IJCSPUB.ORG ISSN : 2250-1770

INTERNATIONAL JOURNAL OF CURRENT SCIENCE (IJCSPUB)

IJCS PUBLICATION (IJCSPUB.ORG) An International Open Access, Peer-reviewed, Refereed Journal

A STUDY ON THE COMPARATIVE EFFECTS OF THE EFFICACY OF BASKA MASK AND I-GEL OF THE PATIENTS UNDERGOING GENERAL ANESTHESIA FOR ELECTIVE MINOR SURGERIES

Suhail Anjum Rather[1] Dr. Abhishek Gupta[2]

[1] Anesthesia Technologist, Aamina Hospital and Nursing Home, Nowgam, Srinagar, India and Post-Graduate student, Department of Operation Theatre and Anesthesia Technology, University School of Allied Health Sciences, Rayat Bahra University, Mohali, Punjab, India.

[2]Assistant Professor, Department of Operation Theatre and Anaesthesia Technology, University School of Allied Health Sciences, Rayat Bahra University, Mohali, Punjab, Bharat

Abstract:

Background: This study aimed to compare the efficacy and safety profile of two supraglottic airway devices, the Baska Mask and the I-Gel in the patients undergoing general anesthesia for elective minor surgeries.

Methods: A total of 60 surgical patients aged 18-50 years, with ASA grade I and II, were enrolled and divided into two groups: the Baska Mask group (n=30) and the I-Gel group (n=30). Demographic characteristics, insertion characteristics, hemodynamic stability, airway sealing pressure, and complications were compared between the two groups.

Results: Demographic characteristics, including age, weight, gender distribution, ASA grade, were comparable between the Baska Mask and I-Gel groups. In a comparative study between Baska mask and I-Gel groups, the Baska mask demonstrated a significantly faster mean insertion time 7.5 ± 1.4 seconds as compared to 7.9 ± 1.3 seconds for the I- Gel group (t= , p=). Ease of insertion was higher in the Buska group with 93.4% reporting easy insertion versus 92.3% in the I-Gel group. Additionally, the Baska Mask achieved better airway sealing pressure (32.7±5.0cmH2O vs. 28.5±6.2 cmH2O, p=0.001) and had significantly fewer complications like sore throat and hoarseness.

Conclusion: The study suggests that the Baska Mask device out performs the I-gel in various aspects of airway management, including shorter insertion times, better hemodynamic stability, superior airway sealing pressure, and but baska mask has fewer postoperative complications. These findings indicate that the Baska Mask may offer significant advantages in clinical practice, potentially improving procedural efficiency, patient safety, and overall outcomes.

***Keywords*:** Supraglottic airway devices, I-Gel, Baska Mask, General anesthesia, surgical airway management.

1. INTRODUCTION

Airway management during general anesthesia is a critical aspect of perioperative care, ensuring adequate ventilation and oxygenation while minimizing the risk of complications such as hypoxemia and aspiration. Over the years, various supraglottic airway devices have been developed to facilitate airway management, offering advantages in terms of ease of insertion, maintenance of airway patency, and suitability for different surgical procedures.[1,2]

Minor surgical procedures under general anesthesia require a patent airway without the use of muscle relaxant. For such procedures, various supraglottic airway devices have been designed and are being used exceedingly. Although endotracheal intubation is the gold standard for airway management, it is being replaced by supraglottic airway devices because they are easy to introduce, better tolerated and results in a lesser hemodynamic response. Further these devices have lesser implications on airway and respiratory mechanics. One such advancement in airway management technology is the introduction of the Buska Mask and I-Gel. These devices have gained popularity among both the anesthesiologists and the surgeons due to their ease of use and favorable clinical outcomes in a wide range of surgical procedures.

The invention of supraglottic airway devices (SGADs) has initiated a new era of modern airway management and it is considered to be an important milestone towards improving patient safety during anesthesia. Over the years, numerous enhancements have resulted in the creation of improved second generation SGADs that aimed to allow a higher positive airway pressure while reducing the risk of pulmonary aspiration by adding a gastric access port for evacuation of the stomach contents.

The I-gel is a supraglottic airway device with an anatomically designed non-inflatable mask that snugly fits onto the peri-laryngeal framework. The device has a oral cavity stabiliser with an airway channel and a gastric tube insertion channel. The Baska mask is a new supraglottic non-inflatable airway device that has a self-sealing membranous cuff that inflates during inspiration and deflates during expiration. An inbuilt tab facilitates insertion of the device. It also has an esophageal drainage inlet, a side channel to facilitate aspiration of gastric contents and an integrated bite-block.

The similarity of these two SGADs are the non-inflatable cuff features, which are considered by some to be the main feature of the so-called third-generation SGADs in comparison to the earlier second-generation SGADs, such as the LMA Proseal, LMA-Fastrack

Aim of the Study

To a study the comparative effects of the efficacy of Baska Mask and I- gel in the patients undergoing general anesthesia for elective Minor surgeries.

Objectives of the Study

1. To evaluate the efficacy of Baska Mask over I-Gel in patients undergoing general anesthesia in the study population.

2. To differentiate the hemodynamic stability after the insertion of supraglottic airway devices (SAD) among both the groups.

3. To compare the duration of insertion and the ease of insertion of supraglottic airway devices (SAD) in both the groups.

4. To assess the incidence of post operative adverse affects in all the study participants.

2. REVIEW OF LITERATURE

In our study we compared two supraglottic airway Baska Mask and I-Gel in relation to the ease of insertion, duration of insertion, hemodynamic responses, and peripheral oxygen saturation (SpO2) levels.

Usha Kumari Chaudhary et al. (2019) conducted a study on a Comparative Analysis of the Baska Mask versus I-Gel for General Anesthesia in Surgical Patients Undergoing Laparoscopic Cholecystectomy, a randomized controlled open-label study, a total of 100 patients in the age group of 20–70 years undergoing elective laparoscopic cholecystectomy were included in his study. The study found that Baska mask is more effective in providing greater OLP compared to I-gel without any increase in laryngopharyngeal morbidity, leak fraction of Baska mask was significantly less than I-gel, Insertion was very easy in Baska mask versus in I-gel.[7]

Thanesh Kumar Sinasamy et al. (2020)) conducted a study on a Comparison of the Baska mask and the i-gel supraglottic airway devices in patients undergoing elective surgery, a single-blinded, randomised controlled trial, comparing the Baska mask and i-gel in patients undergoing elective surgery. In the study they found that the i-gel is better than the Baska mask in terms of ease of insertion, speed of insertion, fewer corrective manoeuvres and less post-operative throat pain. However, the Baska mask had a better cuff seal.[3]

Roopa Sachidananda et al. (2018) conducted a study on Comparison between the Baska Mask® and I-Gel for Minor Surgical Procedures under General Anaesthesia, a randomised single-blinded study; in this study found that the Baska® mask had a similar first-time insertion success rate and insertion time as the I-gel. The sealing pressure of the Baska® mask was significantly greater than that of the I-gel. Both devices had complications that were comparable.

