

STS/EACTS Latin America Cardiovascular Surgery Conference
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Clinical factors impacting outcomes following surgical ablation for Atrial Fibrillation

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**The Society
of Thoracic
Surgeons**



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European Association For Cardio-Thoracic Surgery



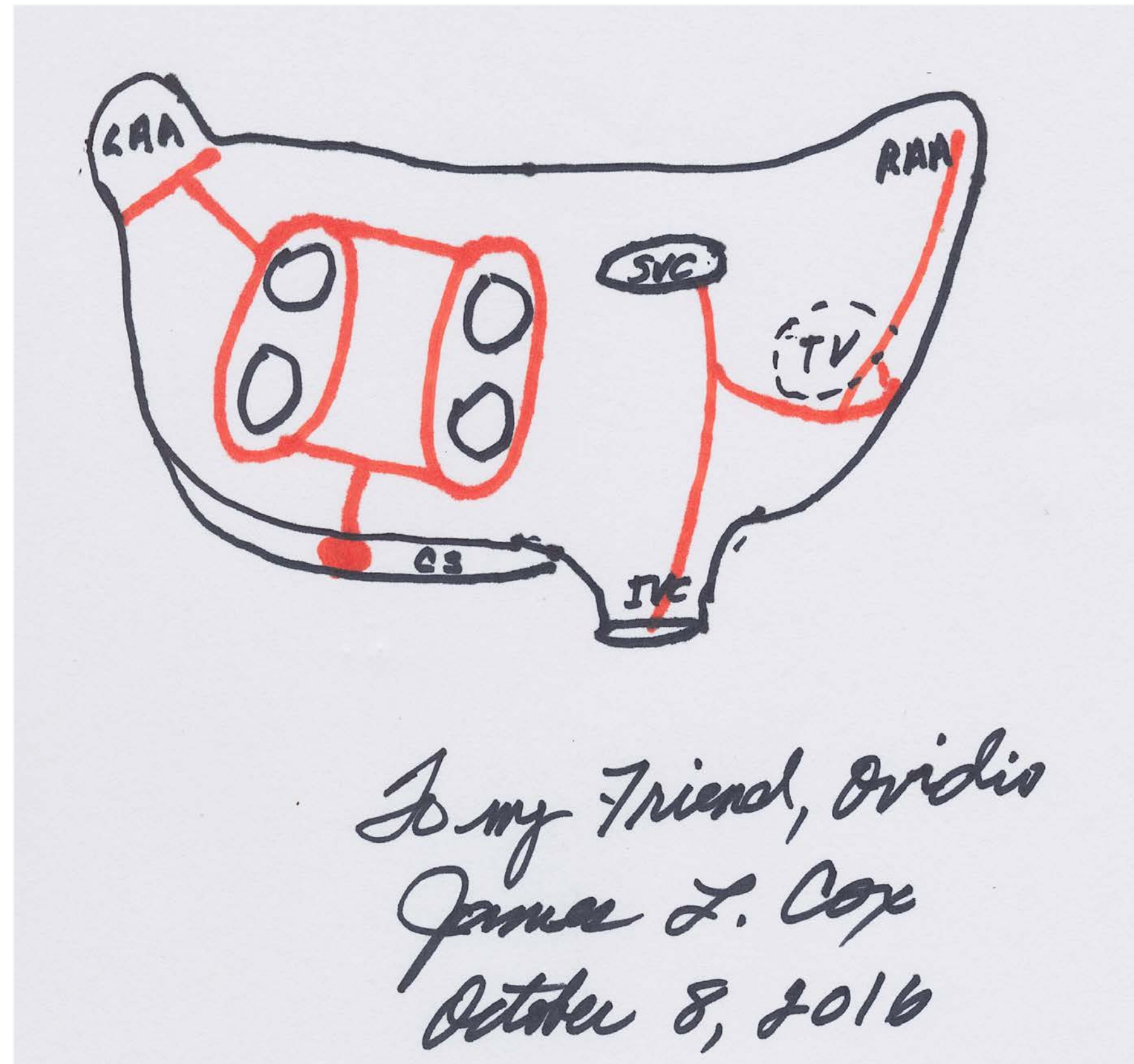
DISCLOSURE

- NO DISCLOSURES
- NO FINANCIAL GRANTS

INTRODUCTION

- The success of the Cox-maze procedure is dependent on many different technical and clinical variables.
- Maze procedure is a concept, and electrophysiological concept, especially designed to eliminate all possible macro-reentrant circuits in BOTH ATRIA.
- FULL BIATRIAL LESION PATTERN, whatever the case may be.

