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ORIGINAL ARTICLE

A Comparison of Lidocaine and Ketamine for prevention withdrawal from injection of Rocuronium

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ABSTRACT

Aim : To make comparison of the effects of lidocaine and ketamine in preventing withdrawal moments linked with IV injection of rocuronium .

Methods: About sixty candidates (ASA I & II) were chosen for this case research and categorized into two groups via aid of random number table in such a manner that each group contained 30 individuals. Candidates belonging to group A were administered ketamine in the dosage of 0.5mg/kg that was diluted in 2ml whereas group B candidates were administered 2ml of 1% lidocaine. On the dorsum of the hand, 20 gauge cannula will be inserted intravenously and candidate will be administered midazolamin doage of 0.02mg/kg intravenously for five minutes before coming into in the Operation theatre. After arrival of candidate , non-invasive routine monitoring of the candidates will be carried out and free fluid flow fluid via cannula will be assured by gravity with aid of IV fluid as normal saline. At room temperature, the syringes will be placed. Administration of drugs will be carried out via the injection port of intravenously cannula with a free fluid flow intravenously.

Results: In case of ketamine , the prevalence withdrawal movements was recorded as 43.3% and lidocaine as 40%. In case of both research groups, the mean withdrawal scores were similar (P value two tailed = 1.0 (>0.05). Two candidates among these individuals i-e one from each groups depicted generalized response (3.3%). No noteworthy difference was recorded in case of lidocaine and ketamine for preventing withdrawal moments after administration of injection of rocuronium.

Conclusion: Equal effectiveness of lidocaine 1% and Ketamine 0.5mg/kg 2ml (20mg) was recorded in deducing withdrawal moments after administration of injection of rocuronium intravenously .

Keywords: Lidocaine, ketamine, withdrawal movements

INTRODUCTION

Rocuronium is a muscle relaxant categorized under Aminosteroidal non depolarizied, and been utilized for instant induction due to its fast mechanism of action . It cause pain on administration of injection. If this injection is given intravenously , before patient losses his consciousness, a burning sensation and pain might happens ; but if administered after patient loses his consciousness via induction agents, a great range of withdrawal effects might happens because of its pain causing element . It has been observed that in case of 50%-80% of the patient, Pain as well as withdrawal effects on arm or wrist were witnessed . After administration of propofol injection, pain is common side effect. Various techniques been utilized in deducing this injection induced pain as well as its withdrawal effect. A comparison of tramadol, lidocaine, fentanyl and ondansetron was made to overcome pain on administration of rocuronium, it was discovered that lidocaine to be most effective where asfentanyl was found to be the least in fighting its side effects.

Sudden elbow and wrist flexion make it hard to carry on with rocuronium injection intravenously; so lidocaine in quantity of 1% given in dosage form as 1mg/kg in order to overcome its complications. Small ketamine doses noteworthy overcomes its withdrawal effects linked with injection of rocuronium intravenously . Magnesium sulphate and 0.9% delusion also administered for this purpose.

We aimed at comparison of the effectiveness of lidocaine and ketamine in deducing pain linked with rocuronium injection when administered intravenously.

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MATERIAL AND METHODS

From outpatient department about, sixty candidates were chosen after giving informed consent and permission from IRB. ASA status, demographic data of candidate and data with respect to operation will be documented in records .All sixty candidates were divided into two groups via aid of random number table in such a manner that each group contained thirty candidates. Candidates belonging to patients group A will be administered ketamine in dosage of 0.5mg/kg that was diluted in 2ml and secondly, candidates of group B will be administered about 2ml of lidocaine 1%.The variables such as sex and age will be handled via matching. The case researcher will investigate the influence of injected drug on a proforma that was designed specially and this case research will be blinded type of case research on drug. On the dorsum of the hand, 20 gauge cannula will be inserted intravenously and candidate will be administered midazolamin doage of 0.02mg/kg ntravenously for five minutes before coming into in the Operation theatre. After arrival of candidate, non-invasive routine monitoring of the candidates will be carried out and free fluid flow fluid via cannula will be assured by gravity with aid of IV fluid as normal saline. At room temperature , the syringes will be placed . Administration of drugs will be carried out via the injection port of intravenously cannula with a free fluid flow intravenously. The test drug will be administered by case researcher at baseline (0 second). After an hour, induction of anaesthesia will be carried out via sodium thiopentone 2.5% and titrated till patient becomes un consciousness, as evaluation was carried out standard via standardize clinical criteria as loss of eyelash reflex and verbal response. This will be instantly followed via injecting 1% rocuronium in dosage of 0.6 mg/kg over the time span of 10 seconds.