Ayisha Mohammed Imam Ghori et al. (2023) conducted a study on comparison of the baska mask and i-gel in short surgical procedures, a randomised single blinded study, in his study the objectives was to compare the sealing pressure, ease of insertion, number of attempts, insertion time, removal and the complications. In this study they found that both I-gel and Baska mask are easy to insert, but the Baska mask is superior in terms of sealing pressure without increase in the laryngopharyngeal morbidity.[5]

Sunita Meena et al. (2023) conducted a study on comparison between baska mask and i-gel insertion in minor surgeriesunder general anaesthesia in patient aged 18-50 y:-a randomizedinterventional study, a Hospital-based Prospective Randomized Interventional study. In the study the evaluation criteria included ease of insertion, oropharyngeal sealing pressure, ability to drain gastric fluid, prevention of malposition, sealing pressure during controlled ventilation and spontaneous breathing, and reduction of respiratory complications.in this study found that The second-generation SADs, including the I-gel, was easy to insert and offer high oropharyngeal sealing pressure. They have a gastric channel to drain gastric fluid, reducing aspiration risk. The I-gel, a new latex-free SAD with a noninflatable cuff made of medical-grade thermoplastic elastomer, provides a superior seal, resulting in lower respiratory complications compared to earlier SADs. It ensures effective sealing during controlled ventilation and spontaneous breathing. The third-generation Baska Mask combines the advantages of second-generation LMAs and provides higher seal pressure during IPPV by apposing to the glottis, distinguishing it from non-inflatable cuff devices like the I-gel. They concluded that Supraglottic airway devices, particularly second-generation SADs like I-gel, offer effective airway management alternatives to endotracheal intubation. These devices provide ease of insertion, high oropharyngeal sealing pressure, and the ability to drain gastric fluid, reducing the risk of complications. The third-generation device, Baska Mask, exhibits enhanced seal pressure during IPPV, making it a promising advancement in airway management. [(6)]

Roopa Sachidananda at el. (2019) conducted a study on comparison between the baska mask® and i-gel for minor surgical procedures under general anaesthesia. a randomised single-blinded study; the first-time success rate, mean insertion time and sealing pressure were measured. In this study they found that The first-time insertion success rate of the Baska® mask were 21/24 (88%) when compared with the I-gel, which was 23/25 (92%) (p=0.585). The insertion time of the Baska® mask was 14.9±6.2 s, verses I-gel was 14.7±4.4 s (p=0.877). The mean sealing pressure of the Baska® mask was significantly higher when compared with the I-gel (28.9±3.5 vs. 25.9±2.5 cmH2 O) (p=0.001).it was found that The Baska® mask had a similar first-time insertion success rate and insertion time as the I-gel. The sealing pressure of the Baska® mask was significantly greater than that of the I-gel. Both devices had complications that were comparable. [(4)]

So Ron Choiorcid at el. (2019) conducted a study on Comparison of clinical performance of i-gel® and Baska Mask® during laparoscopic cholecystectomy, a randomised single-blinded study; the oropharyngeal leak pressure (OLP) and hemodynamic and respiratory parameters were measured. During the study they found that the There were no significant differences between the two groups regarding demographic data, insertion time, fiber-optic view of the glottis, and the use of airway manipulation. The OLP was higher in the Baska Mask group than in the i-gel group (29.6 ± 6.8 cmH_2O and 26.7 ± 4.5 cmH_2O, respectively; P = 0.014). Heart rate, mean arterial pressure, PAP, and lung compliance were not significantly different between the groups. The incidence of intra-operative complications was small and not statistically significant. In the study they concluded that both the i-gel and baska mask provided a satisfactory airway during laparoscopic cholecystectomy. Compared with the i-gel, the baska mask demonstrated a higher OLP.[(19)]

G. Shanmugavelu and T. Kanagarajan (2018) conducted a study on Comparing the functional analysis of I-gel with Baska mask in laparascopic surgeries: an observational study; In the study ease of insertion, leak pressure were measured, in this study they found that the insertion time was shorter for I-gel (12.3±3.8secs) verses Baska mask (20.1±8.1secs). Oropharyngeal leak pressure was significantly higher for Baska mask (24-32cmh20). Oropharyngeal airway morbidity was not significantly different between two groups. So, it was decided that both airways are suitable for laparoscopic surgeries, but I-gel was quicker to insert, but Baska mask gave good airway seal. In this study, they found that Baska mask will give good airway seal when compared with I-gel. But I-gel was quicker to insert than Baska mask. [(18)]

Ramakrishna AKM at al.(2021) conducted a study on A Randomised Clinical Trial to Compare the Effectiveness of Baska Mask Versus i-gel in Patients Undergoing Laparoscopic Surgeries in a Tertiary Centre. In the study they found that Both Baska and i-gel can be used safely and effectively in laparoscopic surgeries. Baska provides a better ASP and Brimacombe view than i-gel. However, i-gel offers the advantage of easier insertion in shorter time.

3. MATERIALS AND METHODS

3.1 MATERIALS

The present study entitled "A study on the comparative effects of the efficacy of Baska Mask and I- Gel of the patients undergoing general anesthesia for elective Minor surgeries" was carried out at Aamina Hospital & Nursing Home, between July 2023 to December 2023, located in Nowgam, Srinagar, Jammu and Kashmir, Bharat, after obtaining the approval from the hospital ethical committee.

A total of sixty (60) surgical patients of age 18-50 years, of weight 30-60 kgs, with ASA grade of I and II, were scheduled for elective lower abdominal and lower limb surgeries. Written informed consent was taken from all the patients. All the patients were randomly divided into 2 groups of 30 each.

Group I (n=30): Airway was maintained with Baska Mask.

Group II (n=30): Airway was maintained with I-Gel.

Inclusion Criteria:

- Patients scheduled for elective lower abdominal or lower limb surgeries.
- Patients with age between 18 and 50 years.
- Patients with weight between 30 and 60 kilograms (kgs).
- ASA physical status classification Grade I and II.
- Patients with ability to provide informed consent.
- Patients with BMI < 30 kg/m^2
- Undergoing minor surgical procedure under general anesthesia.

Exclusion Criteria:

- Patients with BMI greater than 30 kg/m^2.
- Patients with anticipated difficult airway.
- Pregnancy.
- Patients with ASA grade III or more.
- Patients with a history of allergy or contraindications to the study devices (Baska Mask or I-Gel).
- Patients with full stomach.
- Patients posted for emergency surgeries.
- Pediatric patients.
- Patients with age more than 50 years.
- Patients with weight more than 60 kgs.
- Patients unable to provide informed consent.
- Anticipate difficult airway

3.2 METHODS

Pre-Anesthesia Checkup.

A comprehensive pre-anaesthesia check-up, encompassing patients detailed clinical history and clinical examination was done and routine investigations like Hb, blood sugar, renal function test, liver function test, coagulogram, ECG, X ray chest were ordered. All patients were kept nil per oral (NPO) for 8 hours prior to surgery. All patients were administered Tablet Alprazolam 0.25 mg given one day prior to the surgery (for anxiolysis) and Tablet Ranitidine 150 mg night before the surgery and two hours prior shift to operation theatre (OT).

