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# THE IMPACT OF SUCCINYLCHOLINE OR VECURONIUM ON INTRAOCULAR PRESSURE IN RELATION TO THE ACCEPTANCE OF PROPOFOL

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**Abstract:**

***Background and Aim:*** *The performance of the ophthalmic medical procedure, especially once globe is open, be contingent to a large amount on the measure of the intraocular pressure during anaesthesia, nevertheless similarly during the support period. Intubation is typically accomplished through usage of non-depolarizing muscle relaxants inspired by a paranoid dread of swelling intraocular pressure through depolarizing relaxants. The current review has been embraced with a plan to assess impact of succinylcholine or vecuronium on intraocular pressure in relation to the acceptance of propofol.*

***Methods:*** *This existing research was conducted at Jinnah Hospital, Lahore from October 2017 to September 2018. Sixty cases of mutually genders with ASA status I and II, aged 16 to 52 years, remained designated for examination for one year. Cases through medically enormous ocular disease, elevated IOP, cardiorespiratory disease, CNS disease, difficult airway, corpulence, those receiving medications that may affect IOP, and in whom the usage of succinylcholine is contraindicated, were prohibited. Cases were arbitrarily divided into two equivalent sets. Anesthesia was encouraged through propofol 2 mg/kg for more than 36 seconds in all cases. In Set V cases, vecuronium was applied and in Set S cases, succinylcholine was used for intubation. The factual investigation was concluded with a unidirectional ANOVA using SPSS 23 programming rendering.*

***Results:*** *In Set V, the reduction in IOP of 29.48% after enrollment and one minute after intubation was increased to 15.54%, but remained below the gauge estimate. In Set S, there was a 29.15% rise in IOP after enrollment and one minute after intubation, the IOP increased to 36.57%. A substantial rise in beat frequency and circulatory pressure was renowned in Set S after operator acceptance in addition intubation associated to Set V.*

***Conclusion:*** *Propofol and vecuronium give a fantastic intubation illness and this is an appropriate operator for tracheal intubation in elective ophthalmic intervention and crisis where an IOP rise is unfortunate.*

***Key words:*** *Anesthesia, ANOVA, Intraocular pressure, ophthalmic surgery.*

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## INTRODUCTION:

The expansion of intraocular pressure (IOP) during an ophthalmic medical procedure has continuously been dangerous for specialist and this is important to counteract height of the IOP and measure it before, throughout and afterwards medical procedure [1]. The performance of an ophthalmic medical procedure, especially once eyeball is open, rest on to a great amount on the measure of the intraocular pressure (IOP) during the support as well as the acceptance of the anaesthesia. This is frequently accomplished with measured aeriation of the lungs, encouraged by usage of non-depolarizing muscle relaxants [2]. Non-depolarizing muscle relaxants are furthermore maintained as part of the altered rapid, calmly accepted arrangement with a full stomach, anywhere usage of succinylcholine is contraindicated, as in tolerance to perforating eye injury [3]. Vecuronium is a non-depolarizing operator that is short-acting and free of almost or opposite cardiovascular reactions, at least when used in moderately large portions, and would appear to be reasonable for use in ophthalmic medical procedures. Laryngoscopy and tracheal intubation are additional responses to create a significant increase in IOP. The instrument is unclear, but it probably identifies with a reflective cardiovascular response to tracheal intubation [4]. Pressure on the eye ball due to tonic contraction of additional visual muscles and dilatation of the choroidal vein are the main reasons for the increase in IOP. Propofol anaesthesia has been considered mild, without significant reactions and related through a quick and gentle recovery. Their usage is similarly related through a huge decrease in IOP and some benefit in the weakening of IOP expansion related through tracheal intubation. The ophthalmic medical procedure requires silent and co-employable cases, free from the torments of a fixed eye and negligible IOP changes. Therefore, the current research was adopted through a plan to assess impact of succinylcholine or vecuronium on intraocular weight in relation to the acceptance of propofol anesthesia [5].

