



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

## INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.3522633>

Available online at: <http://www.iajps.com>

Research Article

### THE RELATIVE EVALUATION OF USAGE OF DEXMEDETOMIDINE AGAINST FENTANYL FOR ANESTHESIA INTRODUCTION BY PROPOFOL FOR SUPPLEMENT OF LARYNGEAL DISGUISE AIRWAY

<sup>1</sup>Dr Ifrah Syed, <sup>2</sup>Dr. Faiza Izhar, <sup>3</sup>Dr. Muhammad Qasim Yazar

<sup>1</sup>Jinnah Hospital Lahore

<sup>2</sup>WMO DHQ Lodhran

<sup>3</sup>Medical Officer BHU 404GB, Tandlianwala, Faisalabad

#### Abstract:

**Background:** Once propofol is exercised laterally by either fentanyl before dexmedetomidine, this offers steady cardiorespiratory illness, reduced airway responses & flat addition of Laryngeal Mask Airway.

**Aim:** The main purpose of our current research stays to associate hemodynamic & breathing limitations, apnea period & case's reply to Laryngeal Mask Airway addition among dexmedetomidine propofol also fentanyl-propofol mixtures as the main consequence. Subordinate consequence remains to detect slight side effect in intraoperatively & postoperatively phase related by research medicines.

**Methodology:** Potential, dual blind, randomized medical research in 150 fit cases of mutually gender, with ASA grade 1 & 2 remained approved out. Our current research was conducted from January 2017 to October 2018 at the Services Hospital Lahore. Cases remained demographically comparable. Cases stayed randomized to obtain moreover venous dexmedetomidine (2 µg/kg) –propofol(3mg/kg) inoculations- Set-D (n = 75) else Venus fentanyl (2 µg/kg)-Propofol(3mg/kg) inoculations- Set F (n = 75) for Laryngeal Mask Airway addition. Limitations comparable HR, RR, systolic blood pressure, diastolic blood pressure, average arterial blood pressure, oxygen saturation remained noted previously initiation, 35 seconds afterwards initiation, 2, 4, 6, 12, 20, 35, 50 & 65 minutes subsequently addition of Laryngeal Mask Airway. Apnea period remained distinguished. Case's replies to Laryngeal Mask Airway addition just like jaw flexibility, suppressing else any undertaking remained distinguished. Additional side effects remained similarly detected.

**Results:** In Set-D HR, SBP, DBP Also MABP displayed substantial lessening through research phase subsequent Laryngeal Mask Airway supplement, whereas in Set-F here remained increase in overhead limitations distinguished directly afterwards Laryngeal Mask Airway supplement. In Set-D impulsive breathing remained well conserved also apnea time remained pointedly petite associated to Set-F. Laryngeal Mask Airway addition situations remained satisfactory in cases through mutual set. Occurrence of bradycardia besides hypotension remained developed in cases of Set-D whereas occurrence of vomiting & nausea remained existing in 2 cases of Set-F.

**Conclusion:** Dexmedetomidine 2 µg/kg through propofol 3mg/kg Venus offers valuable result in weakening of hemodynamic reply to Laryngeal Mask Airway addition, improved conservation of impulsive inhalation & suitable Laryngeal Mask Airway addition situations as associated to fentanyl 2 µg/kg by propofol 3mg/kg Venus deprived of main side effects.

**Key words:** Inoculation propofol, inj. dexmedetomidine, fentanyl, laryngeal mask airway, Laryngeal Mask Airway addition.

**Corresponding author:**

**Dr.Ifrah Syed,**  
Jinnah Hospital Lahore

QR code



Please cite this article in press Ifrah Syed *et al.*, *The Relative Evaluation Of Usage Of Dexmedetomidine Against Fentanyl For Anesthesia Introduction By Propofol For Supplement Of Laryngeal Disguise Airway.*, *Indo Am. J. P. Sci*, 2019; 06(10).