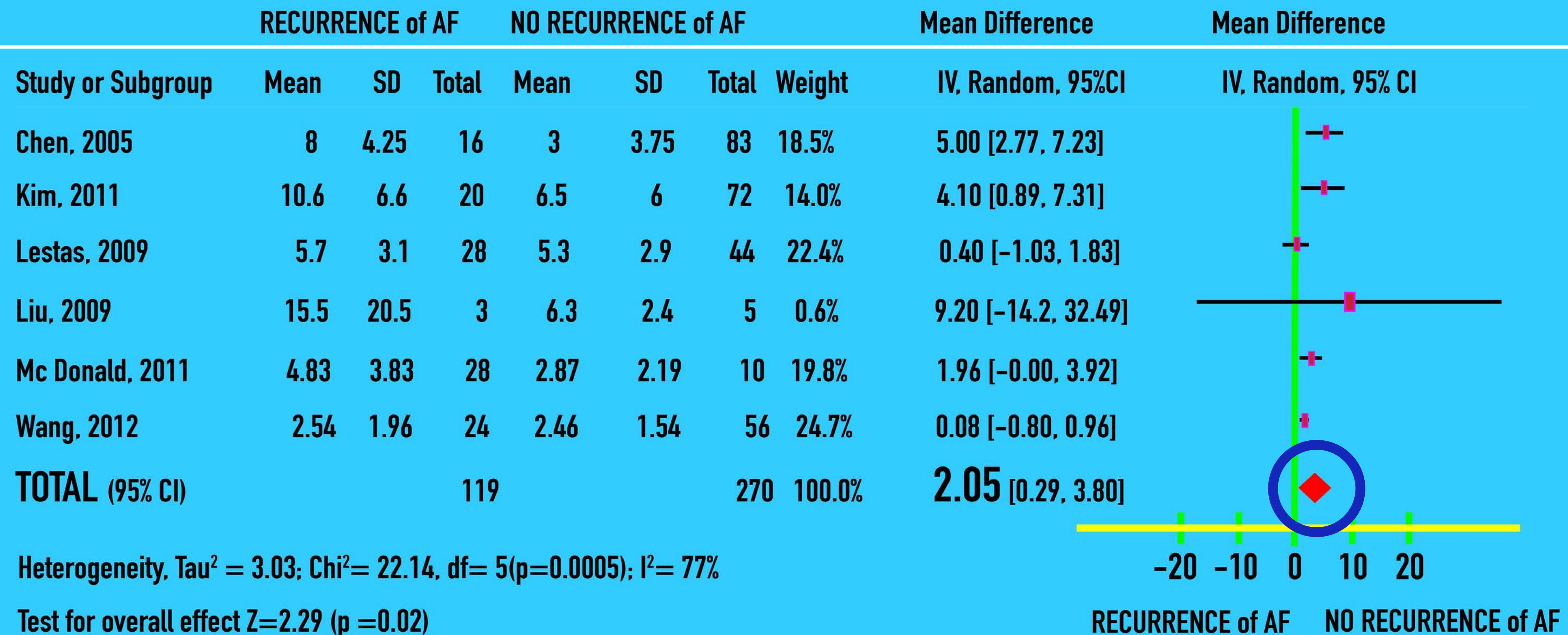
COX-MAZE PROCEDURE



TRADITIONAL CLINICAL FACTORS AFFECTING THE OUTCOME

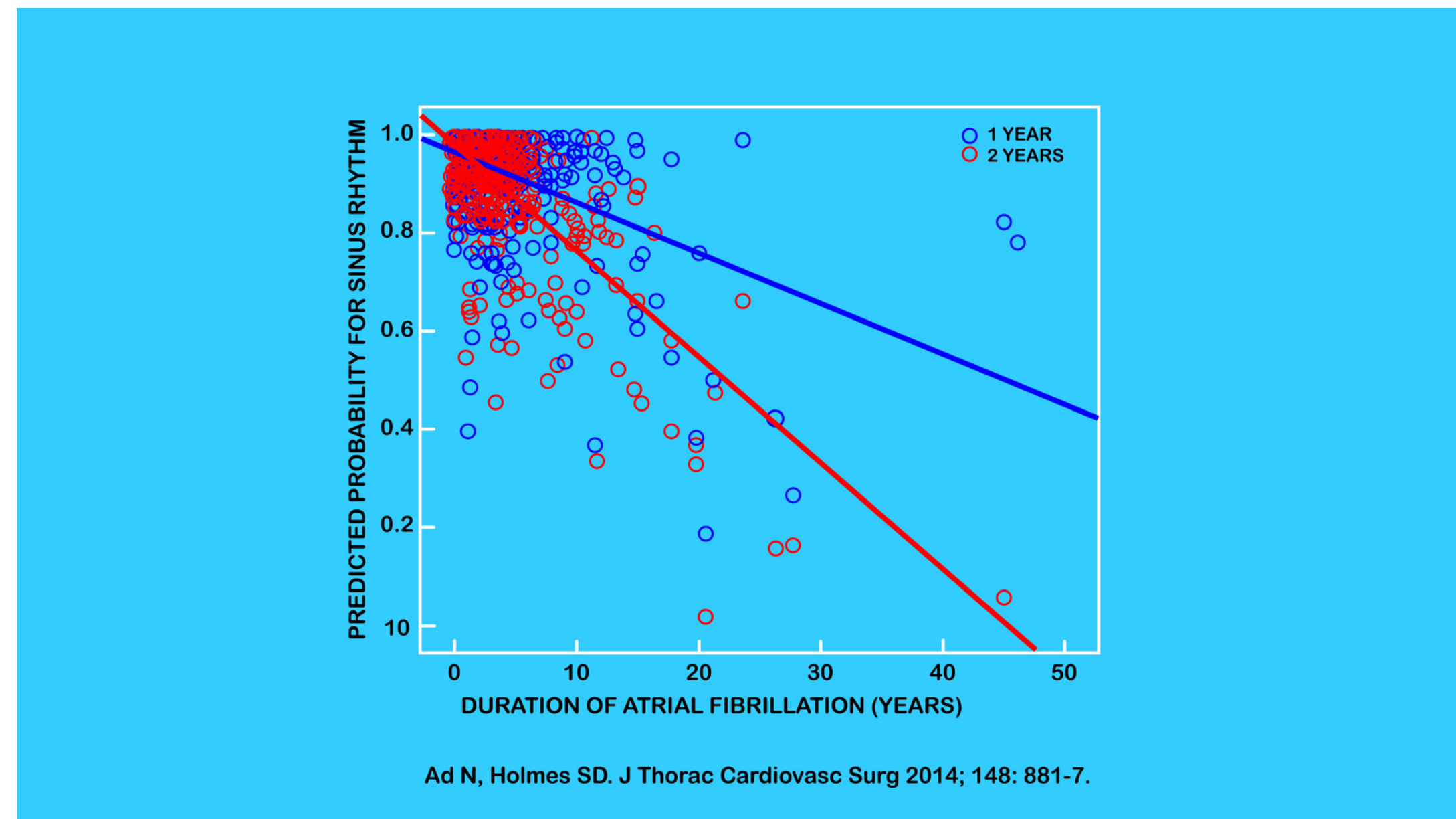
- PATIENT AGE
- PREOPERATIVE DURATION OF AF
- LEFT ATRIAL SIZE
- TYPE of AF
 - Stand alone
 - Concomitant
 - Mitral
 - Rheumatic
 - Degenerative
 - Other than Mitral
- SURGEON'S EXPERIENCE
- ENERGY SOURCES