If withdrawal happens on administration of injection, it will be recorded as nil response, whereas wrist movement only, withdrawal/movement that includes just arm recorded as generalised response. With proper technique, the administration of anaesthesia will be carried out via using proper technique in the presence of anaesthesiologist.

RESULTS

Comparison of the mean age of the patients

Study groups	N	Mean age in years	Std. Deviation
A (Ketamine)	30	31.9	12.2
B (Lidocaine)	30	37.2	12.6

Statistical Analysis
Test applied= ***'t'*** test
t value= 1.644 P value two tailed = 0.11 (>0.05)
There was no significant difference in mean ages between two study groups

Our study showed that there was no significant difference among the patients in two groups regarding their age. Mean age was 31.9 years in ketamine group and was 37.2 years in lidocaine group (P value > 0.05).

Comparison of mean withdrawal score of the patients

Study groups	N	Mean withdrawal score	Std. Deviation
A (Ketamine)	30	1.67	0.88
B (Lidocaine)	30	1.67	0.92

Statistical Analysis
Test applied= 't' test
t value= 0.00 P value two tailed = 1.0 (>0.05)
There was no significant difference in mean withdrawal score between two study groups

DISCUSSION

Our case research did not depict any noteworthy differences in case of relieving pain of ketamine vs lidocaine on administration of rocuronium injection. These conclusions are similar to past research work carried out on pain prevention and withdrawal linked with administration of rocuronium intravenously.

Liou JT and colleagues[6] did examination on smaller doses as pretreatment of saline vs ketamine in deducing withdrawal effects linked with administration of rocuronium in case of children. Administration was carried out by his team in dosage amount of ketamine as 0.2mg/kg or saline by 22-gauge cannula intravenously in the dorsum region of hand. After duration of 0 seconds, injection of Thiopental was administered in dosage of 5mg/kg followed by rocuronium dosage of 0.8 mg/kg intravenously. The rocuronium injection was noted via aid of four-point scale. The prevalence of withdrawal effects was 83% in case of candidates belonging to saline group as compare to 27% in case of members belonging to ketamine group (P<0.05). They made a conclusion that pretreatment done via using small amount of ketamine reduces the withdrawal effects linked with intravenous injection of rocuronium.

In case of our study, we had comparison between ketamine vs lidocaine 1% in case of adults. An increased dosage of Ketamine in amount 0.5mg/kg and a lesser a dosage of rocuronium 0.6mg/kg was given and withdrawal as well as pain was ranked via aid of four point scale. We had made observation that premedication by using ketamine is enough for reducing withdrawal movements as well as pain linked with with rocuronium injection irrespective of amount of dosage administered. All the case researches mentioned above depicted good ketamine efficacy and lidocaine for preventing withdrawal movements and pain linked with rocuronium injection but there is just one case research which made comparison of ketamine efficacy with lidocaine. In our case research, we have also made comparison of lidocaine and ketamine. The ketamine and lidocaine dosage that were used in case our case research was change in amount of dosage as compared to other case researches and our conclusion depicted that no noteworthy difference was being noted and observed between these both. Ketamine used as widely in anesthesia on daily basis as it acts as inductive, good sedative and pain alleviating agent. So as pretreatment it can be used preferentially, instead of lidocaine, for preventing withdrawal movements after administration of rocuronium injection intravenously.

CONCLUSION

Ketamine shows same effectiveness as lidocaine in prevention of withdrawal movements linked with IV rocuronium injection.
Conflict of interest: Nil

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