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Research Article

CONTRAST PROPOFOL AND ETOMIDATE AS AN ENLISTMENT OPERATOR TO ASSESS HEMODYNAMIC CHANGES DURING ACCEPTANCE OF ANESTHESIA IN CONTROLLED HYPERTENSIVE PATIENTS

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Abstract:

Background and Aim: A perfect enlistment operator for general anesthesia sought to have hemodynamic soundness, negligible respiratory reactions and fast discharge. A scope of acceptance operators is right now accessible. The motivation behind this research was to contrast propofol and etomidate as an enlistment operator to assess hemodynamic changes during acceptance of anesthesia in controlled hypertensive patients.

Methods: A forthcoming randomized twofold visually impaired investigation was led at Jinnah Hospital, Lahore Pakistan, on 70 patients who experienced medical procedure under general anesthesia from March 2017 to September 2018. Gathering P patients got infusion fentanyl 2 µg/kg, trailed by infusion propofol 1-3 mg/kg; and gathering E patients got infusion fentanyl 2 µg/kg, trailed by infusion etomidate 0.3-0.5 mg/kg. Persistent hemodynamic parameters, for example, systolic circulatory strain (SBP), diastolic pulse (DBP), mean blood vessel weight, and pulse (HR) were estimated at customary interims. Every single symptom, for example, infusion torment, myoclonus, and so forth were identified.

Results: After acceptance, pulse didn't change essentially in the etomidate gathering, however diminished altogether in the propofol bunch contrasted with the pre-enlistment esteem (4.9% versus 7.4%). The mean abatement in SBP at T2 (3 minutes after acceptance) in bunch E was 5.8%, lower than in bunch P (7.7%). Three minutes after acceptance, the DBP diminished by 17.26% contrasted with 4.9% in Group P and Group E, separately. In the etomidate gathering, post-incited SBP didn't change altogether contrasted with pre-acceptance. In any case, in the propofol bunch SBP diminished fundamentally in postinduction. After acceptance, DBP didn't change fundamentally in the etomidate gathering, however the reduction was noteworthy in the propofol gathering.

Conclusion: Etomidate is better at keeping up pulse and circulatory strain and in this way superior to propofol in controlled hypertensive patients during the inception of general anesthesia.

Keywords: Diastolic blood pressure; Hemodynamic changes; Systolic blood pressure; Etomidate; Propofol; Hypertension.

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INTRODUCTION:

A perfect enlistment operator for general anesthesia ought to have hemodynamic security, negligible respiratory symptoms and quick discharge. A scope of enlistment operators is right now accessible. Thiopental is one of the most seasoned acceptance operators found in 1938 by Lundy, known for its quick activity and wake-up, has an extra property of diminishing ICP in obstinate cases [1]. Studies have indicated that it prompts fringe vasodilation, drop in circulatory strain, increment in pulse and direct negative inotropic impact on the heart. Propofol brings down circulatory strain by decreasing pre-and post-load, cardiovascular yield and fundamental vascular opposition because of hindrance of thoughtful vasoconstriction and weakness of the baroreceptor reflex control framework [2]. Etomidate is portrayed by hemodynamic steadiness, insignificant respiratory sorrow without bronchoconstriction and cerebral defensive impact [3]. Its absence of impact on the thoughtful sensory system, its baroreceptor capacity and its impact of expanded coronary blood stream even in patients with moderate heart brokenness settle on it an injector of decision. Also, Etomidate is frequently utilized for RSI in anesthesia because of its relative cardiovascular steadiness in the crisis room (ED) [4]. This examination is an endeavor to look at the hemodynamic changes of etomidate and propofol as acceptance operators in controlled hypertensive patients. It was likewise important to assess and look at each reaction of one of the two medications perioperatively in this gathering of patients. We needed to assess and analyze hemodynamic changes in controlled hypertensive patients during the acceptance of anesthesia with propofol or etomidate as the enlistment operator and research the occurrence of symptoms, for example, myoclonus, queasiness, infusion agony and thrombophlebitis [5].

