

AF and HF

- AF is present in 15 to 30 % of HF patients
- NYHA I: 10% of AF
- NYHA IV: 50% of AF! (Stevenson, AJC 03)
- AF is associated with 1.5 to 3 fold death in HF patients (Benjamin, Circ 98; Krahn, Am J Med, 95)
 - Causality?
 - simple marker of risk?

Sinus Rhythm or AF?

Data from AFFIRM, RACE, PIAF, suggests no difference between pharmacological rate or rhythm control.

However, effect of sinus rhythm without the deleterious effects of drugs was not evaluated

Recent AFFIRM Substudy (Epstein, Circulation 2004)

- Sinus rhythm: 47% reduction in mortality risk
- Use of antiarrhythmics: 49% increase in mortality risk
- CHF: 57% increase in mortality risk

AFFIRM: Implications

In patients with AF such as those enrolled in the AFFIRM Study, warfarin use improves survival.

The presence of SR but not AAD use is associated with a lower risk of death.

These results suggest that if an effective method for maintaining SR with fewer adverse effects were available, it might improve survival.

ACC/AHA/ESC 2006

Guidelines for the Management of Patients With Atrial Fibrillation

- “Catheter-directed ablation of AF represents a substantial achievement that promises better therapy for a large number of patients presently resistant to pharmacological or electrical conversion to sinus rhythm”.

Proposed management strategies

- Recurrent paroxysmal AF with symptoms:
 - First choice: Flecainide, Propafenone, Sotalol
 - Second choice: other AAD or ablation if first line TT is not effective or tolerated
- Recurrent persistent AF with symptoms:
 - Same algorithm + DC shock
 - Persisting symptoms despite rate control and AAD not tolerated and/or ineffective: AF Abl, AVN Abl +PM, Maze...
- In HF patients, only AAD (Amio, Dofetilide) are recommended.

Persistent AF and HF, therapeutic options

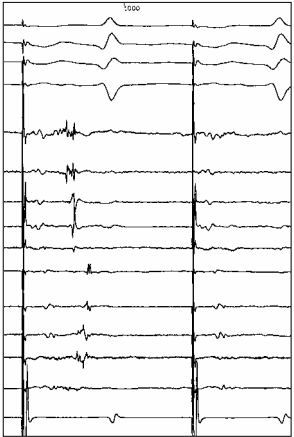
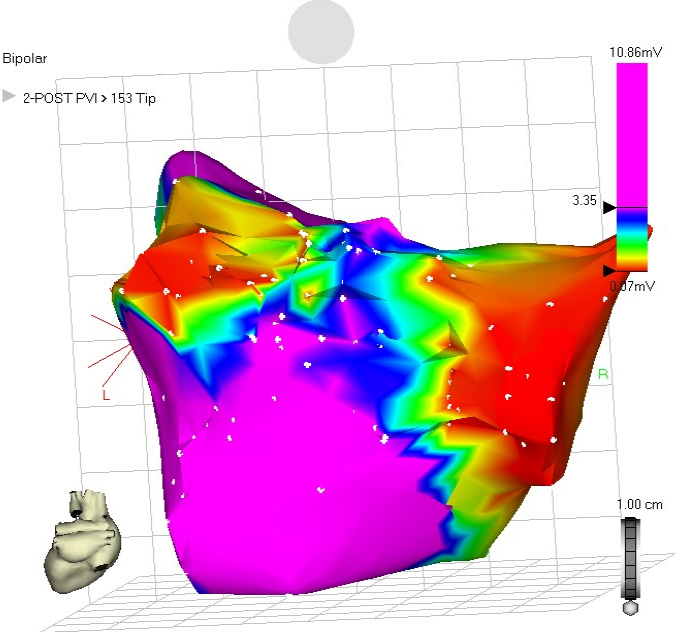
- 1- AAD (limited) and DC shocks
- 2- Rate control
 - Pharmacological
 - AVN ablation + CRT (P or D)
- 3- AF Ablation

AF Ablation in 86 HF patients

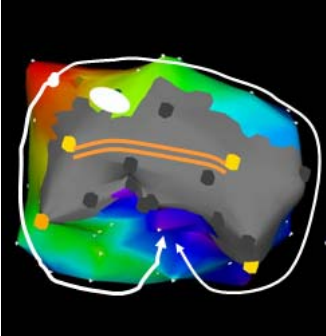
Male	77 (89%)
Age (years)	56±10
Persistent/Permanent AF	79 (92%)
Duration of AF (months)	80±46
Coexisting heart disease	44%

