Perioperative Arrhythmia Management in Thoracic Surgery
David Amar, MD, Alessia Pedoto, MD

Objectives:
1. Incidence and natural history of perioperative arrhythmias
2. Biomarkers and their use in prediction of atrial fibrillation
3. Prevention strategies
4. Treatment of perioperative arrhythmias
5. Role of anesthesiologists in stroke prevention

Case Description:
A 78 year-old man is scheduled for a right lower lobectomy for lung cancer. He had a previous inferior wall myocardial infarction (IWMI) one year ago and no new episode of angina. Ejection fraction is 48%; there is 1-2+ mitral regurgitation. He has history of hypertension, dyslipidemia and previously smoking (one pack per day until IWMI one year ago). Current therapy includes aspirin 81 mg/day, metoprolol 25 mg twice a day, simvastatin 20 mg/day, and lisinopril 2.5 mg/day. Preop BNP 54 pg/ml. He had a transient episode of atrial fibrillation (AF) during hospitalization for his IWMI, but has had no clinical events since then.

1. Is he at high preoperative risk for AF? What are his most important risk factors for postoperative AF?
   A. Age >75
   B. Valvular heart disease.
   C. Normal BNP?
   D. Chronic obstructive pulmonary disease/chronic lung disease.
   E. History of previous AF.
   F. Beta-blocker withdrawal before surgery.
   G. All or several of the above.

3. What should be the approach to postoperative AF prevention?
   A. Pre/postoperative beta-blocker; what dose? Digoxin?
   B. Prophylactic antiarrhythmic therapy.
      a. Intravenous (IV) diltiazem load in PACU then 120 mg BID PO.
      b. Amiodarone, orally 600 mg x 5 days, continued postop (200 mg, duration?)
      c. Sotalol, orally on admission, continued postop.
      d. Amiodarone IV 300 mg IV start in PACU, continued 600 mg BID postop.
      e. Dofetilide orally on admission, continued postop.
      f. Another regimen.

4. The patient develops AF on the second postoperative day, rate 140-180 bpm, with a drop in blood pressure to 96/62. What is your approach to therapy?
   A. Would you change dose/discontinue specific medications?
B How would you approach rate control?
C What considerations would you give to anticoagulation (stroke prevention)?
D What approach would you take to restoration of sinus rhythm? (Drugs? Cardioversion?) What would you do for resistance to cardioversion or early recurrence?
E Would you begin oral antiarrhythmics to prevent recurrence after conversion to sinus rhythm? If so, which drug(s) would you choose, and how long would you treat?
- **High Risk Factors**
  - Prior CVA, TIA, or embolism
  - Mitral stenosis
  - Prosthetic heart valve

- **Moderate Risk Factors**
  - Age $>$ 75, HTN, DM
  - EF $<$ 0.35, Heart failure

- **Weak Risk Factors**
  - Female, Age $<$ 75
  - CAD, Thyrotoxicosis

### References:
