



Original Article

Comparison Of I-Gel and Proseal LMA in Laparoscopic Surgeries

Dr. Vinod V. Hudgi¹, Dr. Ajaykumar², Dr. Prateek Devappa³

¹Assistant Professor, Department of Anaesthesiology, ESIC Medical College and Hospital, Kalaburagi, Karnataka, India.

²Assistant Professor, Department of Anaesthesiology, ESIC Medical College and Hospital, Kalaburagi, Karnataka, India.

³Assistant Professor, Department of Anaesthesiology, MR Medical College and Basaveshwar Teaching and General Hospital (BTGH), Kalaburagi, Karnataka, India.



OPEN ACCESS

Corresponding Author:

Dr. Prateek Devappa

Assistant Professor, Department of
Anaesthesiology, MR Medical
College and BTGH, Kalaburagi,
Karnataka, India.

Email:

prateek.devappa@gmail.com

Received: 06-01-2026

Accepted: 30-01-2026

Available online: 28-02-2026

Copyright © International Journal of
Medical and Pharmaceutical Research

ABSTRACT

Background: Supraglottic airway devices have increasingly been used as alternatives to endotracheal tubes for airway management during laparoscopic surgery. Among second-generation devices, i-gel and ProSeal LMA provide effective ventilation with improved airway sealing and gastric drainage capabilities. This study aimed to compare the clinical performance of i-gel and ProSeal LMA in patients undergoing laparoscopic surgeries.

Methods: This prospective randomized comparative study included 80 patients undergoing elective laparoscopic surgeries under general anaesthesia. Patients were allocated into two groups of 40 each: Group I received i-gel and Group P received ProSeal LMA. Parameters assessed included insertion characteristics, insertion time, first-attempt success rate, oropharyngeal leak pressure, ventilation parameters, haemodynamic changes, and postoperative complications.

Results: The demographic characteristics were comparable between both groups. The mean insertion time was significantly lower with i-gel compared with ProSeal LMA (18.6 ± 5.2 seconds vs 25.4 ± 6.8 seconds; $p < 0.001$). First-attempt insertion success was similar between groups (97.5% vs 95.0%; $p = 0.64$). ProSeal LMA demonstrated significantly higher oropharyngeal leak pressure compared with i-gel (30.8 ± 4.5 cmH₂O vs 27.6 ± 4.2 cmH₂O; $p = 0.002$). Ventilation parameters, haemodynamic responses, and postoperative complications were comparable between groups.

Conclusion: Both i-gel and ProSeal LMA are effective supraglottic airway devices for laparoscopic surgery. i-gel offers advantages of faster insertion, whereas ProSeal LMA provides superior airway sealing pressure. Selection of the device may be based on clinical requirements and the need for optimal airway seal.

Keywords: i-gel; ProSeal LMA; supraglottic airway device; laparoscopic surgery; airway management; general anaesthesia.

INTRODUCTION

Laparoscopic surgery has become an important component of modern surgical practice due to its advantages of reduced postoperative pain, shorter hospital stay, faster recovery, and improved cosmetic outcomes compared with open procedures.[1] Over the years, its application has expanded from basic diagnostic and gynaecological procedures to complex gastrointestinal, urological, and advanced minimally invasive surgeries.[1] However, laparoscopic procedures present specific anaesthetic challenges due to pneumoperitoneum, which increases intra-abdominal pressure, reduces pulmonary compliance, elevates airway pressures, and may increase the risk of gastroesophageal reflux and aspiration. Therefore, maintaining a secure airway and adequate ventilation remains a crucial aspect of anaesthetic management during laparoscopic surgery.[2] Endotracheal intubation has traditionally been considered the standard technique for airway management during laparoscopic procedures because it provides a reliable airway seal, facilitates controlled ventilation, and offers protection against aspiration.[3] However, direct laryngoscopy and tracheal instrumentation may produce sympathetic stimulation leading to haemodynamic fluctuations and are associated with postoperative complications such as sore throat, coughing, hoarseness, airway trauma, and laryngeal injury.[4,5] These limitations have encouraged the use

