A Suggested Algorithm for Atrial Fibrillation Treatment in the Shocked ICU Patient

1. Is the Patient Grossly Unstable
   - Yes Unstable
   - No "Meta-Stable"

2. Get a real "Pink Paper" ECG

3. Is this episode of AF causing additional hemodynamic instability that is worsening the clinical picture?
   - Yes
   - No

4. Does the patient NEED cardioversion?
   - Yes
   - No

5. Does this episode of AF NEED anti-arrhythmics?
   - Yes
   - No

6. Have modifiable risk factors been sufficiently optimized (See Box)?
   - Yes
   - No

7. Does Magnesium resolve the AF (See Box)?

8. Will the patient benefit from amiodarone? (see dosing box* below)
   - Yes
   - No

9. What is the CHADS2vasc and HAS-Bled Score?
   - 1-4: Low risk
   - 5-6: Moderate risk
   - 7-9: High risk

9a. Does the patient have persistent AF and need AC?
   - Yes
   - No

10. Does the risk of stroke prevention outweigh bleeding???

If the patient has no contraindications, is not on inotropes, not hypotensive and can tolerate a lower BP may start CCB or BB. See esmolol & diltiazem dosing in box* below if giving.

BB contraindications:
- HFrEF with pulmonary edema
- Cardiogenic shock
- Bradycardia
- Hypotension
- Asthma
- AV block (> than 1st degree)
- Cocaine use

CCB contraindications:
- HFrEF with pulmonary edema
- AV block (> than 1st degree)
- Sick sinus syndrome
- Bradycardia
- Cardiogenic shock
- Hypotension
- Acute MI

*Modifiable Risk Factors
- Is acidosis corrected?
- Is there volume overload? (K>4 and Mg>2?)
- Can MAP goal be lower?
- Can pressor dose be lower?
- Is BP accurately measured?
- Is there a new MI or HF?
- Is urine output <7 mL/hr?

*Magnesium Dosing & Recommendations
- Belus: 2.4 g IV over 30 min
- Drip: 1-2 g/hr
- Recommended: Check serum Mg and K in 2-4 hours post infusion and stop drip if Mg is >3. Caution in renal failure
- Recommendations: Use lower dose in elderly, Avoid in Transplant (e.g. Lung) for interaction with Tacrolimus

*Diltiazem Dosing & Recommendations
- Belus: 0.15 to 0.3 mg/kg IV
- Drip: 0.25-5 mg/hr
- Order hold parameters: eg HR <50, SBP <105
- Recommendations: Use lower dose in elderly

*Esmolol Dosing Recommendations
- Belus: 500 mcg/kg over 1 min, to max of 1000 mcg/kg
- Drip: 50 mcg/kg/min, raise by 50 mcg/kg/min q 10 min
- Max: 300 mcg/kg/min infusion
- Sample Dose Range for 50-100 kg pt:
  - Belus Range: 25,000-50,000 mcg over 1 min
  - Drip Range: 2,500-5,000 mcg/min by same q 10 min
  - Order hold parameters: eg HR <50, SBP <105

*Amiodarone Dosing & Recommendations
- Belus: 150-450mg over 30 min
- Drip day 1: 1 mg/min for 6 hrs (360 mg) then 0.5 mg/min for 18hrs (540mg)
- Max: 1500 mg/24 hours
- Drip day 2: 0.5 mg/min (720mg) q 24 hrs.
- Note: IV form to be used only for <4 wks
- Recommended: Consider checking thyroid studies at baseline when amiodarone ordered

*WARNING: The information contained herein should not be taken as medical advice. This information is strictly for experienced practicing clinicians and should only be used by those experienced in the care of Atrial Fibrillation. All dosages are suggested and should be confirmed by an expert.

*See associated text and references for details