## METHODOLOGY:

This existing research was conducted at Jinnah Hospital, Lahore from October 2017 to September 2018. Sixty cases of both sexes with ASA status I and II, aged 16 to 52 years, were selected for examination for one year. Cases with clinically enormous ocular disease, elevated IOP, cardiorespiratory disease, CNS disease, difficult airway, corpulence, those receiving medications that may affect IOP, and in whom the use of succinylcholine is contraindicated, were prohibited. Sixty cases of either gender with ASA physical status I AND II, aged 16 to 53 years, remained designated for investigation for a year. Prior to the start of the investigation, moral endorsement in addition authorization from the authority was obtained from the moral council of the school and the emergency clinic concerned. Compound well-versed agreement remained obtained from the cases who took an interest in the examination. Cases who had a history of clinically critical eye disease, high IOP, cardiorespiratory disorders, CNS disease, difficult airway, overweight, those who accepted any medication that might affect IOP, also in whom usage of succinylcholine is contraindicated, stayed excepted from the examination. Cases were arbitrarily allocated to two equivalent sets. In both cases, propofol remained applied as an enrollment specialist. In set V, anesthesia remained introduced through propofol and vecuronium also in set S: anesthesia stayed assumed through propofol and succinylcholine. The pre-anesthetic examination was carried out the day before and the morning of the medical procedure. Clinical evaluation was done and routine tests such as hemoglobin, renal capacity tests, serum electrolytes, arbitrary blood the sugar and X-beam of the chest PA see have been exhorted. On the tables of the reports noted, screens remained devoted in addition Parameters such as heart rate, systolic and diastolic blood pressure, SpO2, ECG remained distinguished. The reference IOP was estimated with the Schiotz space tonometer using a 6 G release weight in wake of corneal anaesthesia with a topical preparation of 5% lignocaine hydrochloride. Premedication in the form of glycopyrrolate, injected midazolam and injected tramadol was administered. Critical limitations, such as SpO2 and IOP, remained estimated in addition noted afterwards 15 minutes of premedication.

**Factual Review:** The information was oblique also arrived into the Microsoft Excel spreadsheet. The investigation is complete.
using Render 23 from SPSS (SPSS Inc. Chicago, IL, USA). Factors were assessed to determine if they were common using the The Kolmogorov-Smirnov test. Graphical measurements were determined. Cluster methods were analyzed by a unidirectional ANOVA test. The level of essentiality was set at $p = 0.06$.

## RESULTS:

Sixty cases with a placebo with ASA grade I-II were isolated in two clusters. The cases in the current review had a place with an age Set of 16-54 years. Here was not at all substantial variance in mean age also weight. Here remained a predominance of male cases in set V also women cases in set S. Variations in intraSet IOP at different time intervals remained contrasted, with the baseline IOP estimate being $18.2 \pm 2.27$ mmHg in Set V and $17.32 \pm 2.64$ mmHg in Set S. Afterward premedication, here remained

not any IOP adjustment in either Set, which was not measurably substantial (p > 0.06). After anesthesia recruitment, IOP was decreased by 29% in Set V, while IOP was increased by 27% in Set S, which was actually profoundly critical (p < 0.002). One minute after intubation: In Set V, there was an 18% increase in IOP, but the value was still below the baseline estimate. In Set S, there was a 66% increase in IOP, which was greater than the baseline estimate. What matters is that the facts are exceptionally remarkable (p < 0.002). After acceptance of anesthesia, in Set V, there remained the decline in beat rate to 81 ± 12 beats/min, while in Set S, the beat rate was increased to 87.45 ± 7.37 beats/min. The thing that counts was measurably critical (p < 0.06). One minute afterwards intubation, in Set V, the beat rate increased to 92 ± 11 beats/min, but was still below the model estimate. In Set S, there remained a further rise in beat rate to 97.6 ± 15.27 beats/min. The thing that mattered was in fact profoundly huge (p < 0.002). In Set V, the progressive calm created agony on infusion, in difference to Set S; and 3 cases created eye blockage, in contrast to 1 patient in Set S. In last set, 3 (9%) of cases created bradycardia.

**Table 1: Demographic information of cases:**

| Variable | Set-V | Set-S | p-value |
|---|---|---|---|
| Age | 47 ± 9.8 | 48 ± 8.47 | > 0.06 |
| Weight | 32 ± 13 | 31 ± 11.25 | > 0.07 |
| Male: Female | 13(53%):12(47%) | 12(47%):13(53%) | |
| ASA Physical status I<br>II | 20(82%)<br>5(18%) | 20(77%)<br>7(23%) | |

**Table 2: Proportional baseline hemodynamic limitations (mean ± SD):**

| Variable | Set-V | Set-S | p-value |
|---|---|---|---|
| Pulse rate | 128.38 ± 8.10 | 124.8 ± 11.38 | > 0.06 |
| Systolic BP | 82.5 ± 7.38 | 94.2 ± 5.7 | > 0.07 |
| IOP (mmHg) | 16.31 ± 2.64 | 17.1 ± 1.25 | > 0.06 |
| Diastolic BP (mmHg) | 79.03 ± 7.09 | 77 ± 6 | > 0.04 |

**Table 3: Heart Rate at numerous time intervals (mean ± SD):**

| Time | Set-V | Set-S | p-value |
|---|---|---|---|
| T0 | 82.5 ± 7.25 | 94.2 ± 6 | > 0.06 |
| Tp | 81.6 ± 7.38 | 93.1 ± 6.7 | > 0.07 |
| Tin | 98.6 ± 15.28 | 92 ± 11 | < 0.002 |
| T1 | 87.45 ± 7.37 | 82 ± 12 | < 0.06 |
| T3 | 85.5 ± 6.26 | 90 ± 9.7 | < 0.06 |
| T5 | 89.4 ± 6.78 | 91 ± 10.8 | < 0.06 |