Ablation strategy in 86 patients with AF and HF

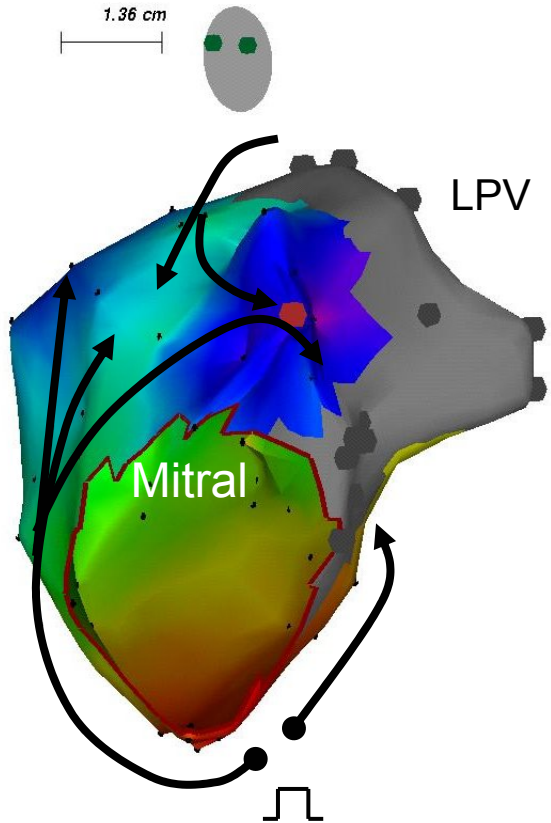
PVI



Roof line

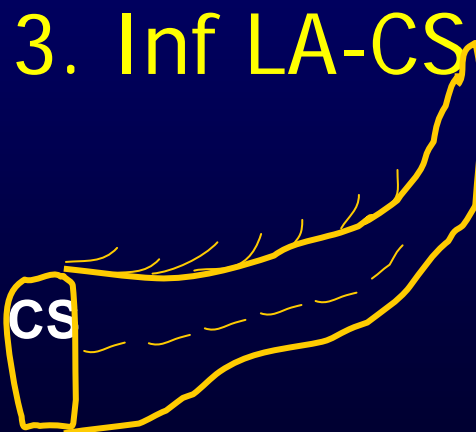
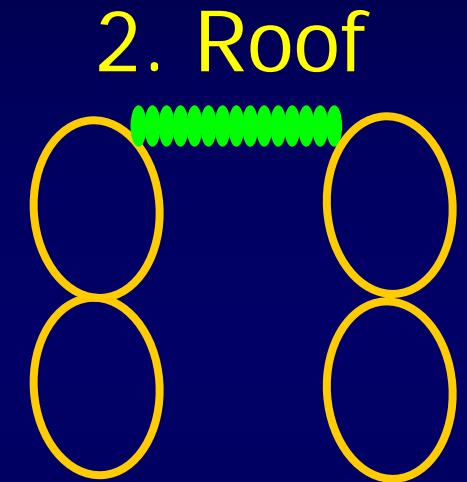
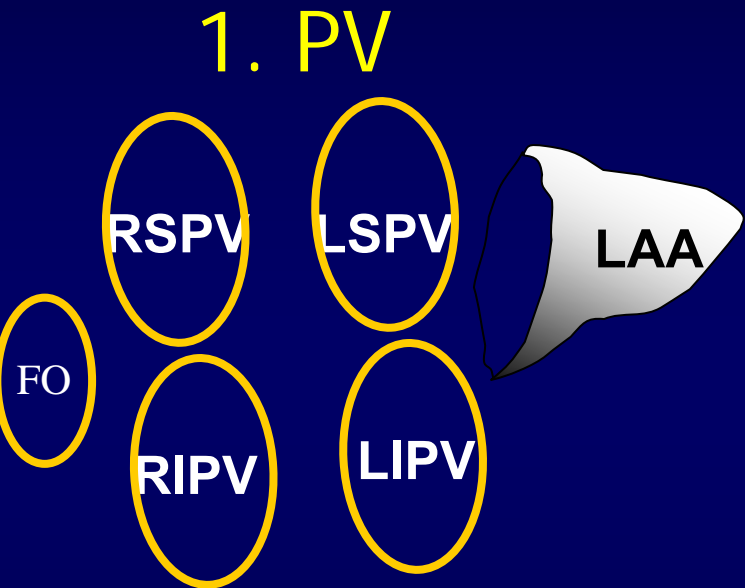


