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I-GEL™ *VS.* AURAONCE™ LARYNGEAL MASK FOR GENERAL ANAESTHESIA WITH CONTROLLED VENTILATION IN PARALYZED PATIENTS

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Aims. The i-gel™ and the AuraOnce™ laryngeal mask are supraglottic airway devices used for airway management during general anaesthesia. Both devices are cheap, disposable and widely used. They may be used with both spontaneous and controlled ventilation. This study compared differences in the seal and peak pressures, and postoperative complications in these devices when used in paralyzed patients under controlled ventilation.

Methods. A prospective randomized trial was designed to compare the i-gel™ and the AuraOnce™ in paralyzed adult patients under conditions of controlled ventilation. Two hundred and four patients (ASA class 1-3, age 18-89, weight 46-115 kg) were enrolled in the study. Standardized anaesthesia (fentanyl, propofol and sevoflurane in air-oxygen) was administered including neuromuscular blockade. The primary outcome measure was the difference in seal airway pressures between the two devices. Secondary outcome measures included peak airway pressures, insertion data and postoperative profiles – the incidence of sore throat, swallowing difficulties, numb tongue, hearing difficulties, neck pain, nausea and vomiting.

Results. First time insertions were 85.6% (i-gel) and 82% (AuraOnce) with overall success rates 96.3% (i-gel) and 94.2% (AuraOnce) (p=0.54). Average insertion times were 11.0 s (i-gel) and 11.6 s (AuraOnce) (p=0.19). Seal pressures were 30.4 cmH_2O (i-gel) and 27.8 cmH_2O (AuraOnce) (p=0.007). Peak pressures were 15.3 cmH_2O (i-gel) and 15.6 cmH_2O (AuraOnce) (p=0.57). Traumatic insertion occurred in 5.8% of i-gel™ and 2% of AuraOnce™ insertions. The overall incidence of postoperative complications was low, with the i-gel™ causing less sore throat and difficulty swallowing at 24h.

Conclusion. Both devices provided effective seals for ventilation under positive pressure. I-gel™ may be a better alternative for the procedures with controlled ventilation because of higher seal pressures and lower incidence of sore throat postoperatively.

INTRODUCTION

Disposable supraglottic airway devices (SADs) are used for airway maintenance in the majority of cases where tracheal intubation is not clearly indicated. During the last decade, there have been various SADs developed and clinically investigated.

The i-gel™ airway [Intersurgical Ltd., Wokingham, UK] is a disposable SAD which was introduced into clinical practice in the United Kingdom in January 2007. It is composed of a stem with an integral buccal stabilizer and a cuff which is made from styrene ethylene butadiene styrene. The cuff does not require inflation. The device also incorporates a channel for communication with the oesophagus (Fig. 1). The i-gel™ has been studied in patients undergoing elective surgery and under both spontaneous and controlled ventilation[1,2] and was found to perform well under these conditions.

The AuraOnce™ [Ambu A/S, Ballerup, Denmark] laryngeal mask is another disposable SAD introduced into practice in the United Kingdom in February 2004 (Fig. 1). It is based on the classic laryngeal mask airway (LMA Classic™) which was conceived over twenty-five years ago by Brain[3] and which entered the clinical arena in 1988. The classic laryngeal mask was a reusable device and because of the concerns about the safety of resterilization, several similar disposable supraglottic devices have been invented. Differences between the AuraOnce™ and LMA Classic™ include an angulated stem and a soft, thin cuff that is designed to minimize both pressure on tissues and leakage from around the device. It also has no grilles. The AuraOnce™ device has also been tested under conditions of both spontaneous[4] and controlled ventilation[5,6].

We designed a study to compare the i-gel™ with the AuraOnce™ under conditions of controlled ventilation. Due to the fact that some of the procedures required