PREOPERATIVE DURATION of ATRIAL FIBRILLATION



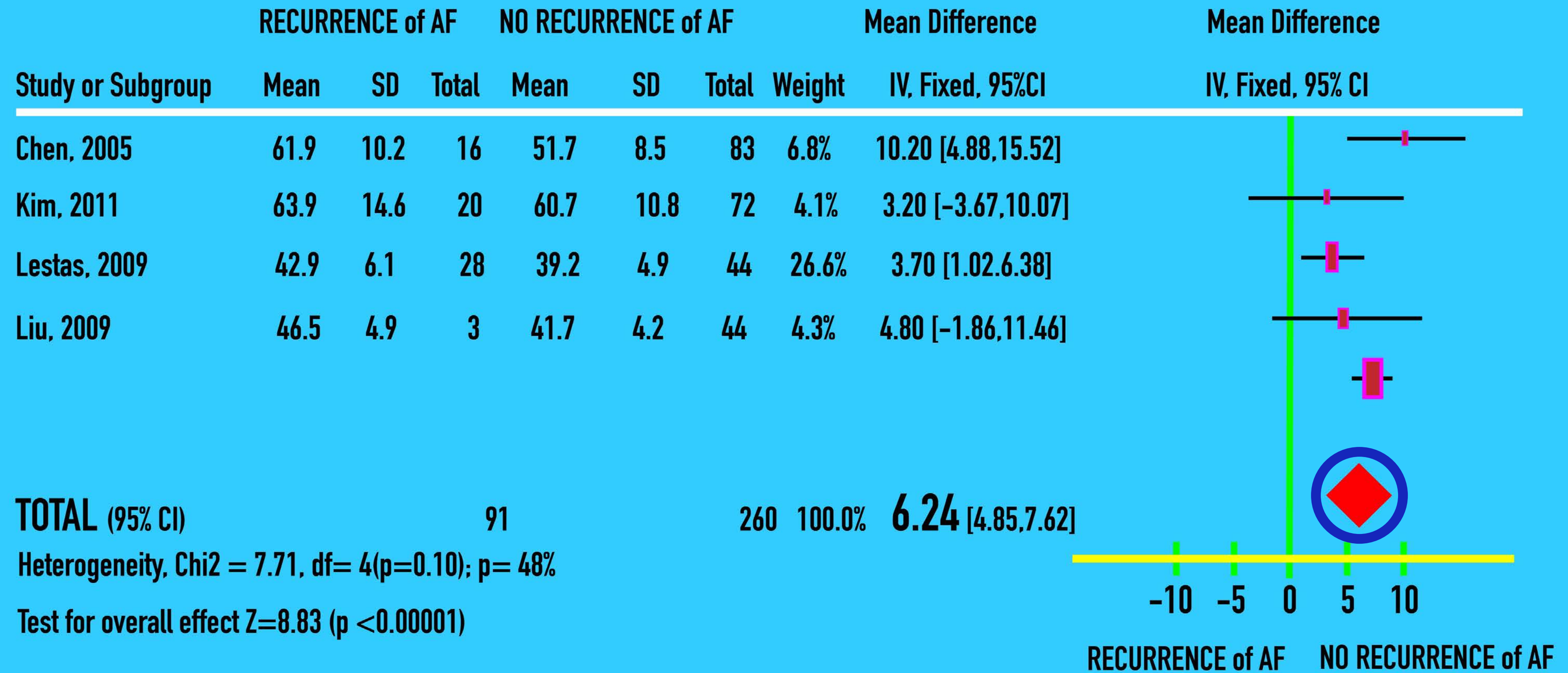
Duan C, et al. *Int J Clin Exp Med* 2016; 9(2): 1073-83

