



Airway-Protective 60-second step-limit Tracheal Intubation Algorithm decreases Throat Pain and Complications.

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PURPOSE / OBJECTIVES

- ❑ **Direct laryngoscopy** with a blade laryngoscope remains the first option for **routine tracheal intubation** despite video-assisted laryngoscopes.
- ❑ Reusable metal blade induces **throat pain** in 30% of patients.(1-2)
- ❑ We observed 40% of throat pain in our setting with plastic blade.

Purpose: Evaluating a potentially **airway-protective 60-second step-limit tracheal intubation algorithm** to **reduce these throat pain incidences**.

MATERIAL & METHODS

- ❖ This trial was multicenter, prospective, randomized, single-blind controlled study.(1)
- ❖ Adult patients without predictive criteria for difficult tracheal intubation.
- ❖ A potentially **airway-protective 60-second step-limit tracheal intubation algorithm** (Figure 1).
- ❖ Single-use plastic or reusable metal blade for tracheal intubation .
- ❖ The operator had 60 seconds to evaluate the difficulty, choose the appropriate technique.
- ❖ Poor laryngeal view, with a reasonable force of mandibular traction => unexpectedly difficult tracheal intubation => **widely and quickly use an alternative technique**.

Primary endpoint: Frequency of **throat pain**, without swallowing, 24 hours after tracheal intubation.

Main secondary endpoints: Incidence of **unexpectedly difficult tracheal intubation** (Intubation Difficulty Score ≥ 1) and complications.

RESULTS

- 693 patients.
- Throat Pain (Figure 1): *No difference*.

Tracheal Intubation Complications
Very low rate and No difference.

Characteristics of Tracheal Intubation	Plastic Blade n = 351	Metal Blade n = 342	P
IDS = 0, n (%), easy	155 (44.4)	195 (57.2)	0.0007
IDS 1–5, slightly difficult	181 (51.6)	139 (40.6)	0.0039
IDS > 5, moderate to very difficult	13 (3.7)	7 (2.0)	0.192
Increased Traction Strength. n (%)	116 (33.4)	74 (21.8)	0.0006
Tracheal intubation duration (s) (mean (SD))	40.1 (52.6)	29.3 (33.1)	0.0014
Angled-tip tracheal tube introducer, n (%)	34 (9.7)	21 (6.2)	0.0842

Table 1. Routine and scheduled tracheal intubation using direct laryngoscopy in patients without predictive criteria for difficult tracheal intubation. **Poor plastic blade performance.**