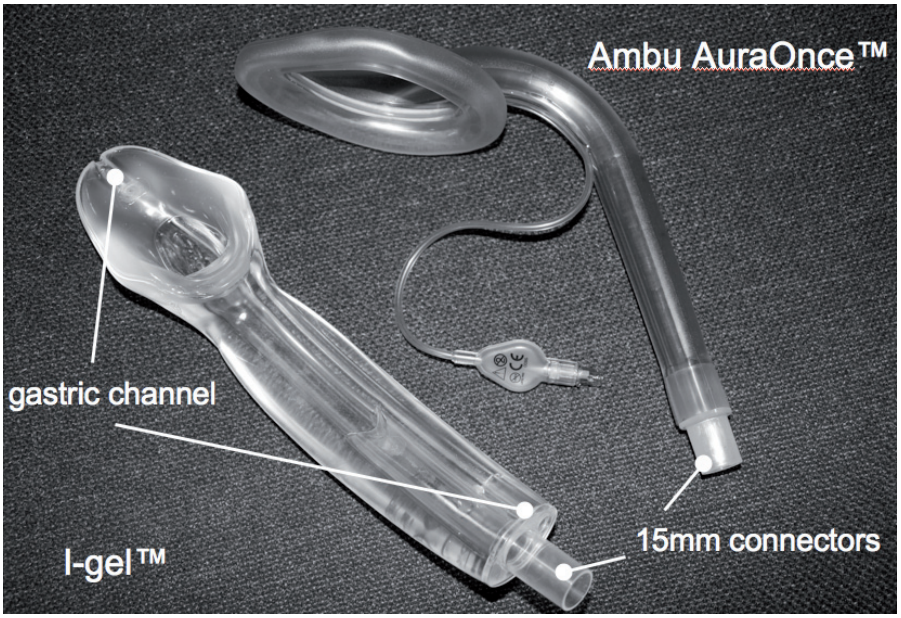

Fig. 1. I-gel™ and AuraOnce™ supraglottic devices.

muscle relaxation[7,8], and to provide homogenous conditions for device insertion, we decided to administer a non-depolarizing muscle blocker to all patients. The primary outcome measure was seal pressure. Secondary outcome measures involved peak pressures, ease and timing of insertion and postoperative complications. The null hypotheses for the study were that there was no difference in the insertion characteristics, total success rate of the two devices or in the incidence of postoperative complications.

MATERIAL AND METHODS

Following both local and regional ethics committee approvals (Office for Research Ethics Committees Northern Ireland number 07/NIR01/124) a randomized, controlled, single-blinded study was established and registered (ClinicalTrials.gov identifier NCT00668278). We were quite explicit with the ethics committee about the use of muscle relaxants, and the committee stipulated that the patient information sheet should mention that such agents were not necessarily a part of the anaesthetic regimen they would have undergone if they were not enrolled in the study. The potential risks associated with the use of these drugs were also outlined. Patients undergoing elective procedures under general anaesthesia who would normally have been managed with a supraglottic airway were invited to participate in the study.

Inclusion criteria were: males or females, aged 18-89 years, American Society of Anesthesiologist (ASA) status I-III, scheduled for elective procedures in general surgery, vascular surgery, urology and gynaecology.

Exclusion criteria were: age less than 18 years or more than 89 years, emergency surgical procedures, surgical procedures inside the abdominal cavity, surgery requiring prone or steep head-down positioning. Patients at increased risk of aspiration were also excluded.

A two-arm table with random numbers was created prior to the study using a randomization freeware (www.graphpad.com). After giving informed consent and prior to induction to general anaesthesia, patients were randomized to receive either the i-gel™ or the AuraOnce™ using sealed envelopes. All data were recorded in a case record sheet.

Patients were fasted according to local guidelines (6 h solids, 2 h clear fluids). Data were recorded including age, sex and weight, ASA status and routine airway assessment – modified Mallampatti score, mouth opening, Mandibular protrusion score and thyromental distance. The type and duration of procedure were also recorded.

Standard anaesthetic monitoring was applied. After obtaining intravenous access, 1 μg/kg of fentanyl was administered and preoxygenation was commenced. After induction with 1–3 mg/kg propofol to loss of verbal contact, atracurium 0.5 mg/kg was administered. Anaesthesia was maintained with sevoflurane in an air-oxygen mixture and analgesia provided using morphine sulphate, paracetamol and/or regional anaesthesia techniques. The "Train Of Four" (TOF) count was measured every 10 s using the MechanoSensor in the neuromuscular transmission module of the anaesthetic machines (GE Healthcare, Helsinki, Finland) until no twitches were present, at which point the device was deemed ready for insertion.

