

ADVANCED CARDIOVASCULAR LIFE SUPPORT

J.M.JERLIN PRIYA M.Sc (N), [Ph.D]
Department of Medical Surgical Nursing.



Introduction

- Advanced Cardiac **Life** support (ACLS) is a detailed medical protocol for the provision of lifesaving cardiac care in settings ranging from the pre-hospital environment to the hospital setting.
- Extensive medical knowledge and rigorous hands-on training and practice are required to master ACLS.
- Only qualified health care providers (doctors, nurses, emergency medical responders) can provide ACLS.



ACLS SURVEY

ASSESS	ACTION AS APPROPRIATE
Assess Airway Patency	<p>Maintain airway patency</p> <ul style="list-style-type: none">• Head tilt chin lift• Oropharyngeal airway• Naso pharyngeal airway <p>Use advanced airway</p> <ul style="list-style-type: none">• Laryngeal mask airway• Laryngeal tube• Esophageal-tracheal tube• Endotracheal tube
Assess Breathing pattern	<p>Give supplemental Oxygen</p> <ul style="list-style-type: none">• 100%- Cardiac arrest <p>Monitor adequacy of ventilation</p> <ul style="list-style-type: none">• Clinical criteria• Quantitative waveform capnography• Oxygen saturation <p>Avoid excessive ventilation</p>





ACLS SURVEY contn..

ASSESS	ACTION AS APPROPRIATE
Assess Circulation	<ul style="list-style-type: none">• Monitor CPR quality• Attach monitor/defibrillator for arrhythmias• Provide defibrillation/cardioversion• Obtain IV/IO access and administer fluids if needed.• Administer appropriate drugs.
Differential Diagnosis	Search, find and treat reversible cause.



CPR Quality

- Push hard ≥ 5 cms and fast ≥ 100 /mt and allow complete chest recoil.
- Minimum Interruptions.
- Avoid excessive ventilations.
- Rotate compressor every 2 mts.
- Compression ventilation ratio is 30: 2.
- PETCO₂ = 35-40 mm/Hg.
- Intra arterial pressure= 40-45 mm/Hg.



Effective Resuscitation Team Dynamics



Roles & Responsibilities-Team leader

Organizes the group

Monitor individual performance

Models excellent team behavior

Trains and Coaches

Focuses on comprehensive care



Roles & Responsibilities-Team Member

Clear role assignments

Excellent resuscitation skills

Knowledge about algorithms

Committed to success



Elements of Effective Team

Closed loop communication

Clear messages

Clear roles and responsibilities

Knowing one's limitations

Knowledge sharing

Constructive Intervention

Reevaluation and summarizing

Mutual respect



Step I- Adult chain of survival

- ❑ Immediate recognition and activate EMS.
- ❑ Early CPR.
- ❑ Rapid Defibrillation.
- ❑ Effective advanced life support.
- ❑ Integrated post cardiac arrest care.



Step II- Post cardiac arrest care

- Therapeutic hypothermia.
- Hemodynamic and ventilation optimization.
- Immediate reperfusion- PCI.
- Glycemic control.
- Neurologic care.



Step –III Acute coronary syndrome care

Mission

- To reduce extent of myocardial necrosis.
- To prevent major adverse cardiac events.
- To treat acute life threatening complications of ACS.



ACLS cases

- Respiratory Arrest
- VF treated with CPR and AED
- **VF/Pulseless VT- Shockable**
- **Pulseless Electrical Activity- Non Shockable**
- **Asystole- Non Shockable**
- Acute Coronary Syndrome
- Bradycardia
- Unstable and Stable Tachycardia
- **Acute Stroke**

