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OCT 15-18 — VIRTUAL

Management of Rapid Atrial Fibrillation: A Clean Sweep of Focused Care Points

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Board Certified Emergency Medicine

Board Certified Family Medicine

Disclosures

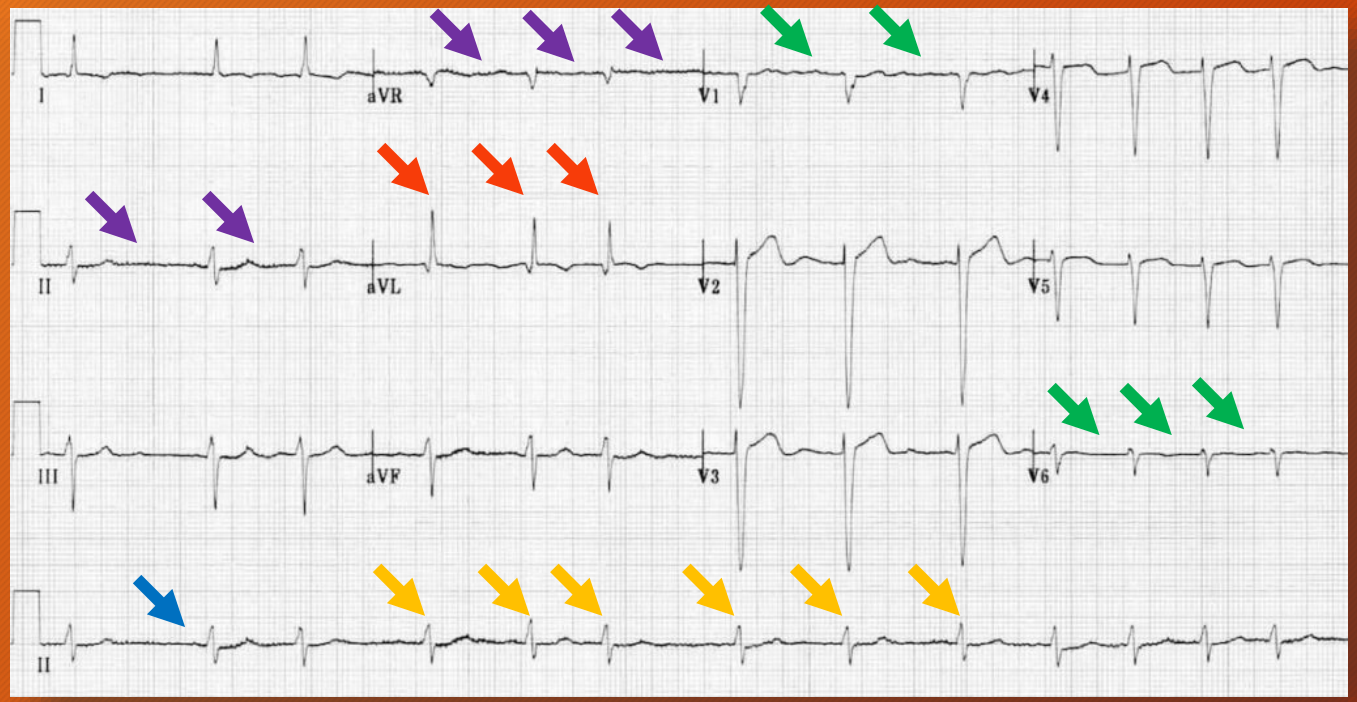
- None to report

Key Points of This Lecture

- Recognition of atrial fibrillation
- Medical decision crossroads in managing rapid atrial fibrillation
- Review treatment options for rapid atrial fibrillation

Recognition

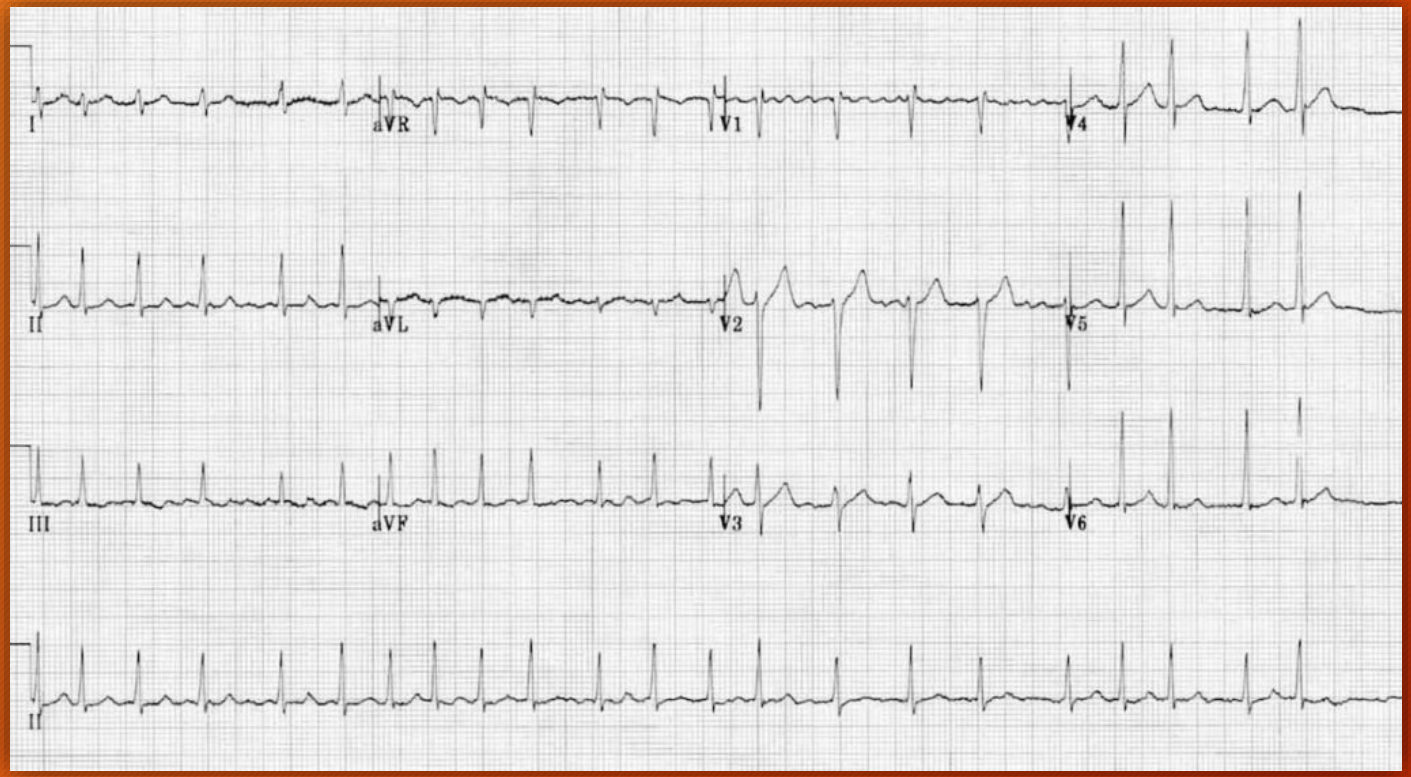
Disorganized atrial electrical activity and contraction



- **IRREGULARLY IRREGULAR RHYTHM**
- **NO DISCERNIBLE P WAVES**
- Variable ventricular rate
- **QRS complexes usually < 120ms (3 little boxes)** unless pre-existing bundle branch block, accessory pathway, or rate related aberrant conduction.
- **FIBRILLATORY WAVES** may be present and can be either fine (amplitude < 0.5mm) or coarse (amplitude >0.5mm)
- **Fibrillatory waves may mimic P waves leading to misdiagnosis**

