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ORIGINAL ARTICLE

EVALUATION OF TRACHEAL INTUBATING CONDITIONS AND SERUM POTASSIUM LEVELS WITH DIFFERENT DOSES OF SUCCINYLCHOLINE: A PROSPECTIVE RANDOMIZED COMPARATIVE STUDY

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ABSTRACT: BACKGROUND: Utility of succinylcholine for rapid sequence induction is a common practice for more than last 50 years. The $ED_{95\ dose}$ of succinylcholine is 0.3mg/kg. Regularly 2-3 times ED_{95} doses of non-depolarizing muscle relaxants are being used for tracheal intubation, but succinylcholine is being used traditionally in a dose of 1mg/kg which is more than 3.5 times ED_{95}. However, according to the available literature evidence doses as small as 0.4mg/kg may also provide clinically acceptable intubating conditions with the possibility of earlier return of neuromuscular function which avoids critical hemoglobin desaturation in unanticipated difficult airway& CVCI situations. We did a study to evaluate the ease of tracheal intubation with low doses of succinylcholine in Indian population. **AIM:** To evaluate tracheal intubating conditions and serum potassium levels with different doses of succinylcholine. **DESIGN:** A prospective randomized double blind comparative study. **METHODS:** 80 patients belonging to ASA PS I&II were randomly divided into 4 groups A,B,C&D who received 0.5mg/kg,0.6mg/kg,0.7mg/kg& 1mg/kg of succinylcholine respectively. All the patients were pre-medicated with Tab. Alprazolam 0.25mg PO previous night and fentanyl 1mcg/kg 5min before induction, induced with sleep dose of thiopentone followed by administration of test drug. After 1min, 3yrs experienced anesthesiologist attempted tracheal intubation& assessment of intubating conditions were done using Cooper& colleagues criteria. N-M effects were monitored preoperatively and up to 3min after dug administration. Haemodynamic parameters& serum potassium were measured preoperatively, continued up to 5min& 1 hour after drug administration respectively. **RESULTS:** Clinical intubation cumulative scores in GROUP A were significantly different from other GROUPS (B, C, D) with ($p<0.05$) on ANOVA. N-M monitoring has revealed significant twitch height depression in Group D ($p<0.05$) at 60 sec after drug administration along with significant twitch height recovery in between the four groups ($p<0.05$). With Bonferroni multiple comparison test Group D is statistically different from Group A&B with no difference between Groups C&D. Haemodynamic monitoring and serum potassium levels were increased but not clinically significant. **CONCLUSION:** To conclude, 0.6mg/kg of succinylcholine can be attempted for rapid sequence induction as it provides equally good intubating conditions with early recovery.

KEYWORDS: Anaesthesia, Succinylcholine, Serum Potassium, Intubating conditions, N-M Monitoring.

INTRODUCTION: Utility of succinylcholine as a tool in facilitating tracheal intubation was first described 60 years ago.[1,2]

Neuromuscular blocking effects of succinylcholine were described by Bovet and co-workers in 1949.[3] Its effects in anaesthetized animals and man were described by Castillo and De Beer in 1950[3] and Thesleff in 1951.[3]

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Despite the recent introduction of short acting non-depolarizing neuromuscular relaxants, succinylcholine with its rapid onset of action, short duration and predictable paralysis, remains unsurpassed in providing ideal conditions for tracheal intubation.

The ED_{95} of succinylcholine is less than 0.3mg/kg.[4,5] In earlier reports, doses averaging less than 0.5mg/kg were usually employed (10–50mg) to facilitate tracheal intubation. However, Foldes noted that a problem with doses of this magnitude was that they allow only 60 to 90 seconds for intubation when single IV dose is administered.[1] Perhaps as a consequence, doses of 1mg/kg or greater have come to be accepted as standard for succinylcholine assisted intubation.[6]

