Atrial Fibrillation: Do We Have A Cure?

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February 21, 2015
Disclaimer

I have no relationships to disclose
Do we have a cure for Atrial Fibrillation?

The short answer is…

unfortunately no...

But there are treatment options that can help your patients and this is what I hope to present to you
Atrial Fibrillation: Concepts

- Heterogeneous, complex dysrhythmia that changes the atrial substrate hence clinical presentation, over time.
- “Atrial fibrillation begets atrial fibrillation”
- With symptomatic atrial fibrillation, treating early in its course can slow or reverse atrial structural remodeling and therefore forestall progression towards permanent atrial fibrillation
- Beyond basics*, treatment should be tailored to the patient

*Heart rate control and anticoagulation where indicated
Concepts

• CHA₂DS₂-VASc score. Memorize this!
  
  – Congestive Heart Failure = 1 point
  – Hypertension = 1 point
  – Age \( \geq 75 \) = 2 points
  – Diabetes = 1 point
  – Stroke = 2 points
  – Vascular disease = 1 point
  – Age 64-74 = 1 point
  – Sex category (female) = 1 point

• Anticoagulate for any score \( \geq 2 \)
Concepts

- **Cardioversion** is a temporizing measure that is used for alleviating symptoms but can aid in prognosticating AF.
- **Antiarrhythmic drug therapy** is successful in maintaining SR 40-60% over one year
  - Need to risk stratify to tailor drugs to patient
  - Almost always a risk of ventricular proarrhythmia
  - Usually leads to a procedure after failure/intolerance of a drug
  - “Pill-in-the-pocket” Flecainide/beta blocker or propafenone prn episodes
- **Ablation** is for *symptomatic* patients who fail or are intolerant of, antiarrhythmics
Concepts

• "Ablate and Pace" is a means of controlling the ventricular rate mechanically by ablating the AV node
  – Left with junctional escape rate, 30-40 bpm
  – Anticoagulation is still necessary; pt. still in Afib
  – Significant symptomatic relief of tachycardia
  – Usually a procedure of last resort. Literally “burning a bridge”; pacemaker dependence
Of course there are always exceptions…
Radiofrequency Catheter Pulmonary Vein Isolation
AV Node Ablation
Junctional Rhythm After AV Node Ablation

JUNCTIONAL ESCAPE AT 35 BPM
Case #1

- 49 year old woman, hx of treated hypothyroidism, presents to ER with new onset rapid, irregular heart rate. Rhythm strips and EKG’s show atrial fibrillation with rapid ventricular response
- Converts spontaneously in ER
- Admitted. Workup including lab work, stress testing, and echocardiography are normal
- Placed on warfarin and amiodarone and told to follow with a local cardiologist
Case #1

• What is your next step?
  – A) Continue current treatment; she is tolerating medications and is still in SR
  – B) Stop amiodarone and consider another antiarrhythmic; continue warfarin
  – C) Her CHA$_2$DS$_2$-VASc score is low; consider ASA and “pill-in-the-pocket” as this was her first episode of atrial fibrillation
  – D) Atrial fibrillation ablation
Case #1

What is your next step?

- A) Continue current treatment; she is tolerating medications and is still in SR
- B) Stop amiodarone and consider another antiarrhythmic; continue warfarin
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- D) Atrial fibrillation ablation
Case #1 Follow-up

- Seen every 6 months in follow-up

- Thus far, no further episodes of AF and hasn’t needed to use “pill-in-the-pocket”
Case #2

- 56 year old male, known AF for 5 years, paroxysmal palpitations of late, overall frequency once every two weeks. Rare previously.
- PMH: HTN, hypercholesterolemia
- ROS: Sudden waking spells at night with rapid heart rate/palpitations. Has been told he snores.
- Vitals: BP 145/85, HR 70’s, R 18
- PE: Overweight, BMI ~35 but normal otherwise
Case #2

- Echo: Borderline increased LV thickness, nl. LVEF, no significant valvular abnormalities
- Stress echo normal
- Event monitor with paroxysms of Afib/RVR
Case #2

• Treatment options?
  – A) Beta blockers and anticoagulation
  – B) Antiarrhythmics and anticoagulation
  – C) Sleep study and ASA or anticoagulation
  – D) Beta blockers and ASA
  – E) “Pill-in-the-pocket” Rx and ASA
Case #2

• Treatment options?
  – A) Beta blockers and anticoagulation
  – B) Antiarrhythmics and anticoagulation
  – C) Sleep study and ASA or anticoagulation
  – D) Beta blockers and ASA
  – E) “Pill-in-the-pocket” Rx and ASA
Indeed, had sleep apnea and underwent CPAP mask titration

Compliance with CPAP an issue

Continued to have paroxysmal AF although with improved frequency of symptoms

Placed on antiarrhythmics and anticoagulation and thus far has had adequate suppression of atrial fibr.