Mitral isthmus



Atrial ablation at rapid/fractionated sites
In the last 35 pts

ABLATION METHOD FOR CHRONIC AF

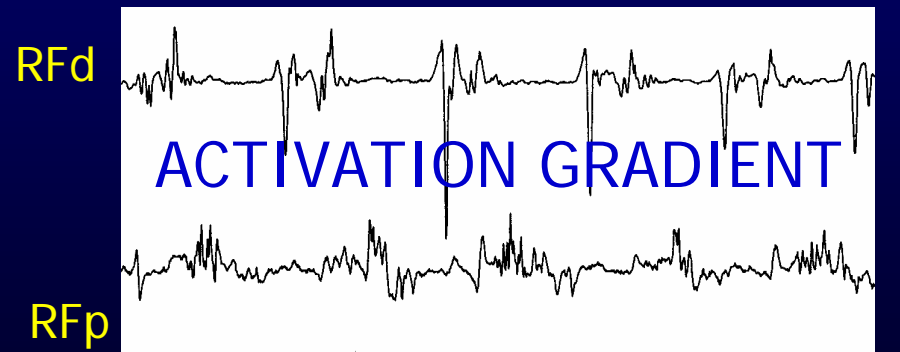
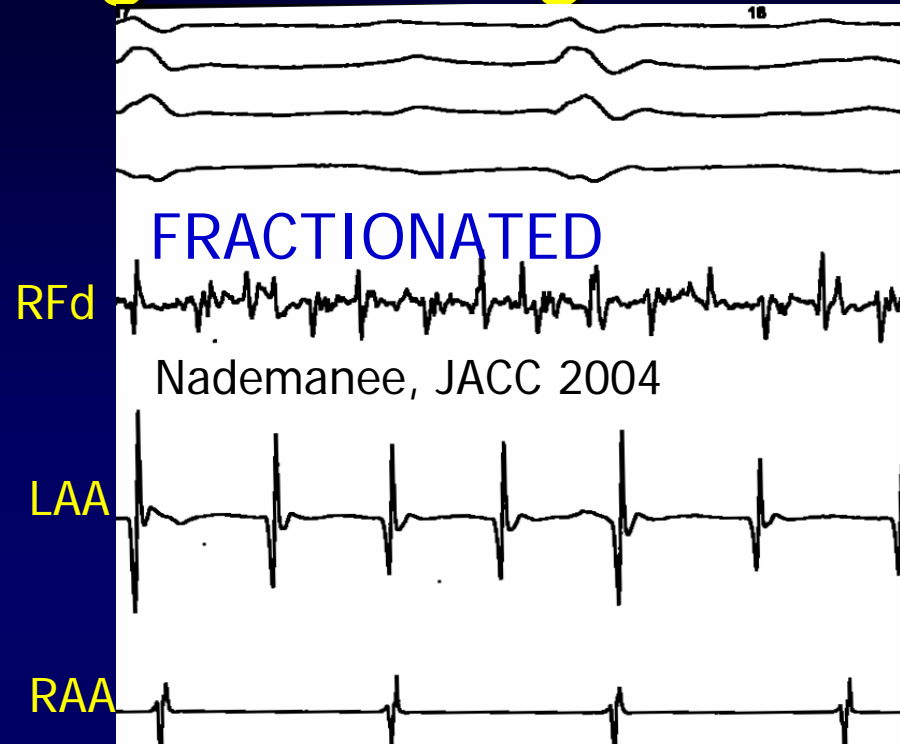
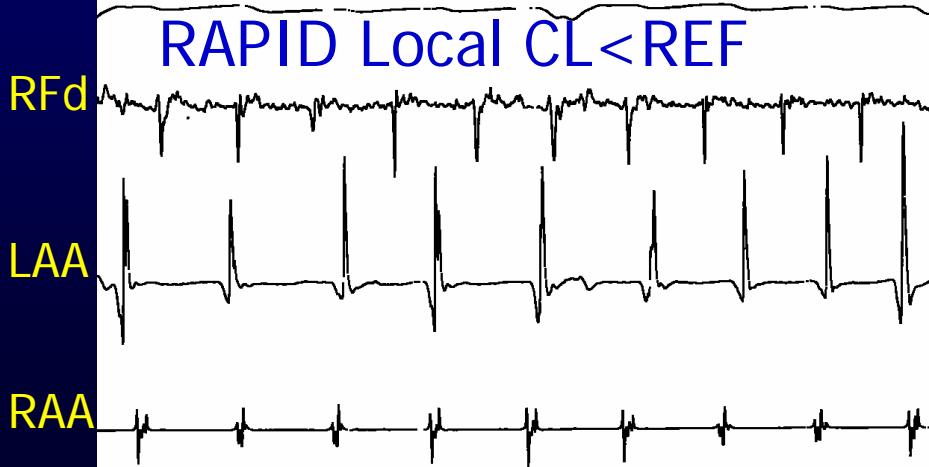
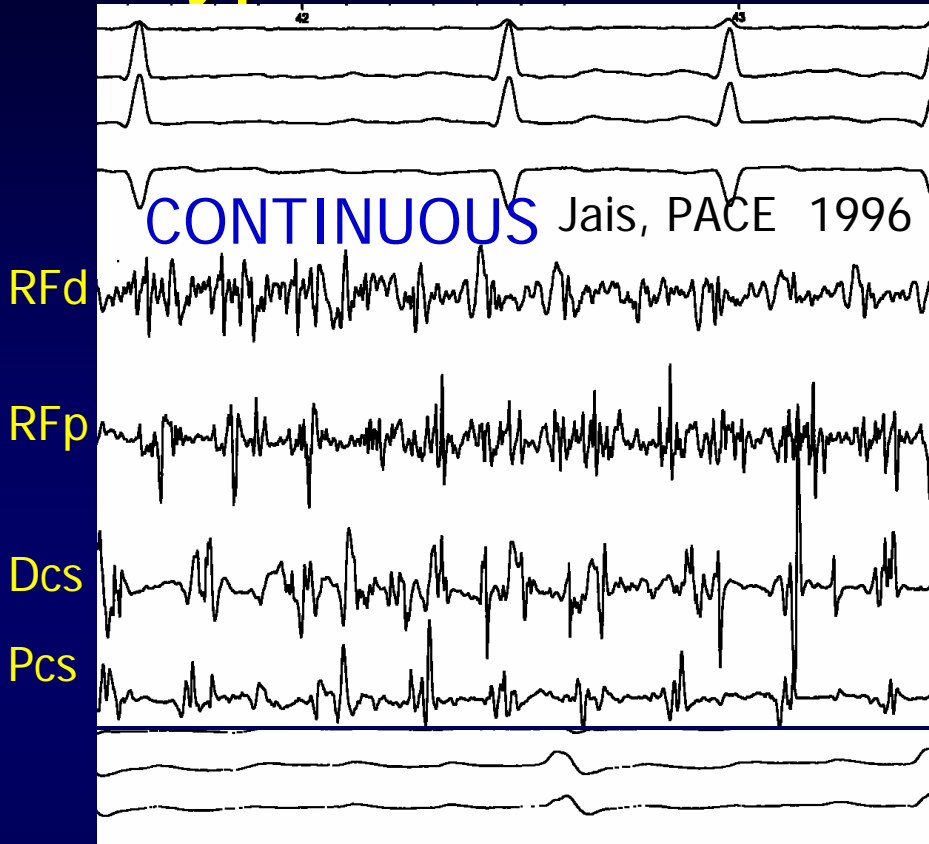