Recently margin of safety associated with succinylcholine has been expressed in doses more than or equal to 1mg/kg. It is based on the consideration that with 1mg/kg of succinylcholine, life-threatening haemoglobin desaturation may occur before functional recovery, especially in subjects whose ventilation is not assisted (Benumof et al).[7] Heier et al In a study of adult volunteers were able to demonstrate the validity of this theory.[8]

Usual doses required for facilitation of tracheal intubation by non-depolarizing agents are equal to 2-3 times ED_{95} dose. Though the ED_{95} dose of succinylcholine is less than 0.3mg/kg,[4,5] it is not clear from the literature why 1mg/kg of succinylcholine has been traditionally chosen for tracheal intubation, as it represents 3.5 to 4 times ED_{95}. Moreover doses of succinylcholine as small as 0.4mg/kg may also provide clinically acceptable conditions for intubation in the majority of individuals[9] and may also have the possibility of an earlier return of neuromuscular function, especially in situations in which the anesthesiologist is uncertain of complete control of patient's airway. Hence the clinical relevance of smaller doses of succinylcholine deserves to be examined.

With this premise, we contemplated a study to evaluate the ease of tracheal intubation with low doses of succinylchloine in Indian population.

AIMS& OBJECTIVES: Assessment & comparison of tracheal intubating conditions, serum potassium levels and recovery from neuromuscular blockade with neuromuscular monitoring, using four different doses of succinylcholine (0.5mg/kg, 0.6mg/kg, 0.7mg/kg and 1mg/kg).

MATERIALS & METHODS: After the ethical committee approval and informed consent, this prospective randomized study was carried out in 80 patients divided into four groups (A, B, C and D).

- Group A -21 patients who received (0.5mg/kg) of succinylcholine.
- Group B -18 patients who received (0.6mg/kg) of succinylcholine.
- Group C -20 patients who received (0.7mg/kg) of succinylcholine.
- Group D -21 patients who received (1mg/kg) of succinylcholine.

Inclusion Criteria: All patients of either sex, aged 15-60 years, of ASA Grade I and II who underwent elective surgeries were included in the study.

Exclusion Criteria:

- ASA Grade > II patients, Age <15 years and >60 years, Pregnant and lactating women, Patients with family history S/o altered pseudocholinesterase function, Patients with NM disorders, muscular dystrophies, head injuries, renal disorders, hepatic disorders and dyselectrolytemia, CVS disorders, Diabetes mellitus, diuretics and on the drugs which interfere with

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neuromuscular function, anticipated difficult airway, Morbidly obese patients (BMI>30), Patients with history of burns (Within past 1 year), Patients at increased risk of gastric aspiration.

Methods of Study: Patients were randomly divided into 4 groups A, B, C and D who received 0.5mg/kg, 0.6mg/kg, 0.7mg/kg and 1mg/kg respectively. Pulse rate, blood pressure, serum potassium and neuromuscular monitoring were done prior to induction in all patients.

All patients were premedicated with Tab. Alprazolam 0.25mg on previous night (PO) and Fentanyl 1 μg/kg intravenously 5min before induction.

A sleep dose of Thiopentone was given, titrated to the abolition of eyelash reflex, followed immediately by the test drug. The test drug was diluted to 2 ml and the researcher was blinded to the test dose. Patients were ventilated with N_20 and O_2 in a ratio of 66%: 33% for 1minute with Magill circuit. After 1minute, an attempt for tracheal intubation was made by an experienced anesthetist with 3 years of experience who was also blinded.

An assessment of the intubating conditions were made as per the criteria given below by the person performing laryngoscopy.

Intubating Conditions: Ease of tracheal intubation was evaluated as per Cooper & Colleagues[10] Criteria 60 seconds after the test drug was administered.

Score	Jaw Relaxation (Ease of laryngoscopy)	Vocal Cords	Response to Intubation
0	Poor (impossible)	Closed	Severe coughing or bucking
1	Minimal (difficult)	Closing	Mild coughing
2	Moderate (fair)	Moving	Slight diaphragmatic movement
3	Good (easy)	Open	None

A total score of 8-9 = excellent, 6-7 = good, 3-5 = fair, 0-2 =poor.

