

Perioperative Atrial Fibrillation (PAOF)

PAOF is the most common perioperative arrhythmia. New onset PAOF is associated with increased morbidity and mortality, mainly from stroke. There are numerous adverse cardiac effects such as decreased coronary perfusion from decreased diastolic time and decreased cardiac output from the lack of coordinated atrial contractions. These contribute to an increased risk of MI, HF, and AKI

PAOF RISK FACTORS:

- Advanced age
- Prior AF
- HF, CAD, CKD
- OSA
- Sepsis, pain, trauma
- Hypervolemia, hypovolemia, hypotension
- Hypoxia, anemia
- Hypokalemia, hypomagnesemia
- Anemia

PAOF PREVENTION AND NON-SPECIFIC THERAPY:

- Continue anti-arrhythmic meds on DOS
- Address the modifiable factors listed above
- Aggressively treat intra-op hypotension
- Use caution with ketamine or Robinul in patients with history of AF
- Use CPAP post-op in OSA patients

PAOF SPECIFIC THERAPY:

- Synchronized cardioversion for RVR with hypotension refractory to vasoconstrictors
- Beta or calcium channel blockers. Beta-blockers may be more effective
- For patients who cannot hemodynamically tolerate beta or calcium channel blockers:
 - Phenylephrine infusion may reflexively reduce heart rate
 - Amiodarone
 - Digoxin if amiodarone contraindicated, e.g., lung disease

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APPROACH TO PRE-OP AF IN ELECTIVE SURGERY:

- New onset AF in PAA and RVR (rate > 110) → cancel for evaluation
- RVR in PAA with prior history of AF:
 - If symptomatic → cancel for evaluation
 - If asymptomatic, attempt rate control pre-op. If unsuccessful, cancel for evaluation
 - Post-op: consult Cardiology if inpatient, or if RVR recurs in outpatient
- AF in PAA with no previous history, but the rate is normal:
 - Continue and consult Cardiology post-op if low-to-moderate risk of MACE
 - Cancel for evaluation if high risk of MACE – major cardiac adverse event:

High risk of MACE – three of the following:

1. Known CAD
2. HF
3. TIA or CVA
4. IDDM
5. CKD: Cr \geq 2 or Stage 4 (GFR < 30 ml/min)
6. Intraoperative, intrathoracic, or suprainguinal vascular surgery

APPROACH TO NEW ONSET AF OCCURRING INTRA-OP OR POST-OP:

- Address reversible factors listed above
- Rate control
- Rule out myocardial ischemia (EKG, biomarkers)
- Consult Cardiology, **however some outpatients can be discharged with a follow-up cardiology appointment (without a bedside consult) if all the following apply:**
 - Asymptomatic
 - Rate controlled
 - Low risk of a thromboembolic event – no valvular disease and CHADVASc score < 3
 - Low-to-moderate risk of MACE

CHA₂DS₂-VASc score stratifies risk of stroke for non-valvular AF patients:

- C = CHF – 1 point
- H = HTN – 1 point
- A = age \geq 65 – 1 point
- A₂ = age \geq 75 – 2 points
- D = DM – 1 point
- S₂ = Stroke – 2 points
- VA = vascular disease – 1 point
- S_c = Sex category female – 1 point

