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Effects of Aphasia on Cognitive & Functional Outcome in Ischemic and Hemorrhagic Stroke Patients

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Objective
To delineate whether aphasia differently affects initial cognitive and functional status and recovery according to stroke type, and to clarify whether severity of aphasia is a predicting factor in stroke patients' cognitive and functional outcome.

Method
Sixty-seven patients (39 ischemic and 28 hemorrhagic stroke patients) with aphasia who were screened with the Korean Version of Frenchay Aphasia Screening Test (K-FAST) were included. 46 age- and sex-matched stroke patients without aphasia (37 ischemic and 9 hemorrhagic stroke patients) were assigned to a control group for comparison. We assessed baseline characteristics, K-FAST and Korean version of Western aphasia Battery (K-WAB) of all subjects. To compare thecognitive and functional status, the Korean version of Mini Mental State Examination (K-MMSE), the Korean version of Modified Barthel Index (K-MBI) and functional independence measure (FIM) at admission and discharge were also reviewed.

Results
The hemorrhagic stroke (HS) patients with aphasia showed younger age, male gender and higher incidence of the tracheostomy compared with the ischemic stroke (IS) patients with aphasia. In IS patients, left hemispheric lesions were more prevalent in patients with aphasia than in patients without aphasia (p=0.038). There were different distribution of aphasia types in IS and HS patients with aphasia (p=0.024). Global aphasia was the most common type in both IS and HS patients, but especially in IS patients(48.72% in IS vs 28.57% in HS). Wernicke's aphasia was relatively prevalent in HS patients compared to IS patients (25.00% in HS vs 7.69% in IS). There were significant improvements between initial and follow-up in mobility subscale and total K-MBI and motor component and total FIM in HS patients, however, not in IS patients. All subscale and total K-MBI and motor and total FIM scores were higher in IS patients with aphasia than in HS patients with aphasia. There were

significant relationships between the Aphasia Quotient (AQ) of K-WAB and almost all scores of K-MMSE, K-MBI and FIM. The initial and follow-up scores of K-MMSE and AQ of K-WAB showed a stronger correlation in IS patients(r =0.849 and 0.761 respectively) than in HS patients(r =0.682 and 0.549 respectively).

Conclusion

Aphasia is a predicting factor of cognitive and functional outcome in stroke patients, and this predicting factor differed between ischemic and hemorrhagic stroke patients. The ischemic stroke patient showed stronger correlation between cognitive status and severity of aphasia compared with hemorrhagic stroke patients.