ACLS Study Guide (2020 Guidelines)

Pre-Course Requirements

The ACLS course now requires a mandatory **Precourse Self-Assessment and Precourse Work** with a passing score of at least 70%. Students may take the self-assessment as many times as needed. Please bring your Certificate of Completion with you to the ACLS class or email in advance to pretest@expresstraining.com. Instructions for accessing the Precourse Requirements are included in your registration confirmation.

ACLS Written Exam

The ACLS Provider exam is 50 multiple-choice questions, with a required passing score is 84%. All AHA exams are now "open resource" which means student may use the ACLS manual, study guides, handouts and personal notes during the exam. Using the ACLS Provider Manual ahead of time with the online resources is very helpful.

BLS Review

Assessment Steps for BLS

1. Make sure scene is safe
2. Tap/shout to check for responsiveness
3. Call for help if patient is unresponsive
4. Check for pulse and breathing for at least 5 but no more than 10 seconds
5. If no pulse (or not sure if there is a pulse) begin CPR

Compressions

- At least 2 inches with a rate between 100 – 120/min
- Allow for full recoil
- PEtCO2 (intubated) < 10 mmHg indicates poor compressions
- Interruptions in compressions should be < 10 seconds
- Switch compressors every 2 min.
- Waveform Capnography is the most reliable method of confirming placement and monitoring of ETT
- Pre-charging the defibrillator 15 seconds before the rhythm can improve CCV

Breaths During CPR

- Limit interruptions to less than 10 seconds
- Ratio of compressions to breaths 30:2 or other advanced protocols that maximize CCF
- Each breath given over 1 second
- An effective breath will result in visible chest rise
- CPR with ETT: 1 breath every 6 seconds with continuous compressions
- Excessive ventilation = decreased cardiac output

Rescue Breathing

- For a patient who is not breathing or breathing effectively give 1 breath every 6 seconds
- Give breaths gently, over 1 second
- An effective breath will result in visible rise/fall of the chest
- Excessive ventilation decreases cardiac output
- Difficulty positioning airway for patency, place NPA or OPA
- OPA Placement = Measure from the corner of the mouth to the angle of the mandible

ACS and Stroke

ACS - STEMI

- Assessment: Pale, cool, diaphoretic, chest pain, dyspnea, anxiety, hypotension, poor perfusion
- Aspirin 162-325 mg
- Time frame to start Coronary Reperfusion (PCI) should be < 90min from ER arrival

Stroke

- Noncontrast Head CT within 20 min. of hospital arrival. A normal CT may rule out hemorrhagic stroke
- To better facilitate care, notify receiving hospital in advance
- Ischemic Stroke: start fibrinolytic therapy ASAP if there are no contraindications
- Hemorrhagic Stroke: neuro consult

RRT and MET (Rapid Response Team / Medical Emergency Team)

- MET / RRT focuses on prevention of deuteriation to cardiac arrest
- Improve patient care by identifying and treating early clinical deterioration

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Effective Team Dynamics

1. Clear roles and responsibilities: Team leader should clearly delegate tasks
2. Knowing your limitation: Stay in scope of practice / ask for a new role if inappropriately assigned
3. Constructive interventions: if someone is about to make a mistake address that team member immediately
4. Knowledge sharing
5. Summarizing and Re-evaluation
6. Clear and Closed loop communication: Repeat back the order, clarify if intervention or dosage is incorrect
7. Mutual respect
8. Team Roles: Team Leader, Compressor, Airway, Medications, Monitor/Defib, Recorder/Timer, CPR Coach
    - CPR Coach focuses on ensuring high quality CPR

Bradycardia and Tachycardia

Bradycardia with a Pulse

- If symptomatic, give Atropine, 1 mg every 3-5 min, max total dose of 3 mg
- If stable, 12-lead and get expert consultation

Tachycardia with a Pulse

- If unstable, immediate **synchronized cardioversion**
- If stable, 12-lead and expert consultation
- If stable w/narrow QRS:
    - Adenosine 1st dose 6 mg / 2nd dose 12 mg

Cardiac Arrest (No Pulse)

