



**5. What are your first priorities in managing this patient?**

Controlling rate, treating failure, investigating the cause

**6. What are possible agents for rate control in this patient, and what are the pros and cons for each?**

- $\beta$  blockers      advantages: low cost, can be given IV or po, effective (70%), helpful in chronic heart failure  
disadvantage: can exacerbate acute heart failure
- Non-dihydropyridine calcium channel blocker (e.g. diltiazem)  
advantages: can be given IV or po, effective (54%), can use in presence of bronchospasm (unlike  $\beta$  blockers)  
disadvantages: if given IV, also need drip (short acting) which necessitates ICU; can exacerbate CHF
- Digoxin – generally not first line, however, can be useful in afib with CHF  
advantages: low cost, can use with CHF  
disadvantages: delay of 60 min. before onset, peak effect in 6 hours, not as effective
- Amiodarone – second line  
advantages: preferred if accessory pathway (WPW)  
disadvantages: longer term toxicity (pulmonary fibrosis, hepatic injury, etc.)

You need to write admitting orders for this patient.

**7. What type of fluid and rate would you write?**

None, IV access only

**8. What nursing orders would you write?**

Strict Is &Os, daily weights, consider Foley, call for HR>?, BP>?

**9. What medication orders would you write?**

- a. Rate control: metoprolol 2.5 – 5 mg IV bolus over 2 min., up to 3 doses, followed by oral metoprolol  
or diltiazem 0.25 mg/kg IV over 2 min., then 5-15 mg/hr  
or (since CHF) digoxin 0.25 mg IV
- b. CHF:  
Furosemide  
ACE (?start now or later)  
Enoxaparin or undifferentiated heparin  
Coumadin

**10. What additional tests would you order to investigate the cause of the atrial fibrillation?**

TSH (low TSH in 5%); TTE – identifies valvular dx, thrombus (low sensitivity), EF; chest x-ray; ?BNP; ?stress imaging

**11. What floor do you admit to?**

Telemetry or ICU (latter required if IV diltiazem)

**12. After the first dose of metoprolol (5 mg IV), the HR, BP and symptoms are unchanged. What would you do next for rate control? Would you cardiovert this patient? Why or why not?**

Repeat loproressor

Would not cardiovert

Has likely had afib >48 hrs, so increased risk of thrombus. For non-emergency cardioversion for afib need either:

a. afib <48 hrs.

b. TEE showing no clot in left atrium or

c. anticoagulation for 3 weeks prior to and 4 weeks after cardioversion

urgent cardioversion for

a. ongoing myocardial ischemia

b. symptomatic hypotension

c. CHF resistant to treatment

After the 2<sup>nd</sup> dose of IV metoprolol, HR drops to 96.

**13. What orders do you write for longer acting rate control?**

e.g. metoprolol 50 mg po twice a day

long term goal is HR 60-80 at rest

**14. Is longer term rhythm control advisable?**

Options: chemical (amiodarone), electrical, ablation

No substantial difference in quality of life or CV end points (or death) in rhythm vs rate control of afib

Some cardiologists opt for rhythm control if they think it is reasonably likely SR will be maintained (e.g. afib of shorter duration; etiology: thyroid or surgery, no MS, etc.).

Other factors impacting decision include: age, severity of chronic symptoms, etc.

Test results show: TSH normal

BNP 2,040

Echo: EF 30%, global hypokinesis, no valvular disease

**15. What other meds would you add?**

CHF with low EF:

ACE

β Blocker (already started)

**16. Which patients with afib merit antithrombotic therapy?**

All except those with “lone afib” or significant contraindications

Aim for INR 2-3

Aspirin for those with “lone afib” or significant contraindications to comadin

On ACE inhibitors, β blocker and furosemide, the patient’s symptoms improve markedly.

Stress test shows no stress or reperfusion abnormalities.

**17. What is the most likely cause of his CHF?**

?alcohol

?afib

?combination

?other

The patient continues to improve

**18. What do your discharge orders include:**

Meds: e.g. ACE;  $\beta$  blocker or nonhydropyrodine (or dig) for rate control: comadin; lasix  
(if still evidence of excessive fluid)

Follow-up: INRs

Primary provider

Other: no alcohol

Daily weights

2 gm sodium diet

Cardiology consult if desired to discuss rate vs rhythm control

Teach patient to self monitor pulse