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RESEARCH ARTICLE
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A COMPARATIVE STUDY ON THE INCIDENCE OF SORE THROAT AFTER TRACHEAL INTUBATION USING SUCCINYLCHOLINE AND ROCURONIUM IN ELECTIVE SURGERIES

Dr Fasna Nellikot[1], Dr. Sunil M[2], Dr.Arun Varghese[3], Dr Susha T S[4*]

[1]Junior Resident, Department of Anaesthesiology, Government Medical College, Thrissur, Kerala, India.
[2]Associate Professor, Department of Anaesthesiology, Government Medical College, Thrissur, Kerala, India.
[3]Assistant Professor, Department of Anaesthesiology, Government Medical College, Thrissur, Kerala, India.
[4*]Assistant Professor, Department of Anaesthesiology, Government Medical College, Thrissur, Kerala, India

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***Corresponding Author:** Dr Susha T S
*Assistant Professor, Department of Anaesthesiology, Government Medical College, Thrissur, Kerala, India

ABSTRACT

BACKGROUND: This study was undertaken to compare the incidence of sore throat after tracheal intubation using Succinylcholine and Rocuronium in elective surgeries.

METHODS: After receiving approval from the institutional ethics committee and signed informed consent from the study participants, a prospective comparative study based in a hospital was carried out among 120 patients. 120 Patients of American Society of Anaesthesiologists Physical Status I and II undergoing elective surgeries under general anesthesia were included in the study. They were allotted into two groups: Group A and Group B. Group A was given Succinylcholine as the muscle relaxant and Group B was given Rocuronium. The postoperative occurrence of sore throat within 24 hours were enquired.

RESULTS: Out of those who received succinylcholine - 56% and amongst those who received rocuronium – 63% had postoperative sore throat. The difference is not statistically significant with the p value is 0. 456.The incidence of sore throat was found to be depended on other factors like duration of surgery.

CONCLUSION: The incidence of sore throat did not vary much from both the groups using succinylcholine and rocuronium. Hence the effect of type of muscle relaxant used for induction of general anesthesia has shown to have no influence on the incidence of sore throat postoperatively.

KEYWORDS: Postoperative sore throat, Succinylcholine, Rocuronium

INTRODUCTION

General anaesthestics bring about a reversible loss of consciousness and analgesia during which patients are not able to be aroused, even with a painful stimulus. The patients ability to maintain his/her own ventilator function is lost. There are many potential side effects associated with general anaesthesia. These issues vary from minor insignificant complaints to life threatening conditions. Fortunately, due to development of various perioperative monitors and equipments major issues arising related to anaesthesia procedures has declined tremendously. The type of side effect the patient experience also depend on the type of anaesthesia they receive , duration they are under anaesthesia and the type of surgery.

Postoperative sore throat is a common occurrence following general anaesthesia. Airway management has the strongest influence on the incidence of sore throat and therefore improving endotracheal intubating conditions can reduce its incidence. Several methods have been proposed to minimize this effect.

Succinylcholine is the only depolarizing muscle relaxant in clinical use. It is well known for its rapid onset of action and short duration of action. Rocuronium is a nondepolarizing muscle relaxant .It has an onset of action that approaches that of succinylcholine, making it suitable alternative for rapid sequence inductions. It has been been noted that the type of induction agent and muscle relaxant used during anaesthesia can affect the incidence of sore throat. This study is based on the comparison of the above mentioned muscle relaxants and occurrence of sore throat.

OBJECTIVES

- To compare the incidence of sore throat after intubation with succinylcholine and rocuronium.

METHODS

After obtaining the institutional research methodology and ethical committee clearance , patients with ASA status I & II ,aged 18 -45, posted for elective surgical procedures satisfying the inclusion and exclusion criteria are compared in the study. Study conducted in Department of Anesthesiology, Government Medical College, Thrissur, Kerala, India. It is a Cross sectional study. Patients will be induced using Inj.Thiopentone sodium 5mg/kg and intubated using Inj. Succinylcholine 1.5mg/kg for one group and using Inj.Rocuronium 0.9mg/kg for the second group .Incidence of sore throat will be enquired within 24 hours of postoperative period . Self made questionnaire is used to assess the sore throat

Inclusion criteria

- Adult patients in age group 18 – 65 years of either sex
- ASA physical status: ASA I &II
- surgery under general anaesthesia
- Must give their written informed consent

Exclusion criteria

- Those having history of drug allergy
- BMI more than 30 kg/m2 , pregnant and nursing women
- Patients with coronary heart disease
- Patient with MPC III and MPC IV

Statistical Methods

The data of study subjects and the outcome will be statistically analyzed and the appropriate statistical test, will be applied using the latest version of SPSS software. ‘p’ value less than 0.01 will be considered significant.

