



COMPERATIVE EVALUTION OF KETAMINE AND FENTANYL AS A COINDUCTION AGENT WITH PROPOFOL FOR SUPRAGLOTTIC DEVICE INSERATION IN PEDIATRIC PATIENT

Dr. Trupti D shah

Associate Professor, Department Of Anesthesiology, B.J. medical College, Ahmedabad.

Dr. Anjali Sahoo *

Senior Resident Doctor, Department of Anesthesiology, B.J. medical College, Ahmedabad. *Corresponding Author

Dr. Nikunj Chauhan

2nd Year Resident Doctor Department of Anesthesiology, B.J. medical College, Ahmedabad.

Dr. Dhriti Patel

Final year MBBS B.J. medical College, Ahmedabad.

ABSTRACT

INTRODUCTION: I-gel insertion requires adequate depth of anaesthesia for obtundation of airway reflexes and it can tolerate without undue coughing bucking or laryngospasm. A prospective, randomized, double-blinded, comparative study among 60 children between 3 to 12 years belonging to ASA I & II posted for elective surgery under general anaesthesia maintaining spontaneous respiration using I-gel. Ideal supraglottic insertion condition was evaluated and compared with children induced with Ketamine- Propofol Vs Fentanyl-Propofol. Propofol in the dose of 2.5 mg/kg was given to both the groups. Group PK received Ketamine of 0.5 mg/kg and Group- PF received Fentanyl of 2µg/kg.

Aims: Compare and estimate insertion conditions for Supra -glottic devices I-Gel with Ketamine versus Fentanyl adding Propofol in spontaneously breathing children undergoing day care procedures and observe haemodynamic and other response to both drugs.

The insertion was evaluated based on 6 variables. Heart rate (HR), systolic blood pressure (SBP), diastolic pressure (DBP) and mean arterial pressure (MAP) were noted. Also the occurrence of apnoea was noted.

RESULT: In fentanyl Incidence of head and limb movements was less. The heartrate, blood pressure was statistically Less. Coughing or gagging was seen in both but fentanyl has more apnoea. Laryngospasm was absent in either group.

CONCLUSION: Coinduction with Fentanyl prior to propofol for insertion of supraglottic device in children provide better insertion conditions and minimal alteration in hemodynamic parameter than the coinduction with ketamine and propofol.

KEYWORDS : I-gel accurately positions over laryngeal framework providing reliable per laryngeal seal and no cuff inflation is necessary .Its insertion requires adequate depth of anaesthesia for Obtundation of airway reflexes without undue coughing, bucking or laryngospasm for daycare surgery.

INTRODUCTION:

Supraglottic airway management devices comprises a family of medical devices that facilitate oxygenation and ventilation without endotracheal intubation. Intubation produce stress response leads to reflex surge in sympatho-adrenal activity. It is above glottis or larynx.

I gel airway is a novel and innovative supraglottic airway management device, made of medical grade thermoplastic elastomer, which is soft, gel-like and transparent the I- gel creates non-inflatable anatomical seal of the pharyngeal, laryngeal and per laryngeal structures whilst avoiding the possible compression trauma that can occur with inflatable Supraglottic airway devices.

Prospective, randomized double blinded comparative study was conducted on 60 ASA I & II children of both the sex-aging 3-12 years undergoing elective surgery under general anaesthesia with spontaneous breathing using I-gel as a Supraglottic device.

MATERIALS And METHODS:

1. After getting ethical committee clearance 60 children were enrolled for the study.
2. Preoperative assessment, investigation and evaluation were done random blood sugar, CBC, renal and liver function test, serum electrolytes, chest X-ray, 12 lead ECG.
3. Informed consent got from the parents.
4. Children fasted 6 hours for solids and 4 hours for fluids.
5. IV access obtained in dorsum of hand with 22 g cannula.
6. In the operation theatre baseline parameter like heart rate blood pressure monitored.
7. Inj glycopyrolate 0.004 mg/kg IV and Inj ondansetron

0.15mg/kg iv was given prior administration of test drug.

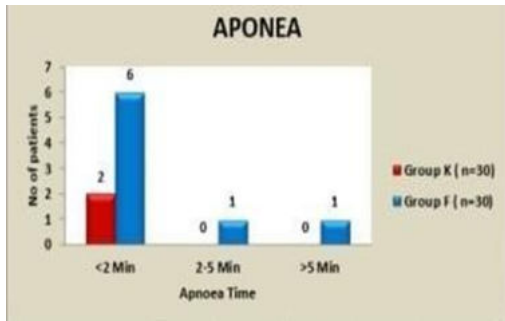
- **Group F: Fentanyl group (n=30)**
- **Group K: Ketamine group (n=30)**

Fentanyl of 2 mcg/kg was injected intravenously to group-F over 10 seconds and 0.5 mg/kg of ketamine was injected intravenously to group K over 10 second. Preoxygenation was done with 100% oxygen for 3 minutes. Heart rate Spo2, blood pressure and respiratory rate observed both the group were included with IV propofol in the dose of 2.5 mg/kg was given over 10 seconds after 90 second of start of propofol injection Igel was inserted.

