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"A Comparative Study of Insertion Parameters, Hemodynamic Parameters and Post Removal Complications of Classic Laryngeal Mask Airway And I-Gel In Pediatric Patients for Elective Short Surgical Procedures under General Anaesthsia"

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Abstract-

BACKGROUND: *I-gel is new single use supraglottic airway device without an inflatable cuff. This study was designed to compare the usefulness of I -gel versus c-LMA in small children.*

OBJECTIVES: *To compare ease of insertion, hemodynamic parameters and airway complications of I -gel with c-LMA for general anaesthesia with controlled ventilation.*

METHODS: *60 ASA- I and II children aged 2-14 years undergoing short surgical procedures under general anaesthesia. Children were randomly divided into two groups (I-gel and c-LMA) in this prospective randomized study. Anaesthesia was induced with injection Propofol 2mg/kg, injection Fentanyl 2microgram/kg. All supraglottic airway devices were inserted under deep anaesthesia, maintained with N20:02, and Sevoflurane. There was no difference in characteristics of insertion. There was no statistical changes between the two groups in terms of hemodynamic parameters. There were difference in the incidence of postoperative airway morbidity among the groups.*

CONCLUSION: *Ease of insertion and number of attempts were statistically insignificant . The hemodynamic response was comparable in both groups. Post operative complications were only clinically significant in the c-LMA group but not statistically significant .*

Keywords*: c-LMA-Classic laryngeal mask airway, I -gel , pediatric patients.GA-General Anaesthesia*

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I. Introduction

Endotracheal intubation is the gold standard for the purpose of maintenance of airway[1], but some undesirable complications are associated with it e.g. , trauma to lips, teeth, tongue, epiglottis, larynx and even trachea, hemodynamic

instability, sore throat subsequently are common as it requires laryngoscopy and manipulation of vocal cords[2].

To overcome the disadvantages of endotracheal intubation supraglottic airway devices are designed. Supraglottic Airway Devices (SGD) are the devices that ventilate patients by delivering anaesthetic gases/oxygen above the level of the vocal cords.

AIMS AND OBJECTIVES OF THE STUDY

The aim of the study is to compare c -LMA and I-gel in paediatric patients undergoing short surgical procedures under general anaesthesia with regards to:

1. Ease of insertion, number of attempts.
2. Hemodynamic parameters (Systolic blood pressure, Diastolic blood pressure, Mean arterial pressure)
3. Post removal complications –cough, sore throat, laryngospasm, lip and dental injury.

II. Materials And Methods

Study site: The study was conducted at ACSR Government Medical College &GGH, Nellore, Andhra Pradesh, accordance with the guidelines of the institutional ethical committee.
Study population: Children who were all scheduled for elective short surgical procedures after the pre anaesthetic assessment according to inclusion criteria and exclusion criteria**.**
Study design: This was a prospective randomized controlled study to compare two groups. 60 patients were included in this study with 30 patients in Group L(classic-LMA) 30 patients in Group I (I -gel).
Sampling method and technique: The patients were divided into two groups of 30 patients each. Computer based randomization was done. Group L (c - LMA) was inserted, Group I (I -gel) was inserted.
Sample size calculation: A total of 60 patients were enrolled in the study. This sample size estimation is calculated with the help of n Master 2.0 software based on findings from previous study[6]. 28 patients needed for each group as for 90% power and a risk of type I error at 1%. It has been decided to enrol l 30 patients for each group considering the attrition rate of 10%.

Formula used for hypothesis testing for two means (equal variances)

$n = (Z\alpha / 2 + Z\beta)\ 2 \times 2 \times \sigma 2 / d2$

where **$Z\ \alpha/\ 2$** is the critical value of the Normal distribution at **$\alpha/\ 2$** (e. for a confidence level of 9 5%, α is 0.05 and the critical value is 1.96),

$Z\ \beta$ is the critical value of the normal distribution at value of the at **β** (e.g., for a power of 80%, **β** is 0.2 and the critical value is 0.84), σ 2 is the population variance, and **d** is the difference we would like to detect.

Study duration: From March 2021 to March 2022

Inclusion criteria:
- Paediatric patients aged between 2-14 years of both sexes.
- Patients belonging to ASA grade I and II.
- Posted for elective short surgical procedures.

Exclusion criteria:
- Patients belonging to ASA grade II I and IV.
- Emergency surgeries, facial abnormalities suspected difficult intubation.
- Patients with known pulmonary and cardiovascular problems.