On arrival into the operation theatre, an appropriate size peripheral venous canula was obtained and Ringer's Lactate 10-15 ml /kg (500-1000 ml) was started preoperatively. All the routine monitors (ECG, Pulse Oximeter, and NIBP) were applied and the baseline vitals were recorded.

All the patients were pre-oxygenated with 100% oxygen for three to five minutes. Patients were then premedicated with inj. fentanyl 1-2 mcg/kg, inj. glycopyrrolate 0.2 mg iv and inj. ondansetron 0.1 mg/kg iv. Anesthesia was induced with inj. of propofol 1-2mg/kg iv (in incremental doses). After the loss of verbal commands, the patients were subjected to bag-mask ventilation with 100% oxygen (O2) via Bain's circuit. After a positive bag-mask ventilation test, the process of induction was facilitated with airway management by giving depolarizing neuromuscular blocking agent inj. succinylcholine 1-2 mg/kg iv. Once the fasciculations reached the foot end of the patient, airway was maintained with the group specific supraglottic airway device (SAD) by a qualified anesthesiologist having minimum 2 years of experience. The patient's head was place in the sniffing position and the supraglottic airway device was inserted after adequate lubrication of cuff with a water-based jelly.

Incremental doses of inj. propofol were used in case of re-insertion of the SAD. The SAD was then connected to the breathing circuit and the correct placement was confirmed by auscultation of bilateral equal air entry and the capnograph.

The anesthesia was maintained with nitrous oxide, oxygen, (60% N20::40%02), and sevoflurane (1%) along with controlled mechanical ventilation (CMV) and inj. atracurium 0.1 mg/kg iv in incremental doses.

At the end of the surgery, after the return of spontaneous respiration, neuromuscular blockade was reversed with inj. neostigmine 0.05mg/kg and inj. glycopyrrolate 0.2mg iv. Airway device was removed once the patients had adequate spontaneous tidal volume, cough reflex, spontaneous eye opening and head lift.

The following parameters were recorded:

- Demographic variables (age, weight, gender, ASA grade,).
- The duration of insertion of SAD (calculated from the time when the SAD was picked up from the airway trolley till the time of adequate ventilation of the patient).
- The ease of insertion of supraglottic airway device was assessed from 1-2-3 scale (1- Easy, 2- Difficult, 3- Impossible)[20]
- The airway sealing pressure of the supraglottic airway device in both the groups was determined by manometer stabilization method.
- The hemodynamic responses to the insertion of supraglottic airway device were noted as baseline, post induction and just after insertion of the airway device.
- The incidence of post operative adverse effects (sore throat, hoarseness, nausea and vomiting,) was checked in both the groups.

The airway sealing pressure was determined by the manometer stabilization method. After closing the expiratory valve of the breathing circuit (closed circuit) at a fixed fresh gas flow of 3 l/min., the pressure manometer was observed on CMV. The point where equilibrium was achieved was taken as the sealing pressure. The Baska Mask has a non-inflatable, membranous cuff that automatically inflates during positive pressure ventilation

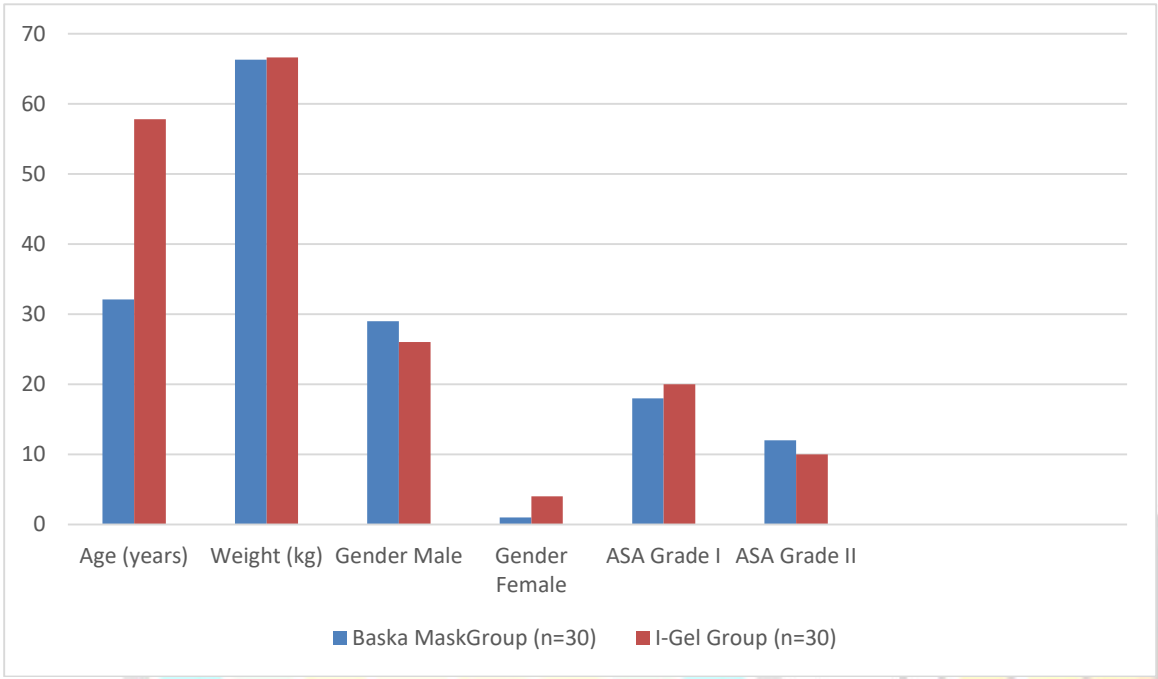
Collected data underwent thorough analysis using appropriate statistical methods to compare outcomes between the two study groups. Comparative analyses included assessment of insertion characteristics, hemodynamic stability, and any complications associated with the use of Baska Mask Versus I-Gel. The data analysis involved comparing outcomes between the Baska Mask and I-Gel groups using independent t-tests for continuous variables such as insertion characteristics and chi-square tests for categorical variables including complication occurrence. A significance level of 0.05 was applied, with p-values less than 0.05 being considered statistically significant. These analyses provided insights into the efficacy and safety of both airway devices in elective lower abdominal and lower limb surgeries under general anesthesia. The results were interpreted to draw meaningful conclusions regarding the efficacy and safety of the respective airway devices in the context of elective surgeries under general anesthesia.

4. RESULTS AND ANALYSIS

Table 1: Shows the demographic characteristics of both the groups.

Variable	Group I	Group II	T- value	P value
Age (years)	33±10.20	32.1±7.91	1.21	0.546
Weight (kg)	66.3 ± 8.3	66.6 ± 9.9	0.90	0.893
Gender M/F	29(96.7%) 1(3.3%)	26(86.7%) 4(13.3%)	1.25	0.350
ASA Grade	I: 18 (60%)	I: 20 (66.7%)	1.982	0.762
	II: 12 (40%)	II: 10 (33.3%)	1.56	0.232

Figure 1: Demographic characteristics of patients in both the groups



The data is Mean ± SD for all the demographic features of both the groups.

