A24 - The set score as a predictor of ICU length of stay and the need for tracheotomy in stroke patients who need mechanical ventilation

A Henein ; N Suri ; M Saad ; E Attallah
Khoula Hospital, ICU, Muscat, Oman

Introduction:
SET score was initially developed as an in-house screening tool based on tracheotomy predictors identified in several retrospective studies. It combined the categories of neurological function, neurological lesions, and general organ function/procedure, and weighed by allocation of certain point values. In our study it was very interesting to us to find a tool to judge application of early tracheotomy, and as we have a good culprit number from stroke cases so we decided to try to apply this score in our ICU after discussion with the inventor of this score.

Methods:
164 stroke patients were prospectively included in the study as they were ventilated or were very little potential for ventilation and assessed by the stroke-related early tracheotomy score (SET score) within the first 24 h of admission. Endpoints were length of stay and ventilation time (VT) after doing early tracheotomy. We examined the correlation of these variables with the SET score using standard analytical methods. The detailed score is denoted in Tables.

Results:
The SET score with a value cutoff point of 8 had a significant effect on decision of making tracheotomy and hence decreasing ventilation time and length of stay in ICU, which affected outcome.

Conclusion:
All efforts must be exhausted in neuro intensive care to decrease the secondary changes of brain injury after stroke, early tracheotomy is a good tool to decrease length of stay in ICU and ventilation time in these patients. Inventing a tool to judge these decisions of doing tracheotomy was a challenge. SET score proved to be valuable. Further multi center trials are needed.

References:

Table 1:

<table>
<thead>
<tr>
<th>Areas of assessment</th>
<th>situation</th>
<th>points</th>
</tr>
</thead>
<tbody>
<tr>
<td>neurological function</td>
<td>dysphagia</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>observed aspiration</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GCS on admission &lt;10</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>brain stem</td>
<td>4</td>
</tr>
<tr>
<td>neurological lesion</td>
<td>space occupying cerebellar</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MCA infarction &gt;2/3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ICH &gt;25 ml</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>diffuse lesion</td>
<td>3</td>
</tr>
<tr>
<td>SET score</td>
<td>Hydrocephalus</td>
<td>4</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------------</td>
<td>----</td>
</tr>
<tr>
<td>general organ function/procedure</td>
<td>neurosurgical intervention</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>additional respiratory disease</td>
<td>3</td>
</tr>
<tr>
<td>Pao2/Fio2 &gt; 150 mmHg</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>APS of APACHE II &gt; 20</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>LUNG IIJURY SCORE &gt; 1</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Table 2:

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Needed Tracheotomy</th>
<th>Did not Need Tracheotomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCA</td>
<td>80</td>
<td>70</td>
<td>10</td>
</tr>
<tr>
<td>Spontaneous ICH</td>
<td>30</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>SAH</td>
<td>10</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Hydrocephalus</td>
<td>6</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Brain stem hemorrhage</td>
<td>8</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Diffuse lesion</td>
<td>18</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

Demographic data of the patients.

Image 1:

Distribution of tracheostomy by the SET score among the studied patients (N=164)

Image 2:

Figure 2: Box plot of the average ICU days by tracheostomy status among the studied patients (N=164)