

Base Hospital Contact: Required for all patients with wide complex tachycardia.

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#))
Assess cardiac rhythm and obtain 12-lead ECG
4. If cardiac chest pain/STEMI suspected, treat in conjunction with [TP 1211, Cardiac Chest Pain](#)
5. Maintain supine for patients with signs of poor perfusion , if respiratory status allows
6. Establish vascular access prn ([MCG 1375](#))
7. Advanced airway prn ([MCG 1302](#))

SINUS TACHYCARDIA ①

8. Consider possible underlying cause and treat as per applicable protocol **②**
9. For sinus tachycardia of unclear etiology and suspected hypovolemia or signs of poor perfusion ([MCG 1355](#)):

Normal Saline 1L IV/IO rapid infusion

Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops

For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)

Continue to assess for underlying cause **②**

SVT – NARROW COMPLEX ≥ 150bpm ③

10. For adequate perfusion:
Attempt **Valsalva maneuver**

Adenosine 12mg (4mL) rapid IV push ④

Immediately follow with Normal Saline rapid IV flush
Repeat x1 if no conversion

11. For alert patients with poor perfusion:

Adenosine 12mg (4mL) rapid IV push ④

Immediately follow with Normal Saline rapid IV flush, may repeat x1 if persistent SVT

DEPARTMENT OF HEALTH SERVICES
COUNTY OF LOS ANGELES

Treatment Protocol: CARDIAC DYSRHYTHMIA - TACHYCARDIA

Ref. No. 1213

CONTACT BASE if no conversion after adenosine or if adenosine contraindicated to discuss order for **Synchronized Cardioversion** per manufacturer's guidelines, may repeat x2, **or at 120J, 150J, 200J**

12. For poor perfusion with ALOC: **5**

Synchronized Cardioversion per manufacturer's guidelines, may repeat x2, **or at 120J, 150J, 200J**

CONTACT BASE concurrent with initial cardioversion

Consider sedation prior to cardioversion:

Midazolam 5mg (1mL) slow IV/IO push or IM/IN

May repeat in 5min prn x1, maximum total dose prior to Base contact 10mg

CONTACT BASE for additional sedation after maximum dose administered

May repeat as above to a maximum total dose of Midazolam 20mg

ATRIAL FIBRILLATION

13. Consider possible underlying cause and treat as per applicable protocol **2**

14. For poor perfusion (*MCG 1355*):

CONTACT BASE for treatment guidance **6**

WIDE COMPLEX – REGULAR/MONOMORPHIC

15. For adequate perfusion:

Adenosine 12mg (4mL) rapid IV push 4 7

Immediately follow with Normal Saline rapid IV flush

If WCT persists:

Adenosine 12mg (4mL) rapid IV push 4 7

Immediately follow with Normal Saline rapid IV flush

16. For alert patients with poor perfusion:

If vascular access available, **Adenosine 12mg (4mL) rapid IV push 4 7**

Immediately follow with Normal Saline rapid IV flush

May repeat x1 for persistent WCT if mental status normal, or proceed directly to cardioversion

If no vascular access or no conversion with adenosine:

Synchronized Cardioversion per manufacturer's guidelines, may repeat x2, **or at 120J, 150J, 200J**

CONTACT BASE concurrent with cardioversion

Consider sedation prior to cardioversion:

Midazolam 5mg (1mL) slow IV/IO push or IM/IN

May repeat in 5min prn x1, maximum total dose prior to Base contact 10mg

CONTACT BASE for additional sedation after maximum dose administered

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May repeat as above to a maximum total dose of Midazolam 20mg

17. For poor perfusion with ALOC: **⑤**

Synchronized Cardioversion per manufacturer's guidelines, may repeat x2, **or at 120J, 150J, 200J**

CONTACT BASE concurrent with cardioversion

Consider sedation prior to cardioversion:

Midazolam 5mg (1mL) slow IV/IO push or IM/IN

May repeat in 5min prn x1, maximum total dose prior to Base contact 10mg

CONTACT BASE for additional sedation after maximum dose administered

May repeat as above to a maximum total dose of Midazolam 20mg

WIDE-COMPLEX – IRREGULAR

18. For adequate perfusion:

CONTACT BASE for treatment guidance **⑦**

19. For poor perfusion:

Synchronized Cardioversion per manufacturer's guidelines, may repeat x2, **or at 120J, 150J, 200J**

CONTACT BASE concurrent with cardioversion **⑦**

Consider sedation prior to cardioversion:

Midazolam 5mg (1mL) slow IV/IO push or IM/IN

May repeat in 5min prn x1, maximum total dose prior to Base contact 10mg

CONTACT BASE for additional sedation after maximum dose administered

May repeat as above to a maximum total dose of Midazolam 20mg

SPECIAL CONSIDERATIONS

- ① Treatment of sinus tachycardia should be directed at the underlying cause. Sinus tachycardia due to conditions such as hypovolemia, sepsis, or GI bleed can present as a wide complex tachycardia in patients with left or right bundle branch blocks. P waves should be visible before each QRS and a typical bundle branch block pattern noted on the ECG.
- ② Tachycardia is often a response to an underlying illness including but not limited to: sepsis, GI bleeding, respiratory distress, anaphylaxis, hyperthermia, and toxic ingestions. Sinus tachycardia may be a manifestation of pain and/or anxiety, but these should not be considered until other, more dangerous etiologies, are evaluated.
- ③ Sinus tachycardia can occur at a rate above 150 bpm. Sinus tachycardia does not respond to Adenosine, so it should not be administered, and treatment should be directed at the underlying cause.
- ④ Adenosine is contraindicated in patients with history of Wolf-Parkinson-White (WPW) Syndrome and atrial fibrillation, Sick Sinus Syndrome, or heart transplant; or if the patient's medications include carbamazepine (Tegretol) for seizure disorder. In these patients, adenosine may cause degeneration to a fatal dysrhythmia.
- ⑤ Altered level of consciousness (ALOC) refers to a decreased or depressed level of consciousness compared to the patient's baseline (secondary to shock or hypoperfusion).
- ⑥ Patients with atrial fibrillation (or flutter) have abnormal impulses generated by the atria. Adenosine is not effective to slow or terminate the rhythm and, in the presence of Wolf-Parkinson-White (WPW) Syndrome, can cause ventricular fibrillation. Further, these rhythms cause abnormal contraction of the atria that can lead to clot formation. Cardioversion increases the risk for stroke as these clots can be forced out of the atria into circulation after cardioversion. Consider and treat underlying causes of rapid atrial fibrillation (e.g. dehydration, sepsis) prior to cardioversion. Cardioversion is appropriate for cases of acute onset (<48 hours) atrial fibrillation with hemodynamic instability and without other apparent cause.
- ⑦ Regular monomorphic wide complex tachycardia may be supraventricular rhythm with a bundle branch block or aberrancy. In this case, Adenosine may convert the rhythm to sinus and AHA guidelines recommend its use for regular monomorphic wide complex tachycardia. Adenosine should not be used for irregular wide complex tachycardia, because this may represent atrial fibrillation with WPW and lead to degeneration to a fatal dysrhythmia (see ④ above).