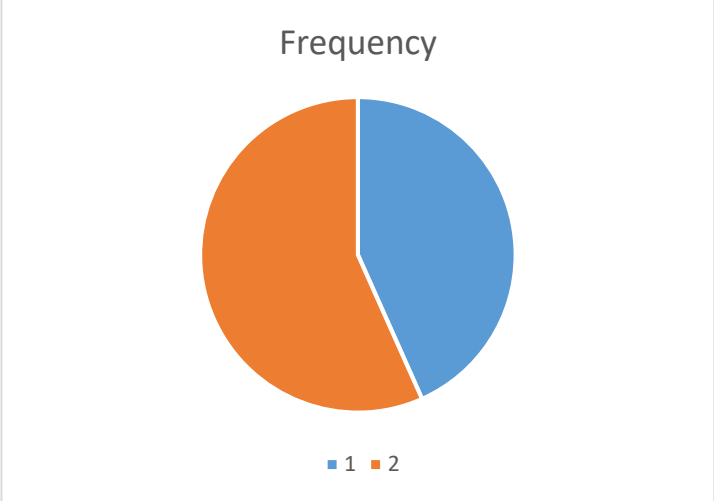
RESULTS

GENDER

Table 1. Gender Distribution

Gender	Frequency	Percentage
Male	52	43.3
Female	68	56.6
Total	120	100

Figure 1 : Gender distribution

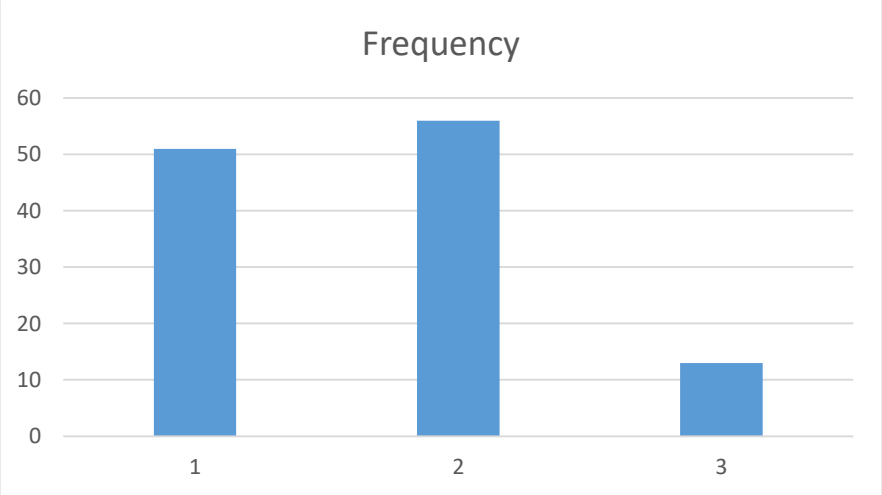


Out of the total 120 patients studied 52 were males and 68 were females, constituting a percentage of 43.3 % by males and 56.6% by females

Table 2- Distributiom of duratiom of surgery

Duration	Frequency	Percentage
1	51	42.5
2	56	46.6
3	13	10.8

Figure 2-Distribution of duration of surgery

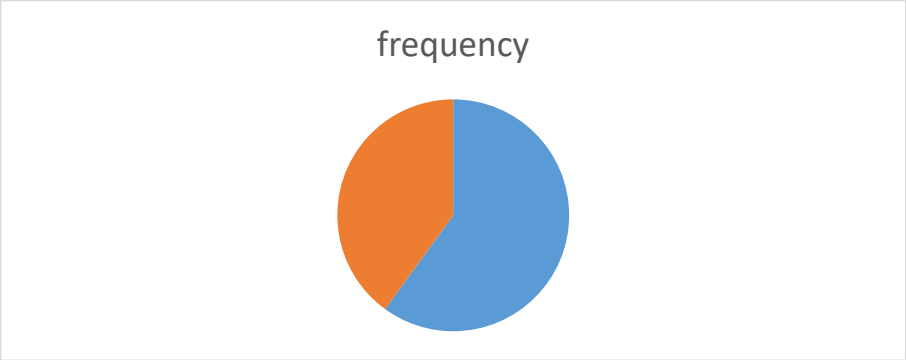


Among the total cases studied 51 cases belonged to the category of less than 1 hour duration and the majority 56 cases were under surgeries which took between 1-2 hours duration.Only 13 cases belonged to more than 3 hours duration category