Recognition

Rapid disorganized atrial electrical activity and contraction

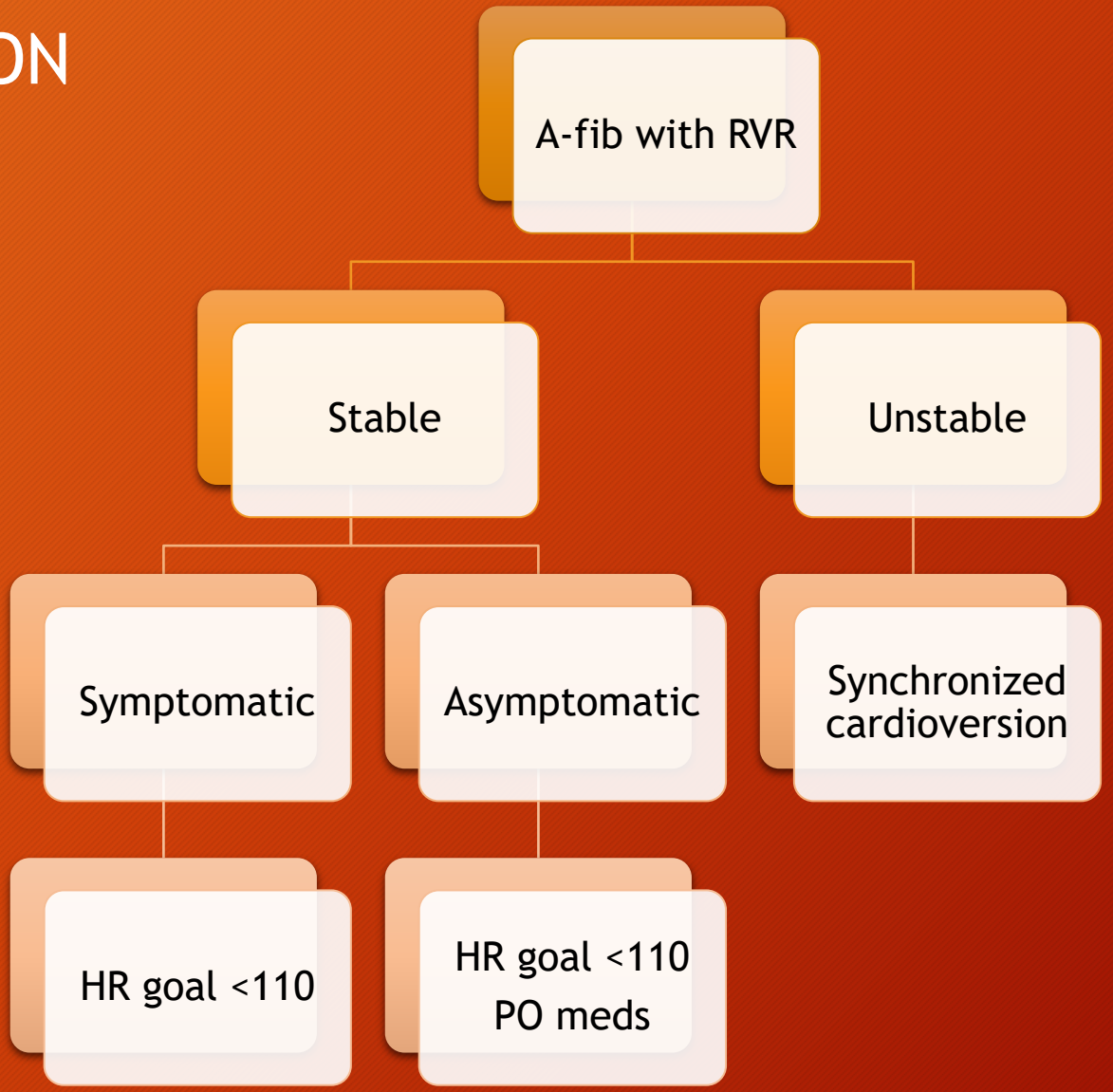


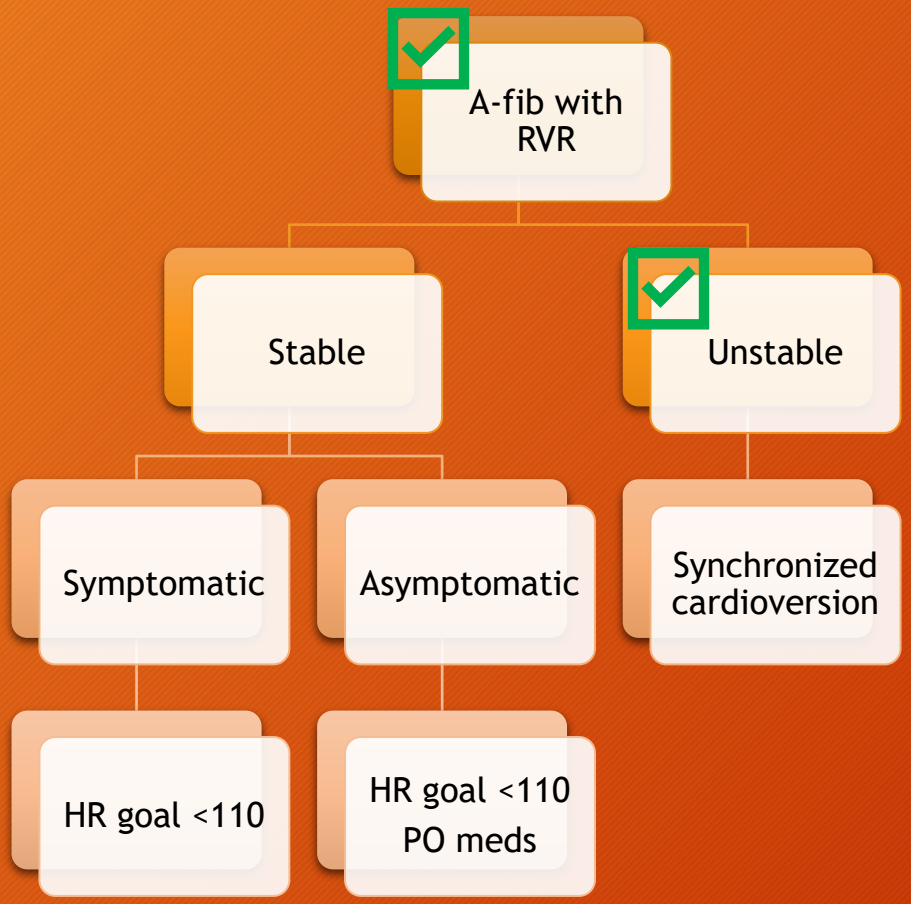
I MUST BREAK YOU

Treatment Toolbag

- Cardioversion
- Beta blockers
  - Metoprolol
  - Esmolol
- Calcium channel blockers
- Digoxin
- Amiodarone

RAPID ATRIAL FIBRILLATION TREATMENT ALGORITHM



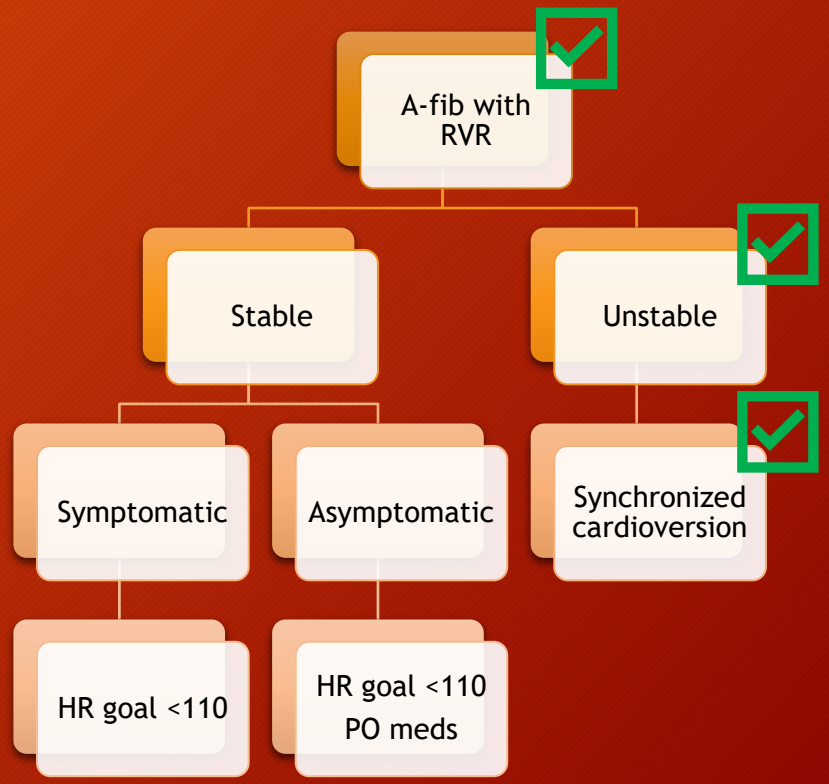


Unstable

- Ischemic chest pain
- SBP <90
- Acute pulmonary edema
- Altered mental status

Unstable - Synchronized cardioversion

Dosing	Do	Don't
• A-fib start at 200 J • A-flutter start at 50 J	• Sedate	• Not sedate • Defibrillate