PREOPERATIVE DURATION OF ATRIAL FIBRILLATION



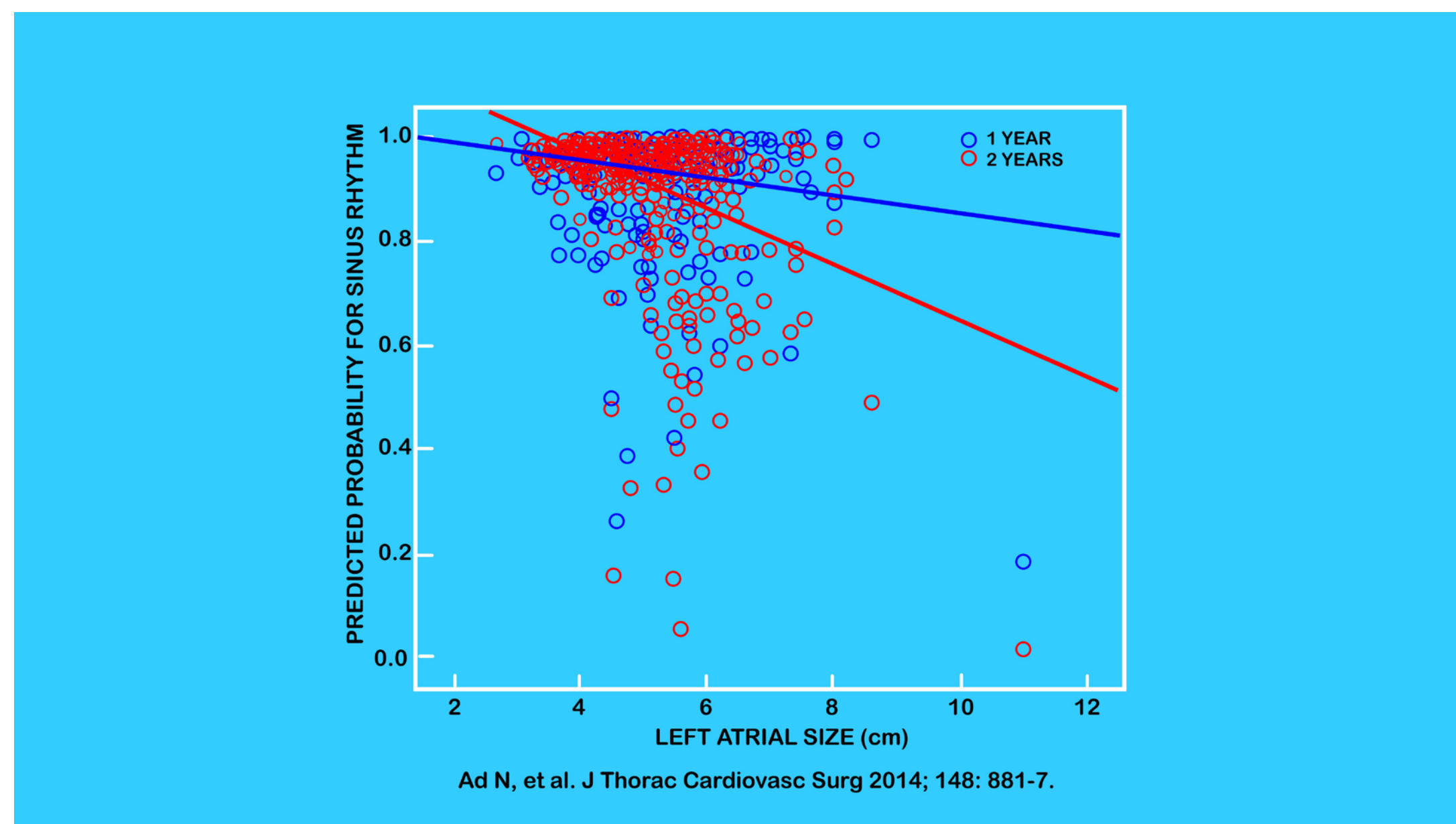
- 1 year prediction model:
 - a 5-yr increase in AF duration, 0.8% reduction in success
- 2 year prediction model:
 - a 5-yr increase in AF duration, 0.8% reduction in success