METHODOLOGY:

A forthcoming randomized twofold visually impaired investigation was led at Jinnah Hospital, Lahore Pakistan, on 70 patients who experienced medical procedure under general anesthesia from March 2017 to September 2018. Consideration criteria were: age bunch 37 to 65 years, controlled circulatory strain with antihypertensive medications other than beta-blockers, BP \leq 140/90 mmHg, a past filled with hypertension \leq 6 years, American Society of Anesthesiologists grade I-II, experiencing medical procedure under general anesthesia. Composed assent was acquired from all patients to partake in the investigation. Avoidance criteria were: Patient dismissal, patients with terminal organ harm, patients experiencing crisis medical procedure, patients with

comorbid conditions including coronary illness, epilepsy, COPD, hefty patients, known essential or auxiliary adrenal inadequacy, delayed steroid use, sensitivity to consider drugs, obstetricians (PIH) and pediatric patients and patients with stun. Upon appearance in the working room, a 20 G venous cannula was embedded and all patients got an implantation of 500 ml dextrose salt arrangement. Standard screens, for example, electrocardiography (ECG), non-intrusive circulatory strain observing (NIBP) and heartbeat oximetry were associated and the essential parameters recorded. All patients were preoxygenated with 5-8 L/min oxygen for 3-7 minutes. Gathering P patients got infusion fentanyl 2 μ g/kg pursued by infusion propofol 1-3 mg/kg, and gathering E patients got infusion fentanyl 2 μ g/kg pursued by infusion etomidate 0.3-0.5 mg/kg. After ventilation survey, succinylcholine 2 mg/kg was directed to encourage the presentation of the endotracheal tube. Every single gathered datum was outlined. Visual impairment was guaranteed by the way that the anesthetist had no information on the medications utilized. Both etomidate and propofol were filled into indistinguishable syringes by a subsequent anesthetist. The patients were allocated to either gather E or gathering P, in light of a PC created randomization table, and just the arbitrator knew the number task for the medication. The arbitrator gave the understudy anesthesiologist a code and gave the acceptance operator to the patient. In the wake of watching and gathering the intra-and postoperative information of each of the 70 patients, the medication was decoded.

Measurable examination:

Subjective information was communicated as rates and extents and quantitative information as mean \pm standard deviation. Contrasts between two gatherings regarding constant factors were broke down by t-test, while clear cut factors were examined by chi-square test. Every factual test were performed with SPSS rendition 23 programming. $p < 0.06$ was considered factually noteworthy, while $p < 0.02$ was considered exceptionally huge.

RESULTS:

A total of 70 patients with ASA body status I and II developed between 37-65 years were self-assertively divided into two social events. The measurement data of the patients is shown in Table 1. Demographically, the two social occasions were identical in regards to ordinary weight, yet typical age, ordinary size, and ordinary BMI were basically higher in pack E ($p \leq 0.06$) Comparative changes in (beats each minute) at different time between times are showed up in Table

2. Heartbeat changes in the etomidate pack after acknowledgment were not gigantic stood out from the pre-selection rate, anyway beat changes in the propofol bundle after acknowledgment were basic appeared differently in relation to the pre-enrollment. Table 3 shows the movements of the mean SBP in the two working social affairs at different time breaks. Pre-selection was taken as the standard. There was no basic change in the etomidate bundle during the post-enrollment period, anyway in the propofol pack the mean SBP decreased in a general sense after

acknowledgment. Table 4 shows the movements of the mean DBP in the two working social events after selection and their assessment with the motivator before acknowledgment (measure). There was a vital decrease in the propofol gathering, anyway the mean DBP didn't reduce through and through in the etomidate gathering. Table 5 shows the changes in the mean of the MAP in the two working social affairs after selection. In the etomidate pack the post-enrollment MAP didn't decrease, yet in propofol the post-acknowledgment MAP reduced inside and out.

Table 1: Contrast of demographic figures:

D Values	Set-P	Set-E	p-value
Weight (kg)	61.2 ± 8.88	56.6 ± 9.8	0.059
Age (in years)	48.8 ± 8	44.5 ± 9.01	0.05*
BMI (kg/m ²)	23.7 ± 1.61	22.6 ± 1.59	0.01*
Height (cm)	162.11 ± 8.88	156.7 ± 9.9	0.02*

Table 2: Comparative changes in heart rates (beats/min) at different time intervals:

Time	Group D	Group E	Group DE	P
B	78.8±11.9	75.1±10.4	74.1±14.7	0.309
AD	71.8±9.6	72.7±9.1	64.7±13.1	0.009*
AI	69.0±7.1	73.6±9.8	66.2±12.1	0.018*
1 min	78.6±8.5	89.5±17.4	69.4±5.8	<0.001*
3 min	74.8±9.3	83.3±15.5	71.9±11.3	0.002*
5 min	71.9±7.9	81.8±14.3	70.2±10.6	<0.001*

Values are expressed as mean±SD. *Statistically significant ($P < 0.05$): One-way ANOVA test. Group D: Dexmedetomidine, Group E: Esmolol, Group DE: Dexmedetomidine and esmolol, ANOVA: Analysis of variance, SD: Standard deviation

DISCUSSION:

Etomidate is a short-acting intravenous narcotic for the acknowledgment of general anesthesia. It has an altogether enduring cardiovascular profile. In our assessment with Propofol the mean re-acknowledgment was HR 82.13 and 4 min after enrollment 76.79, while in etomidate the mean HR pre-acknowledgment was 87.5 and 4 min after selection 84.27, which was irrelevant [6]. This was insisted by the examination drove by M Das et al. Moller et al. regardless, showed that the decrease in the two social affairs was important (p -regard < 0.06) for propofol and etomidate [7]. There was next to no complexity between the two social occasions similar to change in HR. Crush Kaushal et al. reported a decrease in the two social affairs as immaterial. Regardless, the assessment coordinated by Shah demonstrated a comparable result 1 min after acknowledgment, yet later, for instance after 5 min, there was a slight addition in HR for the propofol gathering, there was a colossal augmentation in HR (p -regard 0.001), while the etomidate bundle HR was unimportant [8]. This may be a direct result of the

anxiolytic effect of midazolam and fentanyl, which they use as premedication. None of the patients in either pack had thrombophlebitis following 24 hours of imbue. The bit of etomidate may similarly accept an occupation in imbue torment, as greater measurements are connected with a higher recurrence of venous outcomes [9]. The lipid emulsion formula was in like manner associated with inside and out less mixture torment and generally less phlebitis and thrombosis appeared differently in relation to etomidate in propylene glycol. Neither of the patients in both of the two social events complained of affliction. Mayer et al. declared in 1999 that etomidate, which is characterized in a medium-chain lipid emulsion, makes on a very basic level less burden patients than propofol, which is separated in a long-chain plan [10].

CONCLUSION:

Our assessment shows that etomidate gives higher hemodynamic constancy than propofol when used as an acknowledgment pro in patients with controlled

hypertension. Propofol causes more torment at the mixture site than etomidate.

propofol and admixture at induction. Saudi J Anaesth. 2011;5(1):62-6. [PubMed] [Free full text] doi: 10.4103/1658- 354X.76509.

REFERENCES:

1. St Pierre M, Dunkel M, Rutherford A, Hering W. Does etomidate increase postoperative nausea? A double-blind controlled comparison of etomidate in lipid emulsion with propofol for balanced anaesthesia. *Eur J Anaesthesiol.* 2000;17(10):634-641. [PubMed]
2. Mayer M, Doenicke A, Nebauer A, Hepting L. Induction of anaesthesia with etomidate in lipid emulsion and propofol: haemodynamics and patient comfort. *Anaesthesist.* 1996;45(11):1082-1084. [PubMed]
3. Kosarek L, Hart SR, Schultz L, Di- Giovanni N. Increase in Venous Complications Associated With Etomidate Use During a Propofol Shortage: An Example of Clinically Important Adverse Effects Related to Drug Substitution. *Ochsner J.* 2011;11(2):143- 146. [PubMed] [Free full text]
4. Isitemiz I, Uzman S, Toptaş M, Vahapoglu A, Gül YG, Inal FY, et al. Prevention of etomidate induced myoclonus: Which is superior: Fentanyl, midazolam, or a combination? A Retrospective comparative study. *Med Sci Monit.* 2014;20:262-267. doi:10.12659/MSM.889833. [PubMed] [Free full text]
5. Batra R.K et al. Comparative evaluation of etomidate, propofol and thiopentone in short surgical procedures. *Ind J Anesth.* 1984;(32, 2):108.
6. De Jong F, Mallios C, Jansen C, Scheck P, Lamberts S. Etomidate Suppresses Adrenocortical Function by Inhibition of 11 β -Hydroxylation. *J Clin Endocrinol Metab.* 1984;59(6):1143- 1147. [PubMed] [Free full text] DOI: 10.1210/jcem-59-6-1143
7. Fragen R, Shanks C, Molteni A, Avram M. Effects of Etomidate on Hormonal Responses to Surgical Stress. *Anesthesiology.* 1984;61(6): 652-656. [PubMed] [Free full text]
8. Mccollum J, Dundee J. Comparison of induction characteristics of four intravenous agents. *Anaesthesia.*2007;41(10):995-1000. [PubMed] [Free full text]
9. Moller Petrun A, Kamenik M. Bispectral index-guided induction of general anaesthesia in patients undergoing major abdominal surgery using propofol or etomidate: a double-blind, randomized, clinical trial. *Br J Anaesth.* 2012;110(3):388-396. [PubMed] [Free full text] doi: 10.1093/ bja/aes416
10. Saricaoglu F, Uzun S, Arun O, Arun F, Aypar U. A clinical comparison of etomidate-lipuro,