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Title: What makes a supraglottic airway device effective?

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Previous presentation in conferences

Not applicable

Acknowledgments

Not applicable

IRB number

Not applicable

Clinical trial registration number

Not applicable

Key words:

Supraglottic Airway Device, Oropharyngeal Leak Pressure

Conflict of interest

This article is protected by copyright of Korean Journal of Anesthesiology. All rights reserved.
No potential conflict of interest relevant to this article was reported.

**Funding**

Not applicable

**Author contribution:**

Elisabeth Hoerner (Writing – original draft)

Lukas Gasteiger (Writing – review & editing)

Christian Keller (Writing – review & editing)
What makes a supraglottic airway device effective?

- Letter to the Editor -

We read with great interest the recent original article by Lakshmi et al. [1] describing the clinical performance of three well established and routinely used Supraglottic Airway Devices (SGA), namely the i-gel®, the LMA Supreme™ and the Ambu® AuraGain™ in non-obese patients undergoing general anesthesia.

We would like to compliment the authors for their effort in this prospective and randomized study. Regarding their primary outcome, they found a statistically significant shorter insertion time between the i-gelTM compared to the LMS Supreme™ and the Ambu® AuraGain™ (mean difference 3 and 5.2 seconds, respectively).

They also describe significant differences their secondary endpoint, namely the Oropharyngeal Leak Pressure (OLP) between the three SGAs (29.8 ± 3.0 cmH2O Ambu® AuraGain™, 24.1 ± 6.3 cm H2O LMA Supreme™ and 9.4 ± 6.1 cmH2O i-gel®). The OLP is usually used to quantify the efficacy of airway sealing in different SGA devices and serves as an indicator of the degree of airway protection.

As the insertion time for all three SGAs was clinically tolerable, the authors conclude that all assessed SAGs were equally “effective and convenient”. Whilst the described OLPs for the LMA Supreme™ and the Ambu® AuraGain™ are equal to previous described values [2,3], the OLP of 9.4 cmH2O must be questioned. In a study of our study group, we found a mean OLP of 23 cmH2O in the i-gel® [4], which is comparable to a later published meta-analysis [5].

The described mean OLP of 9.4 cmH2O with a SD of ± 6.1 cmH2O can clearly not be accepted to describe a safe and effective positive pressure ventilation. In fact, when looking at the baseline
characteristics and the given tidal volume of 8 ml/kg, the patients need to have compliance values
that in exceed 100 ml/cmH₂O, which is not frequently observed in narcotized and mechanically
ventilated patients. Also negative values of OLPs are within the range of possibility (2 SD) with
the results published in this trial.

The described OLP for the i-gel® can absolutely not lead to the conclusion given from the
authors as no effective ventilation seems possible. Another possibility could be that they just made
a typo and the OLP was 19. In this case this should be corrected.
References