**INTRODUCTION:**

Avionics course, organization is one of main requirements for anesthetists and weakness to confirm that the flight course can lead to shocking results. The best strategy to confirm the aviation course is tracheal intubation [1]. Once propofol stays exercised laterally by either fentanyl before dexmedetomidine, this offers steady cardiorespiratory illness, reduced airway responses & flat addition of Laryngeal Mask Airway. For medium to minor medical procedures, LMA is a choice for the endotracheal tube [2]. This remains exercised extensively & LMA already exists. It licenses both unrestrictedly like the positive weight ventilation. The extension of the LMA needs a lighter level of anesthesia than the endotracheal intubation, the tasteful mouth opening and immaterial reflections of the upper avionics course, such as hacking, gag or laryngospasm [3]. The search for the perfect anesthesia to provide fantastic conditions for the LMA extension continued. Different intravenous and exhalative confirmatory administrators were used. As the time for LMA integration was longer for inhalation aporic, Venus experts were preferred [4]. Propofol was most appreciated for its potential impact on reflexes in the upper flight course. Precisely once exercised unaccompanied deprived of premedication, Propofol produces cardiorespiratory despair also requires agonizing, soothing properties. Dexmedetomidine, an exceptionally specific  $\alpha_2$  adrenoceptor agonist, appeared to have soothing and distressing properties, anxiolysis and sympatholytic through methods for the receptors located in veins, revealing endpoints, locus coeruleus and spine, without imparting respiratory melancholy. The assisting result was the observation of a reaction in the intra- and postoperative phase in connection with the investigational drugs [5].

**METHODOLOGY:**

Potential, dual blind, randomized medical research in 150 fit cases of mutually gender, with ASA grade 1 & 2 remained approved out. Our current research was

conducted from January 2017 to October 2018 at the Services Hospital Lahore. Cases remained demographically comparable. Cases stayed randomized to obtain moreover venous dexmedetomidine (2  $\mu\text{g/kg}$ ) –propofol(3mg/kg) inoculations- Set-D (n = 75) else Venus fentanyl (2  $\mu\text{g/kg}$ )-Propofol(3mg/kg) inoculations- Set F (n = 75) for Laryngeal Mask Airway addition. Apnea period remained distinguished. Case's replies to Laryngeal Mask Airway addition just like jaw flexibility, suppressing else any undertaking remained distinguished. Additional side effects remained similarly detected. Arranged, double outwardly weakened randomized clinical trial was recorded after support by the good and consistent board of the Foundation. Expecting the number of patients to be 1500 consistently, as stated in the records of past centers, with an assurance break of 14 and a conviction level of 96%, it was decided to use a model size of 66 patients. In anticipation of 12% of the non-response rate, 75 patients were searched at each social event. 150 fit cases of equally gender, with ASA mark 1 also 2, developed 19-75 years, 33-85 kg heavy, were selected for investigation. Patients who underwent various elective minor medical measures underneath GA remained selected for current research. Respondents with ASA grade 3-4, pregnant women, smokers, patients confronted with oral and nasal therapy strategies, patients without mouth openings, patients at risk of deficiency, insufficiently measured hypertension, respiratory exchange, neuromuscular illnesses, haematological spread also outrageous liver or kidney failure, patients who are not defenseless for any of the evaluation drugs were excluded from the study. In the process of obtaining instructed consent, patients were administered discretionarily from a PC table with unpredictable statistics through the individual blinded to system in 2 social affairs of 75 persons apiece by way of set D (n = 75) and group F (fentanyl propofol risk) (n = 75). Social event D Patients Received inj. dexmedetomidine 2  $\mu\text{g/kg}$

weakened in 10 ml standard salt solution Venus piece by piece over 3 min. Get-together F Patients Received inj. fentanyl 2 µg/kg weakened in 12 ml normal saline Venus after and after over 3 minutes. In both social occasions 35 seconds later, inj. Propofol received 3 mg/kg Venus of over 35 seconds for recognition without neuromuscular blockade. 100 seconds afterwards injection, Propofol LMA remained installed through the skilled anesthetist that remained blinded before excellent of recognition also adjuvant pain relieving authorities. The privileged LMA position stayed established by extension of sack-weight breast splitter, with a slight outward improvement of the chamber by LMA sleeve swelling. LMA expansion conditions were investigated by a comparative anesthesiologist. From confirmation to LMA expansion, patients received 100% oxygen through facial coverage and were ventilated during apnea. The information gained from the explanations stayed arrived the EPI information 8 and separated. Constant variables remained reported in mean & SD. Uninfluenced components stayed mediated in rates. t-test & chi-square trial stayed assigned as needed. P regard < 0.06 remained measured quantifiable substantial also < 0.002 significant immense.

