|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
NLM (National Library of Medicine ID: 101738825)
Index Copernicus Value 2019: 79.34
Original Research Article
Volume 5, Issue 9; September: 2021; Page No. 175-177

THE DIFFERENT TIMING OF ORAL CLONIDINE PREMEDICATION EFFECT ON SEDATION SCORE IN SPINE SURGERY

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Article Info: Received 30 July 2021; Accepted 29 August 2021
DOI: https://doi.org/10.32553/ijmbs.v5i9.2212
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Conflict of interest: No conflict of interest.

Abstract
Background: Premedication is the administration of medication before anaesthesia. It is used to prepare the patient for anaesthesia and to provideoptimal conditions for surgery.
Methods: The study of oral premedication dose of clonidine in spinal surgeryat different time was conducted on sixty ASA grade-1 patients of either sex between 20 to 60 years of age undergoing elective spine surgery. Thisstudy was performed after approval from ethics committee of the institute. Informed consent was obtained from each patient.
Results: The total induction dose of propofol required for the induction of the patient is 2-2.5 mg/kg body weight. In our study the average weightof the patient in group-1 was 58.83 kg and in group-2, average weight of the patient was 54.77 kg. The total average weight of patient in the study was 56.80 kg. Thus the total induction dose of propofol required should have been 117.66 mg in group-1, 109.54 mg in group-2 and 113.6 mg in average total.
Conclusion: In conclusion this study establishes that the premedication with tab.clonidine 200µg (As tab. clonidine is available in 100µg) 90 minute before the surgery or 3.5 hour before the surgery reduced induction dose of propofol.
Keywords: Clonidine, Propofol, Spine

Introduction

Premedication[1] is the administration of medication before anaesthesia. It is used to prepare the patient for anaesthesia and to provideoptimal conditions for surgery. The choice of premedication depends upon various factors like type of surgery, age of the patient, choice of the anaesthesia and as more and more patients are going in for the day care surgery, the use ofpremedication is declining as the patients are reporting late on the day of surgery. It was observed that only 37.2% of the patients posted for surgery get normal premedication, in 9.7% no premedication was given and in rest of the patients the premedication time was not appropriate. Premedication aspects of rest of the patients were overlooked or were not properly followed.[2]

Materials and Method

The study of oral premedication dose of clonidine in spinal surgeryat different time was conducted on sixty ASA grade-1 patients of either sex between 20 to 60 years of age undergoing elective spine surgery. Thisstudy was performed after approval from ethics committee of the institute. Informed consent was obtained from each patient.

Exclusion Criteria-

1. Age<20 and >60
2. Patient refusal
3. ASA-2. ASA-3 and ASA-4
4. Patient with B.P.>140/90and<110/70.H.R<60
5. Patient on any medication which altered H.R. and B.P.
6. Difficult intubation and emergency surgery
7. Any medication which interact with clonidine
8. Cervical spine surgery
9. Coronary artery and cerebrovascular disease
10. Neurological disorder and diabetes mellitus

Study protocol were explained to all the patients during pre-anesthetic evaluation and after taking written informed consent they were included in the study and were allotted the group according to the randomallocation software.

Method – Patients were randomized into two groups of 30 each with randomization software.

In group1.patient were received tab clonidine 200µg (2 tablet of Arkamin 100µg each) 90 minute beforesurgery.

In Group2 patients were received tablet clonidine 200µg 3.5 hour before surgery. (Tablet Arkamin of Urichem Laboratories Ltd.is avaibleas 100 µg was used.)

Patients of both the group were advised to take tablet midazolam 7.5mg before bed time and was nil per orally after 10pm.

Next day in the morning group-1 patient were given tab clonidine 200µg 90 minute before surgery and group-2 patient were given tab clonidine 200µg 3.5 hour before surgery. Vitals were recorded in both the groups before premedicating. On arrival in the operation theatre H.R. and

B.P was noted down. Sedation score was done just before and afterpremedication. The degree of sedation was recorded (as per American society of anaesthesiology sedation score)

1. Point- patient awake &talkative
2. Point- patient awake but uncommunicative
3. Point-patient drowsy, quiet and easily arousable
4. Point –patient asleep

A peripheral intravenous line was secured with 18G cannula. Monitor was attached and patient base line measurement of HR. SBP. DBP & MAP was obtained non-invasively and ECG was displayed on themonitor. Saturation was monitored throughout the procedure. Injecton fentanyl 2ug/kg i.v and. Injection emset (ondansetron) 4mg 1/v was givenand after pre-oxygenation with 100% oxygen for 3 minute, patient was induced with injection propofol 40 mg stat and 10 mg every 3 second, till eye lash reflex was gone. Induction dose of propofol was noted. After ventilating the patient, injection rocuronium 0.6mg/kg i.v. was given.

