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Choosing appropriate size of I-Gel® for initial success insertion: a prospective comparative study

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Abstract

Purpose: The optimal size of the I-Gel® remains unclear since the manufacturer's weight-based formula (size 3 for weight < 50 kg, size 4 for weight 50–90 kg, and size 5 for weight > 90 kg) for the laryngeal mask airway I-Gel® is not evidence-based. We hypothesised that sex may also guide the choice of I-Gel® size.

Methods: Insertion success rates of the I-Gel® chosen according to the weight-based formula were prospectively recorded and compared with those of a patients' cohort ventilated with an I-Gel® chosen according to the sex-based formula recorded. Two periods of 18 months were randomised in three independent hospitals in France to study each choice strategy. Patients requiring I-Gel® size change were compared with those who were successfully ventilated with the initially chosen device. Complications linked to the I-Gel® and factors for changing the size of the I-Gel® were also recorded and analysed.

Results: Data from 900 patients were prospectively collected in the three participating centres. The overall initial ventilation was inadequate in 80 cases, including 7% (n = 31) in the weight-based group and 3% (n = 13) in the sex-based group (P = 0.01). In the weight-based group, changing size of I-Gel® was successful in 28 (90%) cases. In the sex-based group, changing size of I-Gel® was useful in 1 case only. Endotracheal tube insertion was necessary in 15 cases despite changing I-Gel® size, including 3 cases in the weight-based group and 12 cases in the sex-based group. Ease of insertion and postoperative pharyngo-laryngeal problems were similar between groups with or without changing size of I-Gel®.

Conclusion: Adequate ventilation is achieved most of the time using size selection for the I-Gel® laryngeal mask airway according to the manufacturer's weight-based formula. However, our results suggest that the sex-based formula in healthy, anaesthetised, adult patients may also be appropriate for I-Gel® size choice.

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