### RESULTS:

In Set-D HR, SBP, DBP Also Mean ABP displayed substantial lessening through research phase subsequent Laryngeal Mask Airway supplement, whereas in Set-F here remained increase in overhead limitations distinguished directly afterwards Laryngeal Mask Airway supplement. In Set-D

impulsive breathing remained well conserved also apnea time remained pointedly petite associated to Set-F. Laryngeal Mask Airway addition situations remained satisfactory in cases through mutual set. Occurrence of bradycardia besides hypotension remained developed in cases of Set-D whereas occurrence of vomiting & nausea remained existing in 2 cases of Set-F. Here were not any substantial variances in cases' age, mass or else gender in 2 sets, e.g.  $p = 0.35$ ,  $0.68$  also  $2.05$  individually (Table 1). Here were not any substantial variances in starting point HR in 2 sets ( $p = 0.25$ ) also on LMA addition ( $p = 0.40$ ), nevertheless extremely substantial variances remained distinguished at succeeding time intermissions ( $p = 0.0002$ ) (Table 2). Variances in SBP appraisals remained not statistically substantial at zero (T0), on LMA addition (TL), and at 35, 50 also 65 minutes ( $p = 0.08$ ,  $0.09$ ,  $0.35$ ,  $0.07$  and  $0.20$  correspondingly). Nevertheless, extremely substantial variances remained distinguished at additional time intermissions ( $p = 0.0002$ ) (Table 3). Variances in DBP appraisals stayed not statistically weighty at zero (T0), also on 61 minutes (T60) ( $p = 0.69$  also  $0.34$  correspondingly). Nevertheless, substantial variance remained verified at T45 ( $p = 0.007$ ), also extremely weighty variances remained distinguished at additional time intermissions ( $p = 0.0002$ ). About any consequence on respiratory rates, not any statistically substantial variances remained distinguished at zero (T0), & at 60 minutes ( $p = 0.52$  also  $0.37$  individually). Here remained substantial variance at T45 ( $p = 0.003$ ), but very substantial variances remained distinguished at additional time intermissions ( $p = 0.0001$ ).

**Table 1: Demographic information:**

Sets	Sum of cases	Gender Male/Female	Age in years	Mass in kg
Set D	74	40-31	$34.18 \pm 15.36$	$53.70 \pm 6.87$
Set F	74	$36.54 \pm 13.99$	$53.24 \pm 6.92$	$38:32$
Entire	145	78:64		
P value		1.01 NS	NS 0.69	0.34 NS

**Table 2: Judgment of HR (per minute)**

Time	Sed-D		Set-F		P value	remarks
	Mean	SD	Mean	SD		
Baseline (T0)	5.67	88.02	6.75	86.67	0.21	NS
LMA insertion (TL)	7.04	85.97	6.55	86.95	0.38	NS
1 min (T1)	7.43	79.64	8.41	94.61	0.0002	HS
5 min (T5)	5.91	67.08	8.22	84.00	0.0002	HS
15 min (T15)	5.18	65.31	6.93	78.77	0.0002	HS
45 min (T45)	6.24	74.72	6.90	81.71	0.0002	HS

60 min (T60)	5.93	75.41	6.54	82.85	0.0002	HS
--------------	------	-------	------	-------	--------	----

**Table 3: Assessment of SBP:**

Time	Sed-D		Set-F		P value	remarks
	Mean	SD	Mean	SD		
Baseline (T0)	9.56	128.86	10.04	131.64	0.08	NS
LMA insertion (TL)	9.64	130.07	10.41	127.16	0.09	NS
1 min (T1)	133.86	10.24	123.53	10.33	0.0002	HS
5 min (T5)	127.23	10.57	115.21	8.24	0.0002	HS
15 min (T15)	117.87	8.75	111.86	5.97	0.0002	HS
45 min (T45)	122.74	8.30	125.40	8.08	0.07	NS
60 min (T60)	124.81	8.79	7.94	126.71	0.19	NS