of supraglottic airway devices (SADs) as less invasive alternatives in selected patients undergoing laparoscopic surgeries. Second-generation supraglottic airway devices have gained popularity due to their improved airway sealing capacity, gastric drainage capability, and suitability for positive pressure ventilation.[6] Among these, the ProSeal laryngeal mask airway (PLMA) and i-gel are commonly used devices that have demonstrated effective airway management during laparoscopic procedures.[6,7] The ProSeal LMA is an advanced supraglottic airway device with an inflatable cuff that enhances perilaryngeal sealing and provides higher oropharyngeal leak pressure compared with conventional laryngeal mask airways. It also incorporates a gastric drainage channel, allowing passage of a gastric tube and drainage of gastric secretions or regurgitated material, thereby improving airway safety.[6] Due to its ability to withstand higher airway pressures, PLMA has been considered suitable for controlled ventilation during laparoscopic surgery. The i-gel is a newer-generation, single-use supraglottic airway device with an anatomically designed, non-inflatable cuff made of soft thermoplastic elastomer. The device conforms to the perilaryngeal structures without requiring cuff inflation, thereby reducing cuff-related pressure complications and facilitating rapid insertion. Similar to PLMA, i-gel contains a gastric channel and provides effective ventilation during general anaesthesia.[6,8] Studies have demonstrated favourable insertion characteristics, minimal haemodynamic response, and effective airway management with i-gel during laparoscopic procedures.[2,8] During laparoscopic surgery, adequate airway sealing and maintenance of effective ventilation are important because pneumoperitoneum may increase airway pressures and compromise respiratory mechanics. Oropharyngeal leak pressure is considered an important indicator of supraglottic airway device performance. A randomized controlled trial comparing i-gel and PLMA during laparoscopic gynaecological surgery demonstrated that both devices maintained effective ventilation; however, PLMA showed higher oropharyngeal sealing pressures, particularly after pneumoperitoneum and Trendelenburg positioning.[2] Similarly, comparative studies have reported that while PLMA may provide a superior airway seal, i-gel offers advantages such as easier insertion and shorter insertion time.[6,9] Previous systematic reviews and meta-analyses comparing i-gel and PLMA have demonstrated comparable clinical efficacy with respect to insertion success and ventilation adequacy. However, differences exist in airway sealing pressure, insertion characteristics, and postoperative complications, with PLMA generally showing higher leak pressures due to its inflatable cuff and i-gel providing advantages related to ease of insertion and reduced airway manipulation.[6,10] Although both i-gel and ProSeal LMA are considered effective second-generation supraglottic airway devices, the selection of an optimal device for laparoscopic surgery remains clinically relevant. Therefore, the present study was conducted to compare i-gel and ProSeal LMA for airway management in patients undergoing laparoscopic surgeries, evaluating insertion characteristics, airway leak pressure, ventilation parameters, haemodynamic responses, and perioperative complications.

MATERIALS AND METHODS

This prospective, randomized comparative study was conducted in the Department of Anaesthesiology at a tertiary care hospital. The study was conducted to compare the clinical performance of i-gel and ProSeal laryngeal mask airway (PLMA) for airway management in patients undergoing laparoscopic surgeries under general anaesthesia.

Study Population and Sample Size

A total of 80 patients scheduled for elective laparoscopic surgeries under general anaesthesia were included in the study. Patients were randomly allocated into two groups of 40 patients each using a computer-generated randomization method.

- Group I (i-gel group): Patients received i-gel supraglottic airway device for airway management.
- Group P (PLMA group): Patients received ProSeal laryngeal mask airway for airway management.

The sample size was calculated based on previously published studies comparing airway sealing pressure between i-gel and PLMA, considering a significance level of 5% and a power of 80%. A total sample size of 80 patients was considered adequate to detect clinically significant differences between the two devices.

Inclusion Criteria

Patients fulfilling the following criteria were included:

- Age between 18 and 60 years
- American Society of Anesthesiologists (ASA) physical status I and II
- Patients undergoing elective laparoscopic surgeries under general anaesthesia
- Body mass index (BMI) <30 kg/m²
- Patients providing written informed consent for participation

Exclusion Criteria

Patients were excluded if they had:

- Predicted difficult airway
- History of upper airway pathology or surgery
- Increased risk of aspiration
- Gastroesophageal reflux disease
- Morbid obesity (BMI ≥30 kg/m²)
- Significant cardiopulmonary disease
- Pregnancy

- Emergency surgery
- Contraindication to supraglottic airway device insertion

Preoperative Assessment

All patients underwent detailed preoperative evaluation, including history, physical examination, airway assessment, routine investigations, and assessment of ASA physical status. Baseline parameters including heart rate, systolic blood pressure, diastolic blood pressure, mean arterial pressure, and oxygen saturation were recorded before induction of anaesthesia.

Anaesthetic Technique

Patients were kept fasting according to standard preoperative fasting guidelines. On arrival in the operating room, standard monitoring including electrocardiography, non-invasive blood pressure monitoring, pulse oximetry, and end-tidal carbon dioxide monitoring was initiated.