Intubation was done gently after 3minute with endotracheal tube 7.5 ID infemale and 8.0 ID in the male. Haemodynamics response to intubation was noted. Patient was maintained on oxygen, nitrous Oxide (33%-66%) & isoflurane (0-1%). injection diclofenac 75 mg i/v was given slowly.

Results:

The total induction dose of propofol required for the induction of the patient is 2-2.5 mg/kg body weight. In our study the average weightof the patient in group-1 was 58.83 kg and in group-2, average weight of the patient was 54.77 kg. The total average weight of patient in the study was 56.80 kg. Thus the total induction dose of propofol required should have been 117.66 mg in group-1, 109.54 mg in group-2 and 113.6 mg in average total.

But the total induction dose of propofol in group-1 was 95 mg which was 80.74% of induction dose required and in group-2, the total induction dose of propofol was 88.33 mg which was 80.63% of theinduction dose and the average induction dose of propofol in the study group was 91.67mg ± 14.281 mg which was 80.69% of total induction dose required. Thus the total induction dose of propofol inboththe groups was significantly less as per kg. required which is highly significant (p-value<0.001) (on applying Wilcoxan signed rank test)In the intragroup comparison, the total induction dose of propofolwas statistically insignificant (p>0.05).

Table 1: Induction dose of propofol (in mg)

	Mean induction dose	Standard deviation	Sig.(2-talled)
Group 1	95	15.256	.070
Group 2	88.33	12.617	

Table 2: Reduction in propofol dose – intergroup Test applied – student t-testGroup Statistics

GROUP	N	Mean	Std. Deviation	p- value
1	30	22.67	13.998	
Reduction 2	30	21.20	11.162	0.655

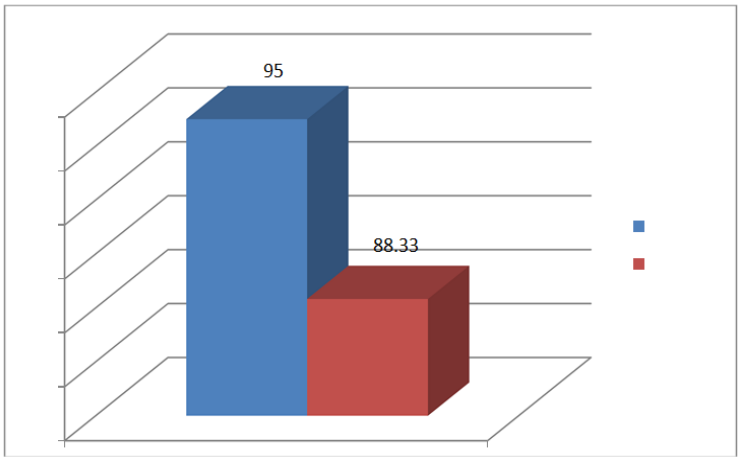

Figure 1: Comparison of mean induction dose of Propofol distribution ingroup1 and group 2

Discussion

Total induction dose of propofol required for the induction of patient is 2-2.5mg/kg body weight. In our study we induced the patient in both the group with inj.propofol till the eyelashes reflex was gone. The average weight of the patient in our study was 56.80kg.This mean that thetotal induction dose of propofol for inducing the patient should have been 114-140mg.But in our study the total average dose of propofol in both thegroups used was 91.67mg, which is statically significant as compare to baseline value.

From our study we found that there was remarkably decrease in the induction dose of propofol in both the groups suggesting that we can premedicate with clonidine at both the timing will gain the same result onthe reduction in induction dose of propofol.

Goyagi T et al[3], in their study on the effect of oral clonidine on theinduction dose of propofol observed that the induction dose of propofol inthose who received oral clonidine 5µg/kg orally, 90 minutes before induction was 1.4±0.3 mg/kg as compared to 1.9±0.4 mg/kg in the control group. A reduction of 26.3% in the induction dose of propofolwas noted. They observed more reduction in induction dose of propofolin their study group as compared to our study group may be due to the 5µg/kg clonidine used in their study. In our study average dose of oral clonidine was 3.6µg/kg.

Conclusion

In conclusion this study establishes that the premedication with tab.clonidine 200µg (As tab. clonidine is available in 100µg) 90 minute before the surgery or 3.5 hour before the surgery reduced induction dose of propofol.

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