4. Organising atrial activity

LAA/Ant LA
Septum
Post LA

5. MI Line

Types of Atrial Electrograms Targeted



1-After PVI
LAA 160



2-After Inf LA
LAA 168



3-After LAA
188



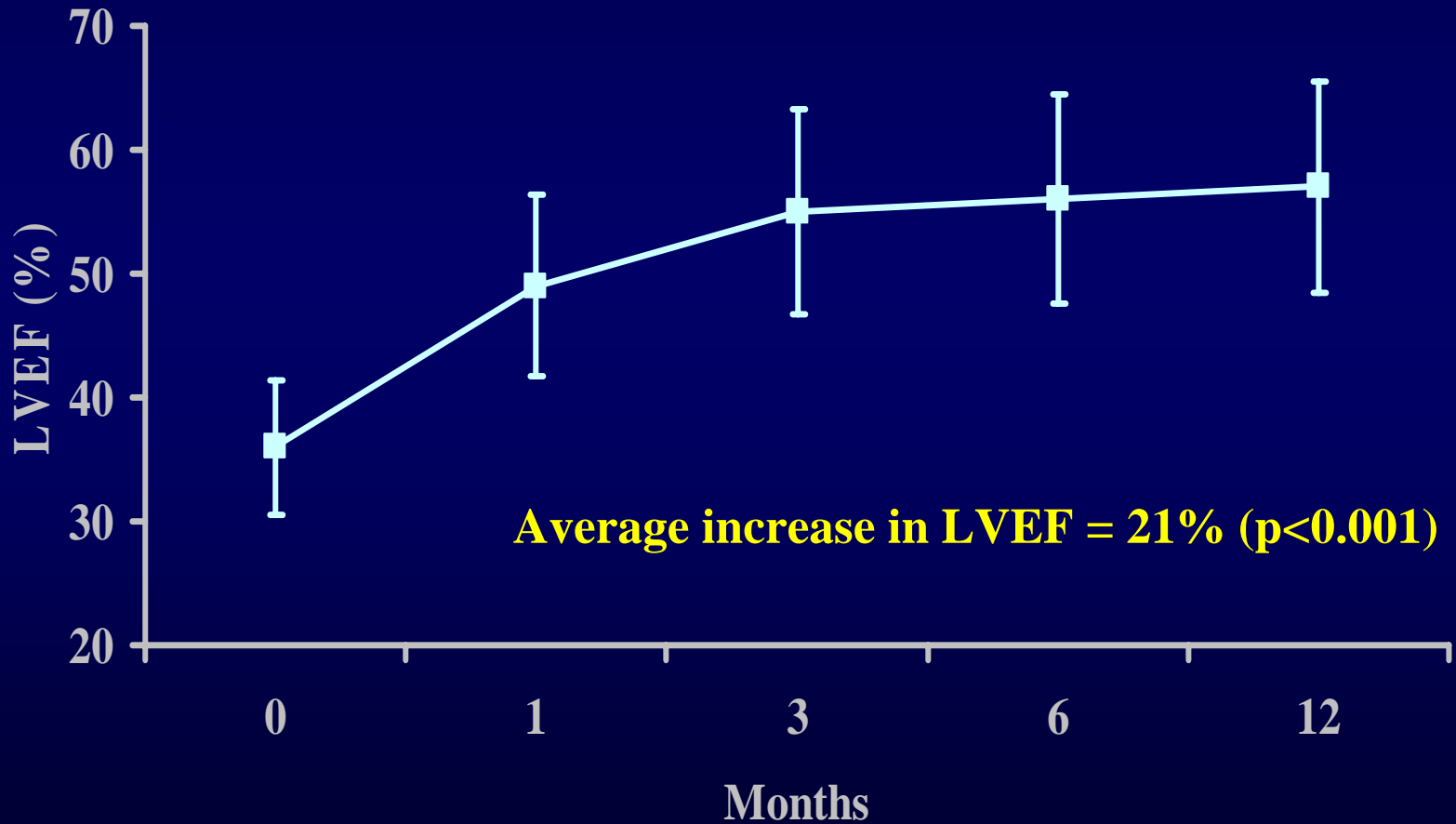
Junction Ant LA / Roof