The devices were prepared and lubricated using Aquagel™ jelly [Ecolab, Leeds, UK]. Selection of the size of each device was on a weight basis as recommended by each of the manufacturers. In the case of the AuraOnce™ the device was inflated with air, once inserted, according to the manufacturer's guidelines. Insertion of the device was timed from the moment the operator received the device to the first effective breath as confirmed by a capnographic trace. The timing was carried out by an independent operator using a stopwatch, which was timed to the nearest 0.1 s. Where there were multiple attempts

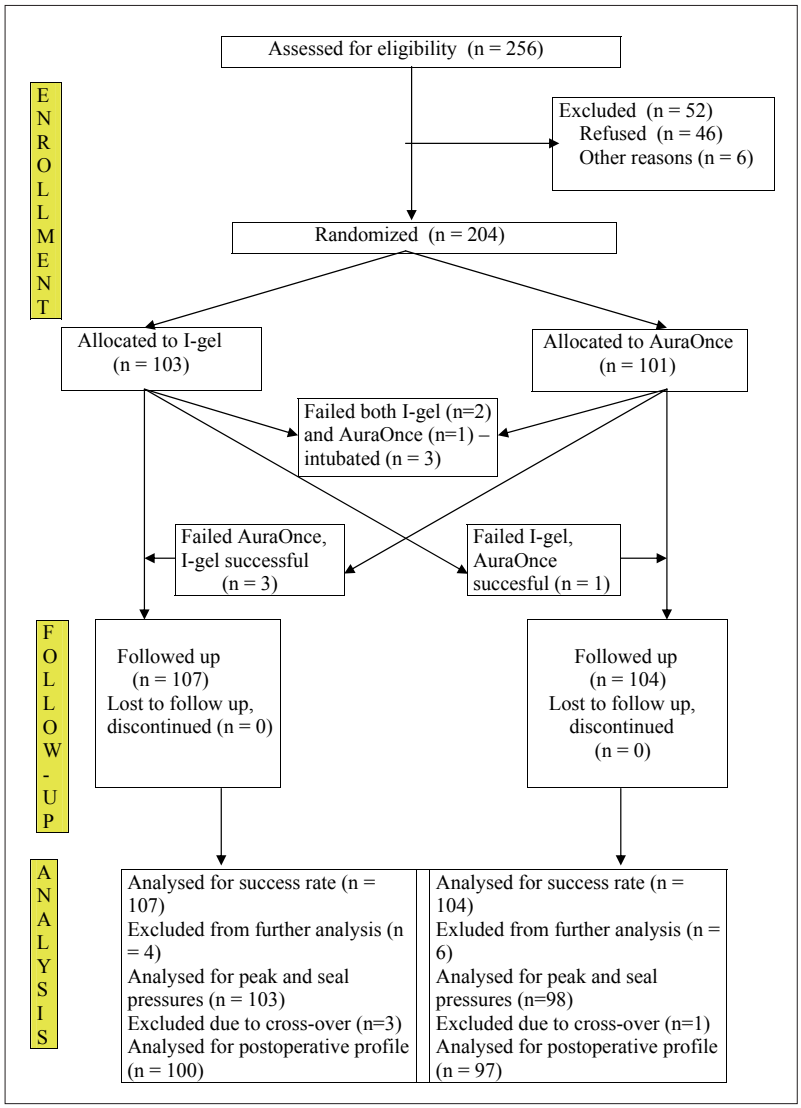

Fig. 2. Diagram describing the flow of the study participants through each stage of the randomized trial.

the total time for the successful insertion was recorded. The number of attempts and any repositioning maneuvers during the course of the procedure (jaw thrust, head flexion, neck extension) were also recorded. Operators experienced with the insertion of both devices inserted the devices.

Manual ventilation was carried out and adequacy of chest wall movement and end-tidal carbon dioxide waveforms were checked. Adequate oxygenation was checked and noted. Adequate oxygenation was defined as oxygen saturation (SpO_2) above 94%. Suboptimal oxygenation was defined as a SpO_2 reading between 94% and 91%. The fractional inspired concentration of oxygen was set on 50%. Failure to achieve adequate oxygenation was defined as a SpO_2 reading of 90% or below[9].

If insertion proved difficult, or ventilation or oxygenation deemed suboptimal then the protocol allowed for a change of device to the other arm of the trial. Results were for the airway device that was inserted successfully although a note was made of these crossovers. If the oxygenation or ventilation were deemed as failed even after the insertion of the other study device then the patient was to undergo endotracheal intubation. If the patient required endotracheal intubation, for whatever reason, they were excluded from the postoperative questionnaire and reported separately.

