

Early Cognitive Impairment Screening After Stroke in the Emergency Department: An Exploratory Study

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KEY TAKEAWAY: Updated cohort showed PSCI in 47.8% of patients and a moderate, statistically significant association between ultra-early NINDS-CSN5 and later MoCA performance.

INTRODUCTION	METHODS	RESULTS		RESULTS AT A GLANCE		DISCUSSION																															
Post-stroke cognitive impairment (PSCI) is a common form of vascular cognitive impairment and an important contributor to long-term disability after stroke. Early cognitive screening remains uncommon, particularly in low- and middle-income countries such as Mexico. Guidelines commonly recommend cognitive assessment at ~3 months, yet dysfunction may be detectable during the acute phase. The NINDS-CSN5 is a brief first-contact cognitive screening tool applicable within the first 2 weeks after stroke. Aim: explore the utility of ultra-early NINDS-CSN5 screening and its relationship with later MoCA performance.	Single-center, prospective observational pilot study. Setting: National Institute of Neurology and Neurosurgery, Mexico City. Period: January 2025–April 2026. Adults with acute ischemic stroke evaluated within 2 weeks from symptom onset; no prior cognitive impairment or aphasia. Workflow: NINDS-CSN5 during the acute phase (≤2 weeks) → MoCA at 3–6 months → PSCI defined as MoCA ≤21. Analyses: descriptive statistics, Spearman correlation, Mann–Whitney U, ROC curves, contingency tables, and exploratory odds ratios using SPSS v22. Ethics/research approval: protocol 05/25.	<table><thead><tr><th>Domain</th><th>Finding</th><th>Interpretation</th></tr></thead><tbody><tr><td>Cohort profile</td><td>N=23; male 17/23 (73.9%); age median 62 y (IQR 15)</td><td>Small, predominantly male acute ischemic stroke cohort</td></tr><tr><td>Stroke severity</td><td>NIHSS median 5 (IQR 7); range 1–15</td><td>Generally mild stroke severity</td></tr><tr><td>Cognitive screening</td><td>NINDS-CSN5 mean 7.65; median 8; IQR 4</td><td>Feasible ultra-early bedside assessment</td></tr><tr><td>Follow-up cognition</td><td>MoCA median 23 (IQR 9) at median 92 days</td><td>MoCA performed at 3–6 months</td></tr><tr><td>PSCI frequency</td><td>MoCA ≤21 in 11/23 patients (47.8%)</td><td>Nearly half met PSCI criterion</td></tr><tr><td>Primary association</td><td>Spearman ρ=0.474; p=0.022; N=23</td><td>Moderate positive association between NINDS-CSN5 and MoCA</td></tr><tr><td>Screening performance</td><td>ROC AUC=0.644; 95% CI 0.414–0.874; p=0.219</td><td>Modest discrimination; exploratory</td></tr><tr><td>Cutoff ≤8</td><td>OR 5.33; 95% CI 0.89–31.91; χ² p=0.059; Fisher p=0.10</td><td>Trend toward identifying higher PSCI risk</td></tr><tr><td>Exploratory correlates</td><td>Education p=0.017; NIHSS p=0.035</td><td>Lower education and greater stroke severity associated with PSCI</td></tr><tr><td>Mood dimensions</td><td>MoCA correlated with depression/anxiety scales; association attenuated after depression adjustment.</td><td>PSCI may be multidimensional</td></tr></tbody></table>	Domain	Finding	Interpretation	Cohort profile	N=23; male 17/23 (73.9%); age median 62 y (IQR 15)	Small, predominantly male acute ischemic stroke cohort	Stroke severity	NIHSS median 5 (IQR 7); range 1–15	Generally mild stroke severity	Cognitive screening	NINDS-CSN5 mean 7.65; median 8; IQR 4	Feasible ultra-early bedside assessment	Follow-up cognition	MoCA median 23 (IQR 9) at median 92 days	MoCA performed at 3–6 months	PSCI frequency	MoCA ≤21 in 11/23 patients (47.8%)	Nearly half met PSCI criterion	Primary association	Spearman ρ=0.474; p=0.022; N=23	Moderate positive association between NINDS-CSN5 and MoCA	Screening performance	ROC AUC=0.644; 95% CI 0.414–0.874; p=0.219	Modest discrimination; exploratory	Cutoff ≤8	OR 5.33; 95% CI 0.89–31.91; χ² p=0.059; Fisher p=0.10	Trend toward identifying higher PSCI risk	Exploratory correlates	Education p=0.017; NIHSS p=0.035	Lower education and greater stroke severity associated with PSCI	Mood dimensions	MoCA correlated with depression/anxiety scales; association attenuated after depression adjustment.	PSCI may be multidimensional	N = 23 Acute ischemic stroke patients prospective pilot cohort 17/23 Male participants 73.9% 7.65 NINDS-CSN5 mean; 95% CI 6.47–8.83 62 y Median age IQR 15 23 MoCA median; IQR 9 92 d Follow-up median; IQR 6 Updated cohort: PSCI in 47.8% and a moderate, significant association between ultra-early NINDS-CSN5 and later MoCA. PSCI FREQUENCY & SCREENING SIGNAL Post-stroke cognitive impairment MoCA ≤21 Patients met PSCI criterion 11/23 47.8% Spearman ρ = 0.474 p = 0.022 N = 23 NINDS-CSN5 ≤8 OR 5.33 (95% CI 0.89–31.91) Trend in contingency analysis: χ² p=0.059; Fisher exact p=0.10.	Structured ultra-early cognitive screening with NINDS-CSN5 was feasible in Mexican patients with acute ischemic stroke. The NINDS-CSN5–MoCA association was clinically coherent and statistically significant in the updated cohort. A cutoff ≤8 may enrich identification of patients at higher PSCI risk, but ROC discrimination was modest and estimates were imprecise. Depressive and anxiety symptoms correlated with MoCA; partial correlations suggest mood variables may influence the NINDS-CSN5–MoCA relationship. Limitations: single-center design, small sample size, exploratory statistics, and wide confidence intervals.
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			CONCLUSIONS In this exploratory pilot cohort, NINDS-CSN5 administered during the acute phase showed a moderate positive association with MoCA at 3–6 months. PSCI was frequent (47.8%), supporting the need for systematic cognitive follow-up after acute ischemic stroke. A NINDS-CSN5 cutoff of ≤8 showed a signal for PSCI risk, but diagnostic performance requires confirmation in larger studies. Mood symptoms and stroke severity should be considered when interpreting post-stroke cognitive outcomes.																																		