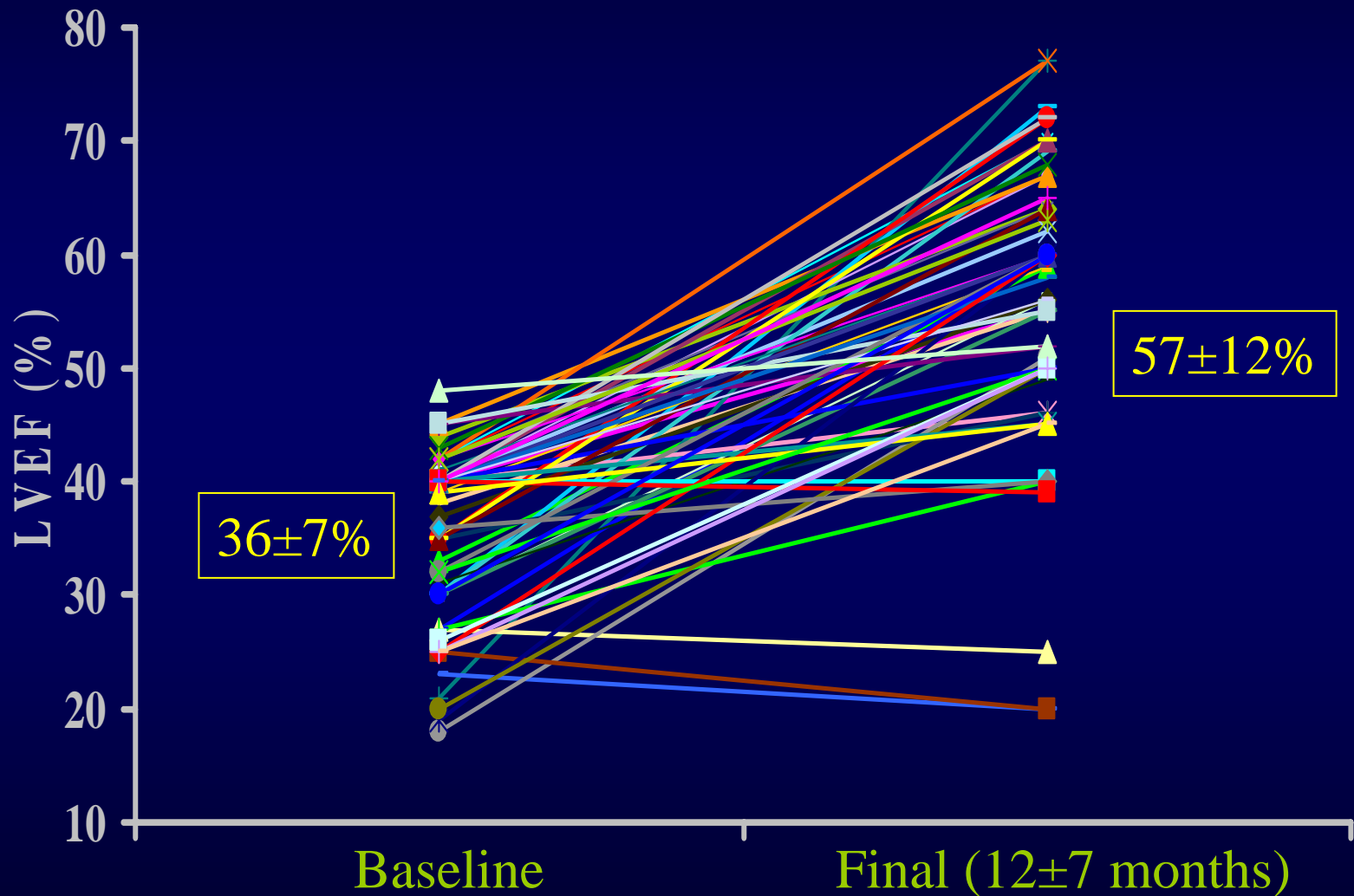
Procedural Outcome

Redo Procedures	48%
Sinus rhythm (overall)	81%
Sinus rhythm without drugs	73
Duration of follow-up (months)	14±7
Major complications	5%
• Tamponade	2.5%
• Stroke	2.5%