Stable

- No ischemic chest pain
- SBP >90
- No acute pulmonary edema
- No altered mental status

Beta blockers

- Metoprolol
- Esmolol

Calcium channel blockers

Digoxin

Amiodarone

Calcium channel blockers

Dosing

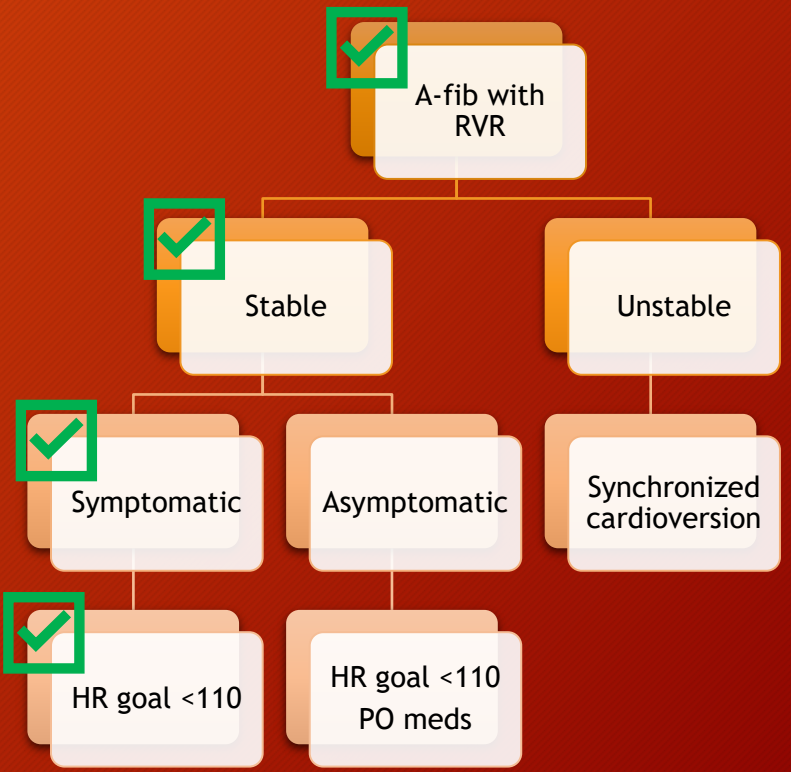
- Diltiazem
  - Bolus .25 mg/kg over 2 min
  - Repeat bolus .35 mg/kg after 15 min
  - Infusion 5-15 mg/hr or
  - PO 60 mg QID

Do

- Bronchospasm
  - Asthma
  - COPD

Don't

- Decompensated heart failure
- Preexcitation
- Hypotension (SBP <90)



Beta blockers

Dosing

- Metoprolol
  - Bolus 2.5 - 5 mg IV over 2 min q5min up to 3 doses
  - If responds, load PO 25-50mg
    - (tartrate BID)
    - ~~(succinate QD)~~

Do

- Exercise
- Myocardial infarction
- Thyrotoxicosis

Don't

- Decompensated heart failure
- COPD
- Asthma
- Hypotension (SBP <90)

Dosing

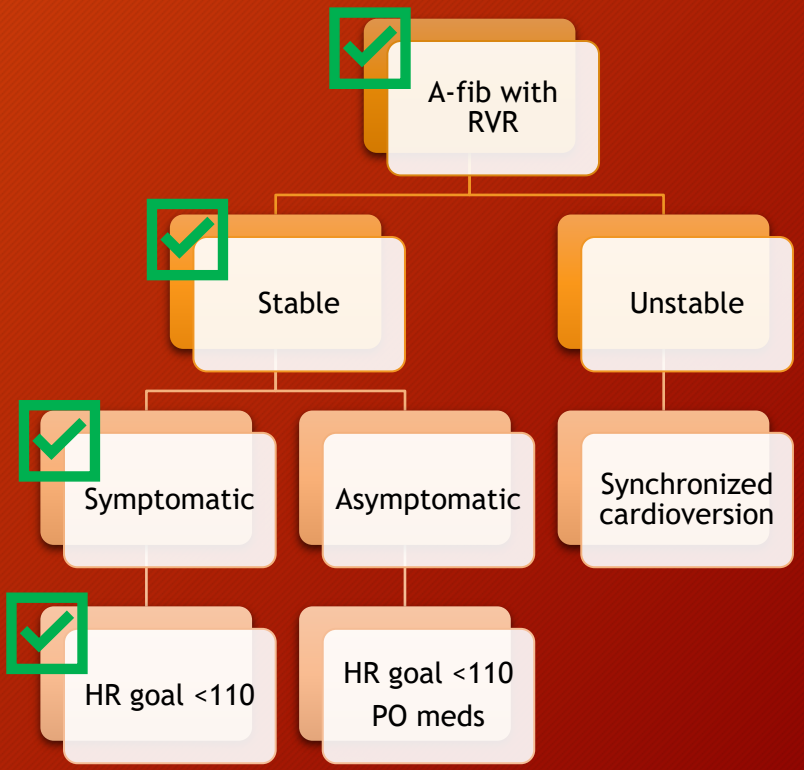
- Esmolol
  - Bolus .5 mg/kg, then 50 mcg/kg/min
  - Rebolus in increments

Do

- Higher safety profile since duration is only 10 minutes

Don't

- Not reference dosing



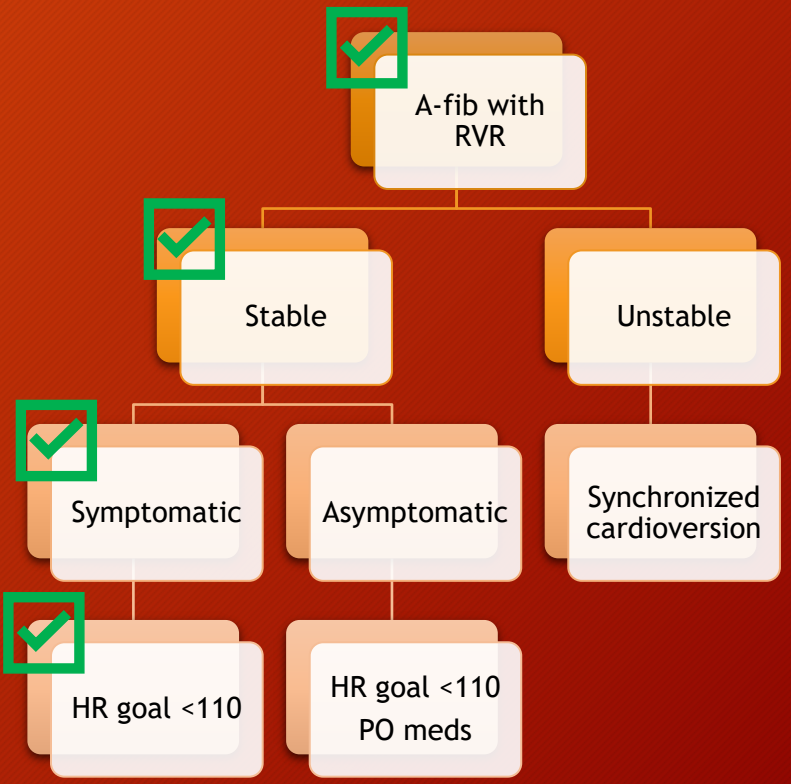
Digoxin

Dosing

- Load 0.25mg IV q2hr
  - up to 1.5mg
  - then 0.125-0.25mg PO or IV QD

Do/Don't

- Consider initially: therapy for patients with LV dysfunction who:
  - Decompensated CHF
  - Improve CHF symptoms
  - Hypotension (SBP<90 or relatively low)
- Consider as 2nd line agent
- 6-8 hour onset



