Emergency Department Management of Atrial Fibrillation

PATHWAY EXCLUSION CRITERIA

- ST depressions ≥2 mm or ST elevation
- Heart failure exacerbation (e.g., pulmonary edema, elevated JVP, elevated BNP)
- New/worsening infection
- Troponin > 0.5 and/or increasing
- Hemodynamic instability
- New/severe anemia
- Renal failure
- Pulmonary embolism
- Hyperthyroidism

A. CARDIOVERSION CANDIDATE CRITERIA

AF duration <48 hours and patient not at high risk for clots (no prior TIA or stroke, thromboembolism, rheumatic heart disease, artificial valve, or systolic heart failure) **OR**

On stable anticoagulation therapy for >3 weeks:

- Direct oral anticoagulant/enoxaparin
- Warfarin with weekly INR >2 x 3 weeks

Consider TEE if unclear, w/therapeutic anticoagulation peri/post-procedure

B. NODAL BLOCKING THERAPY (Metoprolol is 1st line)

Metoprolol 5 mg over 2 mins, every 5 minutes for up to total 15 mg.

IV to PO Metoprolol

Can start 1st oral dose **within 20 mins** of initial IV to estimate dosing needs.

- Total 5 mg IV→ start 12.5 mg PO Q6H
- Total 10 mg IV→ start 2 5mg PO Q6H
- Total 15 mg IV→ start 37.5 mg PO Q6H

Up-titrate PO dose if HR>110 after 2 hours from 1st oral dose

- 12.5 mg PO Q6H→ 25 mg PO Q6H
- on 25 mg PO Q6H→ 37.5 mg PO Q6H
- on 37.5 mg PO Q6H→ 50 mg PO Q6H

Diltiazem 0.25 mg/kg (Max dose 25 mg) IV bolus x1. Start drip at 5 mg/hr. Consider addition 30mg PO IR diltiazem q6 hours or home dose to reduce need for drip. Drip can be titrated to 15 mg/hr, with re-bolus 0.25 mg/kg with each increase. Caution use of diltiazem if known EF < 40% or clinical signs hypoperfusion

IV to PO diltiazem: Oral dose = (IV drip rate [in mg/hr] x 3 + 3) x10

Steps to covert from diltiazem IV to PO

1. Calculate total daily oral dose
2. Round dose to a 30 mg increment, divide this daily dose by 4 to give Q6H dosing
3. Give first PO dose 1 hour prior to titrating drip
4. One hour after PO dose, titrate drip down by 2.5 mg/hr until drip is running at 0 mg/hour

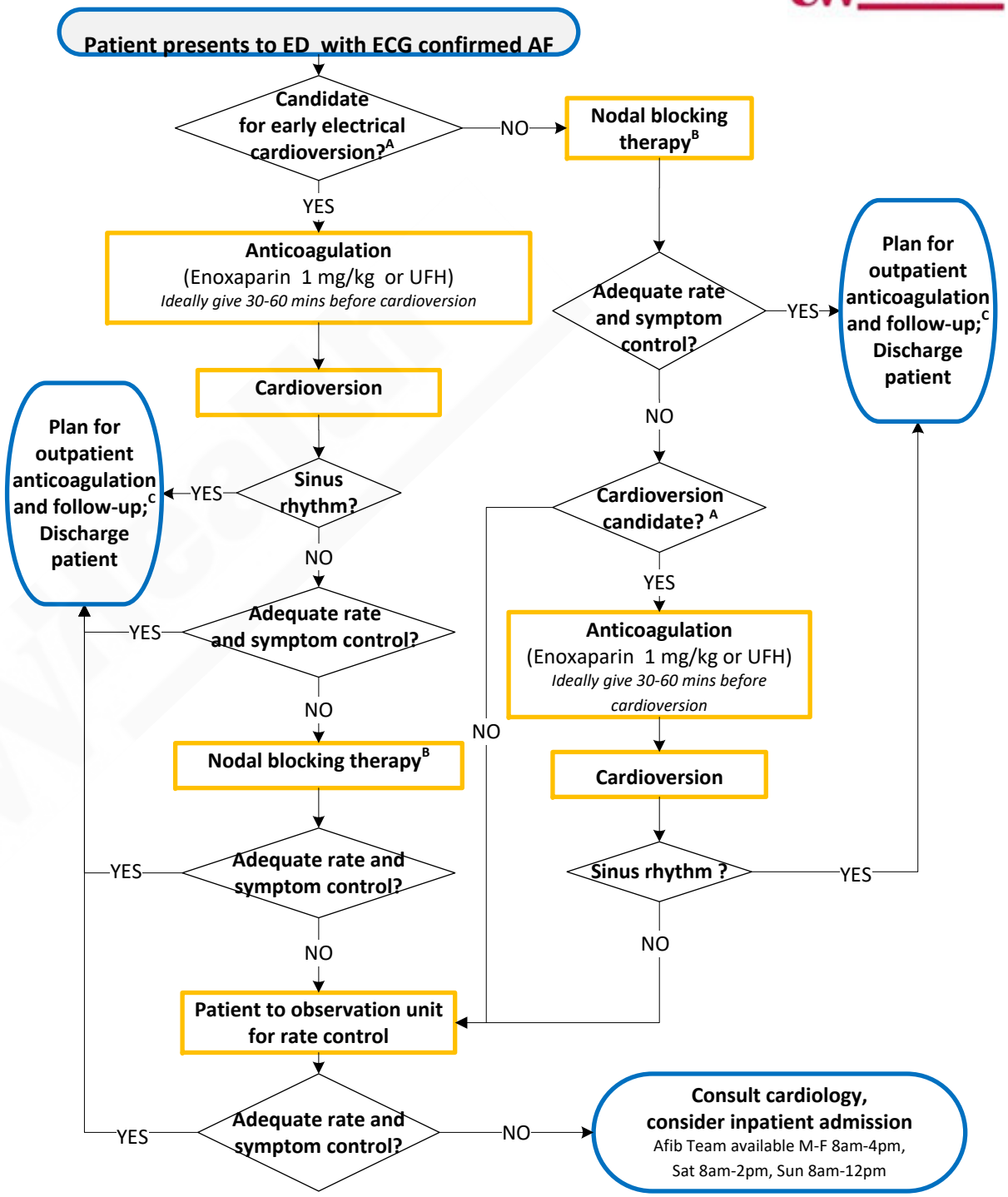
Std rates for diltiazem generally convert as follows:

- 3 mg/hour = 120 mg/day
- 5 mg/hr = 180 mg/day
- 7.5 mg/hr = 260 mg/day
- 10 mg/hr = 330 mg/day
- 15 mg/hr = 480 mg/day

Verapamil: 0.1 mg/kg bolus (Max dose 10 mg) IV bolus x1. Start drip at 5 mg/hr and titrate to goal heart rate (max 20mg/hr) with re-bolus of 0.1 mg/kg with each increase

C. DISCHARGE PLANNING

- Cardioverted pts should have anticoagulation for *at least* 4 weeks
- Indefinite anticoagulation for all patients with a $CHA_2DS_2VASc \geq 2$
- If warfarin is used for cardioverted patients, bridge w/enoxaparin until INR is therapeutic. Bridge not needed unless patient is successfully cardioverted.
- Refer to Selecting Anticoagulation for Atrial Fibrillation Patient algorithm



Full guideline: **Atrial Fibrillation: Management – Adult – Inpatient/Ambulatory/ED**