We report a pilot study that comparatively investigated intubation with AWS using ITL-N or ITL-P compared to those with conventional laryngoscopes.

Methods

**Pilot study**
- Subjects
  - One hundred ASA Physical Class I or II children.
  - Age: 0 day -7 years, body weight: 2.4-25 kg, height: 45-121 cm
- Difficult airway were not anticipated preoperatively.
- Randomly divided into AWS group or laryngoscope group.
- Operator: Eight staff anesthesiologists, residents, and clinical trainees.

**Choice of device**
- Tracheal tube:
  - Portex Blue Line® uncuffed endotracheal tube (ID, 2.5-5.0 mm) or Parker Flex Tip™ cuffed endotracheal tube (ID, 5.0-5.5 mm).
  - Matched in size to the patient’s age.
- Intlock blade:
  - ITL-N for cases in which a tube with an ID of ≤3.5 mm.
  - ITL-P for cases in which a tube with an ID of ≥4.0 mm.

**End points**
- Success rate of intubation with the first or second attempts of laryngoscopy.
- Statistical analysis
  - Chi-square test, Student’s t-test, and Mann–Whitney U-test.

Results

Intubation was possible in all cases in both groups within two attempts of laryngoscopy.

<table>
<thead>
<tr>
<th>No. of attempts</th>
<th>Airway scope</th>
<th>Laryngoscope</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS</td>
<td>27</td>
<td>22.3</td>
</tr>
<tr>
<td>ITL-N</td>
<td>7 cases</td>
<td>43 cases</td>
</tr>
<tr>
<td>ITL-P</td>
<td>8 cases</td>
<td>37 cases</td>
</tr>
</tbody>
</table>

Success rate of intubation: 86% (AWS) vs 92% (Laryngoscope) (P=0.34)

Time required for intubation:
- AWS: 14 sec
- Laryngoscope: 10 sec

Cormack–Lehane classification:
- AWS: 1+2 cases
- Laryngoscope: 1+2 cases

Patient characteristics

<table>
<thead>
<tr>
<th>Age; months</th>
<th>Male / female</th>
<th>Weight; kg</th>
<th>Choice of blade</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 50</td>
<td></td>
<td>n = 50</td>
<td></td>
</tr>
<tr>
<td>36 (0-86)</td>
<td>30 / 20</td>
<td>12.6 (2.4-25.0)</td>
<td>ITL-N</td>
</tr>
<tr>
<td>39 (0-94)</td>
<td>26 / 24</td>
<td>12.5 (2.5-22.2)</td>
<td>ITL-P</td>
</tr>
<tr>
<td>n.s.</td>
<td>n.s</td>
<td>n.s</td>
<td>n.s</td>
</tr>
</tbody>
</table>

Discussion

○ Success rate, No. of attempts
  - AWS > Laryngoscope
○ Time required for intubation
  - AWS > Laryngoscope? Longer?
  - Laryngeal view
  - AWS > Laryngoscope

Intubation with AWS is not inferior to intubation with a conventional laryngoscope, even in children.

Is Longer intubation time (27 - 22.3 = 4.7sec) acceptable for neonates and infants?

For difficult airway cases

AWS for adults → very effective!!
How about AWS for children?

Cases need to be accumulated and further investigations need to be conducted to assess whether AWS fitted with the new ITLs is effective for child cases of a difficult airway similar to their use in adult cases. Our results suggest that AWS is a very promising device even in pediatric cases.

Conclusion

The intubation with AWS using ITL-N or ITL-P was almost the same as that with a conventional laryngoscope.

Reference


Disclosure

The author declared no competing interest.