All patients received intravenous access and were preoxygenated with 100% oxygen for 3 minutes. General anaesthesia was induced with intravenous propofol (2 mg/kg), fentanyl (2 µg/kg), and an appropriate dose of neuromuscular blocking agent (atracurium/rocuronium) to facilitate airway device insertion. After achieving adequate depth of anaesthesia and muscle relaxation, the allocated airway device (i-gel or PLMA) was inserted according to the manufacturer's recommendations by an experienced anaesthesiologist. Correct placement was confirmed by bilateral chest expansion, capnography waveform, absence of audible leak, and adequate tidal volume delivery.

Airway Device Assessment

The following parameters were recorded and compared between the two groups:

1. **Insertion characteristics**
 - Ease of insertion
 - Insertion time (time from picking up the device until confirmation of ventilation)
 - Number of insertion attempts
 - First attempt insertion success rate
2. **Airway sealing parameters**
 - Oropharyngeal leak pressure (OLP)
 - Presence of audible leak
 - Peak airway pressure during ventilation

Oropharyngeal leak pressure was assessed by closing the adjustable pressure-limiting valve at a fixed gas flow and recording the airway pressure at which an audible leak was detected.

3. **Ventilatory parameters**
 - Tidal volume
 - Minute ventilation
 - End-tidal carbon dioxide (EtCO₂)
 - Oxygen saturation (SpO₂)
4. **Haemodynamic parameters**

Heart rate and blood pressure were recorded at:

- Baseline
- After induction
- Immediately after airway device insertion
- 5 minutes after insertion
- 10 minutes after insertion
- At the end of surgery
- After removal of airway device

5. **Fibreoptic Assessment**

The position of the airway device was assessed using a flexible fibreoptic bronchoscope and graded according to visualization of the glottic opening.

Intraoperative Management

Anaesthesia was maintained with oxygen-air mixture, inhalational agent (sevoflurane/isoflurane), and intermittent doses of muscle relaxant as required. Mechanical ventilation was performed using volume-controlled ventilation with appropriate tidal volume and respiratory rate to maintain adequate oxygenation and normocapnia. Pneumoperitoneum was created using standard surgical techniques, and intraoperative ventilation parameters were monitored throughout the procedure.

Postoperative Assessment

At the completion of surgery, neuromuscular blockade was reversed and the airway device was removed after adequate recovery of consciousness and protective airway reflexes. Patients were monitored in the post-anaesthesia care unit.

Postoperative complications were assessed, including:

- Sore throat
- Hoarseness
- Cough
- Blood staining on device removal
- Nausea and vomiting
- Airway-related complications

Statistical Analysis

Data were analysed using SPSS version 27. Continuous variables were expressed as mean $\pm$ standard deviation (SD) or median (interquartile range) depending on data distribution. Categorical variables were presented as frequency and percentage. Comparison of continuous variables between groups was performed using the independent t-test or Mann–Whitney U test. Categorical variables were analysed using Chi-square test or Fisher's exact test. A p-value <0.05 was considered statistically significant.

RESULTS

A total of 80 patients undergoing elective laparoscopic surgeries under general anaesthesia were enrolled and randomly allocated into two groups of 40 patients each. Group I received i-gel supraglottic airway device, whereas Group P received ProSeal laryngeal mask airway (PLMA). All patients completed the study protocol and were included in the final analysis. The demographic characteristics and baseline clinical parameters were comparable between both groups. The mean age of patients was 41.8 ± 10.6 years in the i-gel group and 42.5 ± 11.2 years in the PLMA group ($p=0.78$). The distribution of sex, body mass index, ASA physical status, and duration of surgery showed no statistically significant difference between the groups ($p>0.05$). The baseline haemodynamic parameters including heart rate, systolic blood pressure, diastolic blood pressure, and oxygen saturation were also comparable between the two groups (Table 1). The first-attempt insertion success rate was comparable between both groups, with successful placement achieved in 39 (97.5%) patients in the i-gel group and 38 (95.0%) patients in the PLMA group ($p=0.64$). The mean insertion time was significantly shorter with i-gel compared with PLMA (18.6 ± 5.2 seconds vs 25.4 ± 6.8 seconds, $p<0.001$). The number of insertion attempts and ease of insertion were comparable between groups (Table 2). The comparison of insertion characteristics between i-gel and ProSeal LMA groups is depicted in (Figure 1). The mean oropharyngeal leak pressure was significantly higher in the PLMA group compared with the i-gel group (30.8 ± 4.5 cmH₂O vs 27.6 ± 4.2 cmH₂O, $p=0.002$). Both devices maintained adequate airway sealing during pneumoperitoneum; however, PLMA demonstrated superior sealing capacity throughout the procedure (Table 3). Both devices provided effective ventilation throughout laparoscopic surgery. The peak airway pressure, tidal volume, minute ventilation, end-tidal carbon dioxide levels, and oxygen saturation were comparable between the two groups at all observed time points ($p>0.05$). No clinically significant episodes of hypoxia or inadequate ventilation were observed in either group (Table 3). The comparison of airway and ventilation parameters between i-gel and ProSeal LMA groups is illustrated in (Figure 2). Heart rate and mean arterial pressure showed a transient increase after insertion of airway devices in both groups; however, the changes were not statistically significant between groups. The haemodynamic response following insertion was slightly lower in the i-gel group, although the difference did not reach statistical significance ($p>0.05$). Intraoperative haemodynamic parameters remained stable throughout the procedure (Table 4). Fiberoptic evaluation showed comparable airway positioning between the two groups. A grade 1 view (only vocal cords visible) was observed in 32 (80.0%) patients in the i-gel group and 30 (75.0%) patients in the PLMA group. The distribution of fiberoptic grades was statistically similar between groups ($p=0.61$). The incidence of postoperative complications was lower in the i-gel group; however, the difference was not statistically significant. Postoperative sore throat occurred in 3 (7.5%) patients in the i-gel group compared with 6 (15.0%) patients in the PLMA group ($p=0.29$). Blood staining of the device after removal was observed more frequently with PLMA (12.5% vs 2.5%), although the difference was not statistically significant ($p=0.16$). Incidence of nausea, vomiting, coughing, and hoarseness was comparable between groups (Table 4). The comparison of haemodynamic changes and postoperative complications between the two groups is depicted in (Figure 3).