## DISCUSSION:

The vast majority of ophthalmic medical procedures are conducted under the controlled use of local anesthesia and verified anesthetic care that has required quiet and pleasant cases. In uncooperative cases, particularly in broods, GA is appreciated and aim of GA is to offer eyeball immobilization, insignificant changes in intraocular pressure, gentle enrollment and smooth postoperative development [6]. Most soporific surgeons decline IOP apart from succinylcholine and ketamine. Succinylcholine is, however, a decision to encourage tracheal intubation in presumed full stomach cases. The rise in IOP created by succinylcholine is transient for 5 to 7 minutes and is usually caused by compression of additional visual muscles and dilatation of the choroidal vein. B. Vanacleer reported that there was a 26.38% drop in IOP one minute after propofol administration [7]. The organization of vecuronium after propofol administration was added to promote a 12.95% decrease in IOP. Well after intubation, IOP was 16.68% lower than the baseline estimate, which is equivalent to our survey. R.K. Mirakhaur explained that there was a 37.8% decrease in IOP after propofol and vecuronium administration [8]. After intubation, IOP increased, but at the same time was 28.76% below the baseline estimate, which is virtually identical to our survey. Some analysts reported that the rise in IOP after succinylcholine started in less than a minute, which was 26.2% higher than the baseline estimate, and was not related to an increase in visual blood flow. In our survey, the beat rate showed no significant changes 14 min after premedication in any of the gatherings [9]. In Set S, there was a noticeable rise in beat rate after succinylcholine organization (p < 0.06) and an exceptionally critical increase in beat rate at one minute after intubation (p < 0.002), while in Set V,

throughout the investigation, the beat rate remained stable and below the standard value. Agony on propofol infusion was the main symptom observed during our investigation, which was advanced in Set V (27%) than in Set S (8%). Bradycardia remained detected solitary in Set S, possibly due to the combined effects of propofol and succinylcholine. The findings of our investigation suggest that the acceptance of propofol and vecuronium anesthesia is related with a useful and critical reduction in IOP once associated to propofol in addition succinylcholine at an unprecedented range. Mixing propofol also succinylcholine remains the medication decision once the tough airway or a full stomach is supposed [9].

## CONCLUSION:

To close enrollment through propofol in addition to vecuronium give large to fantastic intubated state contrasted with a mixture of propofol in addition to succinylcholine. This is a reasonable routine for tracheal intubation for cases experiencing elective and crisis ophthalmic medical procedures anywhere IOP ascent is unfortunate. Vigilant evaluation of the airway would be made earlier organizing vecuronium and the danger of nostalgia should be remembered if there is a case of cases with a full stomach.

## REFERENCES:


1. Scheinin B, Lindgren L, Randell T, Scheinin H, Scheinin M. Dexmedetomidine attenuates sympathoadrenal responses to tracheal intubation and reduces the need for thiopentone and peroperative fentanyl. Br J Anaesth 1992;68:126– 31. [PubMed]
2. Yildiz M, Tavlan A, Tuncer S, Reisli R, Yosunkaya A, Otelcioglu S. Effect o dexmedetomidine on haemodynamic responses to laryngoscopy and intubation: Perioperative haemodynamics and anaesthetic requirements. Drugs R D. 2006;7:43– 52. [PubMed]
3. Mirakhur RK, Elliot P, Shepherd WF, Archer DB. Intra-ocular pressure changes during induction of anaesthesia and tracheal intubation. A comparison of thiopentone and propofol followed by vecuronium. Anaesthesia. 1988 Mar;43 Suppl:54-7. [PubMed] [Free full text]
4. Mirakhur RK, Shepherd WF, Elliot P. Intraocular pressure changes during rapid sequence induction of anaesthesia: comparison of propofol and thiopentone in combination with vecuronium. Br J Anaesth 1988:60(4);379-383. [PubMed] [Free full text]
5. Vanacker B, Dekegel D, Dionys J, Garcia R, Van Eeckhoutte L, Dralants G, et al. Changes in intraocular pressure associated with the administration of propofol. Br J Anaesth. 1987 Dec;59(12):1514-7. [PubMed] [Free full text]
6. Elliot P, Mirakhur RK, Shepherd WF. Intraocular pressure during induction of anaesthesia with propofol or thiopental followed by vecuronium: influence of additional dose of induction agent. Anaesthesiology. 1987;67(3):45-48. [Free full text]
7. Mirakhur RK, Shepherd WF, Lavery GG, Elliott P. Effect of vecuronium on Intraocular pressure. Anaesthesia. 1987 Sep;42(9):944-9. [PubMed] [Free full text]
8. Pandey K, Badola RP, Kumar S. Time course of intraocular hypertension produced by suxamethonium. Br J Anaesth. 1972 Feb;44(2):191-6. [PubMed]
9. Miller RD. USA: Churchill Livingstone; 2005. Miller's Anesthesia. 6th edition. pp. 2351–2353.