

Title: EFFECT OF SUCCINYLCOLINE ON RECOVERY FROM VECURONIUM - A COMPARISON OF ORBICULARIS OCULI AND ADDUCTOR POLLICIS MUSCLE

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Introduction. Prior administration of Succinylcholine has been documented to cause augmentation of different competitive neuromuscular blocking agents (1,2).

Methods. 24 patients ASA I,II,III were studied and divided into 2 groups. Group I - intubated with Vecuronium (0.1 mg/kg). Group II - intubated with Succinylcholine (1.3 mg/kg) and relaxation maintained with Vecuronium (0.09 mg/kg). The initial response and recovery from Vecuronium was assessed by facial and ulnar nerve stimulation with Digistim II (neuro-technology). Anesthesia was maintained with nitrous oxide and oxygen (60:40) supplemented with isoflurane. Neuromuscular recovery at extubation was evaluated by Train-of-four ratio and tetanic response to 50 Hz for 5 seconds. The emergence in the recovery room was evaluated by Steward's recovery score (3). The neuromuscular recovery was monitored for 60 minutes post anesthesia.

Results. The mean ages were 40.4 years (Group I) and 41.2 years (Group II) and mean weights 66 kg and 77.45 kg respectively (Table I). The times to 90-100% suppression from initial dose of relaxant are shown in Table II. The mean recovery time from the initial dose of Vecuronium was 34 mins for Group I and in Group II - 9 mins for Succinylcholine and 43 mins for Vecuronium. The results of neuromuscular and clinical recovery of reflexes are shown in Tables III and IV. The mean total recovery room stay was 94.09 and 83.45 minutes.

Table I
Physical Characteristics

	Group I	Group II
Age (Years)	40.4 ± 4.0	41.0 ± 4.6
Weight (Kg)	66.0 ± 3.6	77.4 ± 4.7
Sex (M/F)	3/9	4/8
ASA (I/II/III)	7/4/1	2/7/3

Table II
Time to 90-100% Twitch Suppression Following Initial Dose of Relaxants

	Adductor Pollicis	Orbicularis Oculi
Group I Vecuronium	4'40.78" ± 24.53"	5' 6.02" ± 23.26"
Group II Succinylcholine	1'34.50" ± 7.46"	1'40.22" ± 12.23"
Vecuronium	2'46.58" ± 41.22"	3'46.17" ± 46.06"

Table III
Time to Recovery From Initial Dose Of Relaxant

	Adductor Pollicis	Orbicularis Oculi
Group I Vecuronium	34' 0.07" ± 2'31.20"	33'39.87" ± 3' 8.28"
Group II Vecuronium	43'49.92" ± 6' 1.28"	42' 7.90" ± 5'55.42"
Succinylcholine	9' 8.18" ± 1'14.15"	7'35.73" ± 47.17"

Table IV
Clinical Signs of Recovery (% Present)

	Swallow	Open Eyes	Deep Inspiration	Hand Grip	Head Raise
Just Prior to Extubation	75/92	33/67	50/42	42/42	17/17
Par Arrival	75/100	83/100	75/100	92/100	50/75
30 mins. After Par Arrival	92/100	92/100	100/100	100/100	83/92
60 mins. After Par Arrival	92/100	92/100	100/100	100/100	92/100

(Group I/II)

Discussion. The time for 90-100% twitch suppression following initial dose of relaxant (Table II) was slightly longer for orbicularis oculi compared to adductor pollicis. The recovery from the initial dose of Vecuronium was approximately 10 mins longer (Table III) in patients who had prior administration of Succinylcholine. The recovery from Vecuronium at the conclusion of anesthesia (2 hrs 18 mins - Group I, 3 hrs 5 mins - Group II) did not show any significant difference. No problems or complications were observed on recovery room follow up for 60 minutes.

References.

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