Once successfully inserted, the seal pressure was assessed: total gas flow was set at 5 $l.min^{-1}$, the Adjustable Pressure Limiting (APL) valve was set to 40 cmH_2O. The operator waited until an audible leak was detected from around the device. The pressure at which the leak was noted was recorded. If the pressure reached 40 cmH_2O before a leak was detected the leak pressure was recorded as 40 cmH_2O. The pressure gauge on the anaesthetic machine was used to record the pressure.

Intermittent Positive Pressure Ventilation (IPPV) was commenced with the tidal volume set to 8-10 $ml.kg^{-1}$. The tidal volume was recorded and at this tidal volume the peak airway pressure was noted and recorded. The respiratory rate was adjusted to maintain the $ETCO_2$ between 4.1 kPa and 6.0 kPa. Adequate ventilation was defined as an end-tidal carbon dioxide level ($ETCO_2$) in the range 4.1-

Table 1. Demographic data of the patients participating in the study.

	I-gel™ group	AuraOnce™ group
Age (yrs)	54.6 (13.0)	53.5 (12.4)
Sex	31 male 73 female	21 male 79 female
Weight (kg)	71.8 (13.2)	71.8 (13.7)
ASA 1/2/3	48/53/3	46/51/3
Duration of surgery (mins)	72.1 (27.9)	77.6 (31.6)

The data is expressed as mean (±SD).

Table 2. Types of surgery the patients in the trial were scheduled to undergo.

Type of surgery	I-gel™	AuraOnce™
General		
Breast (mastectomies, axillary node clearances, lumpectomies)	39	49
Inguinal hernia repairs	23	19
Miscellaneous: (umbilical hernia/vasectomy/circumcision/haemorrhoidectomy)	7	1
Gynaecology		
Vaginal repairs	8	7
Tensionfree Vaginal Tape	12	12
Hysterectomy	7	4
Sacrospinous fixations	2	2
Vascular surgery		
Varicose vein surgery	4	5

6.0 kPa. Suboptimal ventilation was defined as an $ETCO_2$ of 6.0-7.3 kPa. Failed ventilation was defined as an $ETCO_2$ of greater than 7.3 kPa**.** Standard monitoring (ECG, non-invasive blood pressure measurement, pulse oximetry) was applied during the procedures and ventilatory parameters (peak pressure, $etC0_2$, inspiratory and expiratory volumes) were automatically recorded. The operators assessed the SADs continuously for an audible leak. Minor leak was defined as any audible leak, without significant decrease in the expiratory volumes and requested repositioning of the device and/or patients´ head. Major leak was defined as an audible leak associated with significant decrease in expiratory volume, deformation of $etCO_2$ trace and/or hypoxaemia.

At the end of the procedure, the sevoflurane was discontinued and devices removed when the patients were breathing spontaneously and able to open their eyes and mouth on command. Reversal of neuromuscular blockade was administered as appropriate. Upon removal, the presence of any blood on the device was noted as was whether the inner aspect of the bowl was dry. If the bowl of the device was not dry, the contents were noted (bile stained, clear fluid, sputum etc.). The patients were then transferred to the postoperative recovery ward.

Postoperative questionnaires were used to assess the presence and severity (none/mild/moderate/severe) of the following symptoms: sore throat, difficulty swallowing, pain swallowing, difficulty speaking, pain in the mouth, neck pain, tongue numbness, ear pain, difficulty hearing, nausea, cough and hiccups. These were assessed at one hour postoperatively. A follow-up visit on the ward at 24 h repeated the same questions. Some patients were followed up with a telephone conversation at 24 h. Data were recorded using a proforma and the two postoperative questionnaires.

Statistics

Sample size calculation was based on the results of a previous study published by Richez et al[1]. A power analysis showed that at least 87 patients in each arm would be required to detect a 10% difference in the primary outcome (seal pressure) at a significance level of 5% and a power of 80%. One-hundred patients were selected for each arm to compensate for potential cross-overs and lost patients.

The data were entered into a database (Microsoft Excel for Mac, Microsoft WA 98052, USA).