P > 0.05 – insignificant (NS)

Table 1 shows that, the mean age of patients in Group I was 33±10.20 years and 32.1±7.91 years in Group II and when compared statistically using student's t-test, the difference in the age of the patients in both the groups was statistically insignificant (P > 0.05) (Table 1, Fig. 1)

The mean body weight of patients in Group I 66.3 ± 8.3 kg and 66.6 ± 9.9 kg in Group II. The difference in the two groups was statistically insignificant (P > 0.05) (Table 1, Fig. 1)

In reference to the gender distribution, in Group I, there were 96.7 % males and 3.3 % females and in Group II, 86.7% males and 13.3% females. The difference in the two groups was found to be statistically insignificant (P > 0.05) (Table 1, Fig. 1)

The percentage of patients belonging to ASA Grade I and II was 60% and 40% respectively, in Group I and 66.7% and 33.3% respectively, in Group II and the statistical difference among both groups was found to be statistically not significant (P > 0.05) (Table 1, Fig. 1)

Table 2: Shows the Insertion Characteristics of SAD in both the groups

Variable	Group I	Group I	t-value	p-value
Mean Insertion Time (sec.)	7.5 ± 1.4	7.9 ± 1.3	3.52	0.032
Ease of Insertion	Easy 28 (93.4%)	Easy 27(92.3%)	5.32	0.049
	Difficult 2 (6.6%)	Difficult 3(7.7%)	3.32	0.0432

The data is Mean ± SD for the insertion characteristics of SAD in both the groups.

P <0.05 – significant (S)

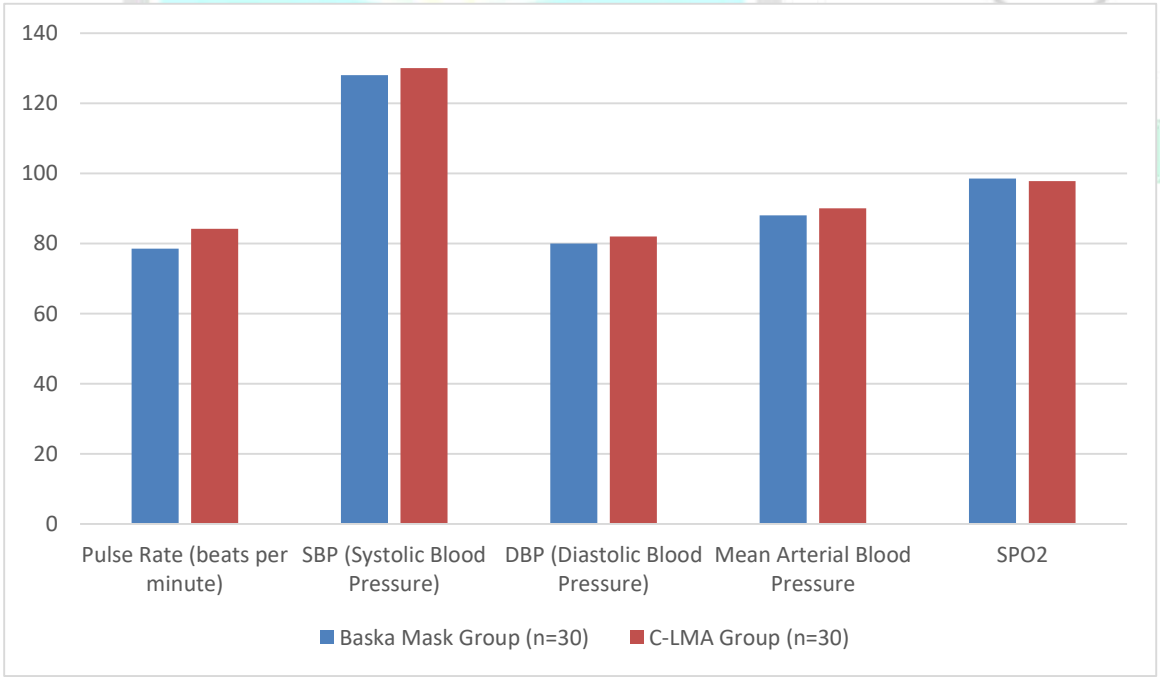
Table 2 shows that, the mean insertion time of SAD in group I was 7.5 ± 1.4 seconds and 7.9 ± 1.3 seconds in group II and when compared statistically, using student's t-test, the t-value of 3.52 and a p-value of 0.032, the difference in the insertion time of the patients in both the groups was statistically significant (P < 0.05) (Table 2, Fig. 2).

Regarding the ease of insertion of the SAD, in group I it was easy in 93.4% of the patients where as difficult in 6.6% of the patients, while in group II it was easy in 92.3% of the patients and difficult in 7.7 % of the patients, therefore, when compared statistically the p-value was found to be 0.049 in all the patients in both the groups in whom the insertion of SAD was easy and p value was 0.0432 in all the patients in both groups in whom the ease of insertion was difficult.

Table 3: Shows the comparison of baseline hemodynamic variables in both the groups

Variable	Group I	Group II	t-value	p-value
Pulse Rate (bpm)	78.5 ± 4.2	82.2 ± 4.8	3.12	0.53
SBP (mm of Hg)	128 ± 6	130 ± 7	2.32	0.443
DBP (mm of Hg)	80 ± 5	82 ± 6	2.43	0.421
MAP (mm of Hg)	88 ± 4	90 ± 5	1.563	0.389
SPO2 (%)	98.5 ± 0.3	97.8 ± 0.4	2.65	0.46

Figure 4: Comparison of Baseline variables in both the groups



The data is Mean ± SD baseline vitals comparison of both the groups
P > 0.05 – insignificant (NS)

Table 4 shows that, the mean pulse rate of patients in Group I was 78.5 ± 4.2 bpm and 82.2 ± 4.8 bpm in Group II and when compared statistically using student's t-test, the difference in the pulse rate of the patients in both the groups was statistically insignificant, t-value of 3.12 and p-value of 0.53 (P > 0.05) (Table 3, Fig. 3)

The mean systolic blood Pressure of patients in Group I was128 ± 6 mm hg and 130 ± 7 mm hg in Group II. The difference in the two groups was statistically insignificant, t-value of 2.32 and p-value of 0.443 (P > 0.05) (Table 3, Fig. 3)

The mean diastolic blood pressure of patients in Group I was 80 ± 5 mm hg and 82 ± 6 mm hg in Group II. The difference in the two groups was statistically insignificant, t-value of 2.43 and p-value of 0.421 (P > 0.05) (Table 3, Fig. 3)