Airway-Protective Tracheal Intubation Algorithm

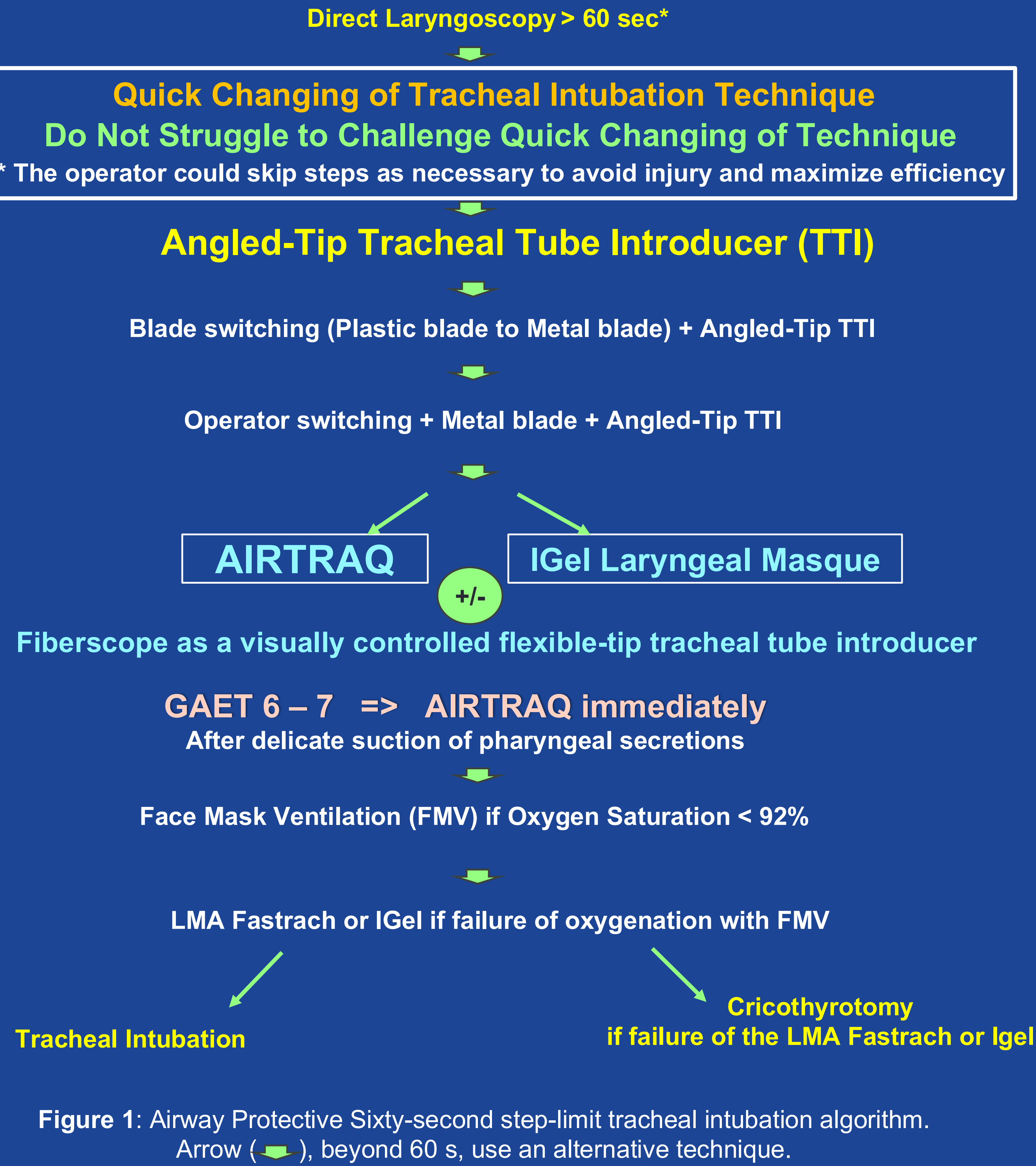


Figure 1: Airway Protective Sixty-second step-limit tracheal intubation algorithm. Arrow (➡), beyond 60 s, use an alternative technique.

