

St. Joseph County Emergency Medical Services

Policies, Guidelines, and Procedures



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Cardiac – Narrow Complex Tachycardia with a Pulse

Patient Assessment

Signs and Symptoms	Differential Diagnosis	Pediatric Considerations
<ul style="list-style-type: none"> • QRS < 0.12 sec • Tachycardia • Irregular heart rhythm • Regular heart rhythm • Diaphoresis • Hypotension • Anxiety • Chest Pain • Dyspnea • Vomiting • Altered Mental Status • Syncope 	<ul style="list-style-type: none"> • Sick Sinus Syndrome • Tachy-Brady Syndrome • Myocardial Infarction • Fever • Hypoxia • Drug Effects • Atrial Fibrillation/Atrial Flutter • WPW • Electrolyte Abnormality • Stress/Emotional • Hyperthyroid • Pulmonary Embolism • Alcohol Withdrawal 	<ul style="list-style-type: none"> • Use the pedi-tape/Broselow or HandTevy for medication dosing • Consider hypoxia and pulmonary disease as causal factor

Treatment Guidelines

EMR	EMT	AEMT	MEDIC	LEAD	OMCP	
						<ul style="list-style-type: none"> • Request ALS unit • Oxygen, if hypoxic, maintain SpO₂ greater than 94% • Basic airway management • Obtain temperature, if possible
						<ul style="list-style-type: none"> • 12-Lead EKG • Transport patients with EKG readout of STEMI or a cardiac arrest patient with ROSC to an interventional cardiology facility if ALS is not available • ETCO₂
						<ul style="list-style-type: none"> • IV/IO Access • Isotonic Crystalloid, as needed for SBP < 100 mmhg or MAP less than 65 or concern for dehydration; as needed for SBP < 100 mmhg or MAP less than 65; or SBP < 70 + (2 x age (yrs))
						<ul style="list-style-type: none"> • Cardiac Monitoring • If sinus tachycardia, find the underlying source and treat accordingly, as necessary • Modified Valsalva Maneuver if regular, narrow complex (ie SVT or atrial flutter) – Adults only
						<ul style="list-style-type: none"> • Adenosine, as indicated • Diltiazem, if rate control is needed for symptomatic atrial fibrillation with RVR or symptomatic atrial flutter with RVR, <i>not indicated</i> in WPW • Synchronized Cardioversion starting at 200 joules, if patient is unstable • PEDIATRIC: Synchronized cardioversion at 1 J/kg, repeat at 2 J/kg, then OMCP • Midazolam if sedation is required for repeated synchronized cardioversion (stable patient only) • Pain Management, as indicated – can be given as cardioversion is being prepared • Lorazepam or Midazolam for patients with tachycardia secondary to alcohol withdrawal. Do not treat with diltiazem • Repeat EKG after successful conversion of rhythm
						<ul style="list-style-type: none"> • All EMTs and AEMTs shall consult medical control (OMCP) after transmitting EKG

Diltiazem

ADULT DOSING – Diltiazem (5 mg/mL)

Indication	Route	Dose	Notes
<i>Symptomatic</i> Atrial Fibrillation with RVR or Atrial Flutter with RVR <i>without</i> hypotension	IV/IO	1 st Dose: 0.25 mg/kg over 2 min Max dose: 15 mg	OMCP required for second dose. Can be considered 15 min after initial dose
Paroxysmal SVT refractory to adenosine			All doses <i>must</i> be given over 2 minutes
Atrial Fibrillation with RVR or Atrial Flutter with RVR <i>with</i> hypotension OMCP			OMCP required before <i>all</i> doses. Second dose can be considered 15 min after initial dose All doses <i>must</i> be given over 2 minutes

PEDIATRIC DOSING – Diltiazem (5 mg/mL)

Indication	Route	Dose	Notes
---NONE---			

Brand Names:

Cardizem

Contraindications:

Known hypersensitivity to diltiazem or other calcium channel blockers, SBP < 90, Myocardial infarction, Pulmonary edema, Sinus tachycardia, History of or current EKG showing WPW, Sick sinus syndrome or 2nd or 3rd degree AV block except with functioning pacemaker

Pregnancy:

Category C

Drug Class:

Calcium channel blocker

Mechanism of action:

Nondihydropyridine calcium-channel blocker. Inhibits extracellular calcium ion influx across membranes of myocardial cells and vascular smooth muscle cells, resulting in inhibition of cardiac and vascular smooth muscle contraction resulting in dilation of main coronary and systemic arteries; no effect on serum calcium concentrations; substantial inhibitory effects on cardiac conduction system, acting principally at AV node, with some effects at sinus node.

Adverse Reactions:

Minor: Turns skin, urine, and secretions red, urticaria, pruritus, chest tightness, edema
Major: Anaphylaxis, hypertension, dyspnea

Precautions:

Monitor for hypotension

Guidelines:

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Notes: