I. Title: Unstable Atrial Fibrillation

II. Target Audience: EM1 Residents

III. Learning Objectives or Assessment Objectives

A. Primary
1. Interprets ECG as AF with RVR
2. Recognizes hemodynamic instability
3. Performs synchronized cardioversion

B. Secondary
1. Explains the difference between synchronized and unsynchronized cardioversion
2. Describes etiologies of atrial fibrillation
3. List indications and contraindications to cardioversion

C. Critical actions checklist (see attached form for details):
1. IV, O2, monitor
2. Immediate ECG
3. Administers ASA 325mg
4. Identifies AF with RVR ECG
5. Performs synchronized cardioversion
6. Admits to telemetry

1. Environment

A. Lab Set Up – ED room

B. Manikin Set Up – HPS no moulage

C. Props – none

D. Stimuli –
1. H&P
2. ECG – Afib with RVR
3. CIEs (normal)
4. ECG – NSR
5. CXR (normal)
6. CBC/CMP (normal)

E. Distractors – none

2. Actors

A. Roles –
1. Patient – provides history, opportunity to observe trainee’s interpersonal skills

3. Case Narrative

A. Scenario Background Given to Participants (all freely provided)
1. CC: Chest Pressure

2. PMH: CAD, MI 2000
3. Meds: Toprol XL 100mg QD
4. Allergies: None
5. Family history: None
6. Social history: 2ppd x 50 years, occ EtOH

B. Scenario conditions initially
1. Patient provides history of 2 hours of increasing chest pressure/SOB after having breakfast with a friend at Starbuck's. Pt also didn't take his meds this morning.
2. Patient's initial exam:
    - Tachycardia, irregularly irregular
    - S4 gallop
3. Patients physiology
    - Atrial fibrillation with RVR
    - Hemodynamically unstable
    - Underlying cardiac ischemia

C. Scenario branch points
1. Pt will present hemodynamically unstable with rapid AF
2. If synchronized cardioversion is used he will stabilize.
3. If he is not treated he will continue to decompensate, ultimately into VT then VF
4. If unsynchronized cardioversion is used, he will develop VF.

IV. Instructors Notes

A. Pt has rapid AF with hemodynamic and cardiac compromise.

B. Actors:
1. Patient: Provides HPI freely.

C. Scenario programming
1. Optimal management path (see evaluation checklist)
2. Potential errors path(s)
    - Not ordering ECG to evaluate for AMI
    - Unsynchronized cardioversion
    - Failure to recognize hemodynamic instability
3. Program debugging
    a. Use fluid infusions/losses to manipulate BP

2. Debriefing Plan

A. Method of debriefing –
   1. Group debriefing

B. Actual debriefing materials
   1. Review article – NEJM Atrial Fibrillation

C. Rules for the debriefing
   1. Participant gives self-evaluation first
   2. Group feedback
   3. Case is replayed if significant changes in management are needed

D. Questions to facilitate the debriefing
   1. What are underlying causes/precipitating factors of AF?
   2. What are the risks associated with untreated AF?
   3. What findings/symptoms suggest an unstable cardiac rhythm?
   4. What is the difference between synchronized and unsynchronized cardioversion?
   5. Under what conditions can cardioversion of new AF be done in the ED?
      a. Less than 48 hours duration
      b. No underlying LV dysfunction
      c. No mitral valve disease
      d. No history of embolism

3. Pilot Testing and Revisions

A. Numbers of participants: 2-3 (1 primary, 2 support)

B. Evaluation forms - for and by participants

X. Authors and their affiliations

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XI. Resources and References

Page RL. Clinical Practice: Newly Diagnosed Atrial Fibrillation *NEJM* 2004;351:2408-16.