Table 1. Demographic and Baseline Characteristics of Study Participants (n=80)

Parameter	i-gel Group (n=40)	ProSeal LMA Group (n=40)	p-value
Age (years), Mean $\pm$ SD	41.8 ± 10.6	42.5 ± 11.2	0.78
Male, n (%)	22 (55.0)	21 (52.5)	0.82
Female, n (%)	18 (45.0)	19 (47.5)	
BMI (kg/m ²), Mean $\pm$ SD	24.6 ± 3.2	24.9 ± 3.5	0.69
ASA physical status, n (%)			
ASA I	24 (60.0)	23 (57.5)	0.82
ASA II	16 (40.0)	17 (42.5)	
Duration of surgery (min), Mean $\pm$ SD	78.5 ± 18.4	80.2 ± 19.1	0.68
Type of surgery, n (%)			
Laparoscopic cholecystectomy	26 (65.0)	27 (67.5)	0.81

Other laparoscopic procedures	14 (35.0)	13 (32.5)	
-------------------------------	-----------	-----------	--

Table 2. Comparison of Insertion Characteristics of i-gel and ProSeal LMA

Parameter	i-gel Group (n=40)	ProSeal LMA Group (n=40)	p-value
First attempt insertion success, n (%)	39 (97.5)	38 (95.0)	0.64
Number of insertion attempts, Mean $\pm$ SD	1.03 $\pm$ 0.16	1.08 $\pm$ 0.27	0.29
Insertion time (seconds), Mean $\pm$ SD	18.6 $\pm$ 5.2	25.4 $\pm$ 6.8	<0.001
Easy insertion, n (%)	38 (95.0)	36 (90.0)	0.39
Difficult insertion, n (%)	2 (5.0)	4 (10.0)	

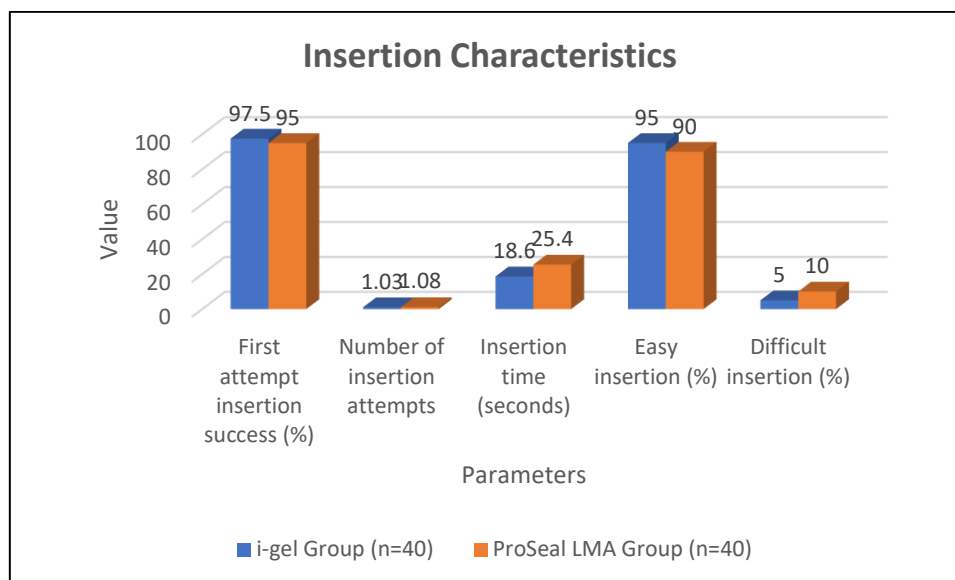


Figure 1. Comparison of Insertion Characteristics of i-gel and ProSeal LMA

Table 3. Comparison of Airway and Ventilation Parameters Between i-gel and ProSeal LMA