Haemodynamic Response: Pulse rate & BP was recorded by NIBP monitor pre-operatively, at administration of drug, at 1min, immediately after intubation and then every minute for 5minutes with automated equipment (Datex Ohmeda S/5 multichannel monitor).

Potassium Response: Potassium estimation was done with venous samples drawn at 1min, 5min, 30min, & 1hr after drug administration using multipurpose automated electrolyte analyzer (Roche Omni C).

NM Effects: Single twitch response was standardized before induction with a supramaximal stimulus. Thereafter twitch height was assessed just before administration of test drug, at 60 sec, and then everyminute for 3minutes. Rescue neuromuscular relaxant was given in the form of vecuronium (0.1mg/kg). Twitch response monitoring was done with TOF Guard neuromuscular monitor (Organon teknika).

Statistical Analysis: Statistical analysis was done by using NCSS 2000 and Pass 2000 software trial version One way analysis of variance (ANOVA), Kruskal–Wallis rank test and Bonferroni (All-

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Pairwise) multiple comparison tests were performed to compare the four groups. Statistically significance was accepted when P value is < 0.05.

RESULTS: This prospective randomized study was conducted in 80 patients. These were divided into four different groups A, B, C & D comprising of 21, 18, 20 & 21 patients respectively. Patients belonging to group A, B, C & D received 0.5mg/kg, 0.6mg/kg, 0.7mg/kg & 1mg/kg of succinylcholine respectively.

The demographic data like age, weight, gender& physical status were compared and there were no statistically significant differences among the groups as shown in table 1&2.

	GROUP A	GROUP B	GROUP C	GROUP D
Age (yrs)	36.95±9.72	33.61±10.05	36.75±10.03	34.28±9.74
Weight (kg)	58.61±10.50	53.05±9.60	54.25±10.18	61.95±10.08

Table 1: Age & Weight

Mean ±SD.

	GROUP A	GROUP B	GROUP C	GROUP D
Sex				
Men	14	8	12	17
Women	7	10	8	4
Physical Status				
ASA I	14	13	17	15
ASA II	7	5	3	6

Table 2: Sex & Physical status

Haemodynamic parameters like heart rate& NIBP were monitored pre-operatively, at induction and then every minute, up to 5minutes after administration of drug. Though a slight increase in mean values of heart rate, SBP& DBP were observed at 1minute after intubation; no statistically significant change was observed in heart rate & NIBP when compared both within as well as in between the groups (Table 3 & 4).

Heart Rate	GROUP A	GROUP B	GROUP C	GROUP D
Pre-operative	90.04±13.84	84.38±14.08	87.95±14.62	85.66±12.21
At drug administration	91.57±12.25	89.33±13.77	90.85±11.14	87.95±14.12
60 sec after drug (at intubation)	95±13.04	90.22±12.53	91.7±12.41	91.19±12.38
1min after	100.33±13.11	97.44±12.10	97.3±12.79	97.57±13.02
2min after	99.42±11.41	99.72±11.51	98.55±14.16	94.52±13.63
3min after	96.90±12.48	95.83±13.07	94.75±12.85	92.80±12.23
4min after	93.76±14.97	95.22±13.70	91.1±12.71	96.14±14.46
5min after	91.66±12.72	90.5±11.52	87.71±13.55	89.90±13.77

Table 3: Heart Rate response

Mean ± SD.