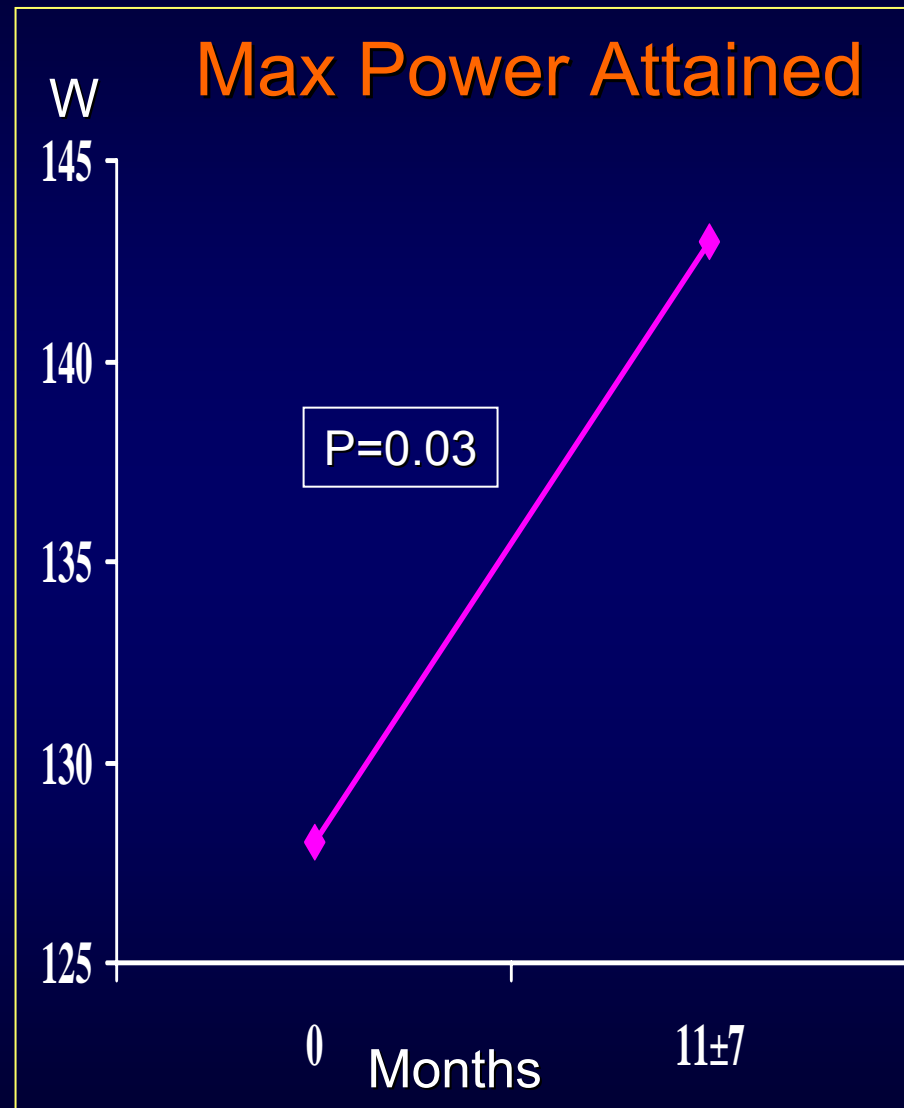
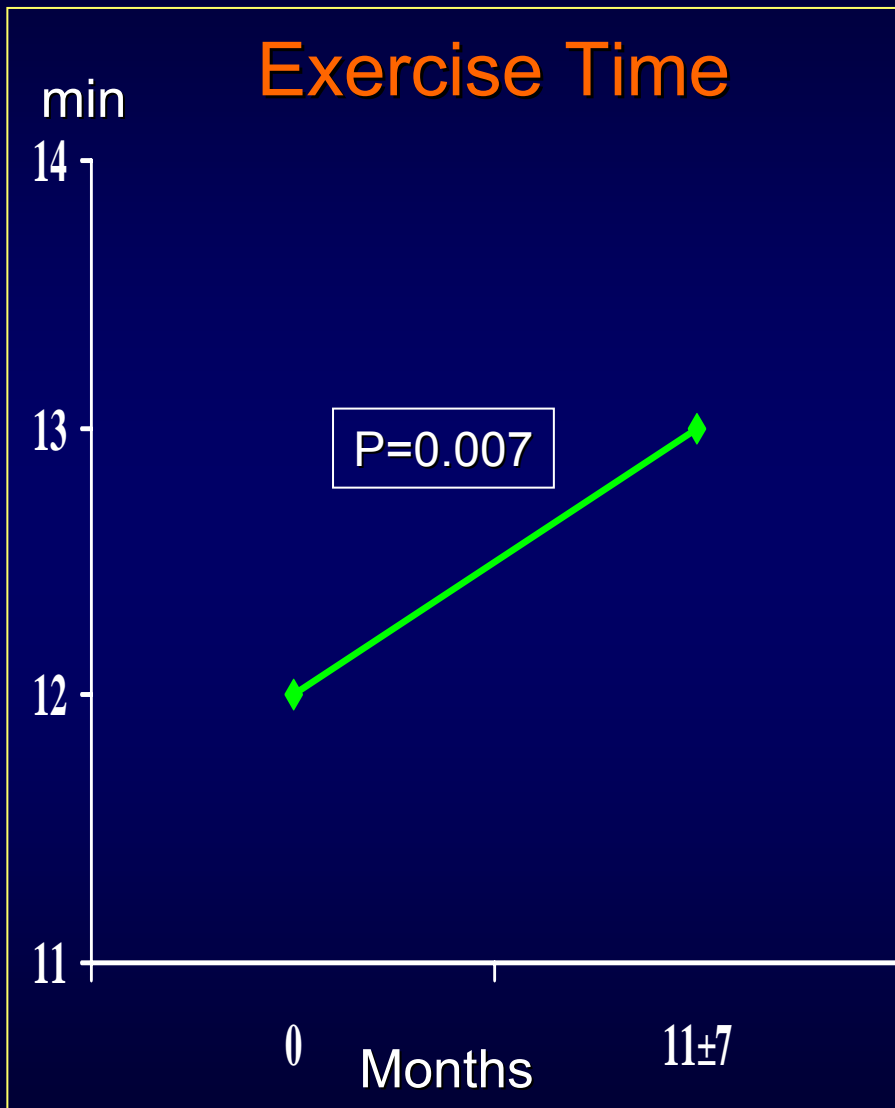
LV Ejection Fraction



Change in LVEF (Individual)



