2.08 DYSRHYTHMIA: TACHYCARDIA

BLS Treatment

- **Primary Survey: identify and immediately correct life threats**
- **ABCs, vital signs and oxygen as indicated**
- **Secondary Survey: relevant physical examination of the patient**
- **Call for ALS resource if patient is symptomatic**

ALS Treatment

Current Advanced Cardiac Life Support should be followed in conjunction with this protocol/algorithm

- IV/IO with **Normal Saline** TKO, preferably at antecubital fossa.
- 12-lead EKG (If symptomatic, do not delay therapy in order to obtain 12 lead).
- Treat if >150 BPM and patient is symptomatic.

STABLE REGULAR AND NARROW (QRS < 0.12 seconds):

- Vagal maneuvers (Valsalva, cough or breath holding).
- **Adenosine**

STABLE REGULAR AND WIDE (QRS > 0.12 seconds):

- **Amiodarone**
- Give **Magnesium Sulfate** in suspected hypomagnesemia

STABLE TORSADES de POINTES

Administer **Magnesium Sulfate.**

HEMODYNAMICALLY UNSTABLE REGULAR: NARROW OR WIDE

- Synchronized cardioversion (refer to **Protocol 7.19 Cardioversion**)
  - As a general guideline:
    - Narrow QRS and regular: start at 70J
    - Wide QRS and regular: start at 100J
- If sedation is needed for awake patient during anticipated cardioversion strongly consider **Midazolam**

If UNSTABLE, NARROW, REGULAR and synchronized cardioversion fails:

- Administer **Adenosine**.

If UNSTABLE REGULAR AND WIDE and synchronized cardioversion fails:

- Administer **Amiodarone**.

HEMODYNAMICALLY UNSTABLE IRREGULAR AND WIDE (Including Torsades de Pointes)

- If unable to synchronize (including Torsades de Pointes) go directly to unsynchronized cardioversion (defibrillation) starting at 120J
- Give **Magnesium Sulfate** for Torsades de Pointes

Base Hospital Contact Criteria

Contact Base Hospital physician if considering medications in addition to Midazolam for sedation.

Comments

- Only administer synchronized cardioversion for atrial fibrillation if patient is unstable.
- Hemodynamically unstable patients may be defined as a heart rate >150 bpm with associated signs and symptoms: hypotension (<90 SBP), acutely altered mental status, signs of shock, significant ischemic chest discomfort, shortness of breath, or pulmonary edema likely due to the arrhythmia.
- This protocol is not intended to treat tachycardia that is secondary to underlying conditions (e.g. dehydration, trauma, sepsis or toxins)
- Do not use Adenosine in patients with 2nd or 3rd degree heart blocks, sick sinus syndrome, polymorphic ventricular tachycardia, or known history of Wolff-Parkinson-White (WPW)
- Midazolam is not contraindicated if SBP is < 90 if used for pre-procedural sedation

2.08 DYSRHYTHMIA: TACHYCARDIA (REGULAR AND NARROW COMPLEX)

BLS – FAQ Link

Current Advanced Cardiac Life Support should be followed in conjunction with this protocol/algorithm

- **Primary Survey**: Identify and immediately correct life threats
- ABCs, vital signs and oxygen as indicated
- **Secondary survey**: relevant physical examination of the patient
- Call for ALS resource if BLS dispatched and patient is symptomatic

ALS

- Cardiac monitor and Identify rhythm
- Heart rate > 150 with QRS <0.12 seconds?
- If QRS is > 0.12 seconds go to **Wide Complex**

NO → Identify underlying causes

YES → Stable?

YES →

12 Lead ECG
Vagal maneuvers

Did rhythm convert?

YES → Monitor for recurrence:
- Repeat 12 lead
- Identify underlying causes

NO →

Start IV

Adenosine
First dose:
6mg rapid IVP followed by 20 ml flush

Did rhythm convert?

YES → Monitor for recurrence:

NO →

Adenosine
12 mg rapid IVP followed by 20ml flush.

May repeat 12mg x1 if no conversion occurs after second dose

Did rhythm convert?

YES/NO → Monitor for recurrence:

NO → Stable?

Regular

Synchronized Cardioversion
Begin at 70J

Strongly Consider:
Midazolam
5mg IMx1 or 5 mg slow IVP

Do not delay administration for IV

If synchronized cardioversion fails, administer **Adenosine** and follow guidelines under **stable** side of flowchart

Irregular

Synchronized Cardioversion
Begin at 120J

Make Base Hospital Contact

Contact Base Hospital if considering medications in addition to Midazolam

Comments

- Only administer synchronized cardioversion for atrial fibrillation if patient is unstable.
- Hemodynamically unstable patients may be defined as a heart rate >150 bpm with associated signs and symptoms: hypotension (<90 SBP), acutely altered mental status, signs of shock, chest pain, shortness of breath, or pulmonary edema likely due to the arrhythmia
- Do not use Adenosine in patients with 2nd or 3rd degree heart blocks, sick sinus syndrome, or known history of Wolff-Parkinson-White (WPW)
- This protocol is not intended to treat tachycardia secondary to underlying conditions (e.g. dehydration, trauma, sepsis, or toxins)
- Midazolam is not contraindicated if SBP <90 if using for pre-procedural sedation.

2.08 DYSRHYTHMIA: TACHYCARDIA (WIDE COMPLEX)

BLS – FAQ Link

Current Advanced Cardiac Life Support should be followed in conjunction with this protocol/algorithm

- **Primary Survey**: Identify and immediately correct life threats
- ABCs, vital signs and oxygen as indicated
- **Secondary survey**: relevant physical examination of the patient
- Call for ALS resource if BLS dispatched and patient is symptomatic

- Cardiac monitor and Identify rhythm
- Heart rate > 150 with QRS > 0.12 seconds?
- If QRS is < 0.12 seconds go to **Narrow Complex**

Stable?

YES

- 12 Lead ECG
- Start IV

Regular

Amiodarone

150 mg into 100ml of D5W with a goal to infuse 100ml over 10 minutes

Irregular including Torsades de Pointes

Magnesium Sulfate

2 grams in 100ml D5W slowly IV/IO with target of infusing over 10 minutes

NO

Regular

Synchronized Cardioversion
Begin at 100J

Strongly Consider:
Midazolam
5mg IMx1 or 5 mg slow IV/IO

Do not delay administration for IV

If synchronized cardioversion fails: administer **Amiodarone** and follow guidelines for **stable and regular** side of flowchart

Irregular including Torsades de Pointes

If unable to synchronize go directly to defibrillation
Begin at 120J

Magnesium Sulfate may be considered for Torsades de Pointes

2 grams in 100ml D5W slowly IV/IO with target of infusing over 10 minutes

Make Base Hospital Contact

Contact Base Hospital if considering medications in addition to Midazolam

Comments

- Hemodynamically unstable patients may be defined as a heart rate >150 bpm with associated signs and symptoms: hypotension (<90 SBP), acutely altered mental status, signs of shock, significant ischemic chest discomfort, shortness of breath, or pulmonary edema likely due to the arrhythmia
- Midazolam is not contraindicated if SBP is <90 if using for pre-procedural sedation
- This protocol is not intended to treat tachycardia secondary to underlying conditions (i.e. dehydration, trauma, sepsis, or toxins)