

ACLS Drug Therapy (based on 2000 AHA Guidelines) revised 10/29/01

Drug Name	Indications	Mechanism of Action	Precautions	Dose Note: Follow IV push meds with fluid bolus
Oxygen	<ul style="list-style-type: none"> ◆ Acute Chest Pain ◆ Suspected hypoxemia of any cause ◆ Cardiopulmonary Arrest 	correct hypoxemia by O2 tension ↑ O2 content ↑ tissue oxygenation	<ul style="list-style-type: none"> ◆ O2 Toxicity with high FIO2s ◆ May cause ↑CO2 if a CO2 retainer 	2 –6 LPM by NC for CP/mild distress NRB Mask for mod. Distress/ CHF Bag/Mask Ventilation Bag/ETT Ventilation
Epinephrine	ANY CARDIAC ARREST: <ul style="list-style-type: none"> ◆ Shock refractory VF & Pulseless VT ◆ Asystole ◆ PEA 	↑ SVR, BP, HR, Contractility of heart, automaticity ↑bloodflow to heart & brain ↑ AV conduction velocity		1 mg IV Push (10 ml of 1:10,000 solution) Repeat q 3-5” Endotracheal dose = 2-2.5 times IV dose Intracardiac if other routes not possible
Vasopressin Pitressin®	<ul style="list-style-type: none"> ◆ Shock refractory VF & Pulseless VT only ◆ Can use instead of EPI initially ◆ Also used for hemodynamic support in Septic Shock 	Non-adrenergic Peripheral Vasoconstrictor ↑bloodflow to heart & brain	<ul style="list-style-type: none"> ◆ Half life = 10 – 20” ---- must wait to start EPI. ◆ Not recommended in CAD 	For refractory VF/Pulseless VT Only as 1 st inotropic – before EPI 40 U IVsingle dose--1 time only Can defibrillate every 60 seconds after administration of Vasopressin
Atropine	<ul style="list-style-type: none"> ◆ Symptomatic Bradycardia ◆ Ventricular Asystole (2nd line) ◆ PEA if rate is brady 	Parasympatholytic action: -accelerates rate of sinus node discharge -improves AV conduction	<ul style="list-style-type: none"> ◆ ↑ myocardial O2 demand: worsening ischemia 	Asystole or PEA 1 mg IV every 3-5” Bradycardia 0.5 to 1 mg every 3-5” Repeat to total dose of 0.04 mg/kg Endotracheal dose = 2-2.5 times IV dose

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Amiodarone Cordarone®	<ul style="list-style-type: none"> ◆ Shock refractory VF/Pulseless VT ◆ Atrial & Vent. Arrhythmias ◆ Great in “failing” hearts ◆ Can use instead of Lido 	Anti arrhythmic Possesses α- and β-adrenergic blocking properties Prolongs action potential duration Prolongs refractory period ↓ AV node conduction ↓ sinus node function	<ul style="list-style-type: none"> ◆ Half life is long ◆ May prolongs QT Monitor BP, HR, QT interval Contraindicated in: Cardiogenic shock, Marked Sinus Brady, 2 nd or 3 rd block	300 mg IV Push in cardiac arrest (VF/VT) 150 mg IV Push for tachys with pulse Can repeat 150 mg in 5 mins. Draw 2 glass ampules through a large gauge needle diluted in 20-30 mL of D₅W Maintenance infusion: 1 mg/min over 6 hrs. then 0.5 mg/min over 18 hrs. – max of 2.2 g over 24 hrs.
Lidocaine	<ul style="list-style-type: none"> ◆ Vtach (with pulse – stable) ◆ VF/Pulseless VT (2nd line) ◆ Symptomatic PVCs 	Suppresses vent ectopy ↑ VF threshold ↓ Vent. Irritability ↓ excitability helps prevent VTach	CNS Toxicity: muscle twitching, slurred speech, resp. arrest, altered consciousness, seizures Prophylactic use in MI no longer recommended.	For Vfib or Pulseless Vtach: 1 – 1.5 mg/kg repeat in 3-5” for total dose of 3 mg/kg Vtach with pulse: 1 – 1.5 mg/kg repeat in 3-5” at 0.5 – 0.75 mg/kg for total dose of 3 mg/kg Infusion: Infusion of 1-4 mg/min after termination of vent arrhythm.