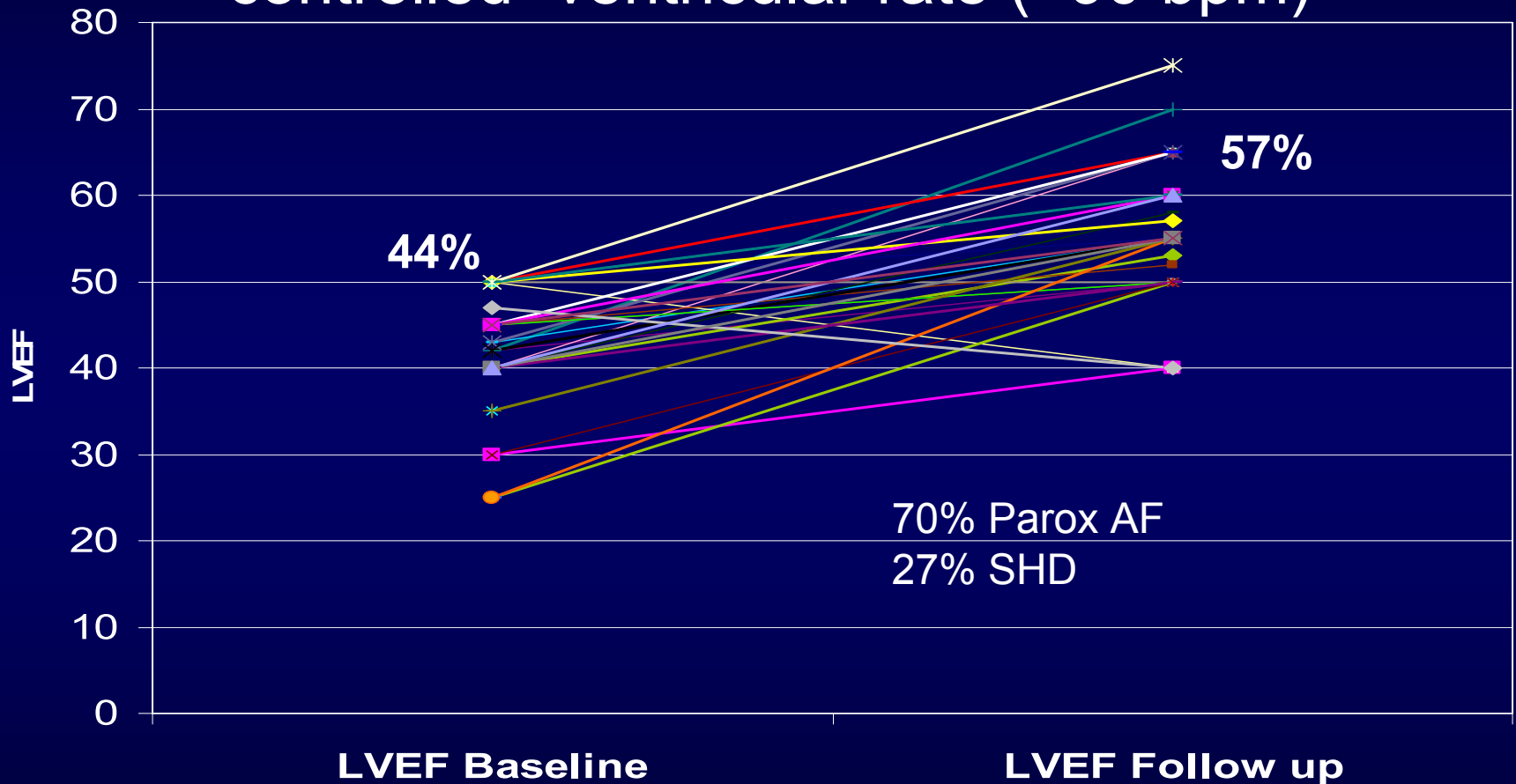
Improvement Exercise Capacity In CHF



Based on 58 pts published in NEJM 2004; 351, 2373-83

Effect of PVI on LV EF

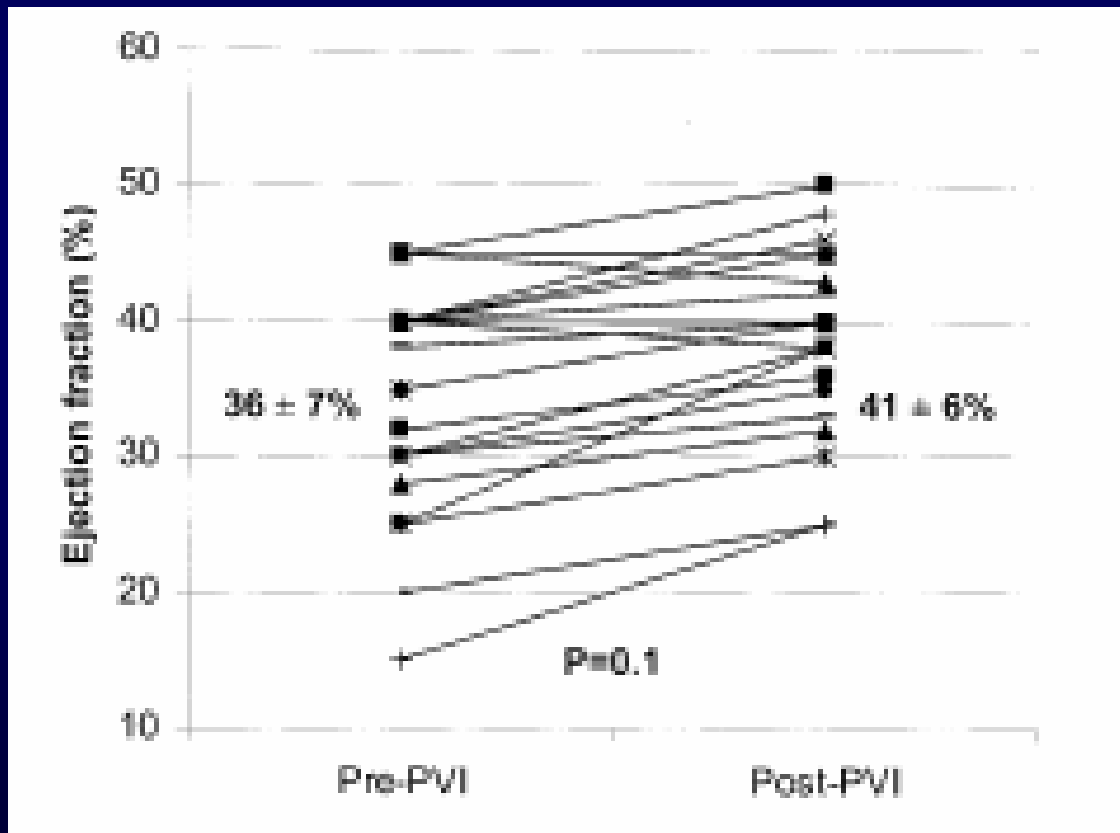
67/366 (18%) pts with baseline EF \leq 50% and
“controlled” ventricular rate (<90 bpm)



- LV EF increased by $>$ 5% in 82% patients
- LV EF normalized to \geq 55% in 72% patients

