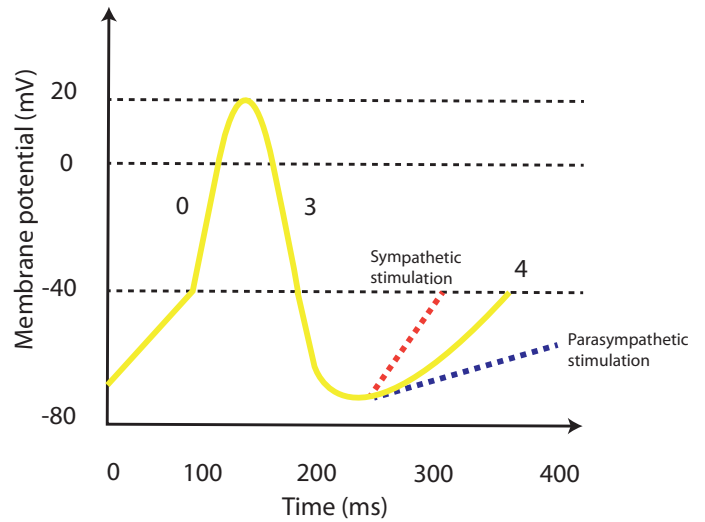
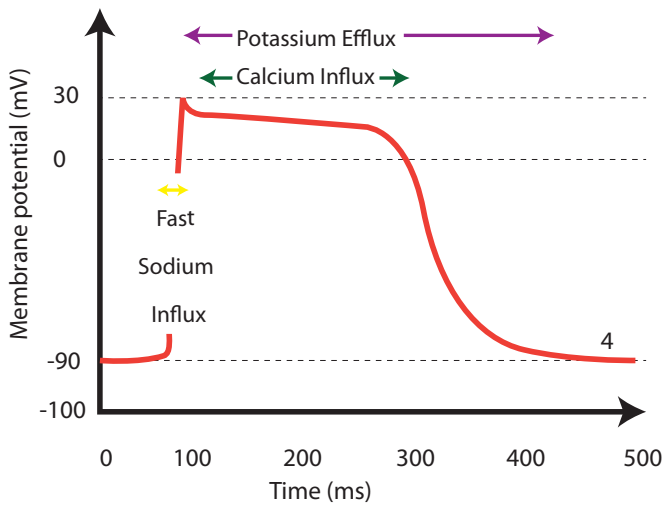


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QUESTION 13

Classify antiarrhythmic drugs, including their mechanisms of action, and give an example of one drug from each group



Vaughan Williams Classification

Class	Action	Effect	Drugs
I	Blocks Sodium Channels		
Ia		Prolongs refractory period of action potential	Procainamide
Ib		Shortens refractory period of action potential	Lignocaine, Phenytoin
Ic		No effect on period of action potential	Flecainide
II	Beta Adrenergic Blockers	Reduced SA firing	Propranolol* / Sotalol [^]
III	Potassium Channel Blockers	Prolong refractory period of the action potential	Amiodarone [#] , ibutilide
IV	Calcium Channel Blockers	↓AV conduction, PR prolonged, decreased contractility	Verapamil, Diltiazem
OTHER	Blocks Na ⁺ /K ⁺ _{ATPASE} , leads to ↑Ca ²⁺ , ↓K ⁺ , ↑ACh	Increased contractility and ↓AV conduction	Digoxin
	Opens K ⁺ channels via adenosine receptors	Hyperpolarises myocardium, ↓AV conduct, ↓SA firing	Adenosine
	Stimulates Na ⁺ /K ⁺ _{ATPASE}	Membrane stabilisation	Magnesium

Notes
 * Propranolol also has sodium channel blocking activity
 ^ Sotalol has two isomers, and is presented as a racemic mixture. One is an effective beta blocker and both have class III action potential prolongation activity
 # Amiodarone is a special case. It blocks sodium, calcium, and potassium channels and exhibits beta blockade, although is usually categorised into Class III