III. Methodology

The present clinical study was undertaken to compare various parameters with classic laryngeal mask airway and I-gel in paediatric patients. The study was conducted in 60 paediatric patients aged between 2-14 years of age undergoing elective short surgeries of less than 1hr duration like herniotomy, circumcision, orthopedic upper and lower limb surgeries under general anaesthesia. The study group randomly divided into two groups with 30 patients each.
Study Group L: LMA of appropriate size was inserted and cuff inflated with the appropriate volume of air.
Study Group I: I-gel of appropriate size was inserted.
The following parameters were observed and compared.
Insertion parameters: Ease of insertion, number of at tempts.
Hemodynamic parameters: heart rate (HR), systolic blood pressure (SBP), diastolic blood pressure (DBP)
Post removal complications: laryngospasm, sore throat, cough, lip & dental injury.
Pre anaesthetic evolution: The fear of the paediatric patients is the fear of pain and separation from the parents. This was addressed by a preoperative visit to the child. A calm child goes through the anaesthetic procedure in a smooth manner. A thorough pre anaesthetic evaluation was done for all patients a day before the proposed surgery. A detailed history, physical examination was done to rule out those coming under the exclusion criteria. The results of the baseline investigations were also assessed.

Investigations to be done:
1. Complete blood picture.
2. Bleeding time, clotting Time.
3. HIV, HBS Ag and HCV screening.
4. RBS.

ECG and chest X-Ray (if required)

Consent:

The parent or guardian of those patients who qualify as per the selection criteria was given explanation regarding anaesthesia procedure in their vernacular language. A written consent was obtained in each case.

Conduct of anaesthesia: All children were kept nil per mouth as per standardized guidelines. They were calmed with 0.3mg/kg of Midazolam syrup 1hr prior to induction of anaesthesia in the induction room with parents aside. Children were monitored with pulse oxymeter, non-invasive blood pressure, ECG, precardiac stethoscope. Base line values of HR, SBP, DBP will be recorded. After calming of the child, shifted to operation theatre. Patients were pre-oxygenated with 100% oxygen. Anaesthesia induction was done with the administration of Sevoflurane in decreasing concentration (8%-2%) in mixture of oxygen and nitrous oxide. After securing an IV line children were pre medicated with injection Glycopyrrolate 0.01mg/kg, injection Fentanyl 1-2 μg / kg through intravenous route . Children were induced with injection Propofol 2mg/kg. After achieving adequate depth of anaesthesia (loss of eye lash reflex), for group L the appropriate sized
LMA was chosen based upon the weight of the children as follows:

Size 1.5 for 5-10 kgs,
Size 2 for 10-20 kgs,
Size 2.5 for 20-30 kgs

LMA was inserted by the classical approach and once LMA is in position, air was injected to provide adequate seal to permit ventilation without leaks.

For Group I appropriate sized I -gel was chosen based upon the weight of the children as follows:

Size 1.5 for 5-12 kgs,
Size 2 for 10-25 kgs,
Size 2.5 for 25-35 kgs.

Position of LMA/ I -Gel was confirmed with bilateral chest lift and auscultation of breath sounds, end tidal carbon dioxide monitoring. Anaesthesia was maintained with nitrous oxide (N2O), oxygen (O2), sevoflurane and intermittent doses of intravenous non depolarizing muscle relaxant injection Vecuronium 0.08-0.12mg/kg. Ease of insertion and number of at tempts for insert ion of LMA and I -gel were noted. Hemodynamic changes in HR, BP were monitored just before induction (baseline), just after insertion, and
then at 1, 3, 5, 10, 20, 30 minutes.

Ease of insertion was evaluated over the following 2 scores.

1)easy (insertion of SGD first or second attempt, no or mild resistance) and
2)difficult (insertion of SGD third attempt, observation of apparent
resistance).

The number of attempts were noted, and it was considered a failure of insertion if more than 3 attempts. The patient was excluded from the study. Child was intubated with an endotracheal tube. At the end of surgery residual neuromuscular blockade was reversed with injection Neostigmine 0.05mg/kg IV and injection Glycopyrrolate 0.01mg/kg IV. After return of adequate muscle power and spontaneous breathing in the Group L, LMA was removed after deflating the cuff when the patient became fully awake and responded to commands and in Group I, I -gel was removed after the child became fully awake.

Post operative Monitoring:

Postoperatively the children were transferred to the recovery room and observed continuously for 60 minutes with parents aside. Children then shifted to the post -operative ward monitored 24 hours for any post operative complications.