Parameter	i-gel Group (n=40)	ProSeal LMA Group (n=40)	p-value
Oropharyngeal leak pressure (cmH ₂ O), Mean $\pm$ SD	27.6 $\pm$ 4.2	30.8 $\pm$ 4.5	0.002
Peak airway pressure (cmH ₂ O), Mean $\pm$ SD	18.9 $\pm$ 3.4	19.4 $\pm$ 3.6	0.52
Tidal volume (mL), Mean $\pm$ SD	430 $\pm$ 55	438 $\pm$ 60	0.54
End-tidal CO ₂ (mmHg), Mean $\pm$ SD	36.8 $\pm$ 3.5	37.1 $\pm$ 3.8	0.72
Oxygen saturation (%)	98.4 $\pm$ 0.8	98.3 $\pm$ 0.9	0.61
Ventilation failure requiring device repositioning, n (%)	1 (2.5)	2 (5.0)	0.55

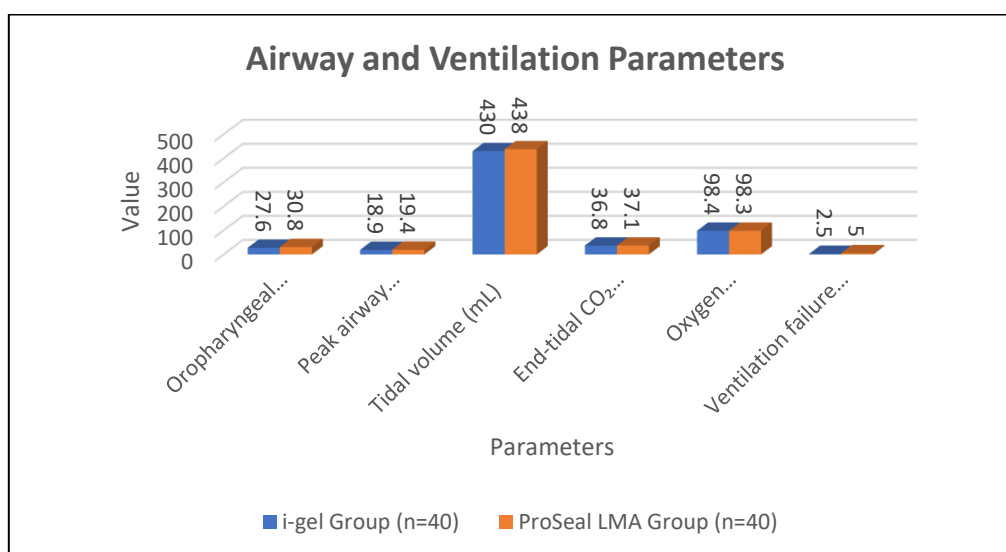
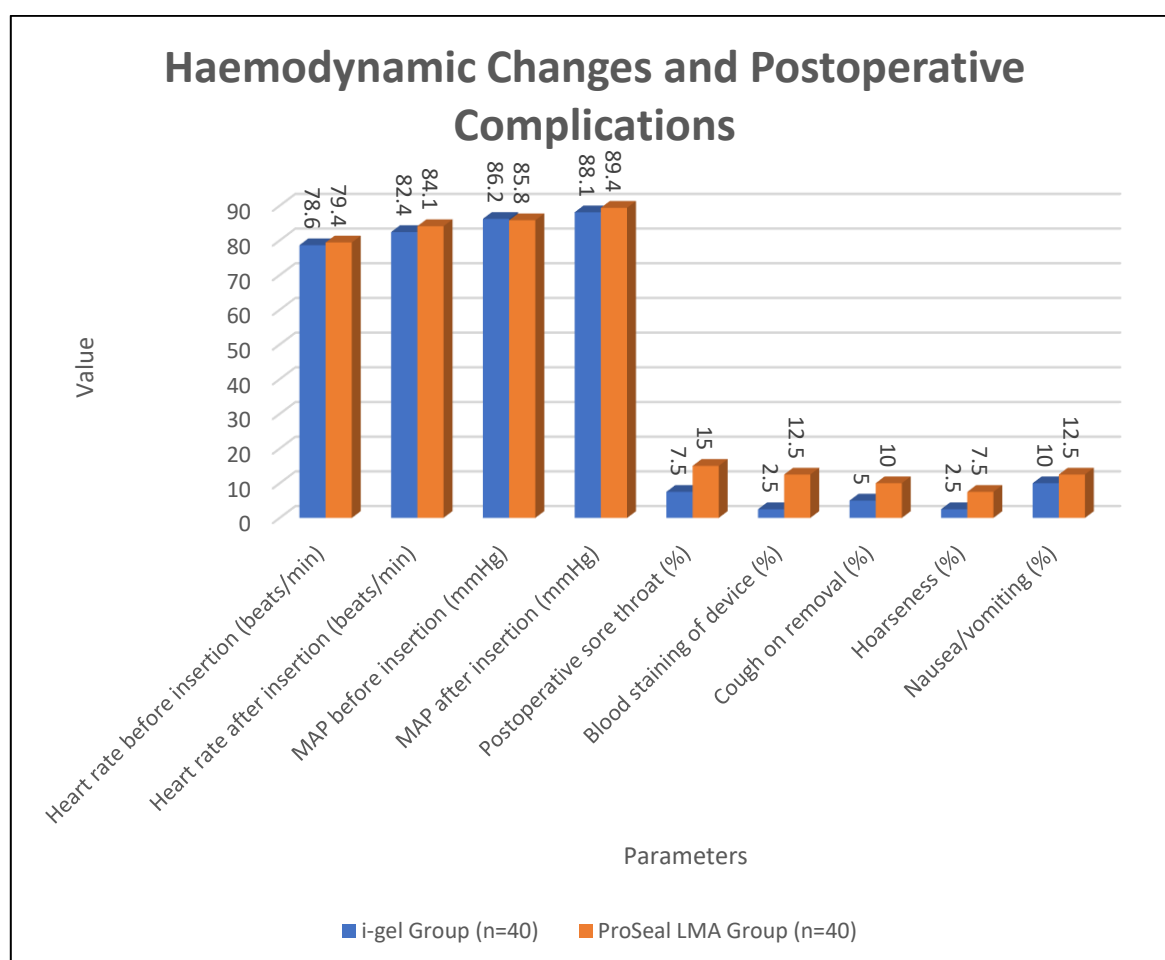