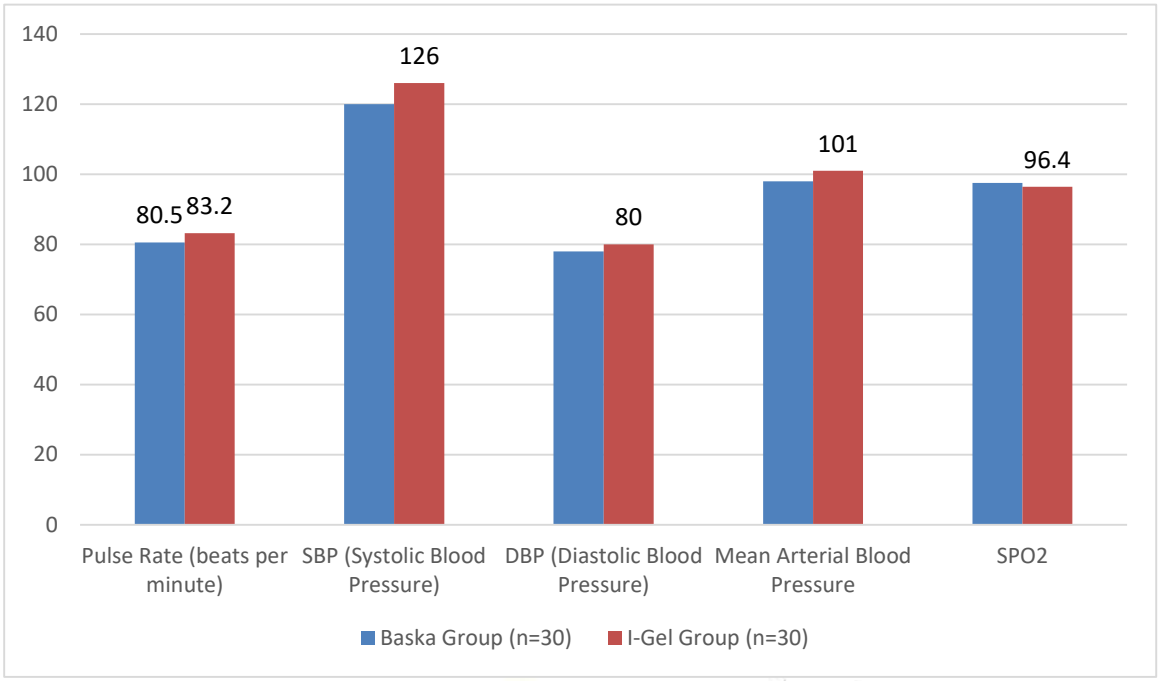
The mean arterial blood pressure of patients in Group I was 88 ± 4 mm hg and 90 ± 5 mm hg in Group II. The difference in the two groups was statistically insignificant, t-value of 1.563 and p-value of 0.389 (P > 0.05) (Table 3, Fig. 3)

The mean oxygen saturation of the patients in group I was 98.5 ± 0.3 % and 97.8 ± 0.4 % in group II. The difference in the two groups was statistically insignificant, t-value of 2.65 and p-value of 0.46 (P> 0.05) (Table 3, Fig.3)

Table 4 - Shows the comparison of post - induction variables in both the groups

Variable	Group I	Group II	t-value	p-value
Pulse Rate (bpm)	80.5 ± 5.2	83.2 ± 4.8	2.43	0.421
SBP (mm of Hg)	120 ± 8	126 ± 7	1.563	0.389
DBP (mm of Hg)	78 ±6	80 ± 5	2.65	0.46
MAP (mm of Hg)	98 ± 7	101 ± 6	3.12	0.53
SPO2 (%)	97.5 ± 0.3	96.4 ± 0.4	2.32	0.443

Figure 4: Comparison of post hemodynamic variables in both the groups



The data is Mean ± SD for the comparison of post- hemodynamic variables in both the groups

P > 0.05 – insignificant (NS)

Table 4 shows that, the mean pulse rate of patients in Group I was 80.5 ± 5.2 bpm and 83.2 ± 4.8 bpm in Group II and when compared statistically using student's t-test, the difference in the pulse rate of the patients in both the groups was statistically insignificant (P > 0.05) (Table 4, Fig. 4)

The mean systolic blood pressure of patients in Group I was 120 ± 8 mm hg and 126 ± 7 mm hg in Group II. The difference in the two groups was statistically insignificant (P > 0.05) (Table 4, Fig. 4)

The mean diastolic blood pressure of patients in Group I was 78 ± 6 mm hg and 80 ± 5 mm hg in Group II. The difference in the two groups was statistically insignificant (P > 0.05) (Table 4, Fig. 4)

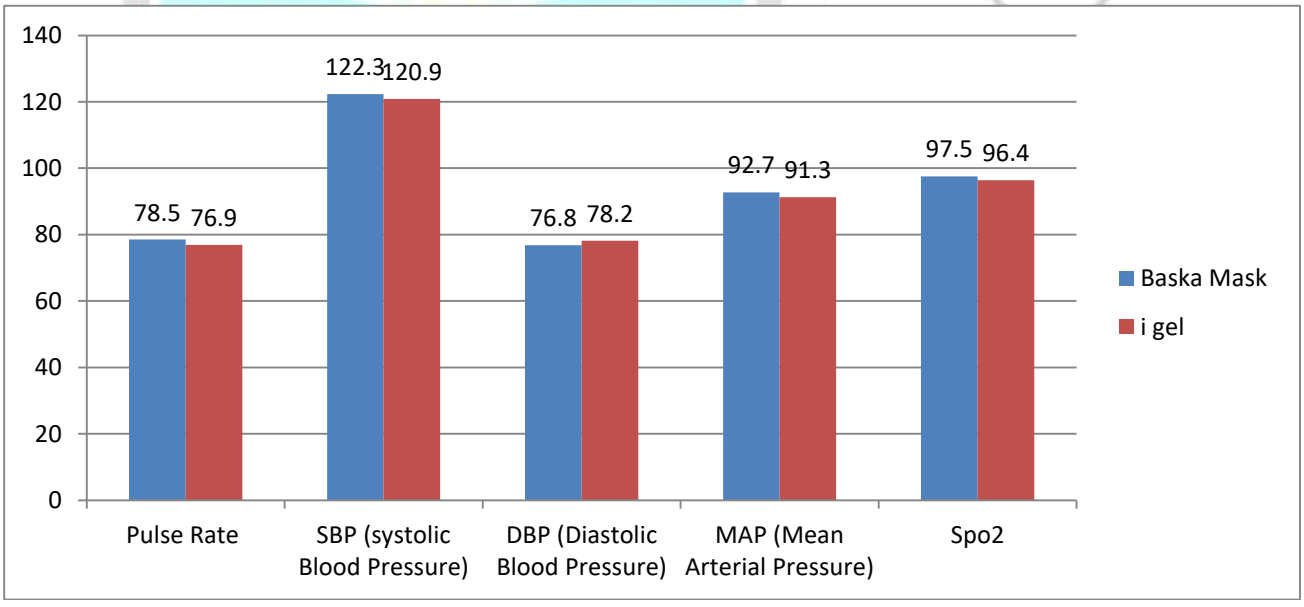
The mean arterial blood pressure of patients in Group I was 98 ± 7 mm hg and 101 ± 6 mm hg in Group II. The difference in the two groups was statistically insignificant (P > 0.05) (Table 4, Fig. 4)

The mean oxygen saturation of the patients in group I was 97.5 ± 0.3 % and 96.4 ± 0.4 % in group II. The difference in the two groups was statistically insignificant (P> 0.05) (Table 4, Fig.4)