Assessment Findings

- Unresponsive
- No pulse & no breathing
- May have agonal gasps

pVT/VF

- CPR first and while defib is charging
- 1 mg epinephrine q 3-5 min (1st drug)
- Amiodarone 1st dose 300 mg / 2nd 150 mg
- Only 2 shockable rhythms in cardiac arrest
- May use Lidocaine instead of Amiodarone

ASYSTOLE/PEA

- CPR first
- Not shockable
- 1 mg epinephrine q 3-5 min
- If no pulse and not pVT, VF, or asystole, then you have PEA

Manual Defibrillation

- Immediately after you shock → compressions
- Immediately if no shock indicated → compressions
- While setting up defibrillation to shock → compressions
- Continue CPR while the defib is charging
- Charge defibrillator before conducing a rhythm check can help increase chest compression fraction

Post Resuscitation / After ROSC

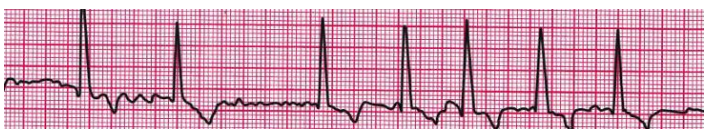
1. Optimize ventilation and oxygenation
2. Treat Hypotension, SBP < 90 mmHg
3. If STEMI → Cath Lab
4. If unable to follow command: targeted temperature management
    - 32-36 C for at least 24 hours

Tachycardia Rhythms with a Pulse

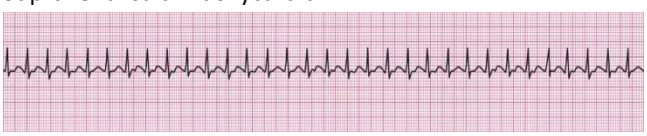
Stable = good BP and good mentation / Unstable = low BP and poor mentation (Follow Tachycardia Algorithm)

Sinus Tachycardia

Atrial Fibrillation



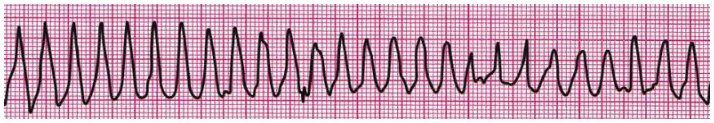
Supraventricular Tachycardia



Monomorphic Ventricular Tachycardia

Atrial Flutter

Polymorphic Ventricular Tachycardia

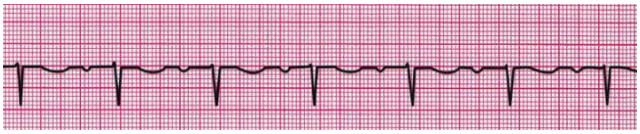


Bradycardia Rhythms with a Pulse

Non-symptomatic = good BP & good mentation / Symptomatic = low BP and poor mentation (Follow Bradycardia Algorithm)

Sinus Bradycardia

1st Degree Heart Block



2nd Degree Heart Block, Type 1

2nd Degree Heart Block, Type 2

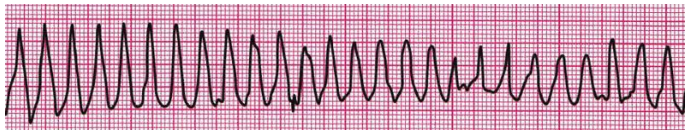
3rd Degree Heart Block

Pulseless Rhythms (Cardiac Arrest)

1st Start **CPR** | 2nd Shock **pVT/VF Immediately** | 3rd Establish **IV Access** & give **Epi** | 4th Treat **Reversible** Causes (H/T)

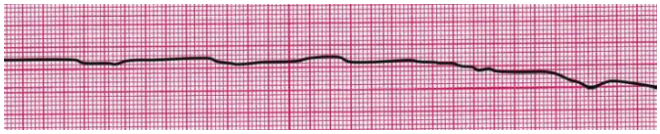
Pulseless Ventricular Tachycardia (Monomorphic)

Pulseless Ventricular Tachycardia (Polymorphic)



Ventricular Fibrillation

Asystole



PEA (Pulseless Electrical Activity)

PEA is any organized rhythm without a pulse that is not VF or pVT