



## Anaesthesiology

## A COMPARISON OF DEXMEDETOMIDINE AND FENTANYL AS CO INDUCTION AGENTS TO PROPOFOL FOR INSERTION OF PROSEAL LARYNGEAL MASK AIRWAY

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**ABSTRACT**

**Background/need Of Study** -Proseal has advantage of laryngeal seal of pressure. Proseal LMA is utilised to GA with compatible efficacy to endotracheal intubation. Several clinical studies for laproscopic surgeries. **Aim** -To evaluate and compare Dexmedetomidine and Fentanyl as co induction agents with Propofol for Proseal laryngeal mask airway (PLMA) insertion and total Propofol requirement. **Objective: Primary Objective:** To Investigate The Induction time, Ease of insertion and Insertion time and Hemodynamics with PLMA insertion using Dexmedetomidine or Fentanyl as co-induction agents to Propofol, **Secondary Objective:** Investigate the Number of attempts, Additional Propofol requirement and adverse events such as Apnoea, Breath holding, Expiratory stridor, and Tearing. **Methods** This study was conducted in the Department of Anaesthesiology, Rangaraya Medical College, Govt Hospital, Kakinada. **Study Design:** A Prospective, Randomized, Comparative Study. **Sample Size:** A total of 60 patients, randomly allocated into 2 groups (30 in Each group), The patients will be randomized to one of the two groups by "closed envelope method".

1. Propofol (2.5mg/kg) + 1µg/kg Dexmedetomidine
2. Propofol (2.5mg/kg) + 1µg/kg Fentanyl

**Results:** All the patients had completed the study and the two groups were comparable in terms of patient characteristics such as sex, age (p=0.24), weight (p=0.68), ASA grading (p=0.9) There is a significant reduction of HR after administration of study drug in P+D group and remained significant at 1st minute after insertion of PLMA. Haemodynamically the SBP/DBP and MAP were not statistically significant between two groups. **Conclusions:** Dexmedetomidine significantly reduces the Induction time and provided ease of insertion of Proseal Laryngeal Mask Airway as compared to Fentanyl. Number of attempts, Additional Propofol requirement and Adverse events such as Apnoea, Breath holding, Expiratory stridor, and Tearing are Less with Dexmedetomidine when compared to Fentanyl when used as coinduction agent maintaining stable haemodynamics

**KEYWORDS :** Dexmedetomidine, Fentanyl, Coinduction Agents To Propofol, Proseal Laryngeal Mask Airway.

**INTRODUCTION**

For many years, Airway management emphasized largely on successful tracheal intubation. But in 1981 by the invention of laryngeal mask airway the focus of airway management changed from intubation to oxygenation and ventilation.

**The Main Advantages :**

less invasive, better tolerated by patients, improved hemodynamic stability, less sore throat, and less coughing, hands free airway In general anaesthesia, The loss of protective airway reflexes and obstruction of the upper airway can be life threatening, in such conditions supra-glottic airway devices such as the Proseal Laryngeal Mask Airway (PLMA) provides a relative secured airway

**SPECIFIC OBJECTIVES :**

This study was conducted in the Department of Anaesthesiology, Rangaraya Medical college, Government General Hospital, Kakinada..

**Study Design:**

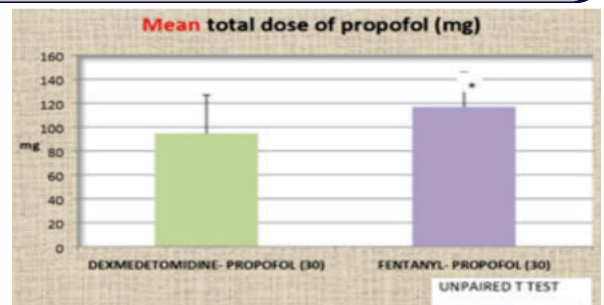
A Prospective, Randomized, Comparative Study. induction with propofol along with the study drug but the statistical difference seen after 5 minutes after the insertion of PLMA, Spo<sub>2</sub>, Etc<sub>2</sub> were also not statistically significant between two groups. Insertion of PLMA .Haemodynamically the SBP/DBP and MAP were not statistically significant between two groups. There is significant reduction of respiratory rate seen in either of groups after induction with propofol along with the study drug but the statistical difference seen after 5 minutes after the insertion of PLMA, Spo<sub>2</sub>, Etc<sub>2</sub> were also not statistically significant between two groups..