Table 5: Shows the comparison of vitals in both the groups post insertion of SAD

Variable	Group I	Group II	t-value	p-value
Pulse Rate (bpm)	78.5 ± 4.2	76.9 ± 3.8	1.23	0.218
SBP (mm of Hg)	122.3 ± 6.5	120.9 ± 5.7	0.91	0.368
DBP (mm of Hg)	76.8 ± 3.9	78.2 ± 4.3	1.10	0.276
MAP (mm of Hg)	92.7 ± 5.1	91.3 ± 4.7	1.42	0.159
SPO2 (%)	97.5 ± 0.3	96.4 ± 0.4	2.32	0.443

Figure 5: Shows the comparison of vitals in both the groups post insertion of SAD



The data is Mean ± SD for the comparison of post- hemodynamic variables in both the groups

P > 0.05 – insignificant (NS)

Table 5 shows that, the mean pulse rate of patients in Group I was 78.5 ± 4.2 bpm and 76.9 ± 3.8bpm in Group II and when compared statistically using student's t-test, the difference in the pulse rate of the patients in both the groups was statistically insignificant (P > 0.05) (Table 5, Fig. 5)

The mean systolic blood pressure of patients in Group I 122.3 ± 6.5 mm hg and 120.9 ± 5.7 mm hg in Group II. The difference in the two groups was statistically insignificant (P > 0.05) (Table 5, Fig. 5)

The mean diastolic blood pressure of patients in Group I was 76.8 ± 3.9 mm hg and78.2 ± 4.3 mm hg in Group II. The difference in the two groups was statistically insignificant (P > 0.05) (Table 5, Fig. 5)

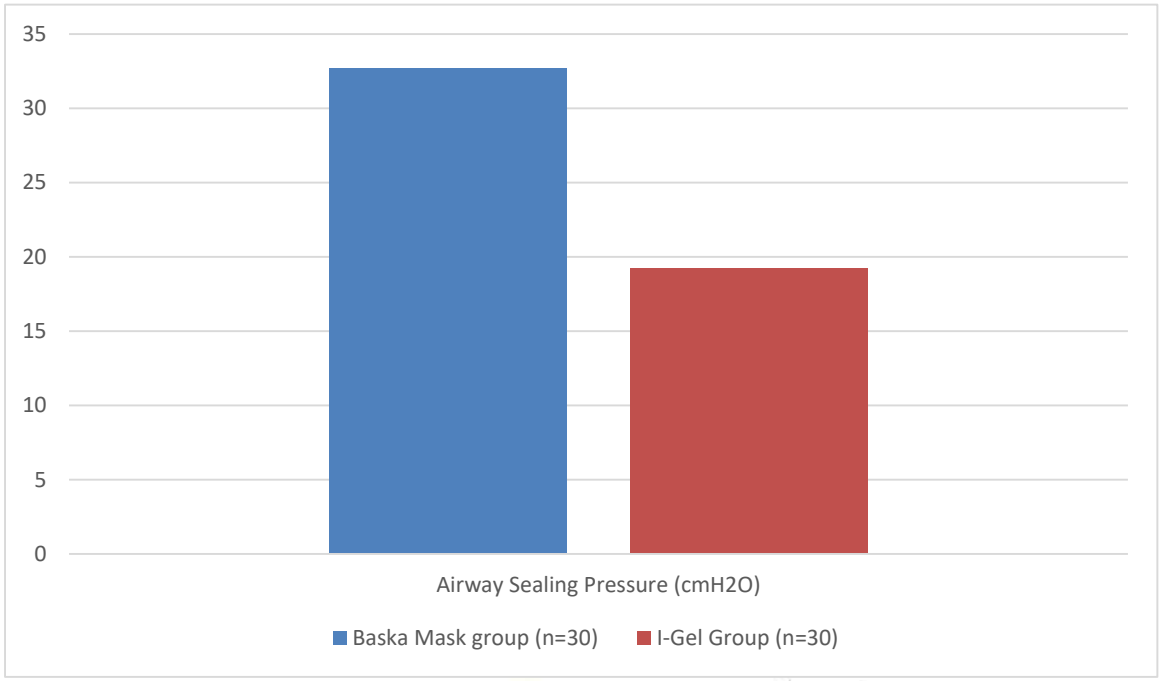
The mean arterial blood pressure of patients in Group I was 92.7 ± 5.1 mm hg and91.3 ± 4.7 mm hg in Group II. The difference in the two groups was statistically insignificant (P > 0.05) (Table 5, Fig. 5)

The mean oxygen saturation of the patients in group I was 97.5 ± 0.3 % and 96.4 ± 0.4 % in group II. The difference in the two groups was statistically insignificant (P> 0.05) (Table 5, Fig.5)

Table 6: Shows the comparison airway sealing pressure in both the groups

Variable	Group I	Group II	p-value
Airway Sealing Pressure (cm of H2O)	32.7±5.0	28.5±6.2	0.001

Figure 6: Comparison airway sealing pressure in both the groups



The data is Mean ± SD for airway sealing pressure of both the groups

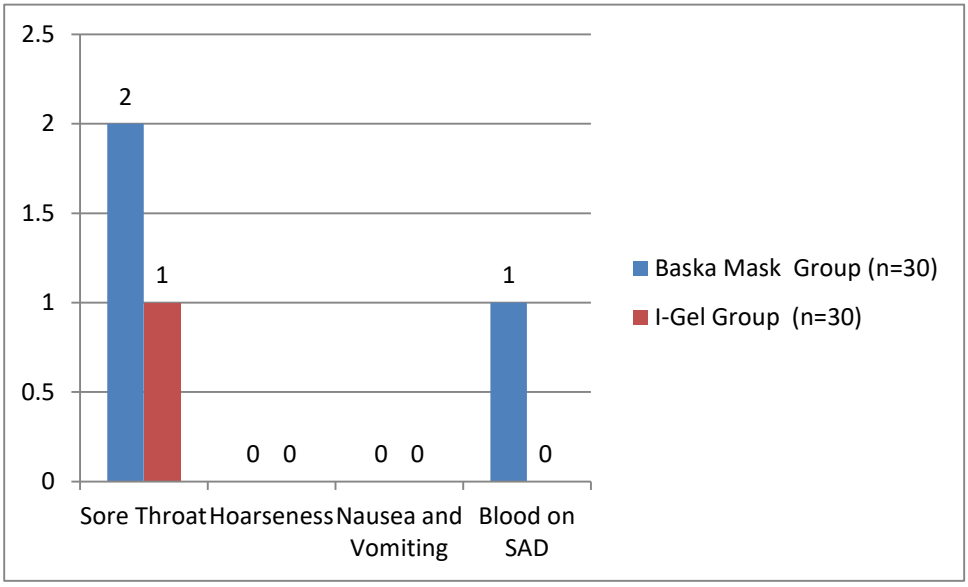
P <0.05 – significant

Table 6 shows that, the mean airway sealing pressure of group I was 32.7±5.0 cm of H2O and 28.5±6.2 cm of H2O in group II, The difference in the two groups was statistically significant, and p-value of 0.001 (P> 0.05) (Table 6, Fig.6).