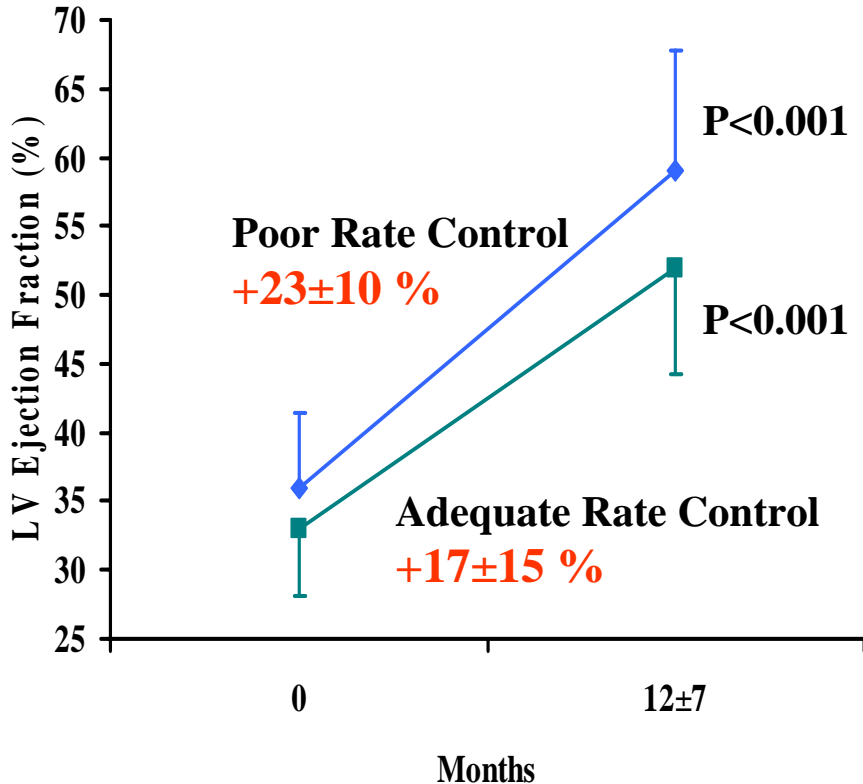
Pulmonary Vein Isolation for the Treatment of Atrial Fibrillation in Patients With Impaired Systolic Function

Chen et al, JACC 2004, 43, 1004-9

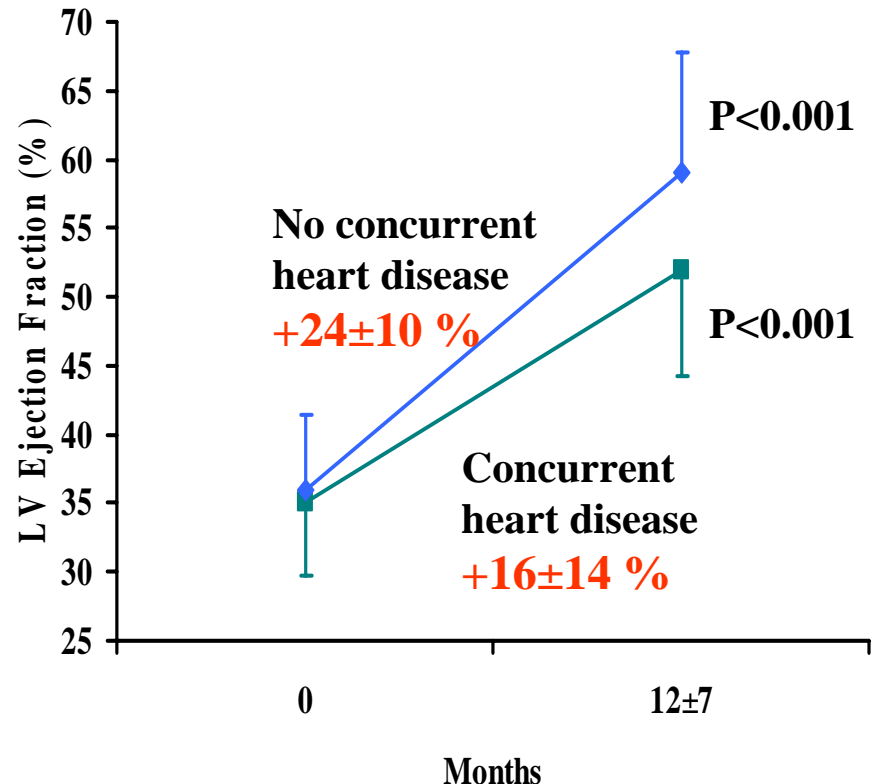


94/377 pts
LVEF < 40%
Parox AF: 43%
SHD: 91%

Rate control



Heart Disease



Marked improvement (by 20% or to $\geq 55\%$ EF)

Poor rate control: **86%** ——— **92%** ——— No concurrent HD: **88%**
Adequate rate control: **54%** W/ concurrent HD: **54%**

Based on 58 pts published in NEJM 2004; 351, 2373-83

Conclusion

1. A purely AF induced CMP may be more likely in patients with dilated CMP occurring after AF onset, in persistent/permanent forms, in absence SHD and controlled heart rate
2. Even in the context of SHD, or controlled heart rate, AF ablation can be associated with LVEF improvement

Conclusion

1. Curative ablation of AF is feasible but difficult in patients with CHF and coexisting heart disease
2. It results in dramatic improvements in symptoms, exercise capacity and quality of life
3. This therapeutic approach is possibly the best one in first intention in patients with idiopathic dilated CMP and AF. It can be completed by CRT (D) in absence of improvement