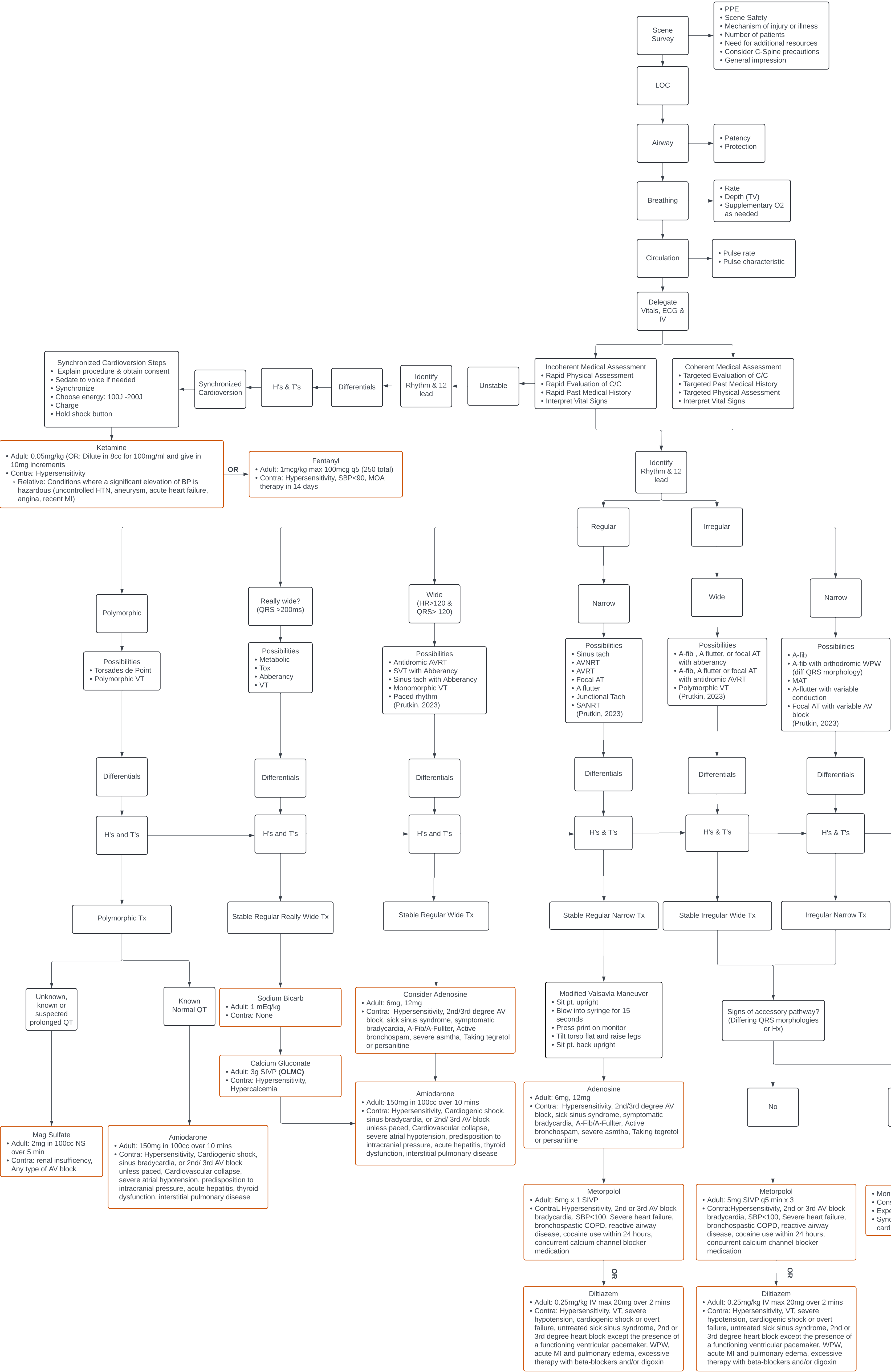


Stable/ Unstable Tachycardia



H's and T's (ACLS Reversible Causes)				
Condition	Common associated clinical settings / Hx (UpToDate: Treatable conditions associated with cardiac arrest)	Pre-Cardiac Arrest Findings (i.e. cardiac arrest findings)	Cardiac Arrest Findings	treatment
Hypoxia	Upper airway obstruction, hypoventilation (CNS dysfunction, neuromuscular disease), pulmonary disease	*Abnormal lung sounds, ↓ MV with ↑ CO2 and ↓ SpO2	*Abnormal breath sounds	PPV, 100% O2, advanced airway, specific treatments
Hypovolemia (fluid losses)	Significant burns, diabetes, gastrointestinal losses, malignancy, sepsis	Compensated shock (↑ HR, ↓ BP)	↓ CVP	Fluid boluses
Hypovolemia (Anemia)	Gastrointestinal bleeding, nutritional deficiencies, recent trauma	Compensated shock (↑ HR, ↓ BP), conjunctival pallor	↓ CVP	Fluid boluses until blood products available
Hydrogen Ions (Acidosis)	DKA, diarrhea, drug overdose, renal dysfunction, sepsis, shock	Respiratory compensation (↑ RR, ↓ pH)	Adequate Mn, NaHCO3	
Hyperkalemia	severe metabolic acidosis (see above), hemolysis, rhabdomyolysis, major soft tissue injury, tumor lysis syndrome, excessive potassium intake	ECG changes: peaked T, Prolonged PR interval, AV blocks, brady arrhythmias, wide QRS widening		
Hypokalemia	Alcohol abuse, diabetes mellitus, diuretics, drug overdose, profound gastrointestinal losses	ECG changes: Prolonged PR interval, ST depression and T wave flattening / inversion, prominent U waves, long QT interval due to loss of T and U waves		Rapid Transfer for assessment of potassium levels
Hypothermia	Alcohol intoxication, significant burns, drowning, drug overdose, elder patient, endocrine disease, environmental exposure, spinal cord disease, trauma	ECG changes: bradyarrhythmia, Osborne waves, PNCs	Hypothermic (< 29 °C)	Warm