– With breakthrough of atrial fibrillation, consideration for ablation
Case #3

• 58 year old police sergeant, mild Htn but otherwise healthy, incidentally found to have an irregular pulse on a routine work-related physical exam. An EKG demonstrates atrial fibrillation with a controlled ventricular response. CHA$_2$DS$_2$VASc score 1. Placed on a NOAC and told he cannot work while on an anticoagulant but referred to his primary care physician.

• 10 years prior, pt. recalls having been told of AF while part of a demonstration for cardiac lead placement. A follow-up found him in SR, and pt. did not seek further attention.
Case #3

• Seen by general cardiologist and referred for consideration of other treatment options
• Event monitor with likely permanent atrial fibrillation with no symptoms reported
• Normal perfusion on nuclear stress test
• Echo with moderate left atrial enlargement but normal LV function
• Equivocal findings for sleep apnea; pt. elected to avoid CPAP
Case #3

- Your next step would be to...
  - A) recommend an ablation procedure and to rid him of the anticoagulant
  - B) place him on an antiarrhythmic drug and cardiovert
  - C) leave him on his current therapy and have him consider other work options
  - D) place a pacemaker
Case #3 Follow-up

- Explained the ablation procedure; technically not indicated because of lack of symptoms
  - Risks of cardiac perforation, CVA, death; lower success rates with his duration of AF

- Explained risks of antiarrhythmic drugs and temporary nature of cardioversion

- Pacemaker not indicated

- Turns out he liked not working and took early retirement. He was left with a rate control and anticoagulation strategy.
Case #4

- 69 year old woman, Htn., OSA, hypothyroidism with paroxysmal palpitations over the last decade. Increase in frequency over the last year and had a hospitalization with sustained palpitations two months ago. Found to be in atrial fibrillation. Rate slowing measures resulted in conversion to SR after 17 hours.
- Symptomatic with palpitations, dyspnea, CP and lightheadedness.
- Seen by Cardiology service
Case #4

• Work-up
  – Troponin borderline positive but negative stress test for ischemia. NI. LVEF by SPECT
  – Echo with normal LVEF, mild-mod LA dilatation
  – Pt. states she’s compliant with CPAP

• Placed on dronedarone, metoprolol and rivaroxaban (in addition to her home meds) and sent home
Case #4

• Seen if F/U by consulting cardiologist. Pt. still having symptoms despite meds, although improved in frequency and duration. Event monitor shows coarse AF correlating with symptoms.

• Referred to EP for consideration of other therapies
Case #4

• Your next step would be to recommend all except…
  – A) Ablation
  – B) Try another drug then ablation
  – C) Ablation
  – D) Ablation
Your next step would be to recommend all except…
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- D) Ablation
Case #4 Follow-up

- Underwent cryoballoon pulmonary vein isolation with good success. Pt. seen at 1 month and 3 months with no episodes of AF. Dronedarone and metoprolol tapered off although anticoagulation continued for CHA$_2$DS$_2$-VASc score. 6 months post ablation, patient continues to do well, with no further spells.
Case #5

- 74 year old retired nurse (used to work at LGH!), DM, Htn., now in *permanent atrial fibrillation* has undergone all phases of Rx
  - *Four* ablation procedures for atrial fibrillation/flutter
  - Dyspnea on exertion particularly on inclines and stairs
  - Rapid palpitations, lightheadedness, fatigue
  - Has refused a pacemaker in the past
  - Wants to lose weight, but can’t exercise. Her husband claims she eats very little (although she came to the office sipping on a Frappuccino with whipped cream!)
Case #5

• Her LV function is normal; severe LA enlargement

• Holter monitoring confirms 100% AF burden with heart rate range of 42-163.
Case #5

Your next recommendation is...

- A) Try another ablation
- B) Try another cardioversion
- C) Continue current meds; nothing more to be done
- D) Consider Ablate and Pace; she’s symptomatic because of poor rate control with exertion
Case #5 Follow-up

- She was desperate to improve her quality of life; she no longer refused the pacemaker and underwent an uneventful Ablate and Pace procedure.
- Her symptoms are markedly improved, her exercise tolerance is improving but is limited by arthritis in her knees and deconditioning.
- Nevertheless, she feels much better and notices that her heart is now “quiet”
Conclusion

• Atrial fibrillation is a diverse arrhythmia, different in symptomatology, course and treatment based on any individual patient’s history

• The earlier we intervene, the better; patient education is paramount
  – StopAfib.org is a good patient resource

• No cure for atrial fibrillation yet, but existing treatment can have a positive impact on your patient’s quality of life.
Thank You!