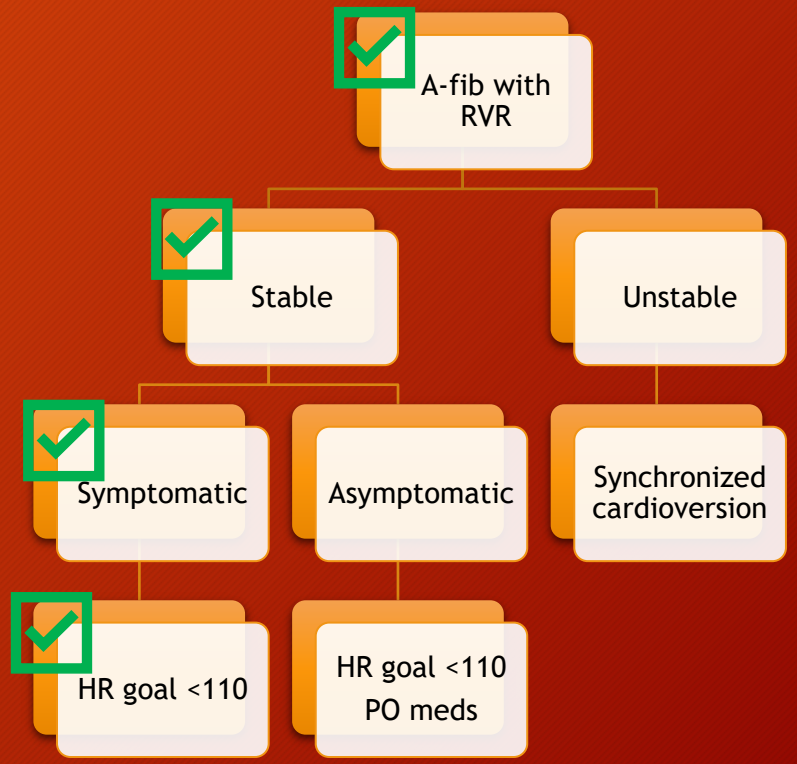
Amiodarone

Dosing

- Rate control
  - 300mg IV x1, then
  - 10-50 mg/hr IV x 24 hours
- Rhythm control
- Cardioversion

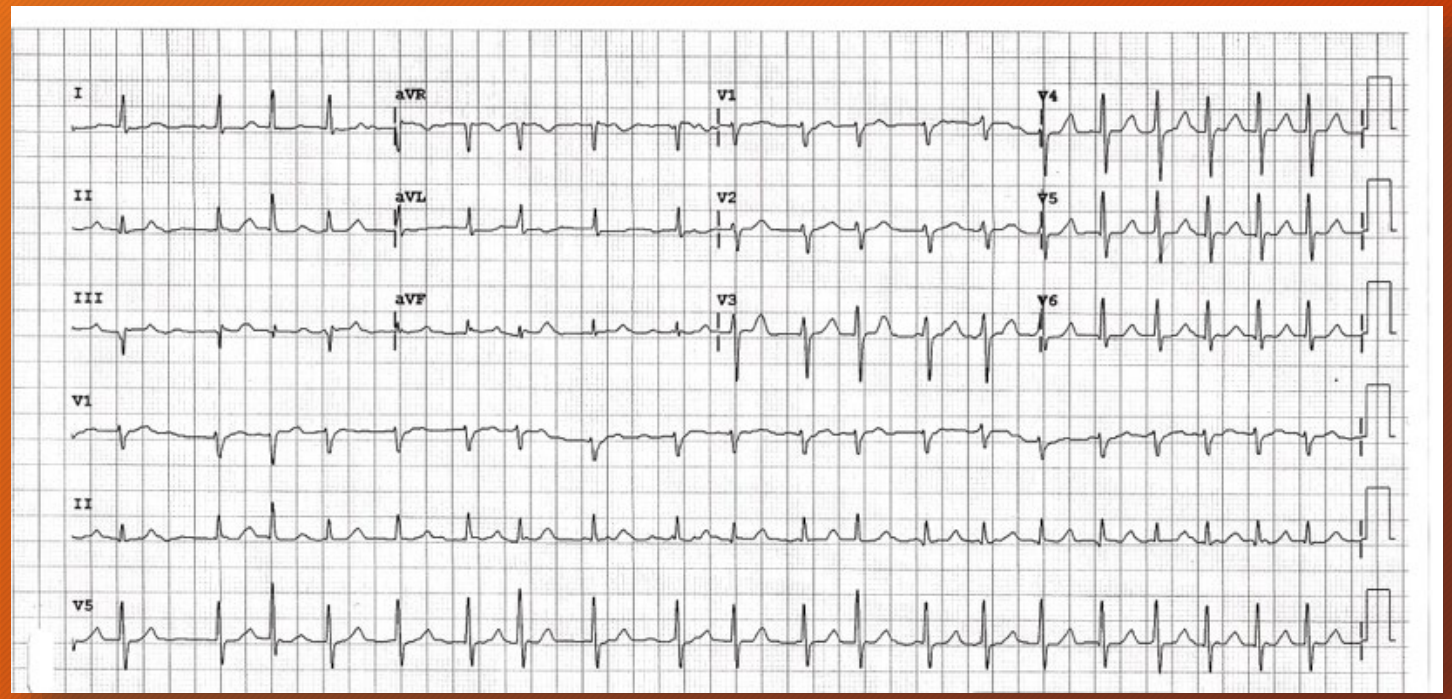
Do/Don't

- Consider for:
  - Decompensated CHF
  - Preexcitation
- 2nd-line agent for chronic rate control