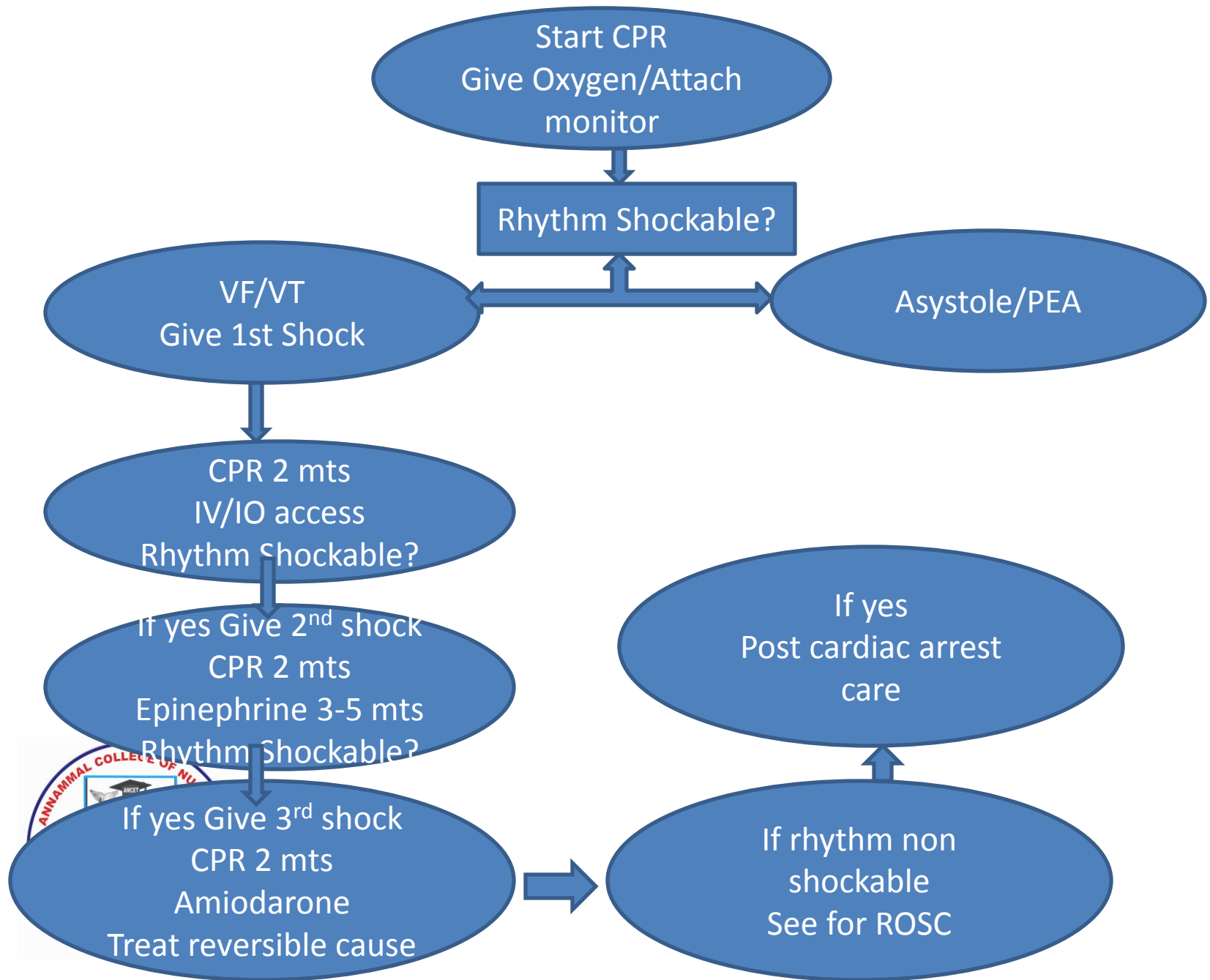


BLS survey

- Check responsiveness
- Activate emergency response system and get AED
- Circulation
 - Check carotid pulse-5 to 10 secs
 - If no pulse start compression
 - 30:2 (100/mt)
 - If there is pulse, give rescue breath- 1:5 for 6 secs
- Defibrillation



Adult cardiac arrest



Adult cardiac arrest

Start CPR
Give Oxygen/Attach
monitor

Rhythm non
Shockable?

Asystole/PEA
No Shock

CPR 2 mts
IV/IO access
Epinephrine every 3-5 mts

If rhythm non
shockable
See for ROSC

If yes
Post cardiac arrest
care



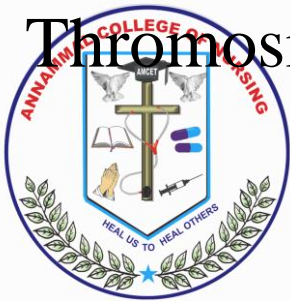
Drug Therapy

- Epinephrine- 1 mg IV/IO
- Vasopressin - 40 units IV/IO
- Amiodarone- 300/150 IV/IO



Reversible causes

- Hypovolemia
- Hypoxia
- Hydrogen ion(acidosis)
- Hypo/Hyper kalemia
- Hypothermia
- Tension Pneumothorax
- Tamponade -cardiac
- Toxins
- Thromosis-Pulmonary
- Thromosis- coronary



Post cardiac arrest care

- Therapeutic hypothermia.
- Hemodynamic and ventilation optimization.
- Immediate reperfusion- PCI.
- Glycemic control.
- Neurologic care.



THANK YOU