Table 7: Shows the comparison of incidence of post operative adverse effects in both the groups

Variable	Group I	Group II	X^2	P value
Sore Throat	2	1	3.42	0.0487
Hoarseness	0	0	-	
Nausea and Vomiting	0	0	-	
Blood on SAD	1	0	4.21	0.032

Figure 7: Incidence of post operative adverse effects in both the groups



The data is Mean ± SD for the comparison of airway sealing pressure in both the groups.

P <0.05 – Insignificant (NS)

There were two patients complaining of sore throat in group I while in group II, one patients complained of sore throat and when compared statistically the p-value was. 0.0487 (fig.7)

There were no patients complaining of hoarseness of voice in group I and in group II,

There were no patients complaining of nausea and vomiting in group I and in group II, (fig.7)

There were two patients where blood on SAD was present in group I while in group II, no blood on SAD was present and when compared statistically the p-value was. 0.032 (fig.7)

5. DISCUSSION

This study evaluated the efficacy of Baska Mask I- Gel in elective Minor surgeries. Various parameters were assessed including insertion characteristics, hemodynamic stability, airway sealing pressure, and postoperative complications to determine the comparative effects of the two airway devices.

The clinical study was conducted on sixty patients of age 18-50 years belonging to ASA grade I and II, scheduled for undergoing general anesthesia for elective lower abdominal and lower limb surgeries.

They were divided into two groups of 30 each, group I and Group II.

Group I patients received SAD Baska Mask and group II patients received SAD I-Gel.

From this study, we could gather the following results:

Insertion Characteristics:

Insertion of Baska Mask was easier and faster as compared to I-gel.

In baska mask group, first attempt was successful in 28/30 cases (93.4%) and only two case required second attempt of insertion, where as in I-Gel, first attempt was successful in 27/30 cases (92.3%) and three cases required second attempt. The difference was clinically as well as statistically significant (Table 2).

Usha Kumari Chaudhary at al. (2018) they observed that insertion of the device was significantly very easy in 58% of patients in Baska mask group as compared to 76% patients in I-gel group**.**

Hemodynamic Stability:

The base line values of the hemodynamic variables in both the groups, which included pulse rate, systolic blood pressure, diastolic blood pressure and SpO2, were found to be statistically insignificant.

The post – induction hemodynamic variables in both the groups were found to be statistically insignificant.

The post insertion hemodynamic vitals in both the groups were found to be statistically insignificant.

The analysis of hemodynamic stability comparing the Baska Mask and I-Gel groups highlights some important considerations for clinical practice. Both devices demonstrated the ability to maintain stable hemodynamic parameters during their use, which included pulse rate, systolic blood pressure, diastolic blood pressure, mean arterial pressure and SpO2. These findings suggest that either device can be used effectively without significant disruption to the patient's cardiovascular stability, which is crucial during anaesthesia and surgical procedures.

Ayisha Mohammed Imam Ghori at al.(2021) found in study that There was no significant difference in the hemodynamic changes after insertion and removal of both the devices.

Despite the similar performance metrics, the slight variations observed between the groups may be attributed to individual patient responses or minor differences in the way each device interacts with the patient's physiology. This equivalence in maintaining hemodynamic stability is essential as it ensures that the choice of airway management device does not adversely affect the patient's overall circulatory status, thereby supporting broader clinical applicability

Airway Sealing Pressure:

The mean airway sealing pressure with baska mask was 32.7 ± 5.0 cm of H_20 and with I-gel was 28.5 ± 6.2 cm H_2o which was statistically significant (P>0.05) [Table 6]. Though the airway sealing pressure of I-Gel was lower than that of Baska Mask, it was enough to provide optimum ventilation, especially under positive pressure ventilation conditions. This is particularly important during anaesthesia and intensive care scenarios where a reliable airway seal can impact the overall success of ventilation strategies and patient outcomes.

The Baska Mask has a non-inflatable, membranous cuff that automatically inflates during positive pressure ventilation; the cuff is continuous with the device's central channel and inflates with each breath during intermittent positive pressure ventilation (IPPV). The cuff's seal pressure increases during inspiration and decreases during expiration. In our study we found that the baska mask has higher airway sealing pressure then the I-gel which was also observed in the study by the, **Ramakrishna AKM at al.(2021)** in this study observed that Baska mask provided a better airway sealing pressure of 40.4 cm of H2O compared to 30.3 cm of H2 O with i-gel after insertion, Post-operative sore throat was significantly higher in Baska mask group compared to i-gel group (56.7 % vs 23.3 %)..

Usha Kumari Chaudhary at al. (2018) baska mask provides a significantly higher OLP as compared to I-gel at insertion, thereby providing greater airway protection during laparoscopic surgery. OLP with Baska mask was 29.9 cm H2 O at insertion and 33.54 ± 1.16 cm H2 O at 30 min of insertion as compared to 23.16 ± 3.07 cm H2 O and 25.97 ± 2.25 cm H2 O with I-gel.

Ayisha Mohammed Imam Ghori at al.(2021) The minimum and maximum sealing pressure (cm H2O) was 25 and 50 in 'B' group, 16 and 44 in the 'I' group respectively. The Mean ± SD sealing pressure (cm H2O) was 32.7±5.0 in 'B' group and 28.5±6.2 in the 'I' group. There was a significant difference in the sealing pressure (cm H2O) among both the groups.

Complications:

The incidence of adverse effects in the postoperative period among both the groups was statistically insignificant. In group I, two cases complained of sore throat in the post operative period where as in group II, one patient complains of sore throat. Similarly, none of the patients in group I and group II complained of hoarseness of voice and nausea and vomiting, In group I two cases blood stains were seen upon removal, while none in group II. . In our study we found that the baska mask has some adverse effects then the I-gel which was also observed in the study by the, **Ramakrishna AKM at al.(2021)** in this study observed that In two cases blood stains were noted on Baska mask upon removal, while none in i-gel group had such findings, **Usha Kumari Chaudhary at al. (2018)** There was blood on the device at removal in one case with Baska mask group as compared to none in I-gel group. There was a history of the mild sore throat in four cases in Baska mask group and three cases in I-gel group immediately after removal of the device. **Al-Rawahi et al (2013)** in the study found that 43.3% of patients had sore throat, and 20% of patients had hoarseness of voice with the use of the Baska mask®

6.CONCLUSION

In conclusion, the comparison between the Baska mask and I-Gel airway management devices across various metrics such as insertion characteristics, hemodynamic stability, airway sealing pressure, and complication rates suggests that the Baska-Mask generally performs better in clinical settings. The Baska Mask offers faster and easier insertion, superior airway sealing pressures, and notably complication rates, making it an advantageous choice for ensuring efficient and safe airway management. While both devices maintain adequate hemodynamic stability, the ease of use, improved patient comfort, and enhanced safety profile of the Baska Mask make it a preferable option for a wide range of medical procedures, particularly in scenarios requiring quick and reliable airway control. The dual drainage system in Baska mask allows passage of a larger oro-gastric tube insertion and rapid clearance, without any increase in laryngopharyngeal morbidity. These attributes underscore the Baska Mask suitability for both emergency situations and routine use, potentially leading to better overall patient outcomes and satisfaction. Further studies needed to evaluate their exact role in the management of high-risk patient with a difficult airway

7. DECLARATION BY AUTHORS

The authors hereby declared that it was their original peace of research and had not been sent to any other journal for publication

8. ETHICAL APPROVAL:

Approved.

