Tachycardia

This protocol is for paramedic use only

Aliases: Supraventricular Tachycardia (SVT), Ventricular Tachycardia (VT or V-Tach), Atrial Fibrillation with Rapid Ventricular Response (A-Fib with RVR)

- This protocol is used for the care of patients with persistent tachycardia (ventricular rate greater than or equal to 150/minute) where the tachycardia is believed to be the primary cause of the patient's symptoms.
- For rates <150, believed to be causing symptoms, contact Medical Control for possible orders. It is not intended to treat tachycardia that is secondary to underlying conditions (i.e., dehydration, trauma, sepsis, or toxins). Consultation with online medical control should be considered for complex patients in whom the cause of the arrhythmia is not obvious.
- Unstable patients may be defined as those with a tachycardia with: hypotension, acutely altered mental status, signs of shock, significant ischemic chest discomfort, shortness of breath, or pulmonary edema that is likely due to the arrhythmia. Unstable patients will usually have a ventricular rate >150 BPM.
- Note: Unstable patients with compensatory sinus tachycardia may resemble tachycardic arrhythmias but should not be treated as such. Treat underlying cause.
- **Adenosine** is only used for regular monomorphic tachycardic rhythm

1. Follow the **General Pre-Hospital Care-Treatment Protocol**.
2. Identify and treat reversible causes.
3. Determine if patient is stable or unstable.

UNSTABLE

1. Prepare for immediate cardioversion. In conscious patients consider sedation prior to electrical cardioversion per **Patient Procedural Sedation-Procedure Protocol**
2. Electrical cardioversion
   a. Perform synchronized cardioversion according to manufacturer recommendations.
   b. If unable to deliver synchronized cardioversion in polymorphic V Tach (including Torsades), defibrillate (cardiovert without synchronization) according to manufacturer recommendations (or device maximum energy dose)
   c. Contact medical control if the patient does not convert at maximum energy, for additional orders.

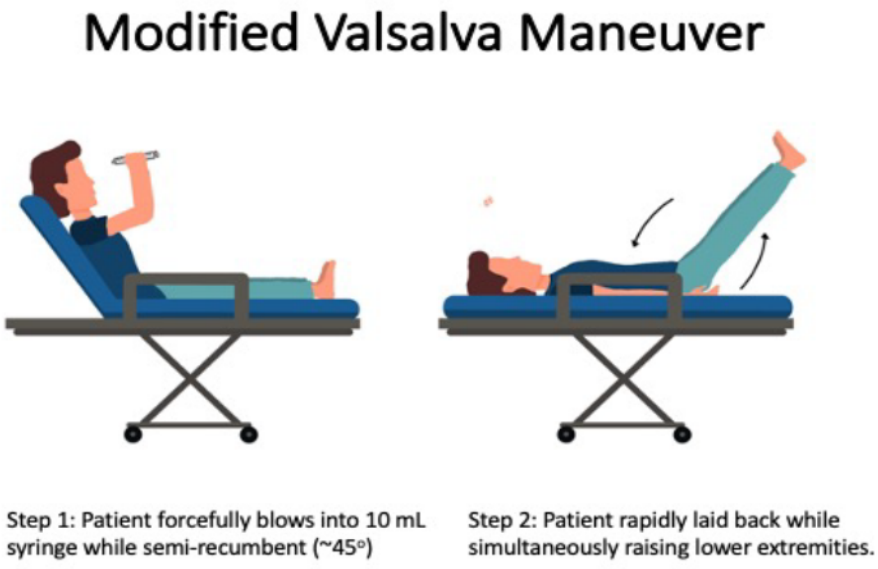
STABLE (But Symptomatic)

1. If at any point a patient becomes unstable, go to UNSTABLE section, and perform synchronized cardioversion.
2. Start an IV **NS** KVO. A large bore antecubital IV is preferred.
3. Obtain 12 lead ECG
4. Contact Medical Control for guidance as needed.

