Diagnosis of Ventricular Arrhythmia & Management of Wide Complex Tachycardia

Ventricular Arrhythmias

Nonsustained VT

Tachycardia

Regular

Irregular

Narrow Complex

Sinus Tachycardia or PSVT or Atrial Flutter

Ventricular Tachycardia or SVT with Aberrancy or Preexcitation

Broad Complex

Narrow Complex

Atrial Fibrillation or Atrial Flutter with varying Block or Multifocal AT

Broad Complex

Polymorphic or Torsade De Pointes or Preexcited AF

Rule: Wide QRS tachycardia is VT until proven otherwise

Wide-Complex Tachycardia

Ventricular or Supraventricular With Aberrant Condition?
WIDE COMPLEX TACHYCARDIA

85% Ventricular Tachycardia

15% SVT with Aberrancy (functional or preexisting)

5% Preexcited Tachycardias over an accessory pathway

Diagnosis of Wide Complex Tachycardia

- A wide QRS tachycardia is VT until proven otherwise

- This is especially in patients with history of heart disease

ECG features of VT

Captured beats or fusion beats

if present, pathognomonic of VT

Rarely seen because rate of VT must be slow, usually < 120 bpm
**Diagnosis of Ventricular Arrhythmias & WCT**

18 April 2011

**SVT with aberrancy:** Normal axis RBBB, V6 RS > 1

**Diagnosis of Ventricular Arrhythmias & WCT**

18 April 2011

**Preexcited AF**

**Diagnosis of Ventricular Arrhythmias & WCT**

18 April 2011

**WPW paths & associated rhythms**

**Preexcited AF**

**Diagnosis of Ventricular Arrhythmias & WCT**

18 April 2011

**Torsades de Pointes**

(a type of Polymorphic VT)

- **Rate:** atrial not discernible; ventricular rate extremely rapid and irregular
- **Morphology:** Abnormal looking & constantly changing QRS complexes
  - Gradually shifting electrical axes (twisting of points)
  - Sinus rhythm shows shortening QT
- **Onset:** Often starts as a short cycle following a long cycle

**Torsades de Pointes**

(a type of Polymorphic VT)

**Diagnosis of Ventricular Arrhythmias & WCT**

18 April 2011

**VT degenerate to VF**

**Diagnosis of Ventricular Arrhythmias & WCT**

18 April 2011
**Torsades de Pointes**

**Management:**
- Discontinuation of offending drugs
- Magnesium sulfate
- Overdrive pacing

---

**Wide Complex Tachycardia**

**Ventricular Tachycardia**

- Hemodynamically unstable
  - Synchronized cardioversion
- Once rhythm has converted, provide antiarrhythmic therapy

---

**Tachycardia Algorithm**

- Assess responsive
- Call for help/Defibrillator
- Assess vital signs
- Review history
- Establish IV
- Do 12 Lead EKG

**Narrow Complex Tachycardia**

**Wide Complex Tachycardia**

**Polymorphic VT**

---

**Wide Complex Tachycardia**

- Adenosine 6mg rapid iv push
- Lignocaine 50-100 mg iv push
- Amiodarone 150 mg iv push over 10 mins
- If still VT, synchronized cardioversion

**Correct abnormal electrolytes**
- Fluid loss/hemorrhage if present
**Medications:**
- Magnesium
- Overdrive pacing if bradycardia related