Depolarizing Muscle Relaxants:	SUCCINYLCHOLINE
	- The only depolarizing muscle relaxant in clinical use today is succinylcholine. - also called diacetylcholine or suxamethonium - consists of two joined ACh molecules - -Stored under refrigeration 2-8 c
Metabolism & Excretion	• rapid onset of action (30–60 s) • short duration of action (typically less than 10 min). • has a small volume of distribution due to its very low lipid solubility. • enters the circulation, most of it is rapidly metabolized by pseudocholinesterase into succinylmonocholine.
	• the duration of action can be prolonged by 1. high doses 2. infusion of succinylcholine 3. abnormal metabolism. 4. hypothermia : decreases the rate of hydrolysis. 5. genetically aberrant enzyme 6. reduced pseudocholinesterase levels (measured as units per liter) a. pregnancy b. liver disease c. renal failure d. certain drug therapies [>> generally produce only modest prolongation of succinylcholine's actions (2–20 min).] [A heterozygote with one normal and one abnormal (atypical) >>slightly prolonged block (20–30 min)] [A homozygous (2 copies affected) atypical enzyme >> have a very long blockade (4–8 h)]
Dose	1-1.5 mg/kg
Side effects:	? CVS effects are found most common in children , bradycardia following administration first dose and second in adult ? Fasciculation ? Hyperkalemia ? Muscle pain ? Intragastric pressure elevation and increase lower esophageal sphincter tone ? Intraocular pressure elevation ? Masster muscle rigidity ? Malignant hyperthermia ? ICP elevation

Cholinesterase inhibitors	NEOSTIGMINE
	- Lipid insoluble, so can't cross BBB. - It is reported that It can cross the placenta and cause fetal bradycardia -
	- It is used to treat myasthenia graves
Dose	? Dose 0.04 mg / kg
Side effects	1. bradycardia 2. nausea 3. vomiting 4. fecal incontinence
	1. Pyridostigmine ; slower onset and less potent 2. Edrophonium: less potent but the most rapid onset of action and shortest duration. 3. Physostigmine ; lipid soluble so can cross BBB

Anticholinergic Drugs	Atropine	
	- Ester linkage for an aromatic acid with organic base . - Competitively blocks acetylcholine receptors (muscarinic receptors)	
	CVS	1. blockade of MU receptors in SA node resulting in tachycardia, 2. this effect is useful in reversing bradycardia due to vagal reflexes: eg, baroreceptor reflex, per peritoneal stimulation, oculocardiac reflex.
	RS	1. inhibit the secretions of the respiratory mucosa and relaxation of bronchial smooth muscle
	GIT	- reduce GI secretion
	UG	- urinary retention
	Ophthalmic	- mydrasis
	Thermoregulation	-inhibition of sweat gland rise temp.
Dose	0.4 – 0.06 mg / kg	
	1. Atropine : Cross BBB 2. GLYCOPYROLATE : can't cross BBB 3. SCOPOLAMINE	

Nondepolarizing Muscle Relaxants:		
	1. they are either benzylisoquinolines B(curium) >>tends to release histamine 2. steroidal compound S (curonium) >> tend to be vagolytic. 3. The more potent one is the longer its speed of onset 4. Water soluble 5. In general the diaphragm , jaw , larynx , facial muscles respond to and recover from muscle relaxation sooner than the thumb , but glottic musculature is quite resistant to blockade	
	Benzylisoquinolines	1. Atracurium 2. Cisatracurium 3. Mivacurium 4. Doxacurium
	Steroidal compounds:	1. Pancuronium 2. Pipecuronium 3. VECURONIUM 4. Rocuronium

		Dose	Side effects
Atracurium	- Two separate processes are responsible for metabolism: A. Ester Hydrolysis: is catalyzed by nonspecific esterases, not by acetylcholinesterase or pseudocholinesterase. B. Hofmann Elimination: A spontaneous nonenzymatic chemical breakdown occurs at physiological pH and temperature.	1. Dose 0.5 mg/kg 2. onset of action 30- 60 s for intubation. 3. Stored at room temp. (within 14 days) 4. can be markedly prolonged by a. hypothermia b. lesser extent by acidosis.	Side effects Side effects: 1. Hypotension and tachycardia 2. Bronchospasm 3. laudanosine toxicity 4. Allergic reaction
Cisatracurium	- Is a stereoisomer of atracurium that is four times more potent than atracurium. - Hofmann elimination --? laudanosine (less amount)	1. Dose 0.1 – 0.15 mg/kg 2. Onset of action within 2 min 3. intermediate duration 4. Stored under refrigeration (used within 21 days)	Side effects not significant
Mivacurium	- Metabolized by pseudocholinestrease	The usual intubating dose is 0.2 mg/kg	Side effects histamine release
Doxacurium	- a potent long-acting compound that is primarily eliminated by renal excretion	- Adequate intubating conditions are achieved - in 5 min with 0.05 mg/ kg.	

		Dose	Side effects
Pancuronium	- Metabolized by the liver and exerted really	- Dose 0.08-0.12 mg/kg	Side effect 1. Hypertension and tachycardia (vagal blockade and sympathetic stimulation) 2. Arrhythmias 3. Allergic reaction (bromide hypersensitivity)
Pipecuronium	more potent but lack cvs side effects		
VECURONIUM	- It depends primarily on biliary excretion, it is a satisfactory drug for patients with renal failure.	- dose is 0.08–0.12 mg/kg	
Rocuronium	rapid onset, no cvs side effects		
- Women seem to be approximately 30% more sensitive than men to vecuronium evidenced by a greater degree of blockade and longer duration of action (this has also been seen with pancuronium and rocuronium).			