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	GROUP A		GROUP B		GROUP C		GROUP D	
NIBP	**SYS**	**DIA**	**SYS**	**DIA**	**SYS**	**DIA**	**SYS**	**DIA**
Pre-operative	124.90±13.42	81.71±12.10	121.33±10.32	79.05±8.04	121.9±12.16	79.9±8.11	125.14±9.07	80.90±8.80
At drug administration	119.04±12.65	78.90±10.55	117.5±13.72	77.77±10.90	117.7±14.33	76.7±9.17	118.76±12.85	78.19±12.14
60 sec after drug (at intubation)	126.80±14.88	85.85±12.62	117.77±11.87	80.77±13.75	115.95±14.63	79.7±13.53	128.14±14.52	85.42±13.03
1min after	149.90±12.60	102.66±12.05	138.77±12.48	97.88 ±14.50	141.25±13.23	99±14.92	153.42 ±13.64	107.04±14.50
2min after	135.09±12.55	94.28±14.63	135.16 ±13.95	92.33 ±12.05	132.55 ±14.45	90.2±14.44	141.42±14.89	96.57±13.98
3min after	126.66±14.84	87.19±13.07	128.22±12. 12	82.66±12.16	124.25±12.34	82.45±12.80	136.04±13.20	88.28±14.00
4min after	122.95±13.32	81.09±13.97	120.72±13.22	78.88±8.71	119.1±15.96	78.3±11.68	126.95±13.86	84.09±15.11
5min after	116.23±13.41	76.76±13.30	116.61±13.29	74.22±9.45	113.3±13.98	74.3±10.15	121.14±14.90	81.04±13.00

Table 4: Non Invasive Blood Pressure monitoring

Mean ± SD.

Clinical Intubation Conditions: Clinical intubation scores were observed 60seconds after administration of succinylcholine in between four groups.

With Bonferroni (All-Pairwise) multiple comparison test, no statistically significant difference was observed among the four groups with respect to jaw relaxation and vocal cords position. However group A & B showed a statistically significant increase in intubation response when compared to group C & D.

A statistically significant difference ($P<0.05$) was found on comparing the cumulative scores in between the groups derived after taking these three factors into account as per Cooper and colleagues criteria (ANOVA). But with Bonferroni (All-Pairwise) multiple comparison test, there was no statistically significant difference between groups B, C & D. However, group A was significantly different from these three groups.

	GROUP A	GROUP B	GROUP C	GROUP D
Jaw relaxation	2.28±0.71	2.55±0.61	2.6±0.60	2.52±0.74
Vocal cords	2.38±0.86	2.44±0.92	2.6±0.60	2.80±0.51
Response to intubation *	1.04±0.97	1.11±0.96	1.6±0.1	2.23±0.88
Cumulative score *	5.71±2.12	6.11±2.05	6.8±1.5	7.57±1.77

Table 5: Comparison of clinical intubation scores

Mean ± SD. * Significant $P<0.05$.

	GROUP A	GROUP B	GROUP C	GROUP D	TOTAL
Intubation conditions					
Poor	1	1	0	0	2
Fair	8	6	4	3	21
Good	7	5	8	5	25
Excellent	5	6	8	13	32

Table 6: Clinical intubation conditions

Grading as per Cooper & colleagues criteria in no. of pts.

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Neuromuscular Monitoring: Twitch Height Neuromuscular monitoring was done pre-operatively and after administration of the drug and comparison was made in-between the groups. No statistical difference is found in preoperative twitch height when compared among the groups. However twitch height at 60 sec after administration of the drug showed a statistically significant difference among the groups ($P < 0.05$). When rank test is used, it clearly showed that the effect is maximum with Group D, followed by Group C, Group B & Group A in that order with mean values of 17.66, 25.4, 32.83 & 32.66 respectively (Table 7).

	GROUP A	GROUP B	GROUP C	GROUP D
Twitch Ht. (Pre-operative)	104.38 ± 11.32	113.77± 9.5	119.15 ± 10.44	111.85 ± 9.17
Twitch Ht. (at 60 sec)	32.66 ± 9.06	32.83 ± 8.2	25.4 ± 9. 16	17.66 ± 10.15

Table 7: Comparison of neuromuscular blockade

Mean± SD. $P < 0.05$

Percentage Twitch Height Depression: This was calculated in each group as percentage of the difference between twitch height at 60 seconds and the initial value. These values were compared among the groups and it is statistically significant. Maximum depression with mean value of 83.19% was observed in Group D, followed by Group C, Group B & Group A in that order as depicted in table 8.