Figure 2. Comparison of Airway and Ventilation Parameters Between i-gel and ProSeal LMA

Table 4. Comparison of Haemodynamic Changes and Postoperative Complications

Parameter	i-gel Group (n=40)	ProSeal LMA Group (n=40)	p-value
Heart rate before insertion (beats/min), Mean $\pm$ SD	78.6 $\pm$ 9.2	79.4 $\pm$ 8.8	0.69
Heart rate after insertion (beats/min), Mean $\pm$ SD	82.4 $\pm$ 9.8	84.1 $\pm$ 10.2	0.45
MAP before insertion (mmHg), Mean $\pm$ SD	86.2 $\pm$ 8.5	85.8 $\pm$ 8.9	0.84
MAP after insertion (mmHg), Mean $\pm$ SD	88.1 $\pm$ 9.1	89.4 $\pm$ 9.5	0.53
Postoperative sore throat, n (%)	3 (7.5)	6 (15.0)	0.29
Blood staining of device, n (%)	1 (2.5)	5 (12.5)	0.09
Cough on removal, n (%)	2 (5.0)	4 (10.0)	0.40
Hoarseness, n (%)	1 (2.5)	3 (7.5)	0.30
Nausea/vomiting, n (%)	4 (10.0)	5 (12.5)	0.72

**Figure 3. Comparison of Haemodynamic Changes and Postoperative Complications**

DISCUSSION

The present prospective comparative study evaluated the clinical performance of i-gel and ProSeal LMA for airway management in 80 patients undergoing laparoscopic surgeries under general anaesthesia. In our study, both devices provided effective ventilation and satisfactory airway management. However, i-gel demonstrated significantly shorter insertion time (18.6 ± 5.2 seconds vs 25.4 ± 6.8 seconds; $p < 0.001$), whereas ProSeal LMA showed significantly higher oropharyngeal leak pressure (30.8 ± 4.5 cmH₂O vs 27.6 ± 4.2 cmH₂O; $p = 0.002$). Haemodynamic parameters and postoperative complications were comparable between both groups. In the present study, baseline demographic and clinical characteristics were comparable between both groups. The mean age was 41.8 ± 10.6 years in the i-gel group and 42.5 ± 11.2 years in the ProSeal LMA group ($p = 0.78$). Gender distribution, BMI, ASA physical status, and duration of surgery showed no statistically significant differences, suggesting adequate comparability of the study population.