The results were expressed as mean ± standard deviations (SD) for demographic data and as mean and 95% confidence interval (CI) for the rest of the data. The two-sample t-test was used for quantitative data and Fischer's exact test was used for qualitative data. *P* values less than 0.05 were considered significant.

RESULTS

Demographic data between the two groups were similar (Table 1, 2). There was a greater proportion of female patients in each group. 256 patients in total were asked to participate in the study, 46 of them (18%) refused to take part and another 16 patients (2.3%) were excluded for other reasons – change of surgical procedure or cancellation of surgery (Fig. 2).

In total, 204 patients participated in the study. 103 patients were initially randomized to the i-gel™ arm and in 101 an AuraOnce™ was initially inserted. Insertion failed in three patients in the i-gel™ group (3.7%); one of them had successful insertion of AuraOnce™, the other two required endotracheal intubation (Fig. 2). In the AuraOnce™ group, 97 patients were ventilated without any complication, while in three of them cross-over to the

Table 3. Insertion data, pressure data, device removal data.

	I-gel™	AuraOnce™	*P*
Size 3/4/5	9/82/12	16/76/6	-
No. of attempts 1/2/3/4	89/12/1/1	81/15/2/0	-
Time for insertion (s)	10.56 [8.75–12.37]	11.98 [10.84–13.12]	0.19 †
Repositioning	15 (14.6%)	24 (24.5%)	0.11 ††
Seal pressure (cm H_2O)	30.41 [29.08–31.74]	27.84 [26.54–29.14]	**0.007** * †
Peak pressure (cm H_2O)	15.32 [14.69–15.95]	15.6 [14.82–16.39]	0.57 †
Blood on device	6 (5.8%)	2 (2%)	0.15 ††

Mean [95% confidence intervals] or proportions. (*) statistically significant.
† = two sample t-test used
†† = Fischer´s exact test used

Table 4. Postoperative questionnaire results taken immediately after the procedure.

	I-gel immediate (n = 100)	AuraOnce immediate (n = 97)	*P*
Nausea	92/6/2/0; 8 (8%)	85/10/2/0; 12 (13.3%)	0.21
Sore throat	83/16/1/0; 17 (17%)	78/14/4/1; 19 (20.4%)	0.38
Difficulty swallowing	97/3/0/0; 3 (3%)	92/4/1/0; 5 (5.2%)	0.34
Pain on swallowing	96/4/0/0; 4 (4%)	93/3/1/0; 4 (4.1%)	0.27
Ear pain	100/0/0/0;	97/0/0/0;	NA
Difficulty hearing	98/2/0/0; 2 (2%)	96/1/0/0; 1 (1%)	0.51
Pain in the mouth	99/1/0/0; 1 (1%)	95/2/0/0; 2 (2.1%)	0.48
Numb tongue	97/2/1/0; 3 (3%)	96/1/0/0; 1 (1%)	0.32
Difficulty speaking	99/1/0/0; 1 (1%)	95/1/1/0; 2 (2.1%)	0.48
Neck pain	99/1/0/0; 1 (1%)	96/1/0/0; 1 (1%)	0.50
Cough	98/1/0/1; 2 (2%)	92/4/1/0; 5 (5.2%)	0.21
Hiccups	99/1/0/0; 1 (1%)	94/2/1/0; 3 (3.1%)	0.29

The results expressed as none/mild/moderate/severe; total incidence (total incidence in %). (*) statistically significant. Fischer's exact test used.

