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The Functional Status and Quality of Life of Patients with Post-Stroke Depression with a Review on their Cognitive and Neurological Status

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Summary

The aim of this study was to determine the effect of depression on the functional status and quality of life of patients with stroke, with a review on their cognitive and neurological status. Prospective study included 60 patients treated for the first stroke events, of which 30 patients with diagnosed Post-Stroke Depression (PSD) and 30 patients without depression. Tests were conducted two and six weeks after a stroke. Depression was diagnosed by Mini International Neuropsychiatric Interview, the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV diagnostic criteria), the severity of depression quantified by Hamilton's Depression Scale (HDRS), the functional status was assessed by the Barthel Index (BI), quality of life was assessed by the Short Form 36 questionnaires (SF-36), cognitive status is evaluated by the Mini Mental State Examination (MINI), and neurological status of the record Stroke scales of the National Institute of Health, USA (NIH). Although the potential for functional recovery in depressive patients is not less, more severe neurological deficit, and so significantly more severe functional disability, was registered in the group of patients with post-stroke depression, initially, as well as after completion rehabilitation treatment. The mean scores on all quality of life domains were higher in patients without post-stroke depression. These differences were statistically highly significant except for the domain of bodily pain. Patients with post-stroke depression have significantly more severe cognitive impairment in relative to non-depressant patients.

Keywords: Cognitive Status; Depression; Functional Status; Neurological Status; Quality of Life; Stroke-Complications

Introduction

PSD is a serious and common complication of stroke. Nevertheless, its impact on the outcome of a stroke is neglected and underestimated. Depression is the most frequently psychiatric manifestation in stroke patients. It hampers the ability to undergo therapy and impairs their functional outcome. Depression also increases the risk of suicide in stroke patients, therefore, increasing mortality. PSD has been reported to affect approximately one-third of individuals: 31% of stroke survivors are estimated to be clinically depressed [1,2]. These rates may also be influenced by a combination of factors such as age, sex, socioeconomic status, functional independence, cognitive impairment, and stroke severity. The presence of PSD can significantly impact a wide range of outcomes and overall stroke recovery [3-6].

From the beginning of the 21st century, there are an increasing number of studies investigating various aspects of PSD: its prevalence, phenomenology, course, etiology, pathogenesis, lesion location, risk factors, prevention, treatment and other aspects of disease [7-20].

The association of depression with cognitive, neurological and functional status of stroke patients, as well as the significance of depressive disorder for stroke outcome remains unclear [21].

The aims of the present study were to determine the effect of PSD on disease outcome, i.e. the degree of impairment and quality of life after stroke.

Results and Discussion

In the group of depressed patients, minor depression quantified by HDRS (score 8-15) was found in 86.7% and major depression (score ≥ 16) was found in 13.3%. At six weeks, 26.7%

of the patients initially diagnosed with depression experienced spontaneous recovery (score<8), which was statistically significant (p=0.008). However, none of the patients diagnosed with major depression in the acute phase of stroke had spontaneous remission of depression (Figure 1 and Figure 2).

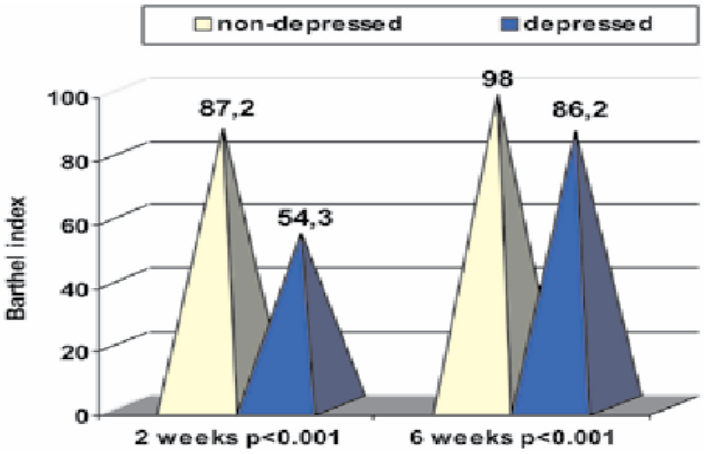

Figure 1: The average Barthel index in non-depressed and depressed patients 2 and 6 weeks after stroke was highly significant (p<0.001).