RESULTS

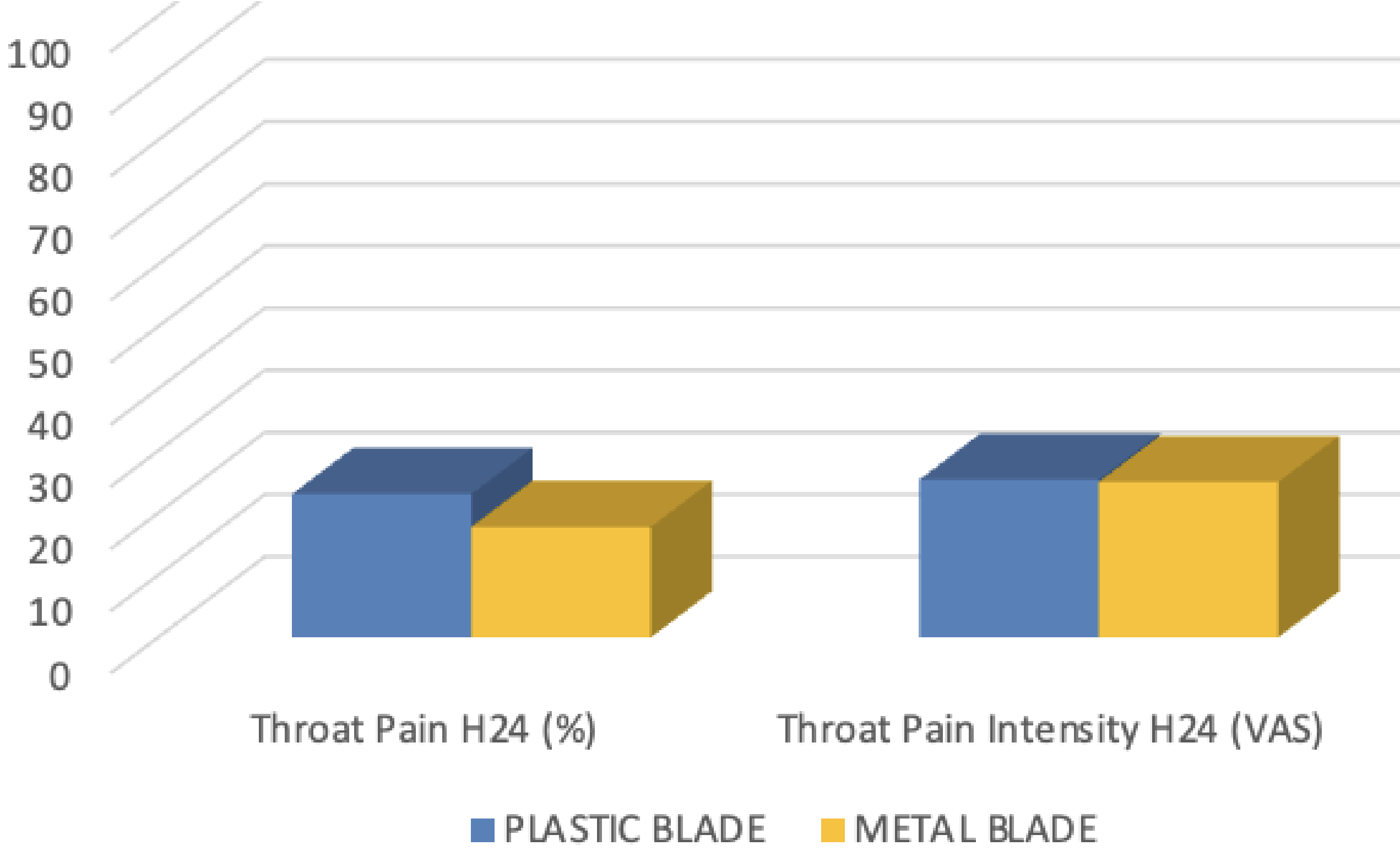


Figure 2: Low Throat pain incidence and mean intensity at 24 hours following tracheal intubation using either single use plastic blade or reusable metal blade based on a potentially protective 60-second step-limit tracheal intubation algorithm. No significant difference. VAS, visual analogue scale.

Despite the poor performance of the plastic blade (Table 1), we have reduced at a very low level throat pain as expected, probably as a result of the **airway-protective 60-second step-limit tracheal intubation algorithm**. *This is consistent with findings of Ndoko et al.(2)*

SUMMARY / CONCLUSION

- **Direct laryngoscopy** : 60 seconds to evaluate difficulty and choose the appropriate technique.
- **Promptly change the technique** if the difficulty persists **over 60 sec**.
- This **airway-protective 60-second step-limit tracheal intubation algorithm** avoids oxygen desaturation and **pharyngolaryngeal injury** by preventing struggling with the blade to improve the laryngeal view.

1. Lassouani S et al. <https://www.researchgate.net/search.Search.html?query=&type=publication>. doi: <https://doi.org/10.21203/rs.3.rs-3504127/v1>.

2- Ndoko SK et al. Br J Anaesth 2008; 100: 263-68. <https://doi.org/10.1093/bja/aem346>