Table 3- Distribution of sore throat

	frequency	percentage
sorethroat	72	60
No sorethroat	48	40

Figure -3 Distribution of sore throat

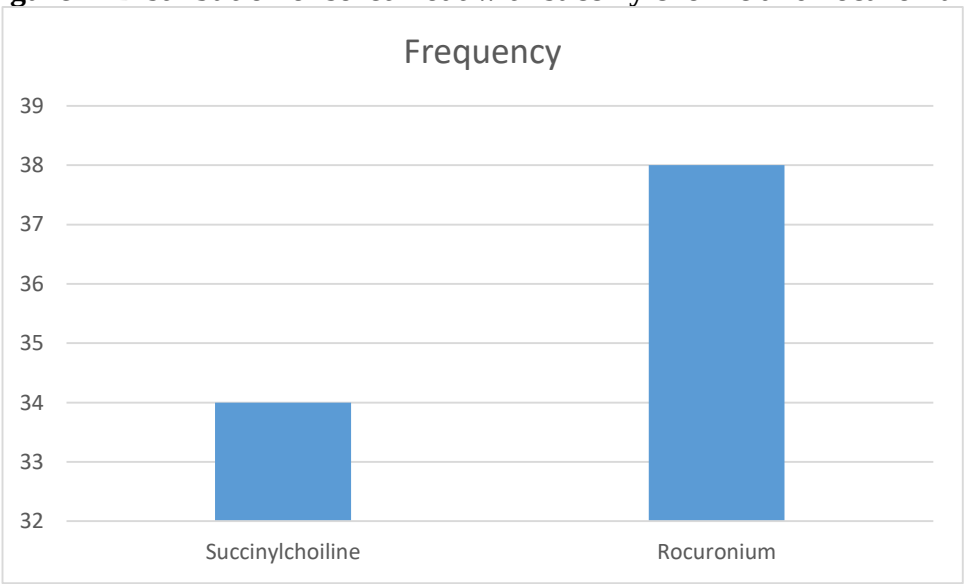


Among the 120 cases studied, 72 cases reported as having sore throat , which constitutes around 60% of the total and 48 cases did not have sore throat constituting 40%.

Table 4- Distribution of sorethroat with succinylcholine and Rocuronium

Drugs	Frequency	Percentage
Succinylchoiline	34	56.67
Rocuronium	38	63.33
Total	72	100

Figure 4- Distribution of sorethroat with succinylcholine and rocuronium



Pearson chi 2 =0.556 p =0.456

Out of succinylcholine 56.67 % and among Rocuronium group 63.33% had sore throat
P value =0.456, which is statistically insignificant.

DISCUSSION

Sore throat is a common postoperative complaint, occurring most often following tracheal intubation. After tracheal intubation, the incidence of sore throat varies from 14to 50% in most of the studies. The wide variation in these percentages is presumably due to different skills and methods among

the anaesthetists and also the difference between the individuals in defining sore throat. It is therefore well recognized that the method of questioning is an important determinant of the incidence of sore throat. This study was undertaken in such a context to evaluate the incidence of sore throat after using succinylcholine (group A) and Rocuronium (group B) in patients undergoing elective surgeries under general anaesthesia.

This is a hospital based prospective comparative study conducted in Government medical college Thrissur, over a period of 12 months between January 2018- January 2019 which has included 120 patients who underwent elective surgeries under general anaesthesia..They were randomly allotted into two groups by the principal investigator. The patients were blind to the group allotted. Approval was taken from the ethical committee of our institution. A written informed consent was taken from all the patients who were involved in the study prior to surgery. The baseline demographic data of two groups were comparable.

Patients with age between 18 and 65 years were included in the study. Of the study population the mean age with incidence of sore throat was 46 years. When compared to previous studies there age was not a factor determining the incidence of sore thoat.

In this study, frequency of sore throat is found to be more in females. Out of 120 patients studied 68 were females,constituting 56.6% and 52 were males (43.3%).

It was found that the incidence of sore throat increased with increase in the duration of surgery. Almost all patients with duration of surgery exceeding 2 hours had sore throat. Ahmed et al, in the study mentioned that sore throat was found to be more common with duration of the surgical procedure and with the patient's position during surgery and muscle relaxants did not influence it. In certain studies it was shown that due to the presence of fasciculations after succinylcholine,it was associated with increased incidence of sore throat. Meanwhile other studies showed that the fasciculations due to succinylcholine did not increase postoperative sore throat incidence when compared with other relaxants.

In our study the incidence of sore throat is not significantly different between the two groups of this study using Succinylcholine and Rocuronium. The p value is 0.456.

CONCLUSION

From this study it has been concluded that there is no significant difference in the incidence of postoperative sore throat between the groups which received succinylcholine and rocuronium as muscle relaxants during elective surgeries under general anaesthesia.

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