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Ibutilide Corvert®	<ul style="list-style-type: none"> ◆ Rapid conversion of atrial fib or flutter of recent onset (< 1 week). 	Prolongs action potential by delaying repolarization	Correct K & Mg before initiating Ibutilide	≥ 60 kg: 1 mg over 10 min < 60 kg: 0.01 mg/kg over 10 min Can repeat with a 2 nd dose
Procainamide	<ul style="list-style-type: none"> ◆ Symptomatic PVC s ◆ <u>Recurrent</u> VF/pulseless VT ◆ SVT uncontrolled by Adenosine & vagal if stable BP ◆ Atrial Fib with rapid rate in WPW ◆ Stable wide complex Tachy of unknown origin 	Suppresses vent ectopy ↑ VF/Pulseless VT threshold	Monitor BP for Hypotension Monitor ECG for ↑ PR and QT Intervals, QRS widening, & heart block Use with caution with Amiodarone (prolongation QT)	20 mg/min IV urgent situations up to 50 mg/min (max 17 mg/kg) stop if arrhythmia suppressed, ↓BP, or QRS duration ↑ by 50% Infusion: 1-4 mg/min
Magnesium	<ul style="list-style-type: none"> ◆ Known low or suspected low serum magnesium ◆ Refractory VT/VF (after Lido) ◆ Torsades de Pointes with Pulse Life threatening vent arrhythmias due to dig tox.	Antiarrhythmic Restores electrolyte balance	Prophylactic use in MI no longer recommended ↓ dose with impaired liver or LV dysfunction	For VT/VF: 1-2 g/10 ml D5W Over 1-2” For ↓Mg: 1-2 g over 5- 60 mins

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Adenosine	<ul style="list-style-type: none"> ◆ Stable SVT (narrow) Not effective in Afib, Aflutter, or VTach 	Depresses SA & AV node activity Slows AV conduction Half-life = 5 seconds	<ul style="list-style-type: none"> ◆ Usually see brief of asysole after adm of drug ◆ Drug interactions with Theophylline, Dipyridamole, & Carbamazepine ◆ Pts. feel flushing, dyspnea, transient CP 	<p>6 mg IV over 1 – 3 seconds followed by 20 cc saline flush then elevate arm (attach both syringes to same port) wait 1-2” then 12 mg IV rapid push wait 1-2”</p> <p>repeat 12 mg IV rapid push</p>
Verapamil	<ul style="list-style-type: none"> ◆ SVT 	Systemic vasodilation Negative Inotropic effect Prolongs AV nodal conduction time Ca ⁺⁺ channel blocker	<ul style="list-style-type: none"> ◆ Expect ↓ BP – can counteract with IV Ca ◆ Do not use with wide complex 	2.5 – 5.0mg IV bolus over 2 minutes 2 nd dose: 5 – 10 mg in 15-30”
Digoxin	<ul style="list-style-type: none"> ◆ Afib or Aflutter ◆ CHF 	Inotropic effect Slows AV conduction	<ul style="list-style-type: none"> ◆ Toxic effects can cause serious arrhythmias 	10 – 15 mcg/kg IV loading dose
Cardizem (Diltiazem)	<ul style="list-style-type: none"> ◆ Afib & Aflutter ◆ Refractory SVT (after Adenosine) 	Ca ⁺⁺ channel blocker Prolongs effective refractory period	<ul style="list-style-type: none"> ◆ BP may ↓ ◆ DO NOT use for wide QRS Tachy, WPW with Afib, sick sinus syndrome, or β blockers 	<p>15-20 mg (0.25 mg/kg) IV over 2” May repeat in 15” at 20-25 mg (0.35mg/kg) over 2”</p> <p>Infusion 5-15 mg/h titrate to HR.</p>