NARROW COMPLEX

REGULAR AND NARROW rhythm (i.e., SVT, A-flutter)

1. Perform Valsalva Maneuver with Postural Modification
    a. Provide continuous cardiac monitoring
    b. Run ECG strip during the procedure.
    c. DO NOT PERFORM CAROTID MASSAGE.
    d. Perform Valsalva Maneuver with Postural Modification (see Figure below)
        i. Place the patient in a semi-fowlers position
        ii. Instruct the patient to forcefully blow into a 10 mL syringe for 15 second
        iii. Then rapidly lower the patient's head to the horizontal position while simultaneously elevating the patient's legs for 60 seconds.



2. For suspected SVT that doesn't convert with Valsalva consider **adenosine** 6 mg rapid IV push through the most proximal injection site. This should be followed immediately with 20 ml **NS** flush.
    a. Adenosine may allow flutter waves to be visible indicating A-Flutter and should be treated as IRREGULAR AND NARROW rhythm below.
    b. If conversion does not occur, administer **adenosine** 12 mg IV using the same technique as stated above.
3. If SVT persists, treat according to MCA selection below.

Medication per MCA Selection

- ☐ **diltiazem** 15-20 mg (0.25 mg/kg) IV slowly
- ☐ **verapamil** 5 mg IV
- ☑ No medication, supportive therapy only

☐ Contact Medical Control prior to medication administration.

☐ Medication administration without Medical Control Contact

4. For suspected A-Flutter treat as IRREGULAR AND NARROW rhythm as below.

IRREGULAR AND NARROW rhythm (i.e., A-Fib/A-Flutter)

1. For suspected A-Fib/A-Flutter (per MCA selection), and if applicable, consider administration as below with Medical Control contact if indicated per MCA selection.
2. Note: treatment is indicated if heart rate is persistently above 125 BPM AND patient is

Medication per MCA Selection

- ☐ **diltiazem** 15-20 mg (0.25 mg/kg) IV slowly
- ☐ **verapamil** 5 mg IV
- ☑ **amiodarone** 150 mg IV over 10 minutes
- ☐ No medication, supportive therapy only

☐ Contact Medical Control prior to medication administration.

☐ Medication administration without Medical Control Contact

Symptomatic from arrhythmia (consider dehydration, hypovolemia, etc., for causes).

WIDE COMPLEX

REGULAR WIDE QRS rhythm (i.e., V-Tach, SVT/A-Flutter with aberrancy)

1. For suspected V-Tach administer **amiodarone** or **lidocaine** per MCA Selection.

Per MCA Selection

- ☑ **amiodarone** - 150 mg IV over 10 minutes
- ☐ **lidocaine** - 1 mg/kg IV

2. If V-Tach persists contact Medical Control and per Medical Control direction, administer:
   a. **amiodarone** 150 mg IV over 10 minutes as needed to a maximum of 450 mg
   OR
   b. **lidocaine** 0.5 -1.0 mg/kg IV push every 5 - 10 minutes to a maximum of 3 mg/kg.
3. For suspected SVT with aberrancy treat as REGULAR AND NARROW rhythm as above.
4. For suspected A-Flutter with aberrancy treat as IRREGULAR AND NARROW rhythm as above.

IRREGULAR WIDE QRS rhythm (i.e., torsades or A-Fib with aberrancy).

1. For suspected torsades administer **magnesium sulfate** 2 gm IV over 10 minutes.
2. For suspected atrial fibrillation with aberrancy follow irregular and narrow complex treatment as above.

NOTES:

1. Administration of **amiodarone** is best accomplished by adding **amiodarone** 150 mg to 100 or 250 ml of **NS** and infusing over approximately 10 minutes.
2. Administration of Magnesium Sulfate is best accomplished by adding **magnesium sulfate** 2 gm to 100 or 250 ml of **NS** and infusing over approximately 10 minutes.
3. Wide complex regular tachycardia may represent SVT with aberrancy, contact Medical Control and consider **adenosine**.

Medication Protocols
Adenosine
Amiodarone
Diltiazem
Lidocaine
Magnesium Sulfate
Verapamil

Protocol Source/References: **REVERT Trial** https://www.ecgmedicaltraining.com/wp-content/uploads/2016/06/REVERT-Trial-SVT.jpg)