Toxins (Poisoning)	History of alcohol or drug abuse, altered mental status, classic triad (e.g. sympathomimetic), occupational exposure, psychiatric disease	See BCLS - Toxidrome Chart Below		Specific treatment / antidotes
Tamponade - cardiac	Post-cardiac surgery, malignancy, post-myocardial infarction, pericarditis, trauma	JVD, muffled heart sounds, ECG may = low voltage, or electrical alternans	↑ CVP	IV bolus, pericardiocentesis
Tension pneumothorax	Central venous catheter, mechanical ventilation, pulmonary disease (eg. asthma, chronic obstructive pulmonary disease), recent thoracostomy, thoracic trauma	High airway pressure, JVD, asymmetric lung sounds / cx rlx.	↑ CVP	Needle decompression
Thrombosis - Pulmonary embolism	Immoblized patient, recent surgical procedure (eg. orthopedic), peripartum, risk factors for thromboembolic disease, recent trauma, presentation consistent with acute pulmonary embolism	DVT, Unexplained hypoxemia, sudden onset pleuritic cx pain and SOB, lower ext. swelling (DVT), ↑ CVP		O2, CMC consult re thrombolytics or Rapid transport
Thrombosis - Coronary (MI)	Cardiac arrest	ECG ischemic, or cx pain with major risk for CAD, arrhythmias. Cardiogenic shock (JVD, crackles) abnormal heart sounds		O2, CMC consult re thrombolytics or Rapid transport to cath lab

(MacLeod, 2024d)

References

- 1) AHS protocols. (2024, August 8). <https://www.ahsems.com/public/protocols/templates/desktop/#home>
- 2) MacLeod, M. H. (2024d). ACLS Reversible Causes – Hs & Ts.
- 3) Prutkin, J. M. (2023, August 31). *Overview of the acute management of tachyarrhythmias*. UpToDate. <https://www.uptodate.com/contents/overview-of-the-acute-management-of-tachyarrhythmias#H1041109>