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Morphine Sulfate	<ul style="list-style-type: none"> ◆ CP with ACS unresponsive to nitro ◆ Cardiogenic Pul. Edema 	<ul style="list-style-type: none"> ↓ Preload ↓ Afterload 	<ul style="list-style-type: none"> ◆ Administer slowly and titrate to effect. ◆ May cause ↓BP & Respiratory compromise – reverse with Narcan 	<p>2-4 mg IV (over 1-5 mins) every 5 to 30 minutes</p>
Aspirin	<ul style="list-style-type: none"> ◆ All ACS 	Prevents platelet aggregation	<ul style="list-style-type: none"> ◆ Contraindicated in acute ulcer disease, asthma, or ASA sensitivity. 	<p>160 mg to 325 mg tablet (chewing is preferable) – give immediately</p>
Sodium Bicarb	<ul style="list-style-type: none"> ◆ Pre-existing hyperkalemia ◆ Drug Overdose ◆ Known ketoacidosis ◆ Prolonged cardiac arrest with adequate ventilation 		<ul style="list-style-type: none"> ◆ Adequate ventilation & CPR are best “buffer agents” 	<p>1 mEq/kg IV bolus</p>
Nitroglycerin	<ul style="list-style-type: none"> ◆ Sublingual: Angina pectoris MI ◆ IV Unstable Angina pectoris Acute MI CHF Hypertension 	<ul style="list-style-type: none"> ↓ pain in ischemic tissue ↑ venous dilation ↓ preload & O₂ consumption Dilates Coronary Arteries ↑ Collateral flow in MI 	<ul style="list-style-type: none"> ◆ Can cause ↓BP & headache ◆ AMI – limit systolic BP drop to 10% if normal tensive 	<p>Sublingual: 1 tablet (0.3-0.4 mg) – repeat Q5”</p> <p>Spray: oral mucosa 0.4 per spray – repeat Q5”</p> <p>Topical: 1-2” of 2% ointment</p>

Acute Coronary Syndromes:

ECG Findings	Diagnostic Class	Therapy
<ul style="list-style-type: none"> ◆ ST elevation 	<ul style="list-style-type: none"> ◆ Acute MI ◆ ST-elevation MI 	<p>Reperfusion therapy</p> <ul style="list-style-type: none"> ◆ PCI or ◆ Fibrinolytics <ul style="list-style-type: none"> □ Recombinant Alteplase (Activase) □ Anistreplase (Eminase) □ Recombinant Reteplase (Retavase) □ Streptokinase (Streptase) □ Tenectaplast (TNKase) <p>Aspirin β Blockers</p>
<ul style="list-style-type: none"> ◆ ST depression or T-wave inversion 	<ul style="list-style-type: none"> ◆ Acute MI ◆ HIGH-RISK unstable angina ◆ Non-ST-elevation AMI 	<p>Antithrombin therapy</p> <ul style="list-style-type: none"> ◆ Heparin <p>Antiplatelet therapy</p> <ul style="list-style-type: none"> ◆ Aspirin ◆ Glycoprotein IIb-IIIa inhibitors <ul style="list-style-type: none"> □ ReoPro □ Integrilin □ Aggrastat <p>Nitrates β Blockers</p>
<ul style="list-style-type: none"> ◆ Nonspecific ECG findings ◆ Absence of changes in ST segment or T waves 	<ul style="list-style-type: none"> ◆ Low- to intermediate- risk unstable angina 	<ul style="list-style-type: none"> ◆ Risk assessment ◆ Serial cardiac markers ◆ Serial ECGs ◆ Aspirin ◆ Heparin

Fibrinolytic Therapy for Stroke:

<p>Inclusion Criteria:</p> <ul style="list-style-type: none">❑ Age \geq 18 years❑ Clinical diagnosis of <u>ischemic</u> stroke causing a measurable neurologic deficit❑ Onset < 3 hours	<p>Exclusion Criteria:</p> <ul style="list-style-type: none">❑ History/Evidence of intracranial hemorrhage on CT❑ Active internal bleeding within last 3 weeks❑ <14 days of major surgery or serious trauma
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