group and in 2 (6.7%) patients of the second group.

To assess cognitive functions, a scale was used MMSE , the results of which are shown in Table 4.

Table 4

MMSE score value

Indicators	I (n=55)		II group (n=30)	
	abs .	%	abs .	%
29-30 points	2	3.6	-	
28 points	3	5.4	1	3.3
25-27 points	8	14.5	2	6.7
20-24 points	12	21.8	2	6.7
10-19 points	18	32.7	9	30
0-10 points	-		3	10

As can be seen from tab. 4, 2 (3.6%) patients of the first group had no cognitive impairment; mild cognitive impairment was observed in 3 (5.4%) patients of the first group and in 1 (3.3%) of the second group; moderate cognitive impairment was observed in 8 (14.5%) patients of the first group and in 2 (6.7%) of the second group; mild dementia was in 12 (21.8%) patients of the first group and in 2 (6.7%) of the second group; moderate dementia was in 18 (32.7%) patients of the first group and in 9 (30%) of the second group; severe dementia was in 3 (10%) patients of the second group.

Table 5 shows the scores of the study groups on the EQ -5 D -5 L questionnaire .

Table 5

The value of the scores on the questionnaire EQ -5 D -5 L

Points	I (n=55)		II group (n=30)	
	abs .	%	abs .	%
0-20 points	-		1	3.3
21-40 points	4	7.3	11	36.7
41-60 points	21	38.2	13	43.3
61-80 points	19	34.5	4	13.3
81-100 points	11	20	1	3.3
Total	55	100	30	100

As can be seen from Table 5, in the second group, 1 (3.3%) patient had from 0-20 points; in the first group, 4 (7.3%) patients had from 21-40 points, in the second group, 11 (36.7%); from 41-60 points were in 21 (38.2%) patients of the first group, in the second group in 13 (43.3%); from 61-80 points were in 19 (34.5%) patients of the first group, in the second group in 4 (13.3%); from 81-100 points were in 11 (20%) of the first group, and in 1 (3.3%) patient in the second group.

Conclusions: The obtained results allowed us to draw the following conclusions. Assessment of the patient's condition using scales is distinguished by its objectivity and accuracy. Patients who received neurorehabilitation showed significantly better results on scales and questionnaires than patients who received standard rehabilitation therapy . A correct understanding of the state of each individual patient allows one to reasonably set strategic and tactical goals of treatment, to weigh the potential risks and benefits of individual methods of treatment in cases where the patient's condition is extremely serious and the likelihood of death is high. In addition, the use of scales allows you to make an objective decision on the length of the patient's stay in the hospital, transfers from one unit to another, and discharge from the hospital. The use of scales makes it possible to increase the efficiency of decision-making in matters of therapy, the effectiveness of predicting stroke outcomes, and to compare treatment methods.

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