A previous study showed that the MEND exam can be performed in less than two minutes, and requires no tools, making it ideal for patient screening, or for frequent, repeated applications.1 The MEND exam is a brief neurological deficit exam that can be performed by paramedics in the field while still being brief and straightforward. It also includes all three components of the CPSS and six additional components of the NIHSS (level of consciousness, orientation, commands, visual fields, gaze, leg drift, limb ataxia, and sensation).

The MEND exam was developed by paramedics in the field on consecutive patients suspected of having stroke, and a convenience sample of additional emergency medical services (EMS) patients with various complaints. Hospital electronic health records were then reviewed to determine the NIHSS score, imaging results and final diagnosis on hospital discharge. The investigators’ goal was to determine the ability of the MEND exam, when administered by paramedics, to predict stroke or transient ischemic attack (TIA), based on the patient’s final diagnosis on hospital discharge.

Additionally, we analyzed the correlation of the NIHSS performed by the stroke team, who performed an NIHSS, to predict stroke or transient ischemic attack (TIA), based on the patient’s final diagnosis on hospital discharge.

The investigators analyzed MEND exam findings conducted by paramedics on consecutive patients suspected of having stroke, and a convenience sample of additional emergency medical services (EMS) patients with various complaints. Hospital electronic health records were then reviewed to determine the NIHSS score, imaging results and final diagnosis on hospital discharge. The investigators’ goal was to determine the ability of the MEND exam, when administered by paramedics, to predict stroke or transient ischemic attack (TIA), based on the patient’s final diagnosis on hospital discharge.

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The mean age was 68 years (range 21-98), and 81% (n=57) were males. 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 score cut-offs of the MEND exam were:

<table>
<thead>
<tr>
<th>Score</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>PPV</th>
<th>NPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEND</td>
<td>≥2</td>
<td>≥3</td>
<td>≥4</td>
<td>≥5</td>
</tr>
<tr>
<td>1</td>
<td>0.94</td>
<td>0.59</td>
<td>0.84</td>
<td>0.81</td>
</tr>
<tr>
<td>2</td>
<td>0.94</td>
<td>0.69</td>
<td>0.87</td>
<td>0.64</td>
</tr>
<tr>
<td>3</td>
<td>0.94</td>
<td>0.76</td>
<td>0.87</td>
<td>0.47</td>
</tr>
</tbody>
</table>

Conclusions

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

A cut-off ≥2 captured the majority of strokes, including posterior circulation strokes.

References


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