**Supplementary Material**

**Prediction of Post-stroke Dementia using NINDS-CSN 5-minute Neuropsychology Protocol in Acute Stroke**

**Running title: NINDS-CSN 5-minute protocol in acute stroke**

**Table S1. Comparison of baseline characteristics between those who were excluded during 3-month follow-up and the post-hoc subgroup.**

|  |  |  |
| --- | --- | --- |
|  | Excluded(n=204) | Post-hoc subgroup(n=85) |
| Age | 67.5±11.7 | 71.6±8.7 |
| Male | 105 (51.5) | 50 (58.8) |
| Illiteracy  | 17 (8.3) | 9 (10.6) |
| Initial NIHSS | 4.9±4.3 | 5.9±4.2 |
| NINDS-CSN 5-minutes protocol score | 5.8±3.2 | 5.0±2.9 |

Number denote mean±SD or frequency (proportion).

National Institute of Health Stroke Scale (NIHSS), National Institute of Neurological Disease and Stroke-Canadian Stroke Network (NINDS-CSN),

**Table S2. Discriminant indices of NINDS-CSN 5-mintue protocol for post-stroke dementia at 3-months after stroke**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Sensitivity | Specificity | PPV | NPV | AUC | SE | 95% CI |
| cutoff 5/6 | 0.68 | 0.78 | 0.38 | 0.93 | 0.731 | 0.04 | 0.68- 0.78 |
| cutoff 6/7 | 0.82 | 0.67 | 0.32 | 0.95 | 0.743 | 0.03 | 0.69- 0.79 |
| cutoff 7/8 | 0.92 | 0.55 | 0.28 | 0.97 | 0.735 | 0.02 | 0.68-0.78 |
| cutoff 8/9 | 0.96 | 0.40 | 0.24 | 0.98 | 0.682 | 0.02 | 0.63- 0.73 |

National Institute of Neurological Disease and Stroke-Canadian Stroke Network (NINDS-CSN), positive predictive value (PPV), negative predictive value (NPV), area under the curve (AUC), standard error (SE), confidential interval (CI)

**Table S3. Correlations between NINDS-CSN 5-min and 60-min protocol**

|  |  |  |
| --- | --- | --- |
|  | Simple correlation | Partial correlation\* |
| NINDS-CSN 60-min protocol  | Correlation coefficients (*r*) | p-values | Correlation coefficients (*r*) | p-values |
| Executive  |  |  |  |  |
|  DSC | 0.43 | <0.01 | 0.33 | <0.01 |
|  TMT-A | 0.33 | <0.01 | 0.18 | <0.01 |
|  TMT-B | 0.43 | <0.01 | 0.30 | <0.01 |
|  COWAT-semantic | 0.40 | <0.01 | 0.36 | <0.01 |
|  COWAT-phonemic | 0.53 | <0.01 | 0.43 | <0.01 |
| Memory  |  |  |  |  |
|  SVLT-delayed recall | 0.47 | <0.01 | 0.44 | <0.01 |
| Visuospatial |  |  |  |  |
|  RCFT-copy | 0.38 | <0.01 | 0.27 | <0.01 |
| Language |  |  |  |  |
|  BNT | 0.44 | <0.01 | 0.25 | <0.01 |
| MMSE | 0.69 | <0.01 | 0.50 | <0.01 |

\* Adjusted for age

National Institute of Neurological Disease and Stroke-Canadian Stroke Network (NINDS-CSN), digit symbol coding (DSC), trail-making test (TMT), controlled oral word association test (COWAT), Seoul verbal learning test (SVLT), Rey complex figure test (RCFT), Boston naming test (BNT), mini-mental state examination (MMSE)

**Table S4. Clinical characteristics of those who had initially below cutoff of NINDS-CSN 5-min protocol score (n=127)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Reverters(n=86) | PSD(n=41) | p-values |
| Age | 71.2±11.4 | 70.0±10.0 | 0.54 |
| Male | 47 (54.7) | 20 (48.8) | 0.54 |
| Education ($\leq $ 6 years) | 48 (55.8) | 26 (63.4) | 0.42 |
| Initial NIHSS | 2.8±3.4 | 5.6±5.4 | <0.01 |
| Premorbid cognitive decline\* | 3 (3.5) | 8 (19.5) | 0.01 |
| NINDS-CSN 5-minutes protocol score | 4.3±1.8 | 3.2±2.0 | <0.01 |

\* Defined as IQCODE ≥ 3.6

Number denote mean±SD or frequency (proportion).

Post-stroke dementia (PSD), National Institute of Health Stroke Scale (NIHSS), National Institute of Neurological Disease and Stroke-Canadian Stroke Network (NINDS-CSN), Informant Questionnaire of Cognitive Decline in the Elderly (IQCODE)

**Table S5. Subgroup analyses for NINDS-CSN 5-minutes protocol of post-stroke dementia**

|  |  |  |
| --- | --- | --- |
|  | Post-hoc subgroup (n=85) | Original Set (n=308) |
|  | Adjusted OR(95 % CI) | p-value | Adjusted OR(95 % CI) | p-value |
| Age | 0.94 (0.87-1.02) | 0.12 | 1.01 (0.98-1.04) | 0.61 |
| Male | 0.34 (0.09-1.30) | 0.12 | 0.76 (0.35-1.65) | 0.50 |
| Education ($\leq $ 6 years) | 0.75 (0.21-2.77) | 0.67 | 0.88 (0.39-2.01) | 0.76 |
| Initial NIHSS | 1.10 (0.96-1.27) | 0.17 | 1.16 (1.05-1.28) | 0.003 |
| Premorbid cognitive decline\* | 7.03 (1.03-47.83) | 0.046 | 3.56 (1.17-10.83) | 0.03 |
| NINDS-CSN 5-minutes protocol score < 7 | 5.90 (1.31-26.46) | 0.02 | 6.32 (2.65-15.05) | <0.001 |

\* Defined as IQCODE ≥ 3.6

National Institute of Health Stroke Scale (NIHSS), National Institute of Neurological Disease and Stroke-Canadian Stroke Network (NINDS-CSN), Informant Questionnaire of Cognitive Decline in the Elderly (IQCODE)