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ADVANCE CARDIAC LIFE SUPPORT

DEFINITION:

Advanced cardiac life support or advanced cardiovascular life support (ACLS) refers to a set of clinical interventions for the urgent treatment of cardiac arrest, stroke and other life-threatening medical emergencies, as well as the knowledge and skills to deploy those interventions.

INDICATIONS OF ACLS

- Narrow–QRS-complex (SVT) tachycardia (QRS _0.12 second), in order of frequency
- Cardiac arrest
- Stroke
- Sinus tachycardia
- Atrial fibrillation
- Atrial flutter
- AV nodal reentry
- Accessory pathway–mediated tachycardia
- Atrial tachycardia (including automatic and reentry forms)
- Multifocal atrial tachycardia (MAT)
- Junctional tachycardia (rare in adults)
- Wide–QRS-complex tachycardia (QRS _0.12 second)
- Ventricular tachycardia (VT) and ventricular fibrillation (VF)
- SVT with aberrancy
- Pre-excited tachycardia (Wolff-Parkinson-White [WPW] syndrome)
- Ventricular paced rhythms

PURPOSES OF ACLS

- Adjuncts for Airway Control and Ventilation
- Management of Cardiac Arrest
- Management of Symptomatic Bradycardia and Tachycardia.

- Post–cardiac arrest Care

CONTRAINDICATION

- "Do not resuscitate order
- Burns,
- Flail chest,
- Fracture,
- Immediate post CABG patient,
- Stiff chest wall

PREPARATION

PATIENT PREPARATION

- Loosen the cloths.
- Place patient in hard place
- Avoid placing sharp object on the patient environment.
- The environment should be sterile.

EQUEPMENT PREPARATION:

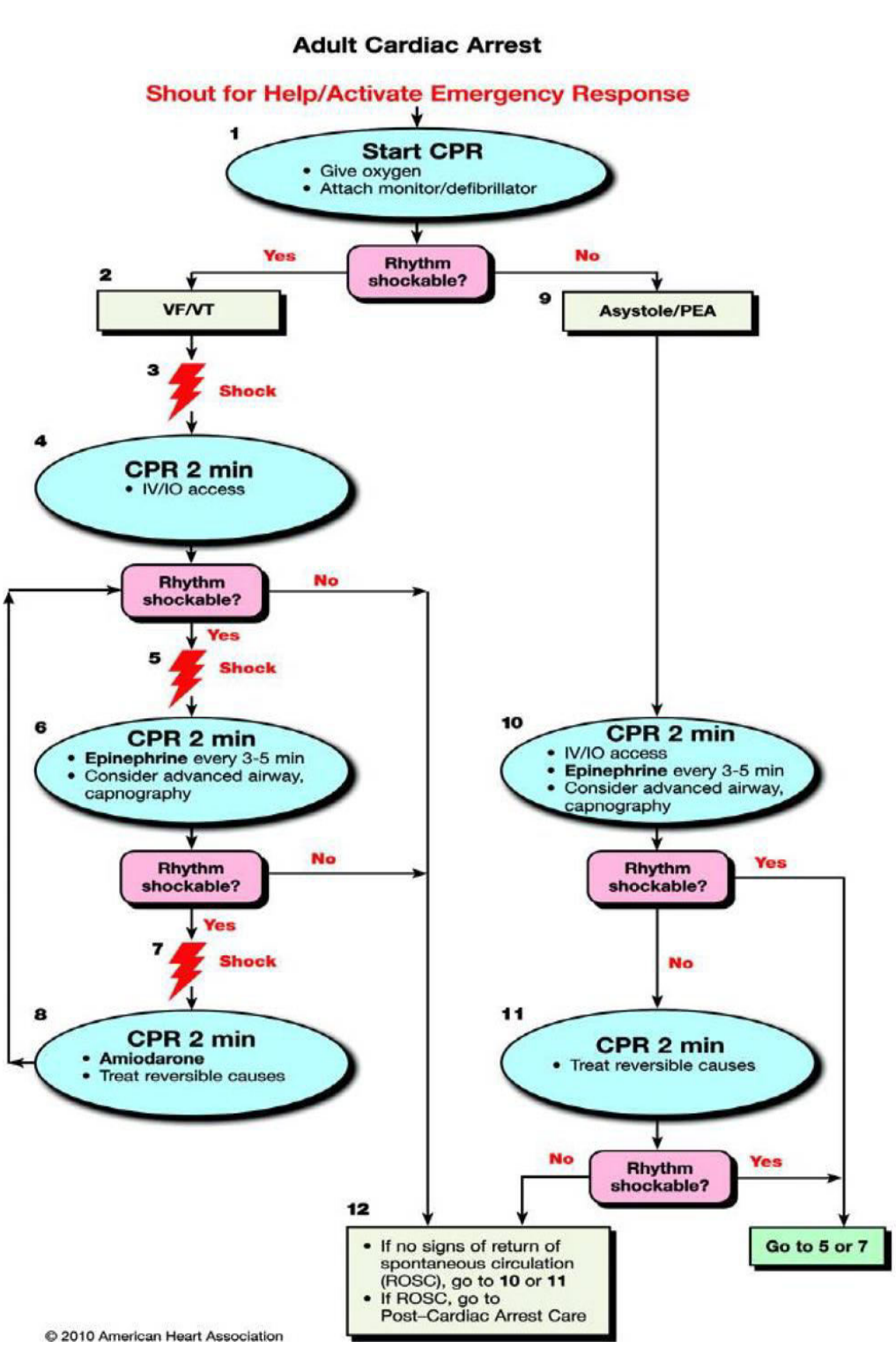
The article needed for ACLS are

- Airway,
- McGill forceps, large and small size,
- King airway set (3) eliminate the need for laryngoscope and endotracheal intubation,
- Bag valve mask,
- Nasal cannula,
- Non rebreather oxygen face mask,
- IV start packs,
- Normal saline solution.

PROCEDURE

SLNO	NURSING ACTION	RATIONAL
1	Place the patient in supine position	For effective treatment
2	Assess the nature of emergency and remain calm	Reduce anxiety for effective treatment
3	Assess the victim by asking “are you okay”if patient is not responding proceed next step	To know the baseline data of the patient
4	Assess breathing by looking the chest wall movement	Fine the respiration is present or absent.
5	If no breathing activate emergency response system	To provide efficient care
6	Assess circulation by palpating the carotid pulse.	Cardiac arrest is recognized
7	Chest compression Place the heel of the hand between the nipple Keep the elbow straight and locked. Compress the chest down 5cm(2 inch)	It reduce the rib fracture
8	Provide pause for recoil of chest wall to normal position	It allow blood flow to the heart
9	Open airway Use head tilt and chin lift method Jaw thrush maneuver if suspect neck fracture	To open the airway Prevent spinal card injury
10	Provide rescue breath by following method such as Mouth to mouth breathing Mouth to nose breathing Bag and mask ventilation Deliver each breath for one full second	To enhance adequate ventilation
11	Repeat the procedure	

12	If patient will not have any improvement attach AED	To treat dysrythmias
13	Establish IV lines	To administer medication
14	Incubate patient with ET tube	To provide proper ventilation
15	Administer medication such as Epinephrine, Amiodarone, Dopamine, Vasopressor	To reverse the cardiac arrest.



CPR Quality
- Push hard (≥2 inches [5 cm]) and fast (≥100/min) and allow complete chest recoil
- Minimize interruptions in compressions
- Avoid excessive ventilation
- Rotate compressor every 2 minutes
- If no advanced airway, 30:2 compression-ventilation ratio
- Quantitative waveform capnography
  - If P_{ETCO_2} <10 mm Hg, attempt to improve CPR quality
- Intra-arterial pressure
  - If relaxation phase (diastolic) pressure <20 mm Hg, attempt to improve CPR quality

Return of Spontaneous Circulation (ROSC)
- Pulse and blood pressure
- Abrupt sustained increase in P_{ETCO_2} (typically ≥40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

Shock Energy
- **Biphasic:** Manufacturer recommendation (120-200 J); if unknown, use maximum available. Second and subsequent doses should be equivalent, and higher doses may be considered.
- **Monophasic:** 360 J

Drug Therapy
- **Epinephrine IV/IO Dose:** 1 mg every 3-5 minutes
- **Vasopressin IV/IO Dose:** 40 units can replace first or second dose of epinephrine
- **Amiodarone IV/IO Dose:** First dose: 300 mg bolus. Second dose: 150 mg.

Advanced Airway
- Supraglottic advanced airway or endotracheal intubation
- Waveform capnography to confirm and monitor ET tube placement
- 8-10 breaths per minute with continuous chest compressions

Reversible Causes
- **H**ypovolemia
- **H**ypoxia
- **H**ydrogen ion (acidosis)
- **H**ypo-/hyperkalemia
- **H**ypothermia
- **T**ension pneumothorax
- **T**amponade, cardiac
- **T**oxins
- **T**hrombosis, pulmonary
- **T**hrombosis, coronary

AFTER CARE:

- Assess the vital signs more frequently
- Obtain ECG to find the dysrhythmic changes
- Maintain the body temperature
- Check the reperfusion state
- Assess the ventilator status of the patient
- Check blood pressure for to assess hemodynamic monitor
- Administer IV fluids

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