9. ACKNOWLEDGEMENT

The authors were thankful to the patients those who cooperated in the study.

10. SOURCE OF FUNDING: None.

11. CONFLICT OF INTEREST:

The authors declared no conflict of interest.

12. References

1. Sahaya A, Singh R, Baser N, Sharda S. Comparison of I-gel and laryngeal mask airway classic in terms of ease of insertion and hemodynamic response: A randomized observational study. *International Journal of Research in Medical Sciences*. 2023.

2. Me J. Effects of laryngeal mask airway I-gel general anesthesia on the stress response during interventional surgery. *Chinese Journal of Modern Drug Application.* 2014.

3. Thanesh Kumar Sinasamy, Wan Mohd Nazaruddin Wan Hassan, Rhendra Hardy Mohamad Zaini, Praveena Seevaunnamtum, Laila Ab Mukmin. Comparison of the Baska mask and the i-gel supraglottic airway devices in patients undergoing elective surgery. *Anaesthesiol Intensive Ther* 2020.

4. Roopa Sachidananda , Safiya I. Shaikh1, Milon Vasant Mitragotri, Vikas Joshi, Dharmesh Arvind Ladhad, Marutheesh Mallappa, Vikram Kemmannu Bhat. Comparison between the Baska Mask® and I-Gel for Minor Surgical Procedures Under General Anaesthesia. *Turk J Anaesthesiol Reanim* 2019.

5. Ayisha Mohammed Imam Ghori, Sahabote Vaishnavi, Nazia Afreen, Mohd Heifzur Rahman, Julakanti Madhavi. Comparison of the baska mask and i-gel in short surgical procedures. *International Journal of Academic Medicine and Pharmacy*. 2023.

6. Sunita Meena, Nandani Sharma*, Jeetam Singh Meena, Kamalesh Kumar Malav. Comparison between baska mask and i-gel insertion in minor surgeriesunder general anaesthesia in patient aged 18-50 y:-a randomizedinterventional study. *International Journal of Current Pharmaceutical Research.* 2023

7. Usha Kumari Chaudhary, Som Raj Mahajan1, Monika Mahajan, Charu Sharma, Mukesh Sharma. A Comparative Analysis of the Baska Mask versus I-Gel for General Anesthesia in Surgical Patients Undergoing Laparoscopic Cholecystectomy Usha Kumari Chaudhary, Som Raj Mahajan1, Monika Mahajan, Charu Sharma, Mukesh Sharma. *Acta Medica International.* 2018.

8. Anil Kumar Mysore Ramakrishna, Sarika Manjunath Shetty , Anup Natha Ramachandragowda , Vyshnavi Sriram , Shali Sohail , Archana Shivashankar. A Randomised Clinical Trial to Compare the Effectiveness of Baska Mask Versus i-gel in Patients Undergoing Laparoscopic Surgeries in a Tertiary Centre. *J Evid Based Med Healthc.* 2021.

9. Kara D, Sarikas CM. Comparison of the Baska and I-gel supraglottic airway devices: a randomized controlled study. *Ann Saudi Med.* 2019

10. Jain P, Sharma U, Chand Modi Y, Kumar Morwal S. Comparison of Baska Mask Versus I-Gel in Short Gynaecological Laparoscopic Surgeries Under General Anaesthesia in Adult Female: A Randomized Interventional Study. *Arch Anesth & Crit Care.* 2023.

11. Lakshmi Kanta Panigrahy , Girija Shankar Prasad Patro , Malaya Kumar Patel , Ajit Kumar Mishra. Comparative Analysis between I-Gel and Baska Mask in Elective Short Duration Surgeries. *International Journal of Pharmaceutical and Clinical Research*. 2023

12. Ebenezer Joel Kumar E, G Vijay Anand, Aldona Shaji R. A comparative study of Baska mask vs proseal LMA in elective sterilization surgeries. *IAIM*, 2019.

13. Bindal M, Demir A, Koculu R, Sabuncu U, Ozgok A. Comparison of new generation baska mask with i-gel and classical laryngeal mask in outpatient urological interventions. *Saudi medical journal,* 2019.

14. Choi SR, Lee TY, Kim SW, Park SY, Chung CJ, Kim JH. Comparison of clinical performance of i-gel® and Baska Mask® during laparoscopic cholecystectomy. *Korean journal of anesthesiology.* 2019.

15. Kim MH, Lee JH, Choi YS, Park S, Shin S. Comparison of the laryngeal mask airway supreme and the i-gel in paralysed elderly patients: a randomised controlled trial. *European journal of anaesthesiology*. 2018.

16. Kumar Sinasamy T, Nazaruddin Wan Hassan WM, Hardy Mohamad Zaini R, Seevaunnamtum P, Ab Mukmin L. Comparison of the Baska mask and the i-gel supraglottic airway devices in patients undergoing elective surgery. *Anaesthesiology intensive therapy.* 2020.

17. Sharma, Parul1; Rai, Sujeet1,; Tripathi, Manoj1; Malviya, Deepak1; Kumari, Sumita2; Mishra, Smarika1. Comparison of LMA Supreme, i-gel, and Baska Mask for Airway Management during Laparoscopic Cholecystectomy: A Prospective Randomized Comparative Study from North India. *Anesthesia: Essays and Researches*. 2022.

18. Shanmugavelu, G., & Kanagarajan, T. Comparing the functional analysis of I-gel with Baska mask in laparascopic surgeries: an observational study. *International Journal of Research in Medical Sciences*, 2018.

19. So Ron Choiorcid, Tae Young Leeorcid, Sung Wan Kimorcid, Sang Yoong Parkorcid, Chan Jong Chungorcid, Jeong Ho Kimorcid, Comparison of clinical performance of i-gel® and Baska Mask® during laparoscopic cholecystectomy. *Korean J Anesthesiol.* 2019

20. Radhika KS, Sripriya R, Ravishankar M, Hemanth Kumar VR, Jaya V, Parthasarathy S. Assessment of suitability of i-gel and laryngeal mask airway-supreme for controlled ventilation in anesthetized paralyzed patients: *A prospective randomized trial. Anesth Essays Res.* 2016

21. Ramakrishna AKM, Shetty SM, Ramachandragowda AN, et al. A randomised clinical trial to compare the effectiveness of baska mask versus i-gel in patients undergoing laparoscopic surgeries in a tertiary centre. *J Evid Based Med Healthc* 2021

22. Al-Rawahi SAS, Aziz H, Malik AM et al A comparative analysis of the Baska® Mask vs Proseal laryngeal mask for general anesthesia with IPPV. *Anaesth Pain & Intensive Care* 2013;