With Bonferroni (All-Pairwise) multiple comparison test, Group D is statistically different from Group A. However no statistical difference is found between the groups B, C & D.

	GROUP A	GROUP B	GROUP C	GROUP D
% Tw. Ht. depression at 60 sec	68.85±12.78	71.07±9.19	76.90±11.82	83.19±11.35

Table 8: Comparison of Twitch height depression at 60 sec

Mean ± SD. $P < 0.05$

Twitch Height Recovery: Neuromuscular monitoring was continued for 3minutes after intubation. Neuromuscular recovery in terms of percentage height regained with respect to initial twitch height was compared among the groups. A statistically significant difference is noted between the 4 groups ($P < 0.05$) as shown in the table 9 & with mean values of 60.62, 59.22, 41.80 & 28.9% for groups A, B, C & D respectively.

	GROUP A	GROUP B	GROUP C	GROUP D
1min after intubation	34.54±10.12	41.39±9.19	21.42±8.66	13.08±7.94
2min after intubation	47.97±11.01	49.89±10.11	30.83±9.12	20.22±8.91
3min after intubation	60.62±9.14	59.22±11.01	41.80±9.81	28.99±9.14

Table 9: Comparison of Twitch Height recovery

Mean ± SD. $P < 0.05$

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With application of Bonferroni (All-Pairwise) multiple comparison test, Group D is statistically different from Group A & B. There is no statistical significance between Group C & D.

Serum Potassium: Serum potassium was monitored both pre-operatively and at 1min, 5min, 30min & after 1 hour. No statistically significant changes were observed in potassium levels in all four groups, at all-time intervals (Table 10).

	Pre-op	1min	5min	30min	60min
GROUP A	3.77±0.48	4.06±0.53	3.81±0.48	3.71±0.50	3.64±0.48
GROUP C	3.70±0.44	3.87±0.53	3.86±0.51	3.64±0.40	3.63±0.49
GROUP D	3.95±0.40	4.27±0.49	3.84±0.40	3.94±0.45	3.95±0.38

Table 10: Comparison of serum K^+ levels

Mean ± SD.

Side Effects: The various side effects observed in patients of four different groups are fasciculation's which were present in all the groups whereas myalgias & secretions appeared in Group-D without statistical difference.

	Fasciculations	Myalgias
GROUP A	28.57%	--
GROUP B	33.33%	--
GROUP C	20.00 %	--
GROUP D	38.95 %	4.76 %

DISCUSSION: Despite availability of effective Non-depolarizing muscle relaxants, succinylcholine is widely used because of rapid onset, short duration and predictable paralysis especially for rapid sequence intubation. A dose of 1.5–2 times ED_{95} is usually sufficient to provide satisfactory intubation conditions even with low potency non-depolarizing muscle relaxants, however succinylcholine is conventionally used in a dose of 1 – 2mg/kg for tracheal intubation which is more than two times ED_{95} (ED_{95} of succinylcholine is 0.3mg/kg).

Naguib et al concluded that a dose of 1mg/kg of succinylcholine may be excessive.[11]

Md. I. El Orbany et al,[12] Kopman et al[9] investigated the ability of smaller doses of succinylcholine in producing satisfactory intubation conditions fast enough to allow rapid sequence induction and found that onset times do not differ between 0.5 and 1mg/kg & 0.6mg/kg respectively.

Moreover a higher than necessary dose of succinylcholine may lead to unwanted delay in neuromuscular block recovery and critical haemoglobin desaturation which may be detrimental to patient in a "cannot ventilate, cannot intubate situation". This was even found in studies of Benumof et al[7] and Heier et al.[8]

These studies stimulated the re-examination of low doses of succinylcholine. With this back ground, we designed a prospective randomized study in 80 patients, divided into four different groups: A, B, C & D comprising of 21, 18, 20 & 21 patients and received 0.5mg/kg, 0.6mg/kg, 0.7mg/kg and 1mg/kg of succinylcholine respectively.

