Atrial Fibrillation/Flutter Pathway for Emergency Departments (ED)

AF/AFL ED Guidelines

How to Use This Patient Guideline

This Clinical Patient Guideline is developed as a standalone document that includes most applicable content to this guideline for clinical use - just print and carry.

However, some reference files may not be included. Where possible these files are noted as external and referenced and printed separately.

This Clinical Patient Guideline does not preclude the expert knowledge of our Providers. Use your professional judgment when deciding what is best for your patient.

Refer back to this document for each clinical encounter to ensure the latest updated version.

Governance

These Patient Clinical Guidelines have been approved by:
- Sanger Heart & Vascular Institute
- CHS-Medical Group Quality Committee

Applicable Organizations/Facilities

Carolinas HealthCare System

Version Management

Version 1.0
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Reference Information


5. Full prescribing information available at http://dsi.com/prescribing-information-portlet/getPContent?productName=Savaysa&inline=true

Not specifically referenced but used in preparation:


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Adult AF/AFL Management

**Initial Evaluation**

Patient presents with Atrial Fibrillation or Atrial Flutter (AF/AFL)

IF AF/AFL is Primary Entity?

Yes

Initiate Diagnostics and Initial Management:
- 12 lead ECG, continuous telemetry
- Vital signs, O2 sat, and NC O2 to keep saturations >92%
- IV access
- Labs: CBC w/ platelet count, CMP, TSH (if none in 3 months), Trop I (if ischemic symptoms present)
- History & Physical Exam: assessment for undiagnosed heart disease such as CHF, severe MR or AS

If another diagnosis is primary entity (ACS, Trauma, CHF) this guideline may be used to assist in initial assessment and management but judgement will be required where elements would conflict with the primary diagnosis (trauma patients may be inappropriate for anticoagulation, sepsis patients who are hypotensive may be inappropriate for IV Diltiazem initially)

No

Consider Cardiology Consult

**Clinical Stage**

Assess for Patient Stability (signs suggestive of instability):
- Angina/ACS or CHF
- Other dysrhythmias including:
  - VT/VF
  - Preexcitation/WPW
  - Pauses > 3 secs in AF or post conversion pauses in PAF
  - Rate > 150 or < 40 bpm
  - Mobitz 2 AV block or third degree AVB in SR
  - New ST elevation/depression
  - Respiratory distress, O2 sat <90%, CHF
  - SBP <90
- Evaluate for/management of other conditions (based on presentation) - sepsis, trauma, PNA, PE, ARF that may be present

Patient Unstable?

Yes

Go to Cardiowersion Pathway

Go to Rate Control Pathway

No

Begin Treatment

**Emergent management of unstable signs/symptoms:**
- Electrical cardioversion (DCCV) if truly unstable with hypotension, ACS, rapid preexcited AF
- BIPAP or intubation of respiratory distress with CHF - rate control of rapid AF often quickly improves CHF symptoms
- Assess for ACS/AMI and if present administer ASA 324 mg PO - initiate treatment for ACS

**Initial Drug Treatment:**
- Initiate IV diltiazem for rapid AF- do NOT use in WPW, caution in decompensated CHF w/ LV dysfunction
  1. Initial bolus (0.25 mg/kg) max of 15 mg administered over 5 minutes and may repeat at 15 minutes with additional 10 mg for VR remains over 110 with adequate SBP
  2. If ventricular rate remains > 110 bpm, begin diltiazem infusion at 5 mg/min and titrate by 5 mg/min for HR <110. Maximum 15 mg/hr
- IV metoprolol 5 mg bolus may be administered for continued elevated rates in AF. May repeat every 5 mins up to total of 15 mg. Caution in bronchospasm or asthma history
  - Administer IVF if suspected hypovolemia

Obtain History for Time of AF Onset

AF Duration <48 hours and NSR Restoration Desired?
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Electrical or Pharmacologic Cardioversion of AF/AFL

**Electrical or Pharmacologic Conversion of AF**
- AF < 48 hours duration or AF ≥ 48 hours with ≥ 3 weeks on oral anticoagulation (OAC) with therapeutic warfarin or uninterrupted factor Xa or direct thrombin inhibitor - See appendix 2 for complete list
- Patient assessment/evaluation completed
- Stable patient, implementation of rate control when required