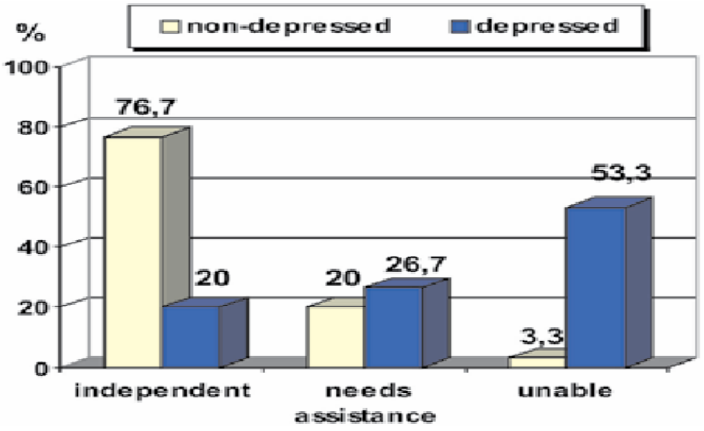

Figure 2: The difference in ambulation between the two groups was also statistically highly significant (p<0.001).

Correlation between the HDRS and BI scores 2 weeks after stroke in patients without and with PSD was r=-0.459 (p=0.011) and r=-0.215 (p=0.253), respectively. Correlation between the HDRS and BI scores 6 weeks after stroke in patients without and with PSD was r=-0.004 (p=0.979) and r=-0.341 (p=0.065), respectively (Figure 1).

Ambulation in non-depressed and depressed patients score 2 weeks after stroke and the HDRS score 6 weeks after stroke in patients with PSD was r=-0.052 (p=0.784), indicating that it is not possible to predict the HDRS score on later testing on the basis of the BI score on initial testing (Figure 2).

The patients with depression had significantly more severe functional disability both at baseline and after rehabilitation treatment, although the potential for functional recovery in depressed patients was not less than in non-depressed ones [22,23].

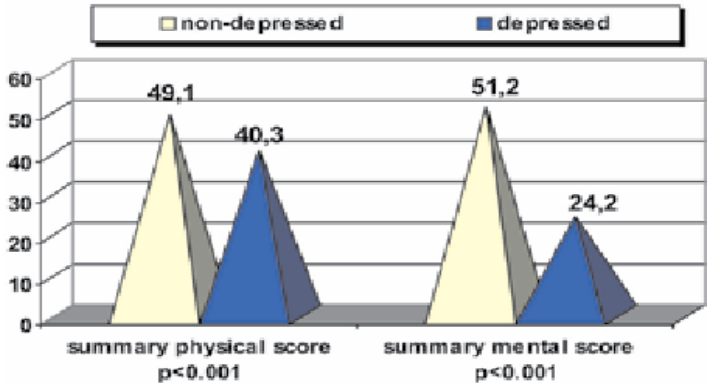

Figure 3: SF-36 [24] summary physical and mental scores in non-PSD and PSD patients.

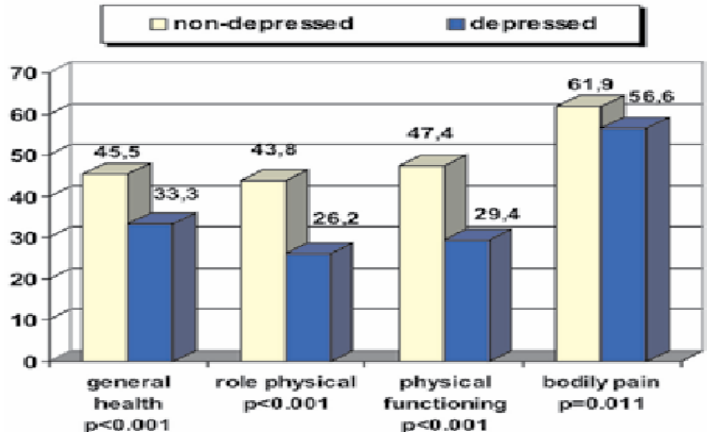

Figure 4: Standardized mean SF-36 domain scores.