Demographic data like age, weight, sex and ASA physical status was comparable among the groups.

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Hemodynamic data (HR&NIBP) were monitored pre-operatively, at induction and then everyminute, up to 5minutes after administration of drug & no statistically significant change is observed, though a slight increase in mean values is observed, oneminute after intubation. This hemodynamic response is even very well documented and is due to mechanical stimulation of airways by the process of laryngoscopy and endotracheal intubation as per Nigrovic et al.[13]

Stewart et al[14] conducted a study in which he compared low (0.5mg/kg) and high (1.5mg/kg) doses of suxamethonium, and found that Heart rate& NIBP have increased on induction in each group of patients, remaining raised after intubation and fiveminutes later also. Although the average change in Heart rate& NIBP was same with each dose, he found a statistically significant dose time interaction ($P<0.01$) in lower dose group with respect to HR & NIBP (SBP). However Miguel et al[15] compared rapacuronium and succinylcholine and observed that there was no clinically significant increase in the heart rate in succinylcholine group like in our study.

In our study, tracheal intubation conditions were assessed clinically as per grading of cooper & colleagues. An objective correlation was attempted by neuromuscular monitoring.

Clinical observation was made by scoring jaw relaxation, vocal cord position and response to intubation by an experienced laryngoscopist and a cumulative score was derived. No statistically significant difference is observed among the four groups with regard to jaw relaxation and vocal cord position. However groups A & B showed statistically significant increase in intubation response than groups C & D. When cumulative scores were analyzed we found no statistical significance among groups B, C & D. However group A was found to be statistically different. Looking at the data, we interpret that groups receiving 0.6, 0.7 and 1mg/kg of succinylcholine provide good tracheal intubation conditions with no statistically significant difference amongst them (Mean score of 6.11±2.05, 6.8±1.5 and 7.57±1.77). Group receiving 0.5mg/kg though provided fair intubating conditions (mean 5.71±2.12), but was found to be statistically different from other groups.

Similar results were also demonstrated by Naguib et al who concluded that dose of succinylcholine required to achieve acceptable tracheal intubation conditions in 95% of patients at 60 sec is 0.50mg/kg.[11]

Md. I. El Orbany et al[12] investigated smaller doses of succinylcholine in producing satisfactory intubating conditions fast enough to allow rapid sequence induction. They found acceptable intubation conditions in patients receiving a 0.5, 0.6 and 1mg/kg doses of succinylcholine with identical intubation conditions in patients receiving 0.6mg/kg and 1mg/kg, which correlates well with the results of our study.

In our study, neuromuscular monitoring was done by comparing percentage twitch height depression. There was no statistically significant difference among the groups with regard to pre-operative twitch height. However twitch height at 60 sec showed statistical significance ($P < 0.05$). With rank test and Bonferonni (All pair-wise) multiple comparison test, maximum effect was seen with group D (1mg/kg). Percentage twitch height depression also was maximum with group D (83.19%) followed by group C, B & A in that order with no statistically significant difference between groups B, C, & D.

Miguel et al also found similar percentage twitch height depression. (Approximately 82%) while using 1mg/kg of succinylcholine.[15]

In our study, we had good clinical intubating conditions in groups B, C & D though percentage twitch height depression (At adductor pollicis) is only 71.07±9.19, 76.90±11.82 and 83.19±11.35

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respectively. It can be explained on the basis of the fact that neuromuscular block develops more rapidly in the airway than in the thumb.[16,17]

Donati et al[18] also reiterated similar fact suggesting that time to maximum blockade was shorter for vocal cords than for the adductor pollicis while using lower doses of succinlycholine.

Twitch height recovery (NMB recovery) was monitored by observing twitch height at 1, 2 & 3 minutes and their deriving twitch height recovery from this data.