**Cardioversion Procedure**
- NPO status for DCCV 6 hours (clear liquids 2 hrs acceptable)- if status is uncertain, wait 6 hours
- Sedation assessment tool (appropriate documentation)- sedation requirements met
- Procedural consent- discuss risks of DCCV, sedation
- Administer OAC for CHA2DS2VASc ≥2 if no contraindications. See appendix 2 for OAC dosing. If CHA2DS2VASc is 0/1 and < 48 hours, no OAC required

**Recovery**
- Sedation recovery/hemodynamic monitoring- HR/BP, O2 sat
- Post DCCV ECG

**Discharge/Disposition**
- Patient considered appropriate for ED discharge
  - Initiation of back up rate control strategy pre-discharge (if required)
  - Provide prescription for 7 days of OAC for CHA2DS2VASc ≥ 2 (or continuation of OAC)
  - Arrangement for follow up with cardiology in < 72 hours (telehealth) for ALL patients with new diagnosis of AF or new initiation of OAC
- Arrange for hospital admission if not appropriate for D/C to home

**Pharmacologic Conversion**
- Most effective with recent onset AF
- Consider keeping NPO status to allow DCCV if oral flecainide ineffective
- Administer OAC for CHA2DS2VASc ≥2 if no contraindications. See appendix 2 for OAC dosing. If CHA2DS2VASc is 0/1 and < 48 hours, no OAC required

**Exclusions for Oral Flecainide**
- Mean HR <70, systolic BP < 100
- Preexcitation, QRS > 120
- History of ischemic heart disease, dilated CM, Hypertrophic CM, history of heart failure, severe valvular heart disease, LVEF < 50% (Imaging within three years showing EF >/=50% by echo/MRI/CT/Nuc/Cath), prolonged QT (QTc > 460), Brugada syndrome, history of SB/resting HR in sinus <50, 2nd or 3rd degree AVB in SR, current anti-arrhythmic therapy with any agent, severe liver or hepatic impairment, K < 3, pregnancy, intolerance to I-C agents

**Flecainide Administration**
- Flecainide 300 mg (wt ≥70 kg) or 200 mg (wt <70 kg)
- Continuous 12 lead ECG monitoring, BP monitoring every 30 minutes. Monitor for development of atrial flutter with 1:1 conduction

Document time to SR restoration, HR and/or post conversion pauses if/when sinus rhythm restored. This will allow for consideration of use as an outpatient (by cardiology) if safety demonstrated.

**Post Pharmacologic Conversion**
- Monitoring for minimum of 4 hrs post Flecainide administration, minimum of 2 hrs after conversion if effective.
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Rate Control of AF/AFL

Rate Control Pathway

Rate Control Arm
- If AF ≥ 48 h duration (or unable to determine duration) and not on OAC may be considered for discharge on rate control medications. [APP 1: Rate Control]
  WITH
  - initiation of antithrombotic therapy determined by risk factors. [App 2: Antithrombic Therapy/OAC]

Note: Patients for whom a pre-discharge strategy of rhythm control w/ TEE/Cardioversion is desired will require cardiology consult.

Discharge and Outpatient Management Without DCCV
- AF of any duration not desiring external cardioversion
- AF > 48 h on OAC with sub therapeutic warfarin or uninterrupted factor Xa or direct thrombin inhibitor (cardioversion without TEE contraindicated)
- Patient assessment/evaluation completed
- Stable patient, implementation of rate control initiated - initial does of oral rate control medication administered. [APP 1: Rate Control]

Rate Control/OAC
- Assess adequacy of rate control implemented during initial assessment
- Implementation of appropriate Antithrombotic/OAC strategy
- Target resting HR 60-100 at rest. If asymptomatic, resting HR of up to 110 acceptable with 72 h follow up
- When unable to provide rate control in ED - admission to hospital

Discharge/Disposition
- Final review of all lab work, radiology studies when indicated
- Prescriptions for OAC and rate control medications
- Cardiology follow up arranged < 72 h
- Patient information on atrial fibrillation, new medications
Appendix 1: Rate Control

If patient presented in rapid atrial fibrillation, a back up rate control strategy should be implemented until follow up with cardiology for patients that will remain in AF as well as those treated with a cardioversion strategy given risk of recurrence of AF after discharge.