Chauhan et al. [12] similarly reported comparable demographic characteristics between patients receiving i-gel and ProSeal LMA, with no significant differences in age, sex distribution, BMI, or ASA status. Their findings supported that both groups were comparable before airway device insertion. A major finding of the present study was the significantly shorter insertion time with i-gel compared with ProSeal LMA (18.6 ± 5.2 seconds vs 25.4 ± 6.8 seconds; $p < 0.001$). The first-attempt insertion success rate was comparable between the two groups (97.5% in i-gel vs 95% in ProSeal LMA; $p = 0.64$).

The faster insertion observed with i-gel may be attributed to its cuffless design, anatomical shape, and absence of cuff inflation requirement after placement. Chauhan et al. [12] reported significantly shorter insertion time with i-gel compared with ProSeal LMA (11.12 ± 1.81 seconds vs 15.13 ± 2.91 seconds; $p=0.001$). They also observed a higher ease of insertion with i-gel, supporting the advantage of its non-inflatable cuff design. Similarly, Park et al. [6], in their systematic review and meta-analysis comparing i-gel and ProSeal LMA, demonstrated that i-gel was associated with shorter insertion time while maintaining comparable insertion success rates. The authors suggested that the simpler insertion technique of i-gel may be advantageous in situations requiring rapid airway establishment. Oropharyngeal leak pressure is an important parameter for assessing supraglottic airway device performance, particularly during laparoscopic surgery where pneumoperitoneum increases airway pressures. In the present study, ProSeal LMA demonstrated significantly higher oropharyngeal leak pressure compared with i-gel (30.8 ± 4.5 cmH₂O vs 27.6 ± 4.2 cmH₂O; $p=0.002$). The superior sealing ability of ProSeal LMA may be explained by its inflatable cuff, which provides better circumferential contact with the perilaryngeal structures and allows higher airway pressure ventilation. Mishra et al. [2] evaluated the effect of pneumoperitoneum and Trendelenburg position on airway sealing pressure during laparoscopic gynaecological surgery and reported significantly higher oropharyngeal leak pressure with ProSeal LMA compared with i-gel. They concluded that although both devices maintained effective ventilation, ProSeal LMA provided a more reliable seal during increased intra-abdominal pressure conditions. Chauhan et al. [12] also demonstrated higher airway sealing pressure with ProSeal LMA compared with i-gel (29.55 ± 3.53 cmH₂O vs 26.73 ± 2.52 cmH₂O; $p=0.001$), supporting the superior sealing characteristics of PLMA. Schmidbauer et al. [13], using a cadaver model, compared oesophageal sealing properties of i-gel, classic LMA, and ProSeal LMA and reported better oesophageal sealing pressure with ProSeal LMA. Their findings suggested that the cuffed design of PLMA provides enhanced protection against regurgitation compared with cuffless devices. In our study, both i-gel and ProSeal LMA provided adequate ventilation throughout laparoscopic procedures. Peak airway pressure, tidal volume, end-tidal carbon dioxide, and oxygen saturation were comparable between groups ($p>0.05$). No patient required conversion to endotracheal intubation due to inadequate ventilation. Uppal et al. [14] compared i-gel with cuffed endotracheal tubes during pressure-controlled ventilation and reported that i-gel provided effective ventilation with acceptable airway pressures and respiratory parameters. In the present study, haemodynamic responses following airway device insertion were minimal and comparable between groups. Heart rate and mean arterial pressure showed mild transient increases after insertion, but these changes were not statistically significant. The favourable haemodynamic profile of supraglottic airway devices is related to reduced airway stimulation compared with direct laryngoscopy and endotracheal intubation. Ismail et al. [15] compared haemodynamic responses following insertion of i-gel, LMA, and endotracheal tube and observed significantly lower cardiovascular responses with i-gel and LMA compared with endotracheal intubation. Their findings demonstrated the advantage of SADs in maintaining cardiovascular stability. In the present study, postoperative complications were comparable between groups. Sore throat occurred in 3 (7.5%) patients in the i-gel group and 6 (15%) patients in the ProSeal LMA group. Blood staining was observed in 1 (2.5%) patient with i-gel and 5 (12.5%) patients with ProSeal LMA, although these differences were statistically insignificant. The lower incidence of airway-related complications with i-gel may be attributed to its soft, non-inflatable cuff, which reduces mucosal pressure and pharyngeal trauma. Park et al. [6] reported in their meta-analysis that i-gel was associated with fewer minor complications, including reduced blood staining and postoperative sore throat, whereas ProSeal LMA demonstrated better airway sealing pressure. Chauhan et al. [12] also reported fewer airway-related complications with i-gel compared with ProSeal LMA, although both devices were considered safe and effective for airway management.

