

Abstract WP232: Prospective Validation of the Miami Emergency Neurologic Deficit (MEND) Exam for Detection of Stroke

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Stroke. 2018;49:AWP232

Abstract

Introduction: Early detection and rapid transport to a stroke center are essential in the care of stroke patients. The Miami Emergency Neurologic Deficit (MEND) exam, developed in 1998, incorporates the posterior circulation elements missed by the Cincinnati Prehospital Stroke Scale (CPSS). It has a max score of 22, and includes all three components of the CPSS and six additional components from the National Institutes of Health Stroke Scale (NIHSS) (level of consciousness, orientation, commands, visual fields, gaze, leg motor, limb ataxia, and sensation). The MEND exam takes under two minutes to perform, and requires no tools, making it ideal as a screening tool, or for repeated examinations.

Purpose: Determine the predictive value of the MEND exam completed by prehospital providers in the field for final diagnosis of stroke.

Methods: We analyzed MEND exam findings conducted by paramedics on consecutive patients suspected of stroke, transferred directly from Monroe County, FL to our large urban academic hospital. We sought to determine the MEND's ability, when administered by paramedics, to predict stroke or transient ischemic attack (TIA), based on the patient's final diagnosis on hospital discharge. Statistical analysis was conducted using SAS, v.9.3. Receiver operating characteristic curves, sensitivity, specificity, positive predictive value and negative predictive value were determined.

Results: From September 2008 to June 2017, 143 patients presenting to EMS had MEND exams completed. Eighty-one percent (n=57) were males. Mean age was 68 (21-98). The average MEND score was 5 (range 0-14). Of 101 strokes, 89 were ischemic (88%) and 12 hemorrhagic (12%). Area under the curve for MEND exam predictability for final diagnosis of stroke or TIA was 0.82 (95% CI 0.73-0.91). The sensitivity, specificity, PPV and NPV for different cut-offs of the MEND exam are: MEND ≥ 2 : 94%, 59%, 0.84, 0.81; MEND ≥ 3 : 84%, 69%, 0.87, 0.64; MEND ≥ 4 : 64%, 78%, 0.87, 0.47.

Conclusion: The MEND exam, completed in the prehospital setting by paramedics, is an effective screening tool for detecting stroke. Since the MEND includes components excluded in other commonly used screening exams, and can be completed quickly, it is a valuable tool for assessing stroke patients.

- Stroke

- Emergency care

- Emergency medical services (EMS)

- Author Disclosures: **I. Motola:** None. **A.A. Brotons:** None. **R.D. Rodriguez:** None. **E.T. Marulanda-Londoño:** None. **H. Li:** None. **S. Hernandez:** None. **H.F. Rivera:** None. **S.L. Schwemmer:** None. **S. Issenberg:** None.
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