Clinical Scenarios

Case Scenario 1



Chief complaint: 52 yo male with palpitations x 3 days

PMHx: HTN

Meds: Multivitamin

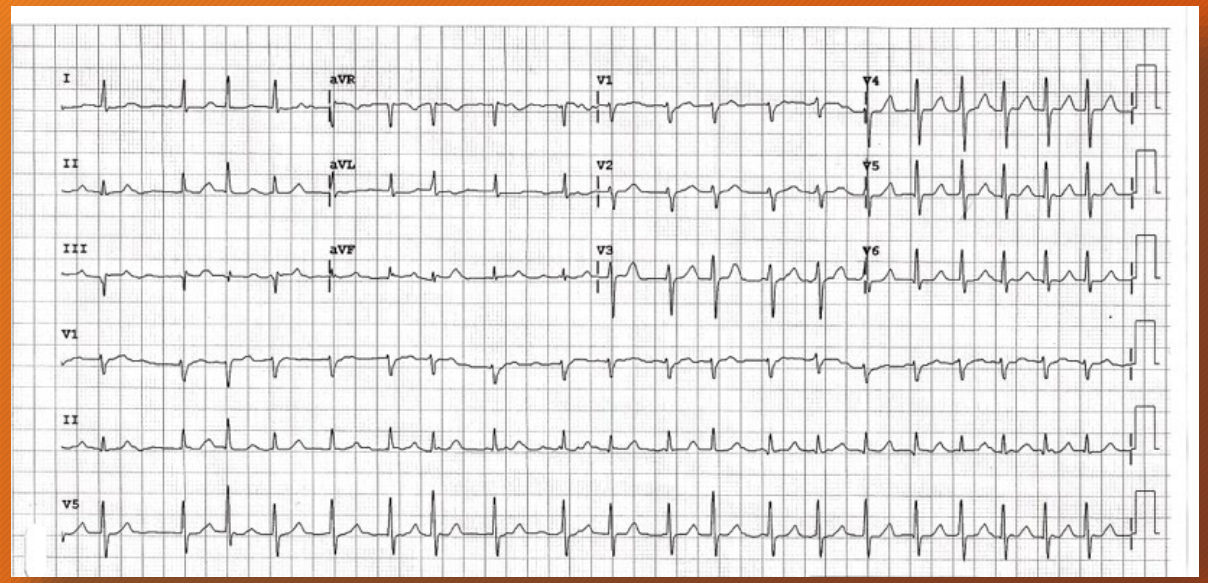
Vitals: Temp: 98.6 F

Blood pressure: 148/90 mmHg

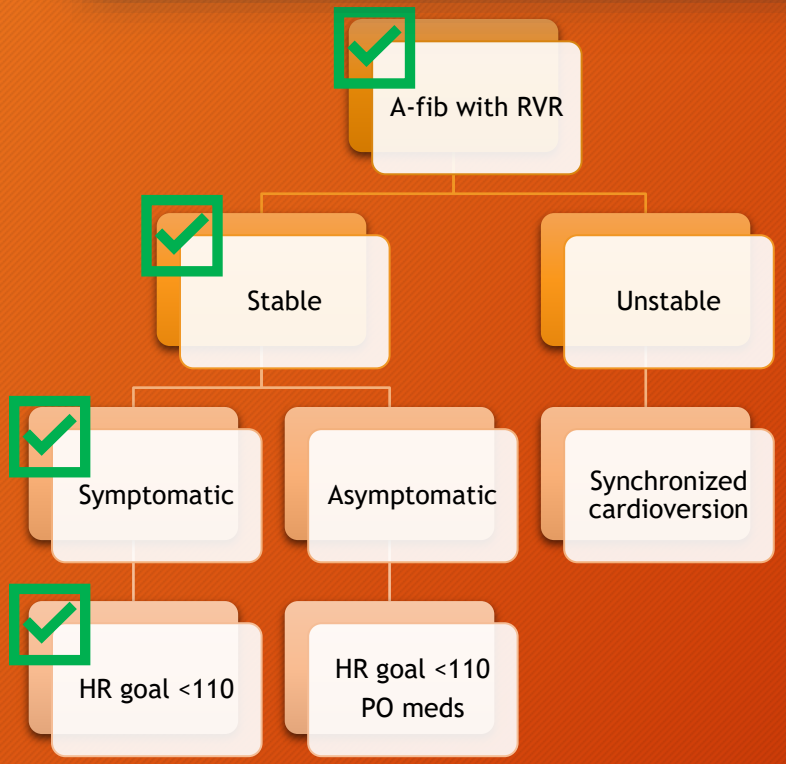
HR: 120-140 bpm

RR: 12 per min

Pulse ox: 100% RA



Case Scenario 1



1. A-fib with RVR?
2. Stable or unstable?
3. Symptoms?
4. At HR goal?
5. Treatment options?

Chief complaint: palpitations x 3 days

PMHx: HTN

Meds: lisinopril

Vitals: Temp: 98.6 F

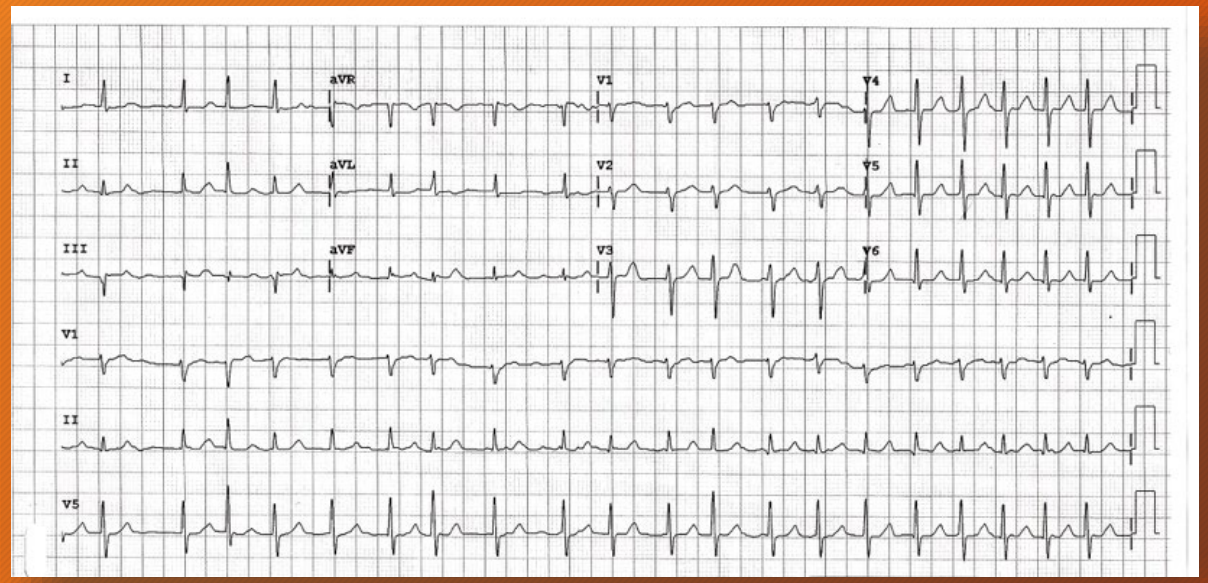
Blood pressure: 148/90 mmHg

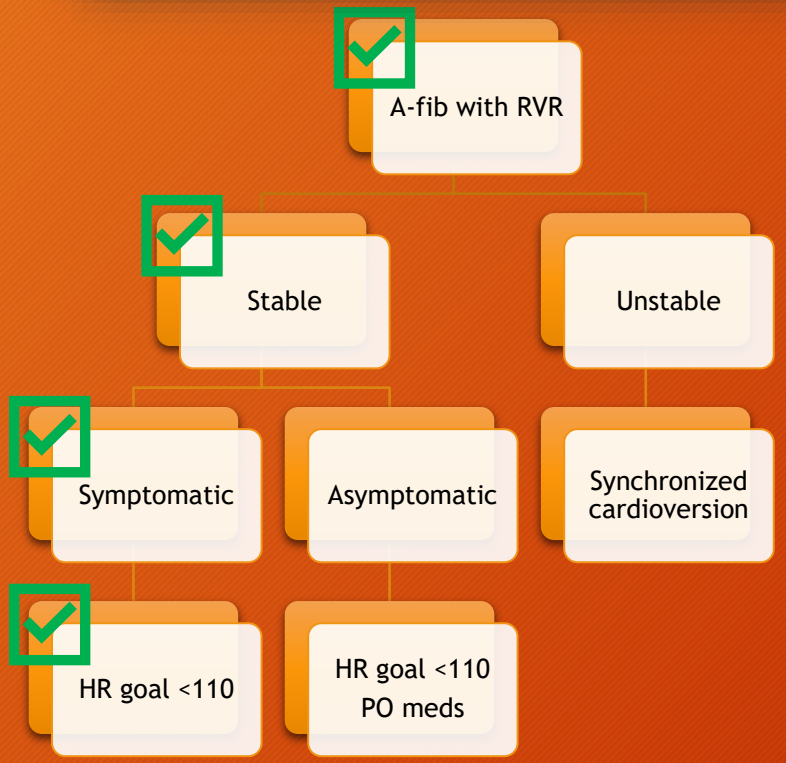
HR: 120-140 bpm

RR: 12 per min

Pulse ox: 100% RA

Case Scenario 1





Treatment?

Cardioversion?
IV Rate Control?
PO Rate Control?
Do Nothing?

Chief complaint: palpitations x 3 days

PMHx: HTN

Meds: lisinopril

Vitals: Temp: 98.6 F

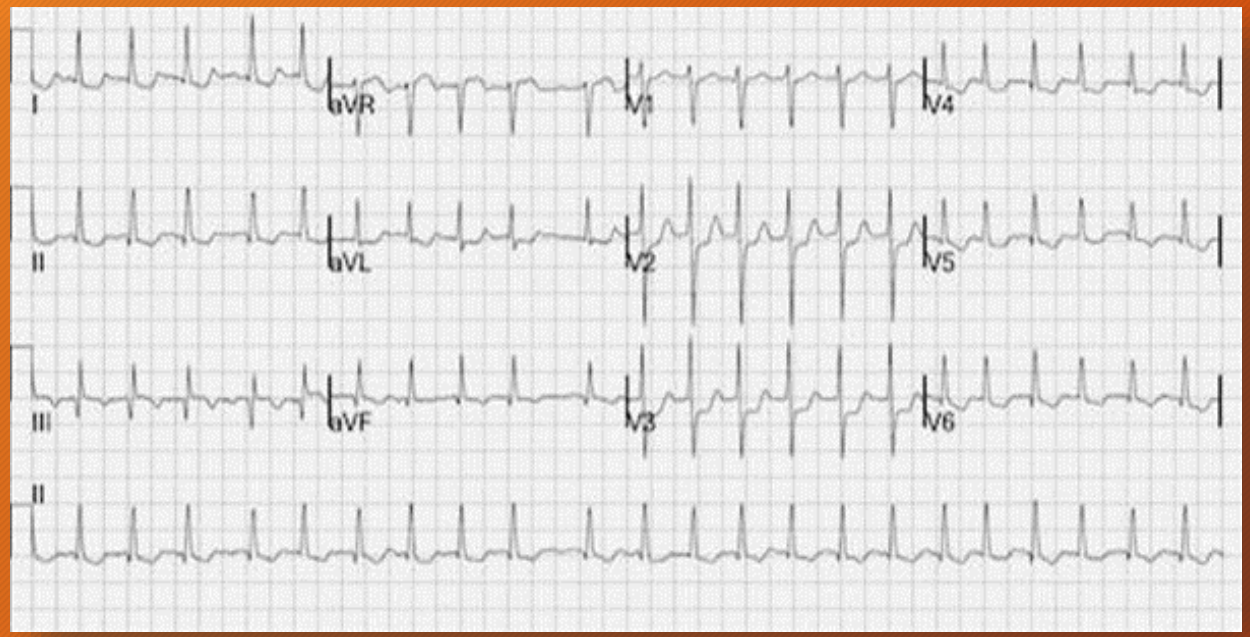
Blood pressure: 148/90 mmHg

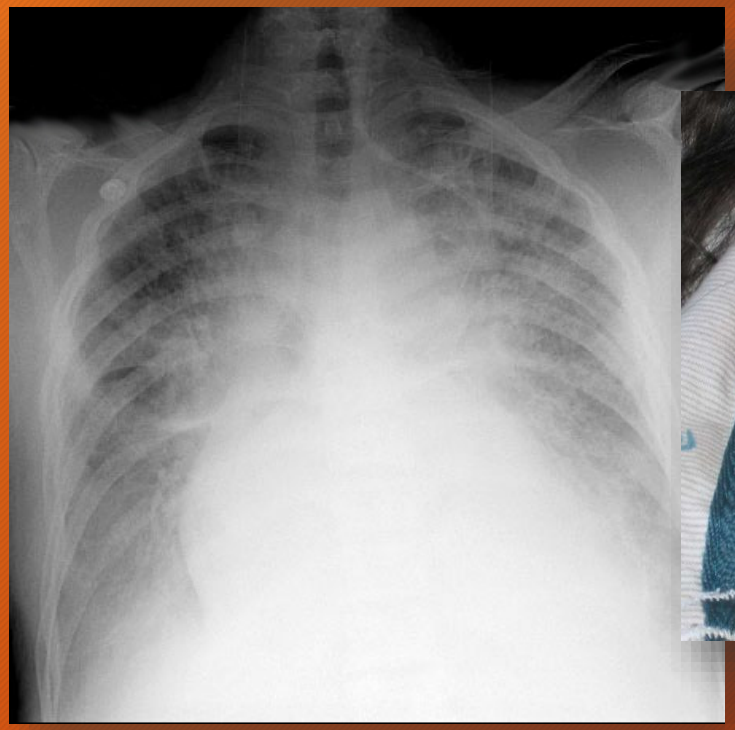
HR: 120-140 bpm

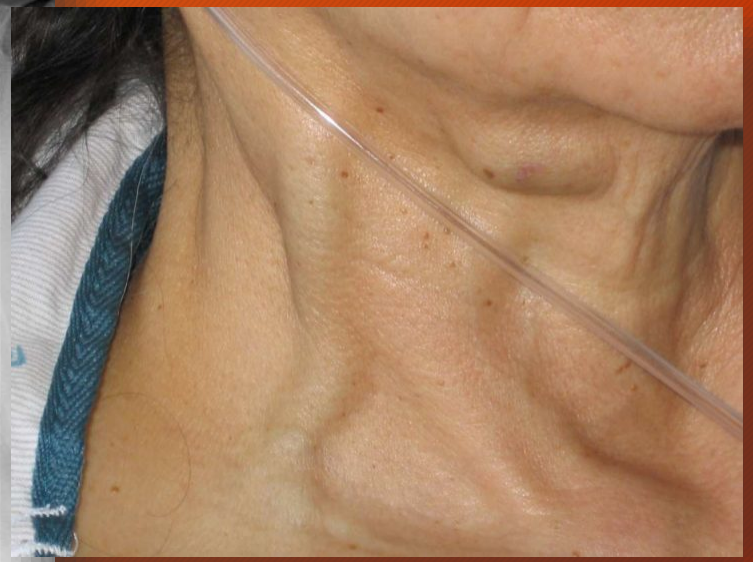
RR: 12 per min

Pulse ox: 100% RA

NEXT CASE







Case Scenario 2

Chief complaint: 64 F presents with exercise intolerance, dyspnea on exertion and peripheral edema for 6 days

PMHx: CHF, HTN, MI

Meds: lisinopril

Vitals: Temp: 98.6 F

Blood pressure: 148/90 mmHg

HR: 160-180 bpm

RR: 12 per min

Pulse ox: 100% RA

Case Scenario 2

A junior resident is on the case.

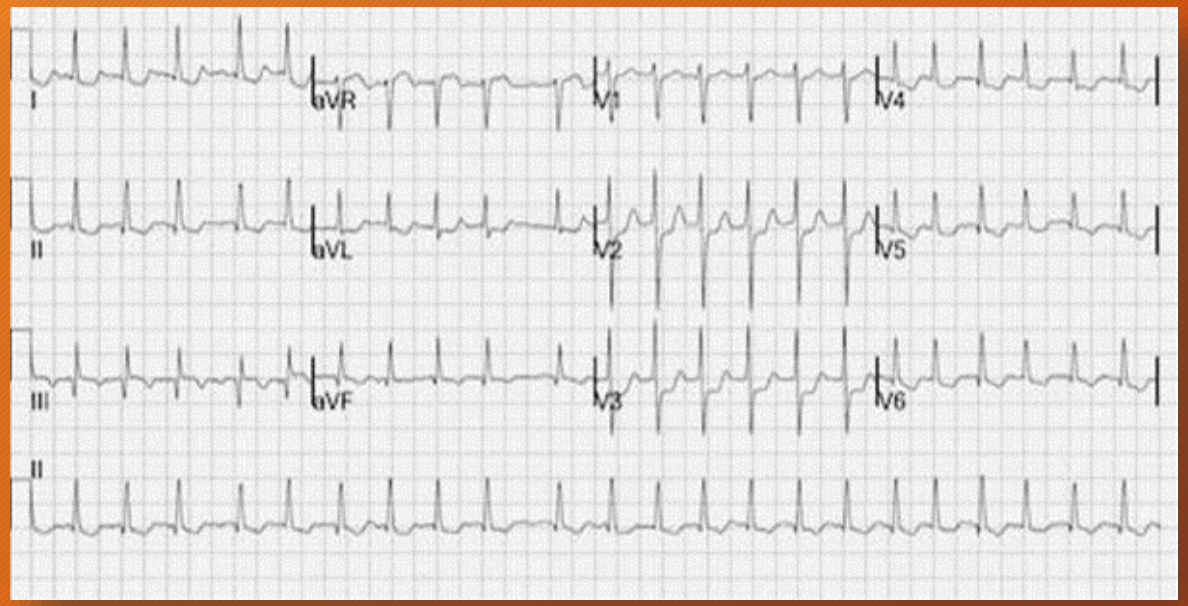
Furosemide 60mg IV was given. Patient urinated 1000cc urine.