LEFT ATRIAL DIAMETER



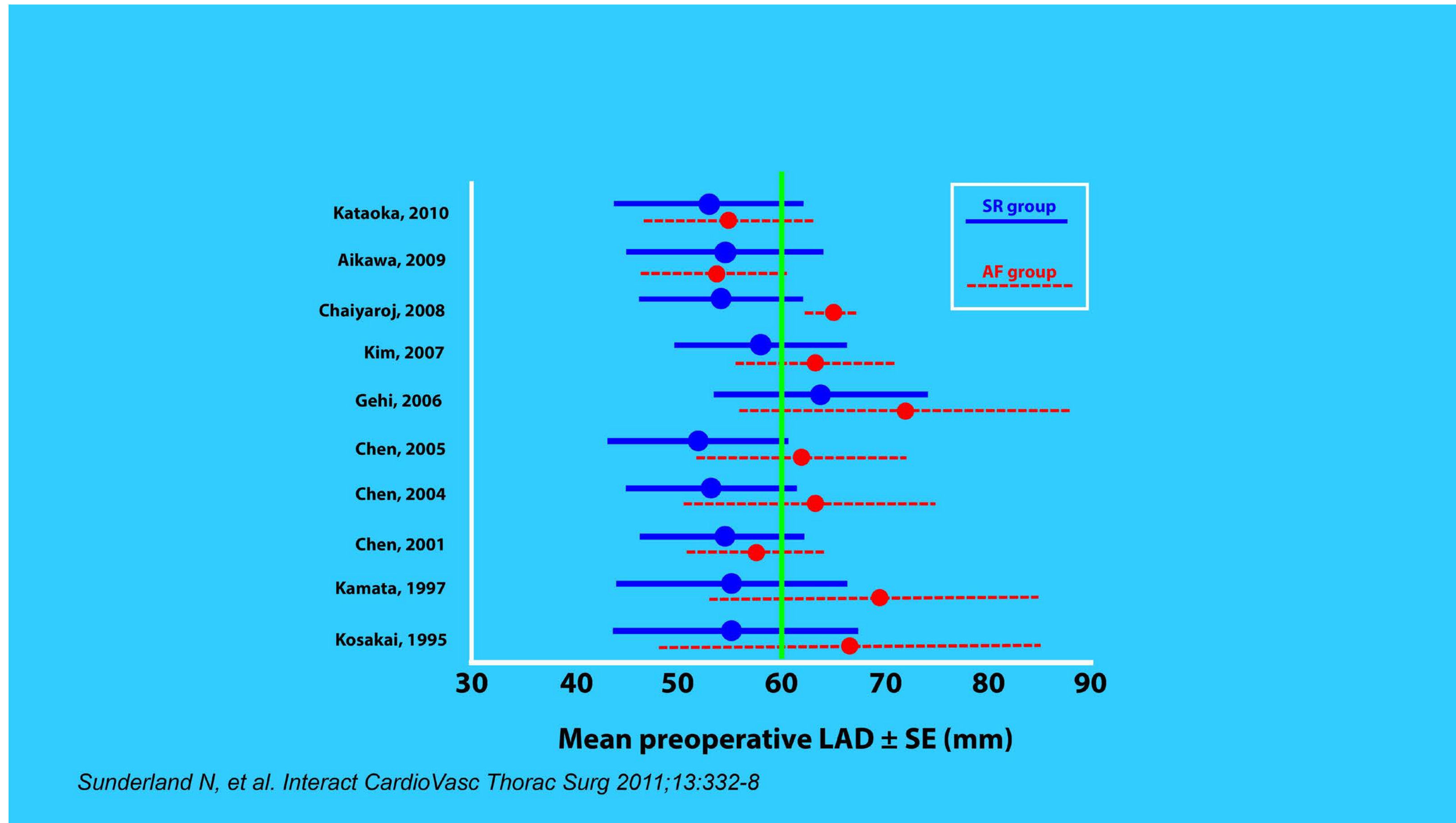
Duan C, et al. *Int J Clin Exp Med* 2016; 9(2): 1073-83

LEFT ATRIAL SIZE



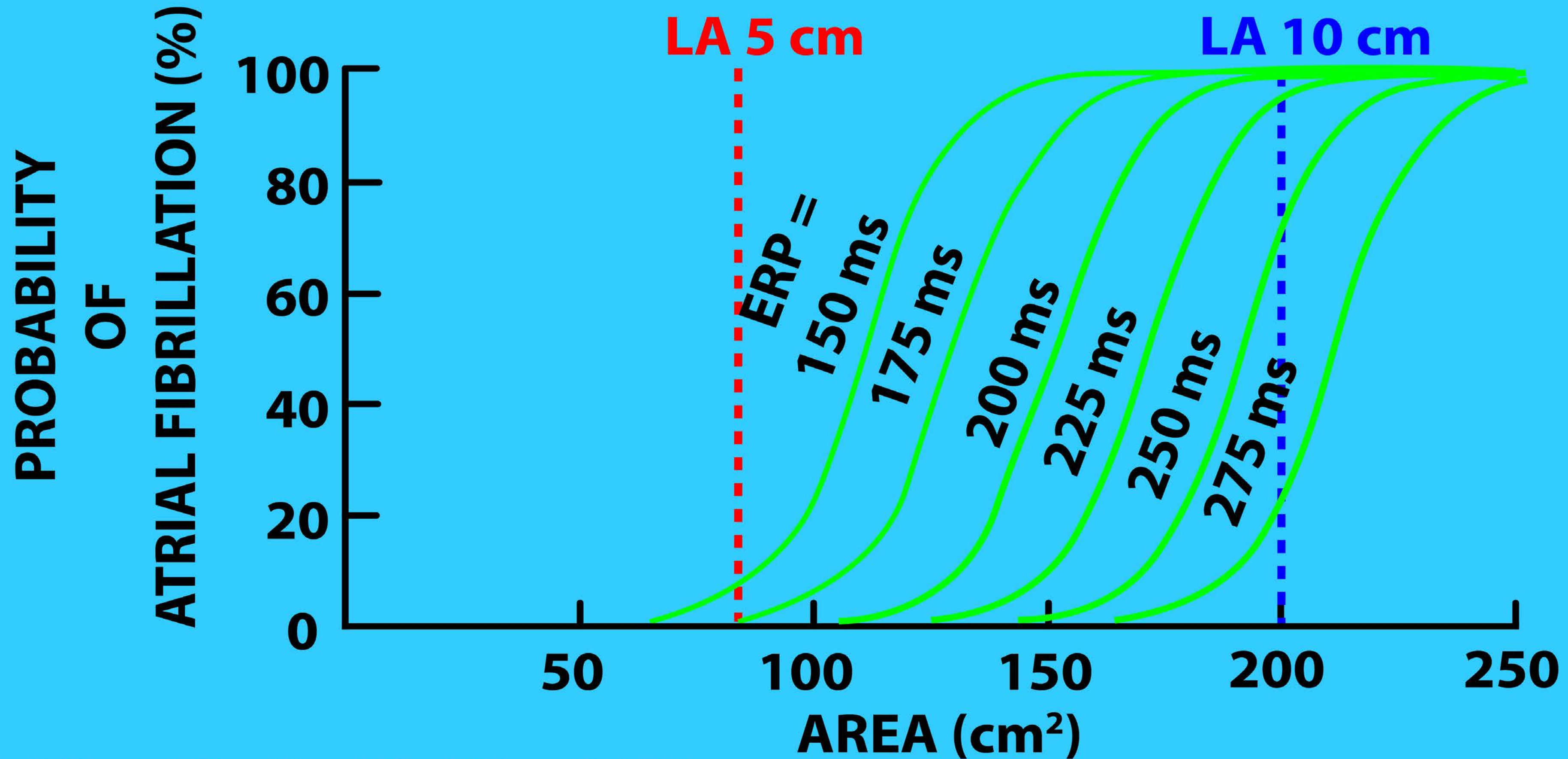
- 1 year prediction model:
 - a 1-cm increase in LA size, 0.4% reduction in success
- 2 year prediction model:
 - a 1-cm increase in LA size, 1.0% reduction in success