Patients with PSD have significantly more severe cognitive impairments than non-depressed patients. In a group of depressed patients, between patients with and without cognitive impairment, there was no significant difference in the frequency of reporting of certain depressive symptoms, nor in the severity of depression, which would indicate that the severity of depression can't explain and justify the existence of cognitive dysfunctions.

Although the potential for functional recovery in depressed patients is not less, significantly more severe functional disability is registered in the group of patients with depression, initially, as well as after the completed rehabilitation treatment (Table 1).

SF-36 domains	Non-depressed patients	Depressed patients
	p	p
General health	0.044	<0.001
Physical functioning	0.327	<0.001
Role-physical	0.020	<0.001
Bodily pain	0.011	<0.001
Mental health	0.732	<0.001
Vitality	0.107	<0.001
Role-emotional	0.708	<0.001
Social functioning	0.216	<0.001
Summary physical score	0.702	<0.001
Summary mental score	0.608	<0.001

Table 1: SF-36 domain scores in non-depressed and depressed patients compared with the general population (50±10).

The mean scores on all SF-36 questionnaires domains were higher in patients without PSD than in those with PSD. These differences were statistically highly significant in all domains ($p<0.001$) except for the domain of bodily pain ($p=0.011$).

The lowest scores on individual SF-36 domains in non-depressed patients were found for the role of physical functioning, followed by general health.

In depressed patients, the lowest scores were found for the role of emotional functioning and social functioning.

The social functioning score indicated that social relationships were 'extremely' or 'very' impaired in 70% (n=21) of depressed patients and in none of non-depressed patients; the difference was statistically significant ($p<0.001$).

Depressed patients had statistically significantly impaired all the quality of life domains compared with the general population, whereas non-depressed.

Conclusion

Stroke outcome, expressed as functional disability and quality of life, is significantly more unfavorable in stroke patients who develop a depressive disorder. Therefore, treatment of this complex sequel of stroke should be timely, appropriate and comprehensive, including a multidisciplinary approach and support by the family and society at large.

The quality of life in patients with post stroke depression was impaired more severely in all SF-36 domains compared with non-depressed stroke patients, with the domains of the role of emotional functioning and social relations being most severely affected (Figure 5).

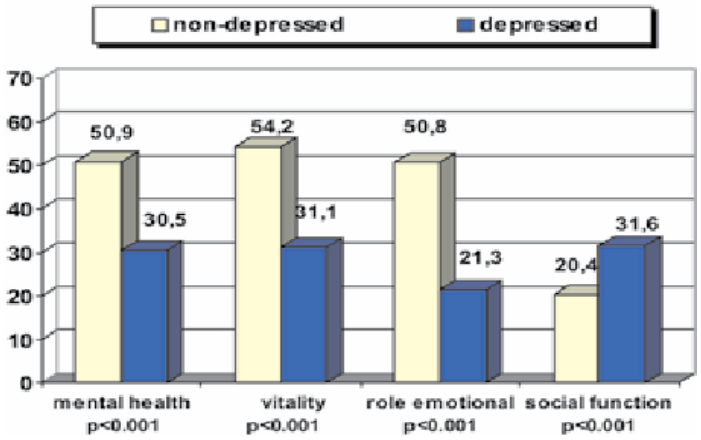

Figure 5: Standardized mean Short Form 36 domain scores.

Functional disability was significantly more severe in depressed patients compared with non-depressed patients, with a highly significant difference in ambulation.

The potential for functional recovery was no less strong in depressed patients, although they had worse functional abilities at the end of rehabilitation treatment, compared with non-depressed patients. The quality of life of depressed patients was significantly more impaired in all SF-36 domains, with the role of emotional functioning and social functioning being most affected.

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