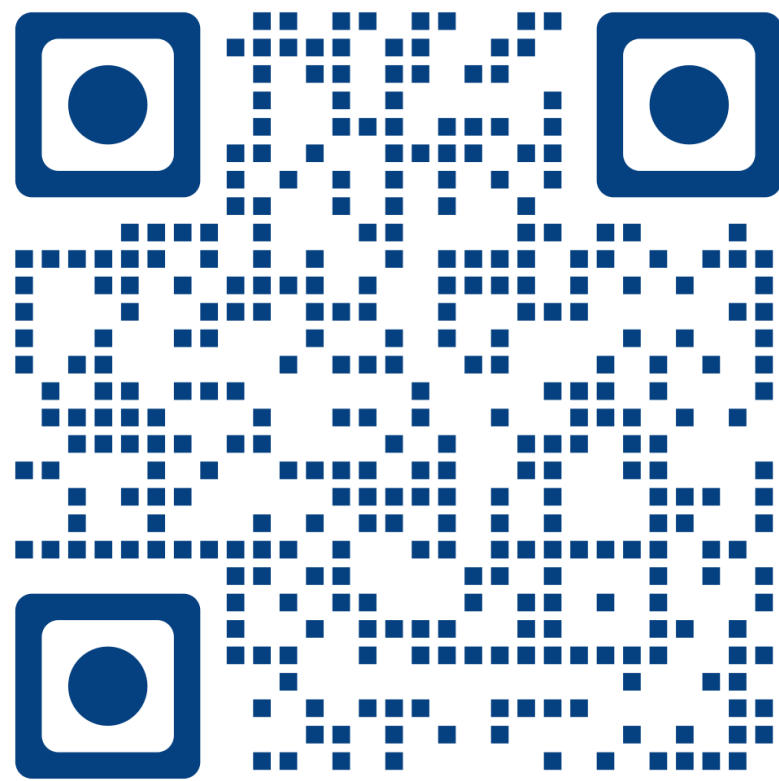
CLINICAL IMPLICATIONS

1 Acute setting	2 Risk signal	3 Context	4 Next step
Cognitive screening can be structured during the first 2 weeks after ischemic stroke.	Lower ultra-early NINDS-CSN5 scores were associated with poorer later MoCA performance.	Findings provide real-world pilot data from a Mexican neurology center.	Larger validation studies should define optimal cutoff and clinical workflow.

EXPLORATORY SECONDARY FINDINGS

Analysis	Key result
Mann–Whitney U by PSCI status	Education p=0.017; NIHSS p=0.035; age p=0.254; NINDS-CSN5 score p=0.235
MoCA vs mood scales	Beck depression p=−0.657, p<0.001; Hamilton depression p=−0.632, p=0.001; Hamilton anxiety p=−0.446, p=0.033; Beck anxiety p=0.109
Partial correlations	NINDS-CSN5–MoCA association remained significant controlling for Beck anxiety (r=0.458; p=0.032), borderline after Hamilton anxiety (r=0.413; p=0.056), and non-significant after depression adjustment.

Interpretation: post-stroke cognitive outcomes may reflect multidimensional interactions between early cognitive performance, stroke severity, education, and mood symptoms.



Abbreviations: PSCI, post-stroke cognitive impairment; VCI, vascular cognitive impairment; NINDS-CSN5, National Institute of Neurological Disorders and Stroke–Canadian Stroke Network 5-minute protocol; MoCA, Montreal Cognitive Assessment.