EKG Review

Intern Boot Camp
Normal EKG
AVNRT
SVT

• Sinus tachycardia is most common
  – Regular, does not exceed 220 –patient age

• After AF/Aflutter, 3 most common SVTs
  – AV Nodal Reentrant Tachycardia (AVNRT)
  – AV Reentrant Tachycardia (AVRT)
  – Atrial tachycardia
AVNRT On EKG

• Narrow complex tachycardia
• A P wave that occurs after the QRS complex (a short RP interval)
• Quickly terminated with AV blocking maneuvers (carotid massage or adenosine)
Atrial Fibrillation with RVR
Atrial Fibrillation

• Atrial fibrillation (AF) is the most common pathologic SVT
  – Risk factors:
    • Old age, males, HTN, underlying cardiac disease
• Etiology: multiple electrical wavelets = atrial dyssynchrony
• Atrial Rate: 400-600
• Treat AF like sinus tachycardia
  – FIND the underlying CAUSE!
AF with RVR

• Hemodynamically Stable
  - Rate control
    • IV Calcium channel blocker
      - Diltiazem 0.25mg/kg over 2 minutes
      - Bolus can be followed by infusion 5-10 mg/hr
    • IV Beta Blocker
      - Metoprolol 5mg over 2 minutes
        » May repeat 3 Q 5 minutes x3
    • IV Digoxin
      - 0.25mg Q 2Hr up to 1.5 mg
Rhythm Control

• Amiodarone
  – 150mg over 10 minutes
  – 0.5 – 1 mg/min
• Sotalol
• Dofetilide
Hemodynamically Unstable

DCCV
Anticoagulation

• **CHADS2 and CHA2DS2-VASc**
  - Heart Failure or Ejection Fraction ≤35%
  - Hypertension
  - Age
  - Diabetes
  - Stroke, TIA or Systemic Emboli Vascular disease (previous MI, peripheral arterial disease or aortic plaque)
  - Sex

• **DCCV**
  - New Onset
  - Unstable
Atrial Flutter with Variable Conduction
A Flutter with 2:1
Atrial Flutter

- Etiology: reentrant circuit
- Atrial rate 250-350
- Narrow complex tachycardia at 150
  - Sawtooth pattern
- Difficult to control
  - Anticoagulation
  - DCCV vs ablation
Non-sustained Ventricular Tachycardia
Monomorphic sustained VT
Polymorphic Ventricular Tachycardia
Ventricular Tachycardia

1. Wide-complex tachycardia
   - Underlying heart disease
     - No
       - Irregular rhythm
         - Unstable condition
           - Polymorphic ventricular tachycardia, ventricular fibrillation
             - Cardioversion-defibrillation
         - Stable condition
           - AF with WPW
           - AF with aberrancy or AF with benign WPW
2. Regular rhythm
   - Stable condition
     - Adenosine
       - Termination
       - No termination
         - Ventricular tachycardia
           - Cardioversion; IV procainamide, sotalol, lidocaine, or amiodarone
   - Unstable condition
     - Ventricular tachycardia
       - Cardioversion; IV procainamide, sotalol, lidocaine, or amiodarone
Ventricular Tachycardia

- AV Dissociation
- Wide QRS
  - > 140 msec
- Bundle Branch Pattern
- Concordance
  - QRS in all precordial leads in the same pattern/direction
VT Management

• DCCV
• Amiodarone
  – 300 mg over 10 minutes
• Lidocaine
  – 100mg IV push
• Treat underlying cause
  – Electrolytes
  – Ischemia
3rd Degree (Complete) Heart Block
Complete Heart Block

- No atrial impulses reach the ventricle
- Escape rhythm’s control ventricular contraction
  - The more distal the block the slow the escape pacemaker
- Present with dizziness, presyncope/syncope, VT/VF, symptoms of heart failure
Tx of Complete Heart Block

• Assess for reversible causes
  – MI, increased vagal tone, drugs
• Avoidance of medications with AV nodal blocking properties
• Atropine
• Pacemaker Indications
  – Most patient with CHB
  – Class I Indication: symptoms, ventricular pauses >3 secs, resting HR <50 BPM while awake
Anterior STEMI
Do this while you dial 1-800-STEMI

- ASA
  - 325mg

- Nitroglycerin
  - 0.4mg SL Q5 min with goal of chest pain free
  - Can gtt if need be. BEWARE of inferior MI!

- Statin
  - Atorvastatin 80mg

- Beta Blocker
  - Metoprolol 12.5 mg to 25mg Q6Hr
  - Titrate to HR of 60
STEMI Management

• Plavix
  – Load with 300 - 600mg
• Heparin
  – Bolus then drip
• Oxygen
• Morphine