2H PAROXYSMAL SUPRAVENTRICULAR TACHYCARDIA (PSVT)

PATIENT CARE GOALS

- Restore regular sinus rhythm, prevent recurrence of symptomatic PSVT, and maintain adequate oxygenation, ventilation, and perfusion.

EMT

1. Assess the patient and provide initial care, including oxygen and vascular access, per **1B General Assessment and Care**.

PARAMEDIC

ADULT	PEDIATRIC (less than 60 kg)
2. **DETERMINE STABLE OR UNSTABLE- REGULAR OR IRREGULAR.**[1]	2. **DETERMINE STABLE OR UNSTABLE- REGULAR OR IRREGULAR.**[1]
3. Perform 12-lead ECG if time allows.[2]	3. Perform 12-lead ECG if time allows.[2]
4. Attempt vagal maneuvers[3], if not contraindicated. Examine any slowing that occurs during vagal maneuvers for evidence of underlying atrial fibrillation or atrial flutter. If detected, treat per **2J Atrial Fibrillation/Atrial Flutter**.	4. Attempt vagal maneuvers[3], if not contraindicated. Examine any slowing that occurs during vagal maneuvers for evidence of underlying atrial fibrillation or atrial flutter. If detected, treat per **2J Atrial Fibrillation/Atrial Flutter**.
5. For <u>stable</u> patients, administer **adenosine (Adenocard) 6 mg rapid IV push** followed by a 20 mL fluid bolus. Watch for slowing of the cardiac rate after administration and discontinue use of **adenosine (Adenocard)** if atrial fibrillation or atrial flutter is present.[4] • If PSVT continues and symptoms are not improved after 1 to 2 minutes, administer **adenosine (Adenocard) 12 mg rapid IV push** followed by a 20 mL fluid bolus. • For unstable patients, **adenosine (Adenocard)** may be used before synchronized cardioversion if vascular access is immediately available.	5. For <u>stable</u> patients, administer **adenosine (Adenocard) 0.1 mg/kg (maximum dose 6 mg) rapid IV push** followed by a 20 mL fluid bolus. Watch for slowing of the cardiac rate after administration and discontinue use of **adenosine (Adenocard)** if atrial fibrillation or atrial flutter is present.[4] • If PSVT continues and symptoms are not improved after 1 to 2 minutes, give **adenosine (Adenocard) 0.2 mg/kg (up to 12 mg)rapid IV push** followed by a 20 mL fluid bolus. • For unstable patients, **adenosine (Adenocard)** may be used before synchronized cardioversion if vascular access is immediately available.
6. For <u>unstable</u> patients, perform **7J Synchronized Cardioversion**. First shock at 120 J. If additional shocks are needed, increase energy settings to 150 J and then 200 J.[5] • For responsive patients, provide sedation prior to shock as outlined in **1D Anxiety**	6. For <u>unstable</u> patients, perform **7J Synchronized Cardioversion**. First shock at 1 J/kg. If additional shocks are needed, increase energy settings to 2 J/kg.[5] • For responsive patients, provide sedation

ADULT	PEDIATRIC (less than 60 kg)
and Sedation Management, but do not delay cardioversion.	prior to shock as outlined in **1D Anxiety and Sedation Management**, but do not delay cardioversion.
7. If symptomatic PSVT returns or does not convert, administer: • **Verapamil (Calan) 5 mg IV/IO slowly over 2 minutes**. If no change, may repeat every 5 minutes to a **maximum total dose of 20 mg.**[6] **OR** • **Diltiazem (Cardizem) 0.25 mg/kg IV/IO slowly over 2 minutes**. A second dose of 0.35 mg/kg may be given after 15 minutes, if needed.[7]	7. If PSVT continues, contact Medical Control for further orders.

DOCUMENTATION KEY POINTS

- Vital sign measurements every 10 minutes and before and after administration of medications and cardioversion.
- ECG tracing documentation for all rhythm interpretations, treatment decisions, and changes in the patient's clinical condition. Continuous ECG tracing while administering adenosine.
- Obtain 12-lead ECG before and after rhythm conversion.
- Initial and on-going assessments, monitoring, interventions, patient response, and complications (if any) encountered.

NOTES

[1] **Stable versus Unstable patients:** A "stable patient" is a patient without signs and symptoms of impaired consciousness or hypoperfusion. Only unstable patients who are experiencing chest pain, pulmonary edema, confusion, or other signs of hypoperfusion should be cardioverted. If the patient is unstable, do not delay definitive treatment to do vagal maneuvers.

[2] **Confirmation of PSVT:** Before treatment, paramedic providers should ensure accurate ECG interpretation of PSVT. Confirm the rhythm via 12-lead ECG. Do not use this guideline in treating sinus tachycardia, atrial fibrillation or flutter, multifocal atrial tachycardia (MAT), sick sinus syndrome, ventricular tachycardia, or tachycardia with AV block.

[3] **Vagal maneuvers:** For adults, consider a Valsalva maneuver, with the "strain" phase lasting at least 10 seconds. Carotid sinus massage may also be performed on adults; it should be done for 10 seconds on one side only (never on both sides simultaneously). For infants, place a bag of ice water over the face and eyes, without obstructing the airway. With older children, ask the patient to blow through an obstructed straw.

[4] **Adenosine (Adenocard)** should be administered through a proximal access site (e.g., antecubital), if

possible. Administer rapidly and follow with an immediate IV fluid flush (use "two syringe technique"). Elevate appendage of site of administration above the heart during administration to maximize delivery. **Adenosine (Adenocard)** is contraindicated in wide-complex tachycardias unless the dysrhythmia is definitely known to be reentrant in origin. It may be used in patients with Wolff-Parkinson-White (WPW) syndrome. Use half the recommended dosage (3 or 6 mg adult dose) for patients taking dipyridamole (Persantine) or carbamazepine (Tegretol), for patients with transplanted hearts, or when given through a central line.

[5] **Synchronized cardioversion** is contraindicated for patients with multifocal atrial tachycardia (MAT), ectopic atrial tachycardia, or suspected digitalis toxicity.

[6] **Verapamil (Calan)**: For patients greater than 65 years of age or with systolic blood pressure less than 100 mmHg, use a 2.5 mg initial dose with 2.5 mg dose repeated if needed.

[7] **Diltiazem (Cardizem)**: For patients greater than 65 years of age or with systolic blood pressure less than 100 mmHg, use a 12.5 mg initial dose with a 12.5 mg repeat dose if needed.