IV. Observations And Results

The study was conducted on 60 children belonging to ASA grade I and II of either sex aged between 2 and 14 years posted for elective short surgical procedures under general anaesthesia. These children were randomly allocated to Group L (30 patients) in whom appropriate size LMA was inserted and Group I (30 patients) in whom appropriate size I-gel was used to secure the airway.

DEMOGRAPHIC DATA:

The demographic data is given in the table -1. The data was comparable between the two groups.

Table 1- Demographic data

Variable	Particulars	Group-L	Group-I
Age(years)	Mean± SD	4.3±1.8	3.9±1.3
	Range	2-10yrs	2-8yrs
Sex	Male	21	22

	Female	9	8
Weight (Kgs)	Mean±SD	16.9±4.2	16.8±3.8
	Range	10-24 kgs	11-23 kgs

Age distribution

The minimum age of the patient was 2 years and maximum age was 14 years in the study group. Both LMA and I -gel groups were comparable with regard to age and the p value derived equal to 0.21 was not statistically significant.

Sex distribution:

There were 21 males and 9 females in Group L. There were 22 males and 8 females in Group I. In both groups significant difference was not seen in sex distribution.

Weight distribution:

The minimum weight of the patient was 10kgs and maximum weight was 24 kgs in the study. The weight of the study population was comparable with p-value equal to 0.84 which was not statistically significant.

Ease of insertion:

In LMA group insertion was graded easy in 86.67% of patient and difficult in 13.33% cases. In none of the case insertion of LMA was impossible. In the I-Gel group, insertion was easy in 93.34% of patients and difficult in 6.66% of patients. In none of the patients insertion of I-Gel was impossible. In both groups, the ease of insertion is statistically comparable and p=0.389 which is not significant.

Table 2 - Ease of insertion

Ease of insertion	**GROUP-L**	**GROUP-I**	**P value**
Easy	86.67%	93.34%	0.389
Difficult	13.33%	6.66%	
Impossible/abandoned	0%	0%	

X2=0.74, p=0.389(Not Significant)

Number of attempts in placement of LMA or I -GEL:

In the LMA group, LMA was placed correctly in the first attempt in 83.3% patients and was placed correctly in the 2nd attempt in 16.6%. The I-Gel was placed in the first attempt in 93.3% patients and in both groups the number of at tempts in placement of LMA/ I -GEL was statistically comparable i.e. , p=0.227 which is not significant .

Table -3

	Group -L	Group-I	p-value
1s t attempt	83.34%	93.34%	0.227
2nd attempt	16.66%	6.66%	

X2=1.45, p=0.227(Not Significant)

HEMODYNAMIC CHANGES

HEART RATE:

The baseline heart rate was 95.1±10.2 in group L and 91.4±8.6 in Group I which when compared was not statistically significant with p value of 0.13. In Group L heart rate increased from the baseline value of 95.1±10.2 to 96.4±9.8 immediately after LMA insert ion. Similarly in Group I heart rate increased from baseline value of 91.4±8.5 to 93.8±7.4 immediately after insert ion of I -gel. The hear t rate in both groups immediately after insertion of LMA and after insertion of I -gel when compared was statistically insignificant with p value >0.05. The heart rate in group L at 1minute, 3minutes, 5minutes, 10minutes, 15 minutes, 20minutes compared with group I was statistically insignificant with p value>0.05. In group L heart rate reached the baseline value within one minute. In group I increase in heart rate reached the baseline within three minutes. The values of heart rate in both groups are given in table -4

HEART RATE:

Table-4

	GROUP-L		GROUP -I		
Time interval	**Mean**	**SD**	**Mean**	**SD**	**P**
Base line	95.1	**10.2**	**91.4**	**8.6**	**0.13**
Immediately after insertion	**96.4**	**9.8**	**93.8**	**7.4**	**0.25**
1 minute	**95.3**	**9.9**	**92.0**	**6.4**	**0.13**
3 minutes	**93.7**	**9.2**	**91.6**	**7.1**	**0.32**
5 minutes	**90.7**	**7.9**	**91.1**	**5.8**	**0.82**
10 minutes	**93.1**	**8.6**	**89.4**	**6.9**	**0.07**
15 minutes	**90.5**	**7.9**	**89.3**	**8.6**	**0.58**
20 minutes	**92.6**	**9.4**	**90.9**	**7.5**	**0.44**

P<0.05- significant, P>0.05-not significant

SYSTOLIC BLOOD PRESSURE:

The baseline systolic blood pressure was 100.8±6.2 in Group L and 100.7±6.3 in Group I which when compared was not statistically significant with p value equal to 0.95. In group L systolic blood pressure increased from the baseline value of 100.8±6.2 to 104.8±6.7 immediately after LMA insert ion. Similarly in group I systolic blood pressure increased from the baseline value of 100.7±6.3 to 102.6±6.3 immediately after insert ion of I -gel. The rise in systolic blood pressure in group L was 4% and in group I was 1.8%. The systolic blood

pressure in both groups when compared was statistically not significant with p value 0.19 (>0.05). The systolic blood pressure in group L at 1minute, 3 minutes, 5 minutes,10 minutes, 15 minutes, 20 minutes compared with group I was statistically not significant with p value>0.05. In group L systolic blood pressure reached the baseline value within 3 minutes. In group I also increase in systolic blood pressure reached near baseline value at 3 minutes. The values of systolic blood pressure in both groups are given in table -5 below.

Table-5

	GROUP-L		GROUP -I		
Time interval	**Mean**	**SD**	**Mean**	**SD**	**P**
Base line	100.8	**6.2**	**100.7**	**6.6**	**0.95**
Immediately after insertion	**104.8**	**6.7**	**102.6**	**6.3**	**0.19**
1 minute	**101.6**	**6.8**	**101.2**	**6.4**	**0.81**
3 minutes	**99.7**	**6.4**	**100.7**	**6.2**	**0.55**
5 minutes	**100.4**	**7.2**	**98.7**	**6.3**	**0.30**
10 minutes	**99.2**	**6.0**	**97.7**	**6.5**	**0.35**
15 minutes	**98.3**	**5.3**	**98.3**	**6.9**	**1.00**
20 minutes	**100.3**	**4.5**	**98.4**	**6.2**	**0.18**

P<0.05-Significant, P>0.05-not significant

DIASTOLIC BLOOD PRESSURE:

The baseline diastolic blood pressure was 61.8±7.8 in Group L and 59.6 ±11 in group I which when compared was not statistically significant with p value equal to 0.36. In Group L diastolic blood pressure increased from the baseline value of 61.8±7.8 to 65.7±7.9 immediately after LMA insertion. Similarly in Group I diastolic blood pressure increased from the baseline value of 59.6±11 to 61.7 ±10.5 immediately after I -gel insertion. The increase in diastolic blood pressure was 6.3% in Group L and 3.5% in Group I after insertion of I - gel. The diastolic blood pressure in both groups when compared was statistically not significant with p value 0.10. The diastolic blood pressure in Group L at 1minute, 3minutes, 5minutes, 10minutes, 15minutes, 20minutes compared with Group I was statistically insignificant with p value>0.05. In Group L diastolic blood pressure reached the baseline value within 3 minutes. In Group I diastolic blood pressure reached the baseline value at

about 1 minute. The values of diastolic blood pressure in both groups during study interval are given in table-6 below.

Table 6 - Changes in Diastolic blood pressure (DBP)

	GROUP-L		GROUP -I		
Time interval	**Mean**	**SD**	**Mean**	**SD**	**P**
Base line	61.8	**7.8**	**59.6**	**11**	**0.36**
Immediately after insertion	**65.7**	**7.9**	**61.7**	**10.5**	**0.10**
1 minute	**64.3**	**9.2**	**60.6**	**10.5**	**0.15**
3 minutes	**58.1**	**7.5**	**58.8**	**11.4**	**0.75**
5 minutes	**58.2**	**8.13**	**56.8**	**11.3**	**0.81**
10 minutes	**58.2**	**8.7**	**55.8**	**10.1**	**0.32**
15 minutes	**57.4**	**9.2**	**56.2**	**10.6**	**0.64**
20 minutes	**56.4**	**9.5**	**56.1**	**10.2**	**0.89**

P<0.05- Significant, P>0.05- not significant

POST-REMOVAL COMPLICATIONS:

Table-7: Post-removal cough

Cough	GROUP-L(n%)	GROUP-I(n%)
Yes	4(13.3%)	2(6.7)
No	26(86.7%)	28(93.3%)
Total	30	30

X2=0.74; p=0.38

In group L post -removal cough was13.3%, in group I post – removal cough was 6.7%, with p value of 0.38, which is more than 0.05 with no statistical significance.