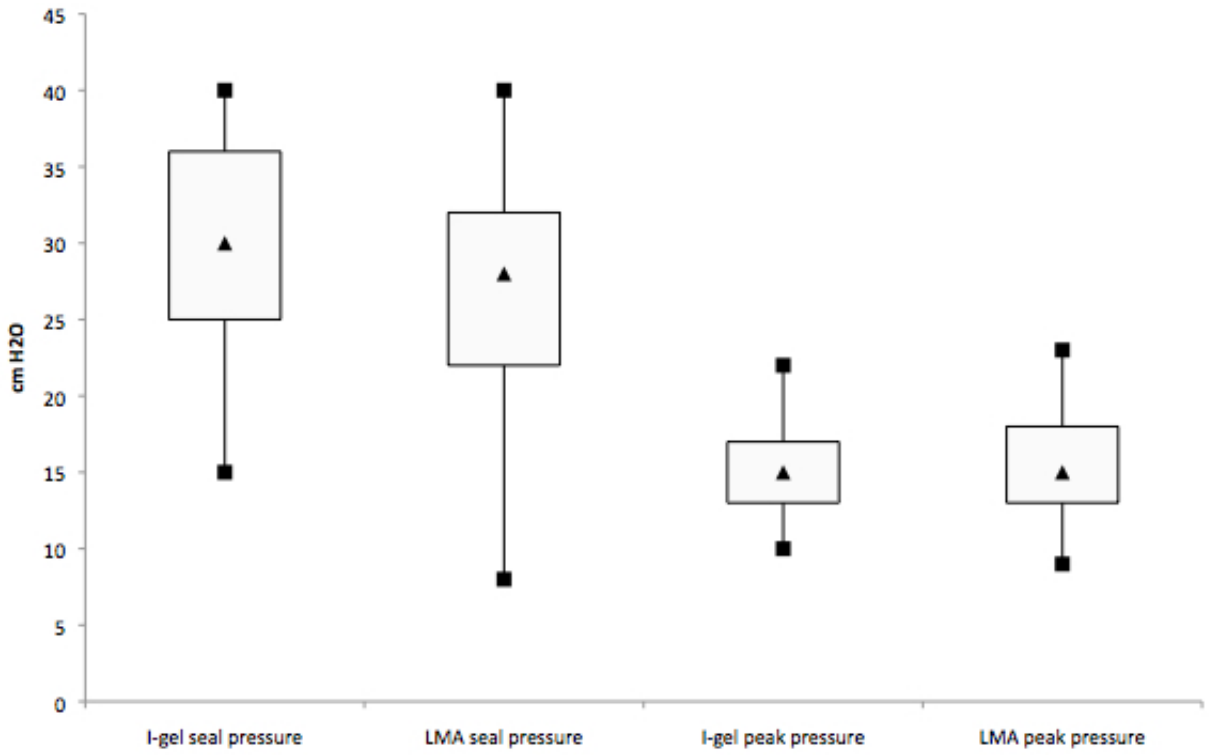

Fig. 3. Seal and peak pressures in the i-gel™ and AuraOnce™ groups.
▲ = means, ■ = upper and lower limits, the boxes represent the interquartile ranges 25-75%.

i-gel™ group was needed and in one case, endotracheal intubation had to be performed. The average insertion times were 10.6 s (i-gel) and 12.0 s (AuraOnce) (P=0.19) and the average number of attempts was 1.18 (i-gel) and 1.21 (AuraOnce) (P=0.73). First/Second/Third/Fourth attempt insertions were 89/12/1/1 for the i-gel™ and 81/15/2/0 for the AuraOnce™. First time insertion rates were 85.6% for the i-gel™ and 82% for the AuraOnce™ with overall success rates of 96.2% for the i-gel™ and 94.2% for the AuraOnce™ (P=0.54). All patients were included in the overall success rates but those who either crossed to the other arm, or who were intubated, were excluded from further statistical analysis. Repositioning or manipulation with the devices at any stage of procedure was required in 39 patients: 15 (14.6%) with the i-gel™ and 24 (24.5%) with the AuraOnce™ (P=0.11). The main reason for manipulation or repositioning was minor leak, often associated with a change of surgical position. Oxygenation in all patients was adequate and ventilation was rated as inadequate in three – two in the i-gel™ group and one in the AuraOnce™ group. Those in whom ventilation was inadequate had the alternative device inserted.

The average seal pressure for the i-gel™ was 30.4 cmH_2O and 27.8 cmH_2O for the AuraOnce™ (P=0.007). Average peak airway pressure for the i-gel™ was 15.3 cmH_2O and 15.6 cmH_2O (P=0.57) in the AuraOnce™ group (Table 3, Fig. 3).

The incidence of blood on the device was 6/103 in the i-gel™ group (5.8%) and 2/98 in the AuraOnce™ group (2%) (P=0.28). In two cases (2%) bile-stained contents were noted on the inner aspect of the devices upon removal, both in the AuraOnce™ group. Neither of these patients exhibited symptoms or signs of pulmonary aspiration.

