

Evaluation and Management of Atrial Fibrillation

Purpose

- Establish a unified guideline for the diagnosis and treatment of atrial fibrillation (AF) in Acute Care Surgery patients.

Background/Definitions

- Primary AF: AF with no precipitating cause
- Secondary AF: AF precipitated by a secondary or reversible cause (e.g., volume overload, surgery, sepsis, etc. --most of your ICU patients)

Inclusion Criteria

- Patients with new onset atrial fibrillation.

Exclusion Criteria

- Patients with chronic atrial fibrillation.

Diagnostic Evaluation

- History:
 - previous history of arrhythmia?
 - currently on anticoagulation?
- Physical:
 - irregular heart rhythm
- Imaging/Labs/Tests:
 - ECG
 - BMP+Mg+Phos
 - Other labs at discretion of provider (CBC, blood cultures/infectious work-up, cardiac enzymes, etc)

Practice Recommendations for Management

- New-onset, secondary AF is an organ dysfunction that signals something is wrong--need to address underlying cause while seeking to control rate/rhythm.

- Helpful questions to guide initial approach of patient with AF:
 - 1) is the AF causing an immediate problem?
 - 2) why is AF happening now (is this primary or secondary AF)?
 - 3) should I worry about longer-term problems from the AF? ?

- Is the AF causing an immediate problem?
 - When to consider rhythm control first:
 - Emergent AF with severe decompensation:
 - hypotension (SBP<100 or <110 for patients 65 and older), acute heart failure, altered mental status, cardiac ischemia
 - if yes --> DCCV (direct current cardioversion)
 - consider pairing DCCV with anti-arrhythmic such as amiodarone to increase probability of longer-term success.
 - Non-emergent AF:
 - consider a rhythm control strategy first if you think the patient needs atrial kick (i.e. severe mitral stenosis, aortic stenosis) or cannot tolerate nodal blocker (Wolf Parkinson White Syndrome)
 - When to consider rate control first:
 - *Note: in most instances you can use rate control FIRST.*
 - Heart rate is higher than it would be with acute illness, but not immediately life threatening to require DCCV.
 - Patient has contraindications to anticoagulation.
 - Evidence to support a rate control strategy first during secondary AF: success of DCCV is low in secondary AF (as in ICU) --43% at 1 hr, 23% at 24 hrs remain in NSR.

- Why is AF happening now?
 - Fix electrolytes (magnesium is an effective rhythm control treatment).
 - Fix volume status.
 - Look for untreated infection.
 - Remove beta-agonists.

- Should I worry about long-term problems from the AF?
 - Arterial thromboembolism and AF recurrence are long-term concerns after new-onset AF in critically ill patients
 - 44% af AF recurrence in 1 year after new-onset AF in sepsis.
 - Cardiology follow-up (either inpatient or outpatient) for long-term rhythm monitoring and treatment plan should be considered.

Outcome Measures and Guideline Adherence

- AF (arrhythmia) is a PI filters for Trauma and Critical Care Surgery that is actively tracked/monitored.

Related Policies

Key Contributors

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References

1. 2019 AHA/ACC/HRS Update
2. 2014 AHA/ACC/HRS Guideline
3. Um K et al. Pre- and post-treatment with amiodarone for elective electrical cardioversion of atrial fibrillation: a systematic review and meta-analysis. *Europace*. 2019;21(6):856-863.
4. Arrigo M et al. Disappointing success of electrical cardioversion for new-onset atrial fibrillation in cardiosurgical ICU patients. *Crit Care Med*. 2015;43(11):2354-2359.
5. Walkey AJ et al. Practice patterns and outcomes of treatments for atrial fibrillation during sepsis: a propensity-matched cohort study. *Chest*. 2016;149:74-83.
6. Bosch NA et al. Comparative effectiveness of heart rate control medications for the treatment of sepsis-associated atrial fibrillation. *Chest*. 2021;159(4):1452-1459.
7. Davey MJ et al. A randomized controlled trial of magnesium sulfate, in addition to usual care, for rate control in atrial fibrillation. *Ann Emerg Med*. 2005;45(4):347-353.
8. Onalan O et al. Meta-analysis of magnesium therapy for the acute management of rapid atrial fibrillation. *Am J Cardiol*. 2007;99(12):1726-1732.
9. Bosch NA et al. Atrial fibrillation in the ICU. *Chest*. 2018;154:1424-1434.

Supplemental Materials

- “Etiology of Atrial Fibrillation” schematic.

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