**Patients Rate Controlled on Diltiazem Infusion Alone**

Begin with a single dose of immediate release Diltiazem (short acting preparation) as rate control is established

- 5mg/hr discharge on 120 mg Diltiazem per day
- 10 mg/hr discharge on 240 mg Diltiazem per day
- 15 mg/hr discharge on 360 mg Diltiazem per day

Options at discharge include short acting Diltiazem TID/QID (very inexpensive) or extended release q 24 hr (can be expensive even with insurance)

Ensure BP, sinus rate and AV conduction appropriate for administration of Diltiazem. If patient is on background dihydropyridine calcium channel blocker (i.e. amlodipine), recommend discontinuing the dihydropyridine with initiation of Diltiazem. If patient is already on other rate control agent, such as beta blocker, consider increase in that rate control agent dosage and/or addition of Diltiazem.
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Appendix 2: Antithrombic Therapy/OAC

Antithrombic Therapy/OAC:\
The determination of OAC at discharge is determined based on risk factors for stroke in AF and not on the rhythm at discharge. Risk factors for determination of administration of OAC in ED at the time of discharge are based on CHA2DS2-VASc whether or not sinus rhythm is restored.

CHA2DS2-VASc Score - presence or treatment for:

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congestive Heart Failure</td>
<td>1</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1</td>
</tr>
<tr>
<td>Age ≥ 75</td>
<td>2</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1</td>
</tr>
<tr>
<td>Stroke/TIA/Embolic History</td>
<td>2</td>
</tr>
<tr>
<td>Peripheral Vascular or CAD</td>
<td>1</td>
</tr>
<tr>
<td>Age ≥ 65 and &lt;75</td>
<td>1</td>
</tr>
<tr>
<td>Sex/gender = female</td>
<td>1</td>
</tr>
</tbody>
</table>

**Sum of Risk Factors:**

0 = No Anticoagulation or anti platelet therapy  
1 = ASA 325 mg once daily  
≥2 Oral anticoagulation. If patient is not already on OAC with warfarin or approved factor Xa or thrombin inhibitor initiate Oral anticoagulation if no contraindications to OAC therapy.  
Assess patient for high bleeding risk (i.e. recent surgery, trauma, prior serious bleeding)

- **Apixaban** (Eliquis) 5 mg BID is the appropriate dose for most patients however, Apixiban 2.5 mg BID if any two of the three present age ≥ 80, weight ≤ 60 kg, Cr ≥ 1.5  
- **Dabigatran** (Pradaxa) 150mg BID for Cr Clearance > 30ml/min, reduce dose to 75mg BID for Cr Clearance 15-30ml/min  
- **Rivaroxaban** (Xarelto) 20mg one daily with evening meal, reduce dose to 15mg daily if Cr Clearance 15-50ml/min. Do not use if Cr Clearance <15 ml/min  
- **Edoxaban** (Savaysa) 60mg once daily with Cr Clearance >50 but ≤95, 30mg daily for Cr Clearance15-50ml/min. Do not use if Cr Clearance > 95.

**Limitations:**
Apixaban, Edoxaban, Dabigatran and Rivaroxaban are intended for use in non-valvular AF. The definition of this will continue to evolve. For the purposes of this guideline, these agents are not to be used in patients with prosthetic (tissue or mechanical) heart valves and patients with known moderate to severe mitral stenosis.

**ESRD:**
Apixaban has been approved for use in ESRD. Dose is 5 mg BID and reduce to 2.5 mg BID if age ≥80 or weight ≤60 kg in conjunction with ESRD. Consider use of Warfarin in ESRD recommend discussion with cardiology and/or nephrology for initiation of OAC in ESRD

For patients on dual anti platelet therapy with ASA and Clopidogrel or Prasugrel or Ticagrelor, recommend discussion with cardiology for determination of optimal anti platelet strategy to be combined with OAC.