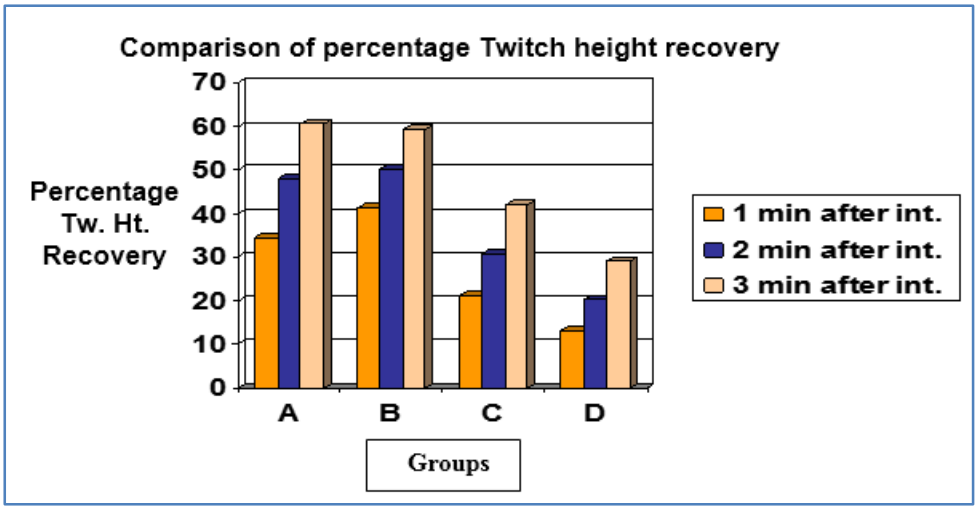
With application of Bonferroni (All pair-wise) multiple comparison test, group D was found to be statistically different from group A & B. However no significance was found between groups C & D at all times.

The twitch height recovery at 3min was 60.62±9.14% and 59.22±11.01% for group A & B respectively. At a similar time the twitch height recovery was 28.99±9.14% for group D and 41.80±9.81% for group C, which shows that patients belonging to group A & B have recovered earlier.

Both groups A & B achieved more than 50% twitch height recovery at the end of 3min.

Similar results emphasizing early recovery when using low doses of succinylcholine were shown by MD I El. Orbany et al.[12]

The value of T1 = 50% was also underlined by Benumof et al[7] that critical hemoglobin desaturation occurred at mean time for 50% twitch recovery. This observation has an important implication for the clinical management of a patient with a difficult airway, especially in a situation whereminute ventilation is zero eg., “cannot ventilate, cannot intubate situation”.



Serum Potassium: As per Mc. Loughlin et al, succinylcholine increases the serum potassium level about 0.5mmol/lit.[19] In our study we have monitored serum potassium both preoperatively and at various intervals after drug administration and found no statistically significant increase in potassium levels either within the group or in between the groups. We found mild increase (0.2-0.3 mmol/lit) in serum potassium levels in all the groups after 1minute interval which is not statistically significant.

In a comparative study by Mirakhur et al, they observed fasciculations in 90% of patients and myalgias in 46% of patients with 1mg/kg dose of succinylcholine.[20] We have observed fasciculations in patients of all the groups with high incidence in group D with 38.95% which is statistically insignificant. Myalgias and secretions have occurred in group D patients with 4.76 & 9.52%

respectively, but Mc. Loughlin observed mild to moderate myalgias in 55% of patients with no incidence of severe myalgias.[19]

CONCLUSION: To conclude, in our study the clinical intubation conditions were good in Groups B,C,D receiving 0.6, 0.7, 1mg/kg respectively and fair in Group A receiving 0.5mg/kg as per Cooper& colleagues criteria. In support, the percentage twitch height depression with N-M monitoring was statistically insignificant between Groups B, C & D, while recovery to 50% of T_1 was earlier in Groups A&B. Hence as observed in Group B with good intubating conditions and early recovery, succinylcholine in a dose of 0.6mg/kg probably can be used for rapid sequence induction & intubation in patients with uncertain airway which avoids critical haemoglobin desaturation. The difference in potassium level measurements were statistically insignificant among the groups at all intervals.

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