All except one postoperative questionnaire were completed and analyzed. The overall incidence of postoperative complications was low in each of the groups (Table 4, Table 5). The only areas that achieved statistical significance were those of sore throat and difficulty swallowing: at 24 h 12 patients complained of sore throat in the i-gel™ group (12%) and 22 patients (22.7%) in the AuraOnce™ group (P=0.03), and at 24h 2 patients in the i-gel™ group (2%) complained of difficulty swallowing with 9 patients (9.3%) in the AuraOnce™ group (P=0.02).

DISCUSSION

The results of this study showed that both devices performed without any significant difference apart from higher seal pressures in the i-gel™ group and lower incidence of postoperative sore throat and difficulty swallowing at 24 h also in the i-gel™ group. There was a preponderance of female subjects in our study (74.5%). This was due to the high proportion of gynaecological and breast surgery in our institution – surgical procedures for which a supraglottic airway may be suitable. (Table 2) A previous study involving the i-gel™ only included female patients[3] and it may be the case that women are more likely to have such devices inserted. We did not choose a crossover design for this study, although most studies comparing two airway devices employ this design. However, crossover design

Table 5. Postoperative questionnaire results taken at 24h after the procedure.

	I-gel 24h (n = 100)	AuraOnce 24h (n = 97)	*P*
Nausea	85/11/3/1; 15 (15%)	83/10/4/0; 14 (14.4%)	0.53
Sore throat	88/12/0/0; 12 (12%)	75/13/8/1; 22 (22.7%)	**0.03***
Difficulty swallowing	98/2/0/0; 2 (2%)	88/9/0/0; 9 (9.3%)	**0.02***
Pain on swallowing	99/1/0/0; 1 (1%)	92/5/0/0; 5 (5.2%)	0.09
Ear pain	100/0/0/0;	97/0/0/0;	NA
Difficulty hearing	100/0/0/0;	96/0/1/0; 1 (1%)	0.49
Pain in the mouth	99/1/0/0; 1 (1%)	93/4/0/0; 4 (4.1%)	0.17
Numb tongue	99/0/0/1; 1 (1%)	97/0/0/0;	0.51
Difficulty speaking	100/0/0/0;	94/2/1/0; 3 (3.1%)	0.11
Neck pain	98/2/0/0; 2 (2%)	95/2/0/0; 2 (2.1%)	0.38
Cough	93/7/0/0; 7 (7%)	87/9/1/0; 10 (10.3%)	0.28
Hiccups	98/2/0/0; 2 (2%)	95/2/0/0; 2 (2.1%)	0.38

The results expressed as none/mild/moderate/severe; total incidence (total incidence in %). (*) statistically significant. Fischer's exact test used.

does not allow comparison of the incidence of postoperative complications for each device, and we feel that this outcome is very important.

Comparison with other studies

Insertion attempts for the AuraOnce™ are similar to those found in other studies[4,5]. Total success rate for AuraOnce™ insertion was 94.2% which corresponds with the results of other studies where overall success rate found was between 94% and 100% (ref.[4-6,10-12]).

First time success rates for the i-gel™ found in our study was 85.6% which is lower than the results published in recent cohorts. The i-gel was inserted in several studies on the first attempt in more than 90% of patients[1,2,13-15]. This finding could have been caused by an initial relative lack of experience in some operators. Overall success rate of the i-gel™ insertion in these studies varied between 93-100% and our success rate of 96.3% compares well with these findings. At least one study has demonstrated a shallow learning curve before attainment of high success rates with the i-gel™ (ref.[16]). The effective airway time (time to connection of the breathing circuit) was shorter and the average number of insertions was slightly less in the i-gel™ group, although neither was found to be significant. The i-gel™ was found to be the easiest of several SADs to insert in one manikin-based study[17]. Time taken to insert the AuraOnce™ was shorter in our study than in previous studies[5,6,10] and comparable to the results of another[12] which may be explained by a greater experience of all our operators with insertion of the AuraOnce™ device.