CONCLUSION

Both i-gel and ProSeal LMA provided effective and reliable airway management in patients undergoing laparoscopic surgeries under general anaesthesia. The i-gel demonstrated significantly shorter insertion time and ease of placement, whereas ProSeal LMA provided a superior oropharyngeal leak pressure, indicating better airway sealing capacity. Ventilation parameters, haemodynamic stability, and postoperative complications were comparable between both groups. Therefore, i-gel can be considered a suitable alternative when rapid insertion and reduced airway manipulation are preferred, while ProSeal LMA may be advantageous in situations requiring higher airway sealing pressure.

Limitations

The study was conducted with a relatively small sample size of 80 patients from a single centre, which may limit the generalizability of the findings. The study included only elective laparoscopic procedures and excluded patients with anticipated difficult airway or significant comorbidities. Long-term postoperative outcomes and performance of these devices in high-risk patient populations were not evaluated.

REFERENCES

1. Alkatout I, Mechler U, Mettler L, Pape J, Maass N, et al. The development of laparoscopy—A historical overview. *Front Surg.* 2021;8:799442.
2. Mishra SK, Sivaraman B, Balachander H, Naggappa M, Parida S, Bhat RR, et al. Effect of pneumoperitoneum and Trendelenburg position on oropharyngeal sealing pressure of I-gel™ and ProSeal LMA™ in laparoscopic gynecological surgery: A randomized controlled trial. *Anesth Essays Res.* 2015;9(3):353-358.
3. Saraswat N, Kumar A, Mishra A, Gupta A, Saurabh G, Srivastava U. The comparison of Proseal laryngeal mask airway and endotracheal tube in patients undergoing laparoscopic surgeries under general anaesthesia. *Indian J*

- Anaesth. 2011;55:129-134.
4. Saeg AA, Alnori H. Laryngeal injury and dysphonia after endotracheal intubation. *J Med Life*. 2021;14:355-360.
 5. Cook TM. Strategies for the prevention of airway complications—A narrative review. *Anaesthesia*. 2018;73:93-111.
 6. Park SK, Choi GJ, Choi YS, Ahn EJ, Kang H. Comparison of the I-Gel and the Laryngeal Mask Airway Proseal during general anesthesia: A systematic review and meta-analysis. *PLoS One*. 2015;10(3):e0119469.
 7. Sule M, Salahu D, Atiku M, Abdurrahman A, Mohammed AD, Abdullahi MM. Airway management during diagnostic laparoscopic surgery: A comparison of I-gel and Proseal laryngeal mask airway. *J West Afr Coll Surg*. 2023;13(4):34-39.
 8. Vasani A, Rajyaguru AM. I-gel as an alternative to endotracheal tube in adult laparoscopic surgeries: A comparative study. *J Minim Access Surg*. 2015;11:251-256.
 9. Jadhav PA, Dalvi NP, Tendolkar BA. I-gel versus laryngeal mask airway-Proseal: Comparison of two supraglottic airway devices in short surgical procedures. *J Anaesthesiol Clin Pharmacol*. 2015;31:221-225.
 10. Shin HW, Yoo HN, Bae GE, Chang JC, Park MK, You HS, et al. Comparison of oropharyngeal leak pressure and clinical performance of LMA ProSeal™ and i-gel® in adults: Meta-analysis and systematic review. *J Int Med Res*. 2016;44:405-418.
 11. Verma B, Nidhi A, Jain M. A comparative study between I-gel and Proseal LMA in adult patients undergoing elective laparoscopic cholecystectomy. *Int J Contemp Med Res*. 2018;5:E6-E9.
 12. Chauhan G, Nayar P, Seth A, Gupta K, Panwar M, Agrawal N. Comparison of clinical performance of I-gel with LMA Proseal. *J Anaesthesiol Clin Pharmacol*. 2013;29:56-60.
 13. Schmidbauer W, Bercker S, Volk T, Bogusch G, Mager G, Kerner T. Oesophageal seal of the novel supraglottic airway device I-Gel in comparison with the Laryngeal mask airways Classic and Proseal using a cadaver model. *Br J Anaesth*. 2009;102:135-139.
 14. Uppal V, Fletcher G, Kinsella J. Comparison of I-gel with cuffed tracheal tube during pressure-controlled ventilation. *Br J Anaesth*. 2009;102:264-268.
 15. Ismail SA, Bisher NA, Kandil HW, Mowafi HA, Atawia HA. Intraocular pressure and haemodynamic responses to insertion of I-gel, laryngeal mask airway or endotracheal tube. *Eur J Anaesthesiol*. 2011;28:443-448.