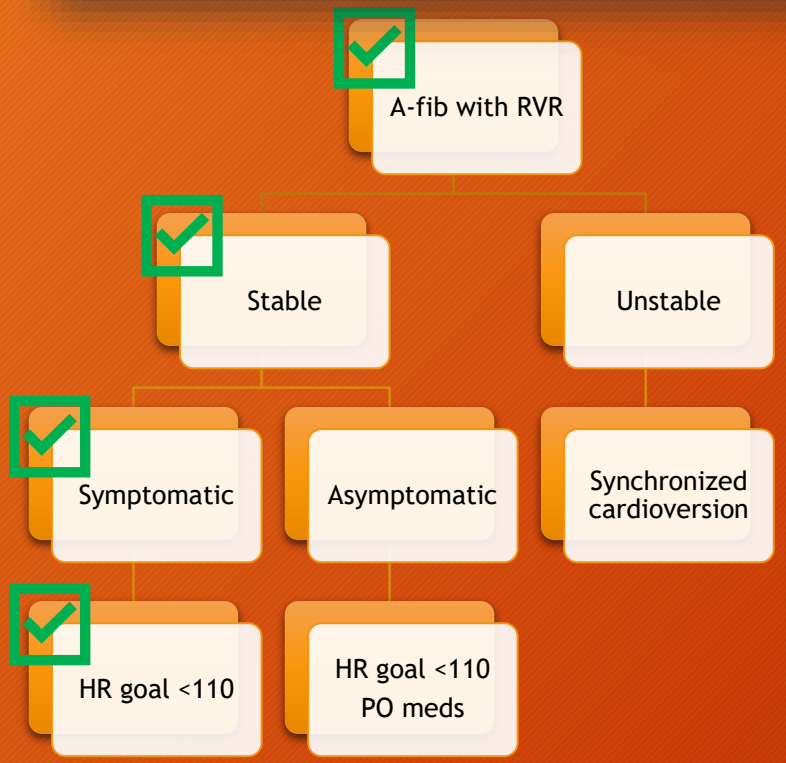
A bolus of diltiazem 25mg was given.

The patient’s blood pressure dropped to 90/54.

The resident is now asking for you to save them from further evil.

Case Scenario 2





1. A-fib with RVR
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Chief complaint: 64 F presents with exercise intolerance, dyspnea on exertion and peripheral edema for 6 days

PMHx: CHF, HTN, MI

Meds: lisinopril

Vitals: Temp: 98.6 F

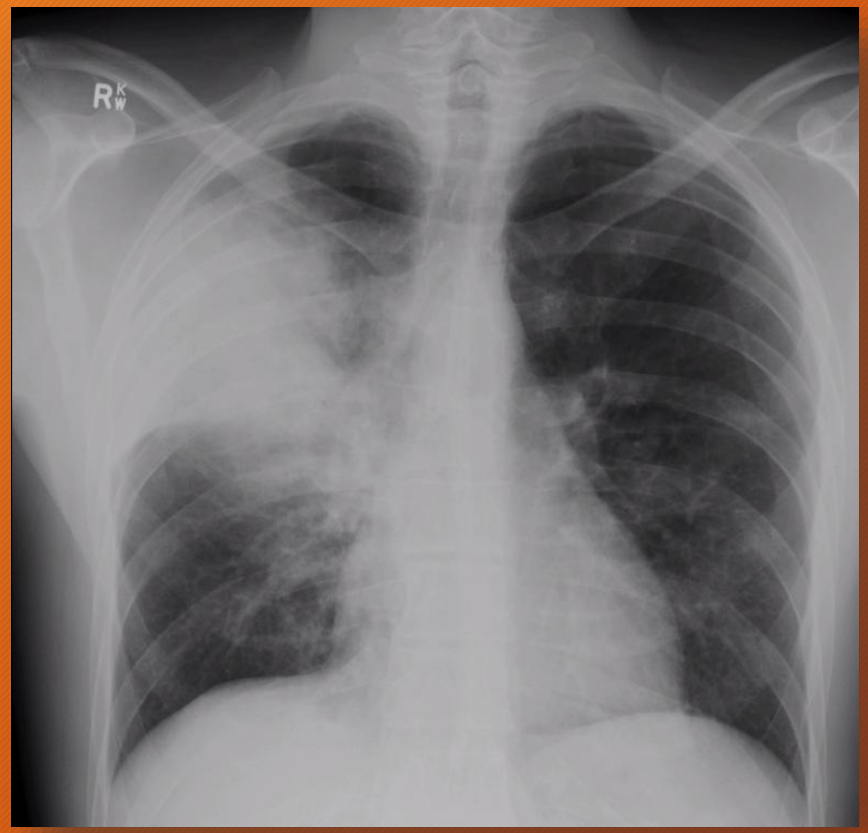
Blood pressure: 148/90 mmHg

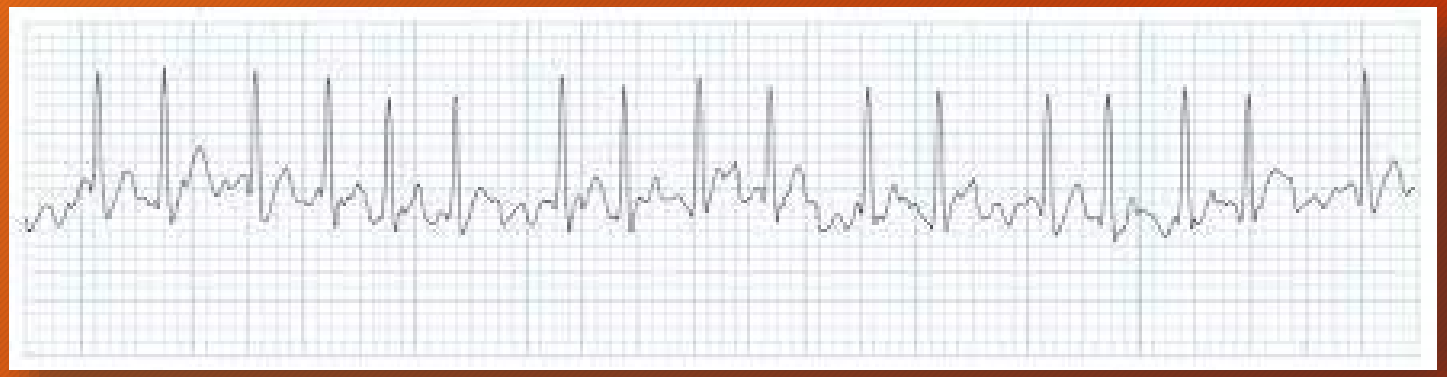
HR: 160-180 bpm

RR: 12 per min

Pulse ox: 100% RA

NEXT CASE





Case Scenario 3

Chief complaint: 54 M with productive cough, fever, weakness for 5 days

PMHx: COPD, Afib, HTN

Meds: lisinopril, apixaban

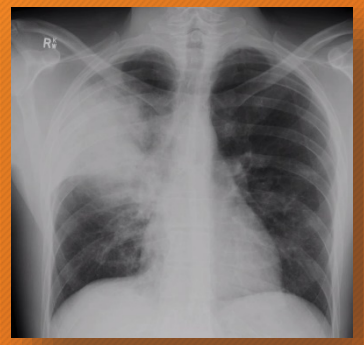
Vitals: Temp: 101.4 F (oral)

