Node ⊖

i) β⊖ [⊖Sympathetic act^{n}]

ii) Ca^{2+}⊖ [Verapamil] [Prolong Depolarization]

iii) Adenosine (Acute)

iv) Digoxin [Parasympathomimetic effect]

Myocardial Cell ⊖

i) Na^{+}⊖

ii) K^{+}⊖

*) Arrhythmias & their DOC

1] Atrial Fibrillation / Flutter → Acute :- *) TOC :- Cardioversion
*) DOC :- IV Ibutilide (III Antiarr.)
→ Long term :- a) Rate control (ventricular < 100) :- β⊖ → Stable patient :- Metoprolol
→ Unstable patient :- Esmolol
b) Rhythm control (Atrial cells) → Amiodarone (III antiarr.)
→ ass. ⊼ WPW syn. :- IV Procainamide (Ia antiarr.)

2] Ventricular Tachycardia / Fibrillation → Idiopathic VT / VPC's :- β⊖
→ VT / VFib :- Amiodarone → Pulmonary fibrosis :- Prednisolone
→ MI or Digoxin Induced → Lidocaine (Ib antiarr.)

3] SVT / PSVT → Acute :- Fast IV Adenosine —If COPD/Br. Asthma→ Verapamil (Ca^{2+}⊖ Non DHP)
→ Long term :- First β⊖ —If C/I or NR→ Ca^{2+}⊖ (Verapamil) —NR→ Digoxin

4] WPW syndrome → Ass. ⊼ Atrial fibrillation :- IV Procainamide
→ *) DOC oral Flecainide (Ic antiarr.)
*) TOC is Radiofrequency Ablation of the aberrant pathway

5] Long QT syndrome → Acute (Torsades) → Congenital / Acquired :- $MgSO_4$
→ Long term → Congenital :- *) DOC is β⊖
*) TOC is Pacing (Implantable Cardioverter Defibrillator ie. ICD)
→ Acquired :- Avoid drugs ↑QT interval

6] Catecholamine Induced Arrhythmia → DOC is β⊖

Class of antiarrhythmic drugs	Mechanism of action	Effect on action potential duration
Class I		
Class IA Procainamide Quinidine Disopyramide	Na+ channel blockers with significant K^+ channel blocking property	Prolonged
Class IB Lidocaine Mexiletine	Na+ channel blockers with K^+ channel opening property	Shortened or no effect
Class IC Flecainide Propafenone Moricizine	Na+ channel blockers with negligible K^+ channel blocking property	Variable or no effect
Class II		
Propranolol Esmolol	β- blockers	-
Class III		
Amiodarone, dronedarone Dofetilide Sotalol Ibutilide Vernakalant	K^+ channel blockers	Prolonged
Class IV		
Verapamil Diltiazem	Ca^{2+} channel blockers	-
Miscellaneous		
Adenosine	Activates adenosine receptors	Shortened
Digoxin	Na^+-K^+ ATPase inhibitor	Increases AV node refractoriness
Magnesium	Unknown	-