**DISCUSSION:**

In addition to the adequate importance of anesthesia for facilitating trajectory reflexes, factors influencing LMA dilatation include mouth opening, patient MPG evaluation, and jaw loosening. Fentanyl was used more typically to weaken these reactions, but dexmedetomidine is being considered at this stage [6]. Benchmarking means that SBP was practically indistinguishable, both in the social and in the field. Dexmedetomidine 2 µg/kg through propofol 3mg/kg Venus offers valuable result in weakening of hemodynamic reply to Laryngeal Mask Airway addition, improved conservation of impulsive inhalation & suitable Laryngeal Mask Airway addition situations as associated to fentanyl 2 µg/kg by propofol 3mg/kg Venus deprived of main side effects [7]. We observed a decrease in standard mean SBP of up to 17% after a portion of dexmedetomidine that had calmed down for 35 minutes had accumulated. Example Mean SBP in social event F through and through from start to third minute after LMA extension instead of Group-D according to our assessment. What makes the difference was demonstrably unusually fundamental between the two social events. Our disclosures facilitate with the research by Ramaswamy AH et al. also Surabhi et al. Here remained very substantial rise in SBP benchmark in social event F from the beginning minutes after LMA formation instead of Set-D, anywhere here remained not any fundamental variation [8]. The hyperdynamic reply to LMA incorporation also skin ablation remained not found in Set D either. At the clear chance that there should be an event of fentanyl, hyperdynamic reply to cautious transformations remained considered also here remained early an increase in Systolic Blood Pressure, which appeared different with respect to the control mean Systolic Blood Pressure [9]. Our results are similarly reliable, with various assessments showing that dexmedetomidine gives hemodynamic strength and attentiveness to essential representations of the

medical system dulls attentive responses. Dexmedetomidine 2 µg/kg through propofol 3mg/kg Venus offers valuable result in weakening of hemodynamic reply to Laryngeal Mask Airway addition, improved conservation of impulsive inhalation & suitable Laryngeal Mask Airway addition situations as associated to fentanyl 2 µg/kg by propofol 3mg/kg Venus deprived of main side effects. The biphasic result of dexmedetomidine is achieved by limiting the central revealing flood that cancels the rapid stimulatory outcome [10].

**CONCLUSION:**

Fentanyl also dexmedetomidine mutual deliver steady hemodynamics, lessened airway reactions & smooth addition of Laryngeal Mask Airway laterally through propofol, nevertheless dexmedetomidine remains greater to fentanyl in preserving steady hemodynamics, preservative breathing & provided that improved Laryngeal Mask Airway addition situations. Consequently, dexmedetomidine seems to remain the possible alternate to fentanyl to co-administer by propofol for Laryngeal Mask Airway addition.

**REFERENCES:**

1. Wong CM, Critchley LA, Lee A, Khaw KS, Ngan Kee WD. Fentanyl Dose Response Curves When Inserting The LMA Classic Laryngeal Mask Airway. *Anaesthesia*. 2007;62:654-660. doi: 10.1111/j.1365-2044.2007.05057.x. [PubMed]
2. Phua WT, Teh BT, Jong W, Lee TL, Tweed WA. Tussive effect of a fentanyl bolus. *Can J Anaesth*. 1991;38(3):330-334. [PubMed]
3. He L, Xu JM, Dai RP. Dexmedetomidine reduces the incidence of fentanyl-induced cough: A double-blind, randomized and placebo-controlled study. *Ups J Med Sci*. 2012; 117: 18-21. doi:

- 10.3109/03009734.2011.629749[PubMed][Free full text]
4. Bhartia N , Pokalea SN , Balaa I, Guptab V. Analgesic efficacy of dexmedetomidine versus fentanyl as an adjunct to thoracic epidural in patients undergoing upper abdominal surgery: a randomized controlled trial. *Southern African J Anaesth Analg*. 2018;24(1):16–21.
  5. Lessa MA, Tibiriçá E. Pharmacologic Evidence for the Involvement of Central and Peripheral Opioid Receptors in the Cardioprotective Effects of Fentanyl. *Anesth Analg*. 2006;103(4):815-821. doi: 10.1213/01.ane.0000237284.30817.f6[PubMed]
  6. Muzi M, Robinson BJ, Ebert TJ, O'Brien TJ. Induction of Anesthesia and Tracheal Intubation with Sevoflurane in Adults. *Anesthesiology*. 1996;85(3):536-543. [PubMed][Free full text]
  7. Ramaswamy AH, Shaikh SI. Comparison of dexmedetomidine-propofol versus fentanyl-propofol for insertion of laryngeal mask airway. *J Anaesthesiol Clin Pharmacol*. 2015;31(2):217-20. doi: 10.4103/0970-9185.155152. [PubMed][Free full text]
  8. Sood J. Laryngeal mask airway and its variants. *Indian Journal of Anesthesiology* 2005;49:275-280.
  9. Brimacombe J, von Goedecke A, Keller C, Brimacombe L, Brimacombe M. The laryngeal mask airway Unique versus the Soft Seal laryngeal mask: a randomized, crossover study in paralyzed, anesthetized patients. [PubMed]
  10. Brimacombe J. Anatomy. In: *Laryngeal mask anesthesia: principles and practice*. 2nd ed. 2005; pp. 23-26.