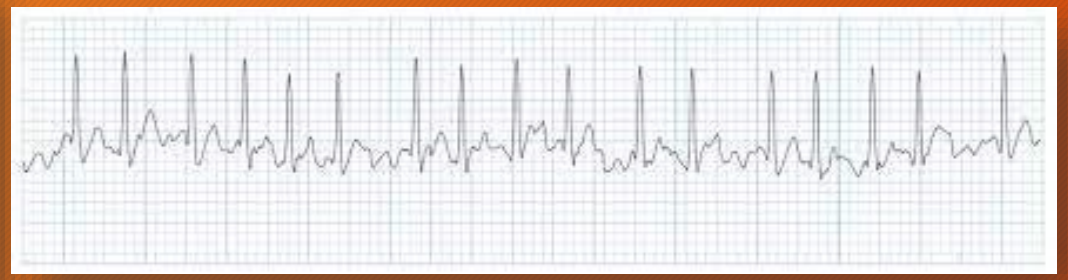
Blood pressure: 94/48 mmHg (MAP 63)

HR: 120-140 bpm

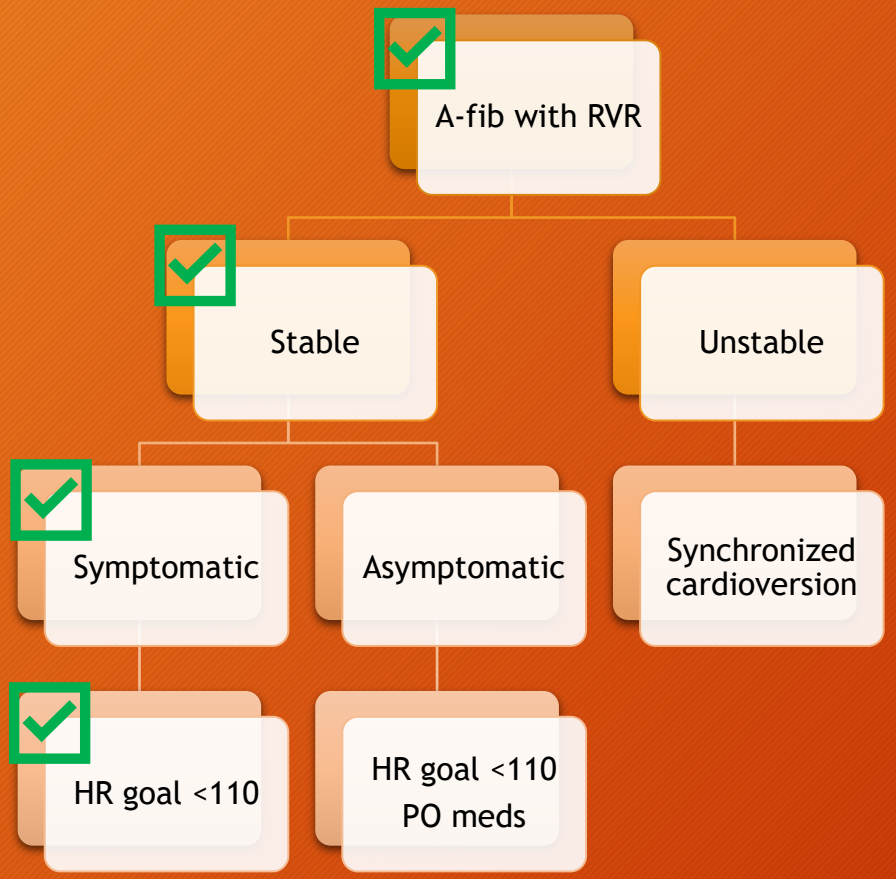
RR: 22 per min

Pulse ox: 92% RA





Case Scenario 3



1. A-fib with RVR?
2. Stable or unstable?
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4. At HR goal?
5. Treatment options?

Chief complaint: 54 M with productive cough, fever, weakness for 5 days

PMHx: COPD, Afib, HTN

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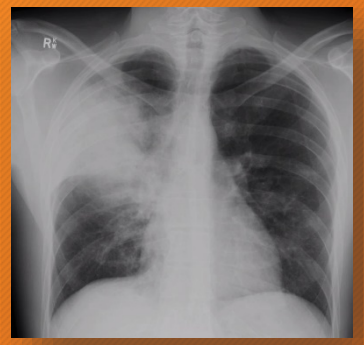
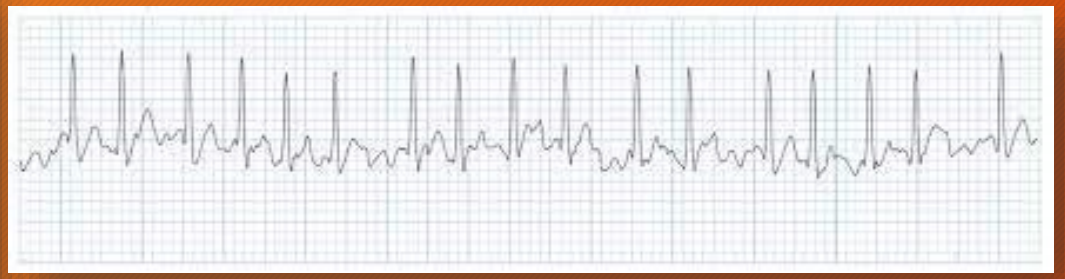
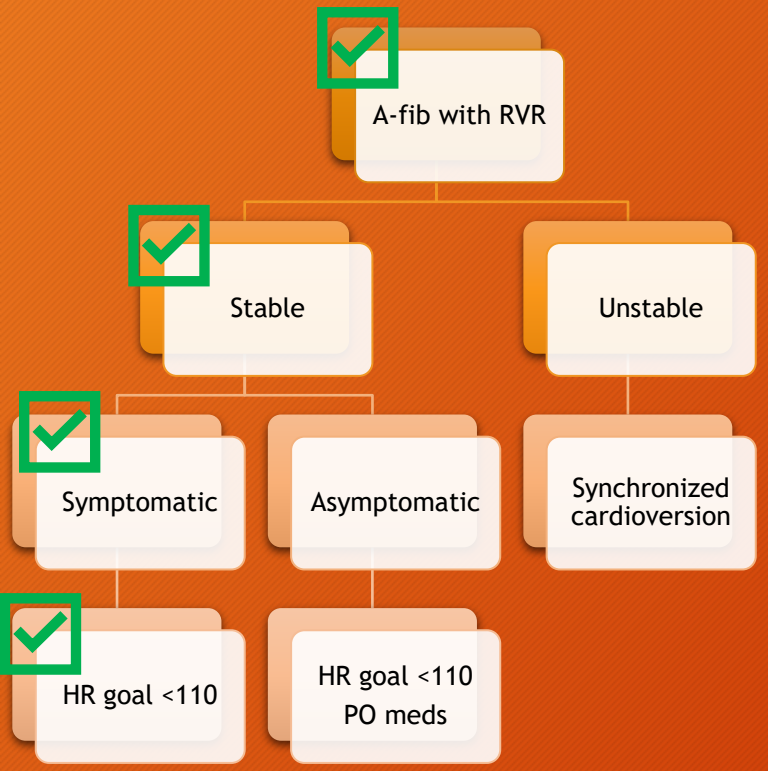




Case Scenario 3



Treatment Options

Cardioversion
IV Rate Control
PO Rate Control
Do Nothing

Treat the Sepsis

Chief complaint: 54 M with productive cough, fever, weakness for 5 days

PMHx: COPD, Afib, HTN

Meds: lisinopril, apixaban

Vitals: Temp: 101.4 F

Blood pressure: 94/48 mmHg (MAP 63)

HR: 120-140 bpm

RR: 22 per min

Pulse ox: 92% RA

References

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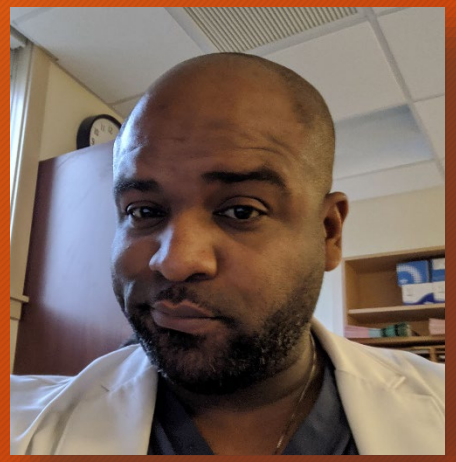
Thank You



The good ol’ days

Patient presents with ear pain.

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