

Changes of Psychosocial and Functional Assessment After Rehabilitation in Patients with Brain lesion

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Objective

Cognitive dysfunction and psychological changes in patients with brain lesion may be a major factor in disturbing successful rehabilitation of the patient. The Purpose of our study was to identify improvement of activities of daily living(ADL), psychosocial status after rehabilitation and to find out correlation between ADL and psychosocial tests in patients with brain lesion.

Materials and Methods

A retrospective analysis was conducted using the medical records of 432 patients with brain lesions. The inclusion criteria for the study were adult patients (≥ 18 years old) with psychological status(BDI, BAI, Hamilton depression inventory), social maturity(SMS), cognitive function test(MMSE, Digit span test, K-BNT, NPI, GDS) and ADL assessments(MBI) performed before and after rehabilitation. We excluded patients who had more than 2 weeks interval between each assessment. Thirty-seven patients who satisfied our criteria were included in this study. All statistical analyses were performed using the SPSS ver. 12.0. Wilcoxon signed-rank test was done to compare the scores of MMSE, DST, K-BNT, SMS, NPI, BDI, BAI, HDI, GDS and MBI. Linear regression analysis was performed to confirm the correlation between cognitive, psychological tests and functional outcomes. For predicting improvement of functional status, logistic regression analysis was performed with independent variables such as initial cognitive function, psychological status and social maturity.

Results

Among 37 patients, 20 were men and 17 women and the mean age was 61.92 ± 16.78 years. 11(29.7%), 18(48.6%) and 8(21.6%) patients had right-sided, left-sided, and bilateral brain lesions, 29(78.4%) and 8(21.6%) patients had each hemispheric and brainstem lesion, respectively. The initial mean MMSE of all patients was 17.38 ± 8.78 and the mean MBI score was 26.86 ± 19.87 . The mean MMSE and MBI after rehabilitation were improved to 18.81 ± 7.67 and 45.08 ± 26.98 . When comparing the initial and follow-up evaluations, MMSE, Digit span test, KBNT, SMS, MBI score were significantly improved($p < 0.05$). Their showed no significant correlation between cognitive, psychological tests and functional outcomes. According to the degree of MBI score improvement, 25 patients were categorized into the high improvement group and 12 patients low group. When comparing the assessments scores of the two groups, initial MMSE, DST, KBNT, SMS were significantly higher in high improvement group. According

to multivariate logistic analysis, initial MMSE score showed significant positive correlation with degree of MBI score improvement ($b=0.270$, $p=0.014$).

Conclusion

In our study, significant improvements was shown in most of functional and cognitive tests after rehabilitation, but not in emotional tests. And initial MMSE score showed significant positive correlation with degree of MBI score improvement, that suggest the initial MMSE score is related to functional recovery.