Abstract WP222: Predictive Value of the Miami Emergency Neurologic Deficit (MEND) Exam for Detecting Large Vessel Occlusion Strokes

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Abstract

Introduction: The Miami Emergency Neurologic Deficit (MEND) exam is a screening tool for identifying stroke patients in the field. It is rapid, and can detect both anterior and posterior circulation strokes. Recent developments in the care of ischemic stroke patients with large vessel occlusion (LVO) have highlighted the need to transport these patients to comprehensive stroke centers (CSC) with neurointerventional capabilities. This field triage requires a screening tool that can rapidly and accurately identify LVO patients.

Purpose: Determine the predictive value of the MEND exam for detecting LVO stroke, when completed by prehospital providers in the field.

Methods: We analyzed MEND exam findings conducted by paramedics on patients suspected of stroke, who were airlifted to our CSC. We sought to determine the MEND's ability, when administered by paramedics, to identify LVO, based on imaging (CT/CTA or MRA) or findings on intervention. Large vessel occlusion was defined as a total occlusion of the ICA, MCA-M1, MCA-M2, ACA-A1, ACA-A2, BA, VA, PCA-P1, or PCA-P2. Statistical analysis was conducted using SAS, v.9.3. Receiver operating characteristic curves, sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were calculated.

Results: From September 2008 to June 2017, 143 patients had MEND exams completed. Of these, 121 were airlifted to a CSC, where they had the NIHSS performed. The mean MEND score was 5 (0-14), and the mean NIHSS on arrival to the hospital was 10 (0-34). Of 101 strokes, 89 were ischemic (88%) and 12 hemorrhagic (12%). LVO was diagnosed in 43 stroke patients (42%). Area under the curve for MEND exam predictability for LVO was 0.65 (95% CI 0.49-0.75). The sensitivity, specificity, PPV and NPV for different cut-offs of the MEND exam are: MEND ≥3: 98%, 29%, 0.43, 0.96; MEND ≥4: 81%, 51%, 0.48, 0.83; MEND ≥5: 60%, 65%, 0.49, 0.74.

Conclusion: The MEND is a simple and rapid evaluation that can be performed in the field by EMS personnel to screen for LVO strokes. In our study, a MEND score ≥3

identified 98% of LVOs, and a score ≥4 identified 81% of LVOs, with improved specificity. The MEND exam is an effective tool to identify patients with LVO for transport to a CSC.

- **Stroke**
- **Systems of care**
- **Emergency care**
- **Emergency medical services (EMS)**