Table - 8: Post -removal sore throat

Sore throat	GROUP-L(n%)	GROUP-I(n%)
Yes	4(13.3%)	-
No	26(86.7%)	30(100%)
Total	30	30

X2=4.28; p=0.03

In group L post -removal sore throat was 13.3%, in group I post - removal sore throat was 0%, with P value of 0.03, which is less than 0.05 with statistical significance.

Table - 9: Post -removal spasm

Post -removal spasm	GROUP-L(n%)	GROUP-I(n%)
Yes	-	-
No	30(100%)	30(100%)
Total	30	30

X2=0; p=1

In group L post - removal spasm was 0%, in group I post -removal spasm was 0%, with P value of 1 which is more than 0.05, which is statistically in significant

Table-10: Post-removal lip/dental injury

Post -removal lip/dental injury	GROUP-L(n%)	GROUP-I(n%)
Yes	3(10%)	1(3.3%)
No	27(90%)	29(96.7%)
Total	30	30

X2=1.071; p=0.3006

In Group L post - removal lip/dental injury was 10%, in Group I post - removal lip/dental injury was 3.3%, with P value of 0.3 which is more than 0.05, which is statistically in significant.

V. Discussion

This study consists of 60 patients, ASA I or II physical status aged between 2 and 14 years who were randomly allocated into 2 groups: the c-LMA group and the I -Gel group. These patients were posted for elective short surgical procedures under general anaesthesia with controlled ventilation using either
c-LMA or I-gel for airway management.

EASE OF INSERTION:

In our study we found that c-LMA was inserted easily in 86.7% of patients where as I -gel was inserted easily in 93.3% of patients. Ease of insertion was comparable in both groups and the difference was statistically insignificant in our study with p=0.389.

Ali et al[17] conducted a study of 100 patients who received ventilation via the I-gel or c-LMA during elective surgery and compared the devices for ease of insert ion. They found that both the devices are comparable in ease of insert ion and there was no statistical significance between two groups[52].

Haq Dad Durrani et al[3] also conducted a study of 100 patients aged between 15-17 yrs. of ASA grade I & II and mallampati score 1 or 2 assigned into two equal groups who were ventilated with I -gel and c- LMA and compared insert ion parameters. They found that the ease of insert ion was comparable between two groups with a p value of 0.844 which is statistically insignificant[38]. This result also correlates with many other previous studies.

On contrary there is a study conducted by **Jeevan Singh et al** among 48 post burn contracture neck patients in which they encountered more ease of insertion with I -gel group with 22/24 than that with c-LMA group with 19/24 with a p value of 0.023 which is of statistical significance[8].

NUMBER OF ATTEMPTS FOR INSERTION:

In this study LMA was inserted in first attempt in 83.3% patients whereas I-gel was placed in first attempt in 93.3% of patients. A global study involving the I-gel paediatric device was carried out over 2 months. In that study the success rate for inserting the device was 80% on first attempt and 100% after two attempts [9,10], which is in accordance to our study. Other studies using the paediatric I -gel[6] and **LMA**[11,12] have shown the simi lar results.

Janakiraman et al[5] had first attempt success rate significantly higher in LMA group 86% than in I -gel group which is 54%. They replaced I-gel in second attempt with appropriate size and rate went up to LMA 92% and I -gel 84%.

Asai et al[13] conducted a study in which I -gel was used to ventilate 20 spontaneously breathing adult patients during anaesthesia and compared the number of attempts, insertion time and success rate. The I-gel was inserted on the first attempt in 19 of 20 patients

Kannaujia et al[14] conducted a study of 50 patients who were anaesthetized and ventilated with I -gel. Ease of insertion, number of attempts of insert ion and manipulations required for effective airway seal were recorded. They found that success rate on first attempt was 90% whereas on second attempt was 100%.

HEMODYNAMIC PARAMETERS:

Acott[15] assessed the use of I -gel as an airway device during general anaesthesia. Regarding the hemodynamic stability he observed the hemodynamic changes like heart rate, systolic blood pressure, diastolic blood pressure throughout the surgery after LMA insertion and I -gel insertion and found that there was no statistically significant difference between the 2 groups with a p value greater than 0.05 in all the parameters.

Jindal et al[16] conducted a comparative evaluation between LMA and I-gel in 75 normotensive anaesthetized paralysed patients between 20-70 years and ASA I/ II in view of hemodynamic parameters after insert ion of LMA/ I -gel and reported that there was no statistically significant difference in hemodynamic stability between the two groups which is in accordance with our study.