**Sample Size:**

A total of 60 patients, randomly allocated into 2 groups (30 in Each group), The patients will be randomized to one of the two groups by "closed envelope method"

**Inclusion Criteria:**

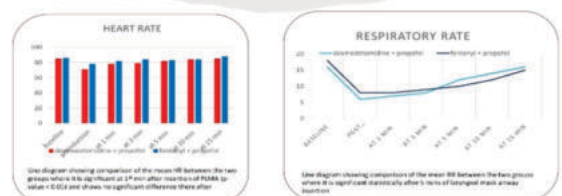
1. ASA I-II.
2. Age from 20 to 60 years.
3. Either sex

**Exclusion Criteria**

1. Patient refusal.
2. Patients with pre-existing diseases
3. Patients requiring post op ventilation.
4. Allergy to study medication
5. Reduced mouth opening.
6. BMI > 30.
7. On beta blocker therapy.
8. Basal heart rate < 60.
9. Patients at risk of aspiration

**RESULTS:**

All the patients had completed the study and the two groups were comparable in terms of patient characteristics such as sex, age (p=0.24), weight (p=0.68), ASA grading (p=0.9). There is a significant reduction of HR after administration of study drug in P+D group and remained significant at 1st minute between two groups. There is significant reduction of respiratory rate seen in either of groups after





**DISCUSSION**

1. Various induction agents such as Thiopentone sodium, sevoflurane, propofol have been used so far
2. for smooth insertion .of PLMA. Propofol having short duration of action and adequately suppresses pharyngeal and laryngeal reflexes causes dose-dependent cardio-respiratory depression when used alone
3. Different co induction agents such as low dose muscle relaxants, opioids, benzodiazepines, etc., have been used along with propofol to decrease the unwanted events while inserting PLMA. However, opioids on other hand may increases the respiratory depression and increases the haemodynamic instability caused by propofol. ...
4. Selective alpha-2 agonist such as dexmedetomidine has been used for co-induction with propofol to evaluate theinsertionconditions of LMA'sTo our surprise we required a significantly lower mean induction dose of propofol 90.25 ± 26.62 mg ( 1.52 ± 0.45 mg/kg) in group P+D as compared to group P+F 139.8 ± 22.24 (2.36 ± 0.37 mg/kg), below our maximum pre decided dose of 2.5 mg/kg to achieve BIS of 50-45
5. Dexmedetomidine and fentanyl were found to blunt the sympatho adrenal response to PLMA insertion and many literatures supporting the evidence of causing hypercapnia and irregular breathing on rapid infusion, but we did not experience any significant changes with 1µg/kg of Dexmedetomidine when infused over 10minutes
6. Although respiratory rate decreased even with fentanyl, we did not find any statistical significance in the initial 5 minutes of PLMAinsertion
7. We found no statistical significance in the number of attempt for insertion of PLMA and on comparing the ease of insertion of PLMA , Dexmedetomidine provided better insertion condition with 96.6% patient allowing the PLMA easily when compared to fentanyl at 90% for easy insertion...

**REFERENCES:**

1. Misra MN, Ramamurthy B. The Pro-seal LMA Tm and the tracheal tube: A Comparison of events at insertion of airway device. International J Anesthesiol. 2008;16.
2. 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(2):129-34.
3. Patel MG, Swadia VN, Raghavendra S. Comparison of propofol and sevoflurane for insertion of PLMA. J Anaesth Clin Pharmacol. 2010;26(1):74-78.
4. Khanduja S, Ohri A, Panwar M. Dexmedetomidine decreases requirement of thiopentone sodium and pentazocine followed with improved recovery in patients undergoing laparoscopic cholecystectomy. Journal of Anaesthesiology clinical pharmacology