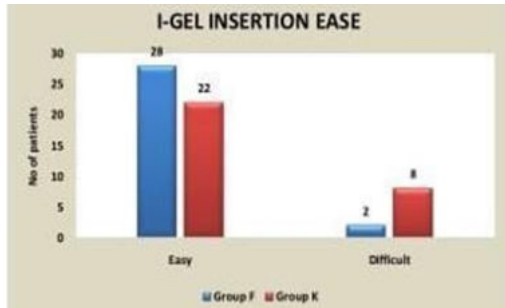
- Airway patency checked by patient respiratory movement and capnography.
- Anaesthesia was maintained using oxygen and 1% sevoflurane.
- The following parameter was observed heart rate, Spo2, blood pressure and respiratory rate were monitored continuously.

At the end of the surgery the device was removed in a deep plane and face mask was used after patient became conscious he/she was shifted to the recovery room patient were observed and oxygen saturation were recorded Till discharge for both intraoperative and postoperative complication like laryngospasm, bronchospasm, bloodstaining of the device, stidor, hoarseness of voice or painful phonation.

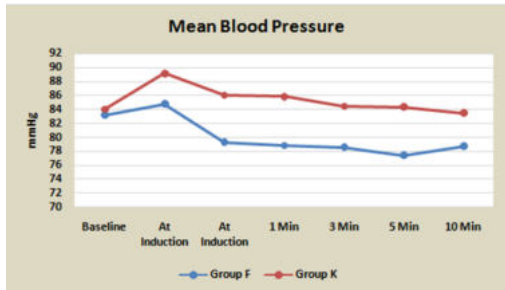
I-gel insertion conditions assessed by six variables using three point scale for Resistance to mouth-opening, Swallowing, Coughing/gagging, gross Limb/head movements, Laryngospasm and number of attempts .



Graph- 1



Graph:- 2



Graph:- 3

DISCUSSION:

Use of I- gel in children is becoming increasingly common to achieve easy I-gel insertion. Obtundation of airway reflex is must, so coughing, gagging, head and limb movements or laryngospasm can be avoided. Sufficient depth of anesthesia needed for adequate mouth opening. Combination therapy termed as co- induction may provide enhanced effects more of desired effects rather than adverse effects with minimal costs. Recently various anaesthetics procedure the concept of co- induction has been proved better with various combination of drugs like propofol fentanyl, propofol ketamine, propofol- midazolam have been tried in my study.

The insertion condition of I-Gel was observed on the basis of 6 variable such as resistance to mouth opening resistance to insertion, swallowing, coughing, gagging limb and hand movements and laryngospasm. there was no laryngospasm in both the group in our study.

Acknowledgement:-

I acknowledge my PG-teacher Dr. Trupti D shah (Associate professor) for their constant guidance and inspiration.

Disclaimer: -

I Dr.Anjali Sahoo wants to verify that the views expressed in the article are mine, and not an official position of the institution or funder.

RESULTS:-

1 The incidence of head and limb movements was less in

group-F compared to Group-K.

- 2 Coughing or gagging was seen in 3.3% of both the groups.
- 3 No statistical difference in the occurrence of restricted mouth opening between the groups.
- 4 Fentanyl group showed the incidence of more apnoea compared to ketamine group.
- 5 The heartrate, blood pressure was statistically more with ketamine group than fentanyl group
- 6 Laryngospasm was absent in either group.

CONCLUSION:-

In the study we conclude that coinduction with **Fentanyl** prior to **propofol** for insertion of Supraglottic device in children provided **better insertion conditions and minimal alteration in hemodynamic parameter** than the coinduction with ketamine and propofol.

REFERENCES:-

1. Asha Gupta, Sarabjit Kaur, Joginder Pal Attri, and Nisha Saini Comparative Evaluation of Ketamine - Propofol, Fentanyl - Propofol and Butorphanol Propofol on Haemodynamic and Laryngeal Mask Airway Insertion Conditions J anaesthesiology Clin Pharmacology. 2011 Jan-Mar; 27(1): 74-78.
2. Bahk JH, Han SM, Kim SD. Management of paediatric difficult airway with a laryngeal mask airway under Propofol anaesthesia. *Paid Anaesth*. 1999; 9:163-166.
3. Brimacombe J, Berry AM. The laryngeal mask airway anatomical and physiological implications. *Acta anaesthesiology Scand*. 1996; 40:201-209

Books:

1. Chandy Verghese Gabriel Mena David Z. Freson Archie IJ. Brain, Laryngeal Mask Airway. Benumof and Hagber's Airway Management, 3rd Edition.
2. Dorsch and Dorsch - Understanding Airway Equipment
3. Stoelting's Pharmacology and Physiology in Anaesthetic Practice