In this study the hemodynamic parameters that were compared between the groups LMA and I -gel are heart rate, systolic blood pressure, diastolic blood pressure and mean arterial pressure on comparing and analysing these parameters it was found that there was no statistical significance in terms of hemodynamic parameters in both the groups with a p value of greater than 0.05, which correlates with the other studies.

POSTOPERATIVE COMPLICATIONS:

One of the most important parameters that was compared between both supraglottic devices was postoperative complications. In this study the postoperative complications that were compared are post - removal cough, post - removal sore throat, post - removal laryngospasm/ bronchospasm and post removal lip/ dental injury.

Post-removal cough:

It was found that 4/30 patients of LMA group have post -removal cough and 2/30 patients of I -gel group had cough which is statistically not significant. In al l these cases cough was seen immediately after the removal of the supraglottic device.

Al i sarfaraz siddique et al [17] recruited 100 patients of 15-75 years of age and conducted a comparative study of insertion parameters and post operative complications with I-gel /LMA. In contrast to our study, they encountered more post removal cough in the case of I -gel (7/50) as compared to LMA (4/50). However, the statistical analysis still leaves the difference insignificant saying p=0.262.

Haq dad Durrani et al[3] conducted a study comparing I -gel and LMA in terms of insertion parameters and postoperative complications. The postoperative complications that were compared by them are postoperative cough, laryngospasm/bronchospasm and post - removal lip/dental injury. They found that postoperative cough was clinically significant with higher incidence in the LMA group but statistically insignificant which is in accordance with our study.

Post-removal spasm:

No postoperative laryngospasm/bronchospasm was reported in any of the case in this study in both the groups.

Ali A et al[4] conducted a study of 100 patients who received ventilation via the I -gel or c-LMA during elective surgery. The devices were compared for ease of insertion, number of airway manipulations needed and post operative complications. It was found that there was no statistically significant difference between the two groups in all these parameters. The incidence of complications was very low, with one case of blood on I - gel and one incident of laryngospasm with each device.

Ishwar singh et al[7] studied comparison of clinical performance of I-gel with p-LMA in elective surgeries. 60 ASA grade I and II adult patients were randomly assigned into two groups who were ventilated using LMA/ I-gel . The insertion parameters and postoperative complications were compared. There was no evidence of bronchospasm or laryngospasm in any of the case in both the groups which correlates with this study.

Post-removal sore throat:

Post -removal sore throat was found in 4 of 30 patients in Group L where as no incidence of post operative sore throat was found in the I-gel group which shows statistically significant difference in both the groups with a p value 0.03 (<0.05) which is statistically significant.

Keijzer et al[18] from the department of anaesthesiology and intensive care at the Netherlands cancer institute Antonivanleuwenhoek hospital and the VU university medical centre in Amsterdam. They have compared the rate of post operative sore throat with I -gel and well-known brand of laryngeal mask airway patients were interviewed postoperatively at 1 hour, 24 hours and 48 hours the authors found a significantly low levels of sore throat with I -gel which in accordance to our study.

Wakeling et al[19] conducted a study of 200 patients in which insertion of the LMA by means of the standard technique, the cuff being fully deflated before the insert ion and then inflated with enough air to obtain adequate seal after placement was compared with insertion of the LMA with the cuff already inflated with recommended volume of air. The incidence of postoperative sore throat was significantly less in the group in whom LMA was inserted after the inflation of the cuff. In this study we followed the standard technique for the insert ion of LMA which may have accounted for the higher incidence of post -operative sore throat in the LMA group.

Post-removal lip/dental injury:

Lip/dental injury was compared between the two groups. It was found that 3 of 27 patients in group L has lip or dental injury, and 1 of 29 patients have lip/dental injury in the i -gel group with a p-value of 0.32 (>0.05) which is of statistical insignificance.

Haq dad Durrani et al[3] conducted a study comparing I -gel and LMA in terms of insert ion parameters and post operative complications. They found that lip/dental injury is statistically insignificant between the two groups which is in accordance with our study.

VI. Conclusion

The conclusions of the study are,

- The insert ion parameters, ease of insert ion and number of at tempts are statistically insignificant between c -LMA and I-gel groups.
- The hemodynamic response was comparable in both the groups.
- Post - removal complications like cough, laryngospasm and lip/dental injury are only clinical ly significant in the c-LMA group but statistically not significant.
- Post operative sore throat was significantly higher in the c -LMA group as compared with I -gel group.

Hence, we recommend the routine use of c -LMA and I-gel in paediatric patients as both are comparable in terms of insertion, hemodynamic parameters with less postoperative complications

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