Three patients required endotracheal intubation. Each of these patients had some degree of abnormity at preoperative airway assessment. The incidence of blood on the device was higher in the i-gel™ group. The technique of insertion is not the same as that for laryngeal masks and the manufacturer recommends repositioning maneuvers in cases of resistance to insertion, such as deep rotation. Insertion of the i-gel™ has led to trauma to the frenulum in our institution[18]. The deep bowl of the i-gel™, which is designed so as not to fold the epiglottis, can fold the tongue in on insertion. If this is not recognized then injury is likely. There have been only two observational studies

evaluating traumatic insertion of the i-gel™ (ref.[1,2]) and its incidence is reported to be as low as 1%. The other studies had crossover design and thus occurrence of airway trauma could not be attributed to any one particular device. The incidence of traumatic insertion with the AuraOnce™ has been shown to be as high as 20% (ref.[5]). Our incidence of 2% for this device is much lower.
The i-gel™ was found to have a higher seal pressure than the AuraOnce™. A recent study comparing the i-gel™ to an endotracheal tube showed a comparable seal (in terms of leak fraction) – albeit under pressure controlled ventilation[19]. However, in another study using a cadaver model, the oesophageal seal pressure of the i-gel™ was found to be significantly lower than with the Classic™ and ProSeal™ laryngeal masks[20].

In initial investigations performed on cadavers it was found that the i-gel™ effectively mirrored the perilaryngeal anatomy and that it consistently achieved positioning for supraglottic ventilation[21]. The device was designed after investigation using cadaveric dissections, endoscopies and radiological imaging in an attempt to ensure the cuff mirrored the pharyngeal, perilaryngeal and laryngeal anatomy. It may be also used as a conduit for fibreoptic intubation[22] and has been used in the management of a patient with subglottic stenosis[23].

The postoperative complaints in our study demonstrated a lower incidence of postoperative sore throat and difficulty swallowing at 24h in the i-gel™ group. Very similar results were experienced in another study where the i-gel™ caused lower incidence of postoperative sore throat and neck complaints[24]. This fact may be attributed to the different pressures exerted on pharyngeal mucosa by the inflated cuff of the laryngeal mask compared with the cufless anatomical shape of the i-gel™.

The incidence of soiling on the inner aspect of both devices was low overall, being lower in the i-gel™ group. The phenomenon of visible regurgitation with the i-gel™ is now well documented[25,26]. The gastric channel allows early recognition of regurgitant gastric contents when placed correctly, although Gibbison's case series points out that this may not prevent ingression of gastric contents into the airway. We experienced two cases of gastric content contamination to the inner aspect of AuraOnce™, however no patient exhibited symptoms of aspiration. The incidence of aspiration associated with laryngeal mask use is estimated as low as 0.2% (ref.[27]).

The overall postoperative complication rate was low, comparable to those found in other studies of these devices. Supraglottic airways are frequently used as conduits for positive pressure ventilation, and avoid the potential pitfalls and postoperative complications of endotracheal intubation.

Study limitations

There are several limitations to our study:

The study was performed in patients under confirmed neuromuscular blockade which was not necessary for all procedures. However, there is some evidence that muscular tone in the pharynx is not influenced by neuromuscular blockade[28], and that neuromuscular blockade does not alter the incidence of sore throat with the LMA-classic™ (ref.[29]) but the results of our study cannot be applied to those in whom neuromuscular blocking drugs are not administered.

Secondly, the fact that we did not stipulate the checking of cuff pressures with the AuraOnce™ device may have prejudiced against that device in terms of its intraoperative performance and the postoperative course of patients in whom it was inserted. The changes in the cuff pressure of a laryngeal mask may have influence on the postoperative airway morphology[30]. The lack of an inflatable cuff in the i-gel™ obviates the need for checking of cuff pressures, and given our experience that checking of pressures is a variable practice this may be an advantage in itself.

Thirdly, the comparison between a device with a gastric channel and one without may disadvantage the device without for reasons explained above. The AuraOnce™ is the most common disposable SAD in use in our region and its cost is comparable with the i-gel™. The LMA-Supreme™ a newer disposable device that possesses a drain tube may have been a better candidate, but it was not available at the time the study was designed and its cost is several times higher than the cost of the i-gel™.

CONCLUSIONS

We have shown that these two disposable supraglottic airway devices perform almost equally under conditions of controlled ventilation, and that they have a low postoperative complication rate. The i-gel™ provided better seal and caused less postoperative sore throat and swallowing difficulties at 24 h.

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Conflict of interest: Assoc. Prof. Pavel Michalek has been lecturing for several companies manufacturing airway devices, including Intersurgical Ltd., AMBU Ltd. and Intavent Orthofix Ltd.

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