WHAT SIZE of the left atrium?



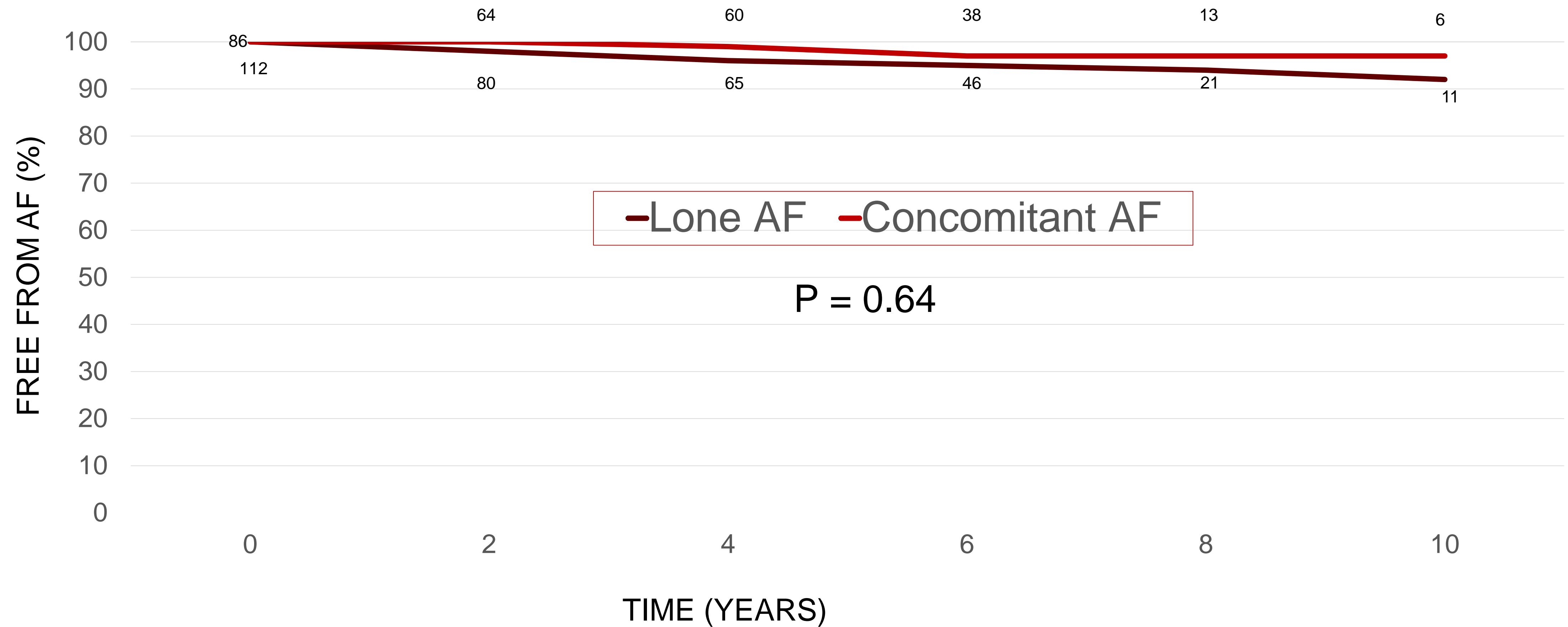
Extrapolated Probability of AF vs Area vs ERPs

Normal range of Human ERPs: 150-275 ms

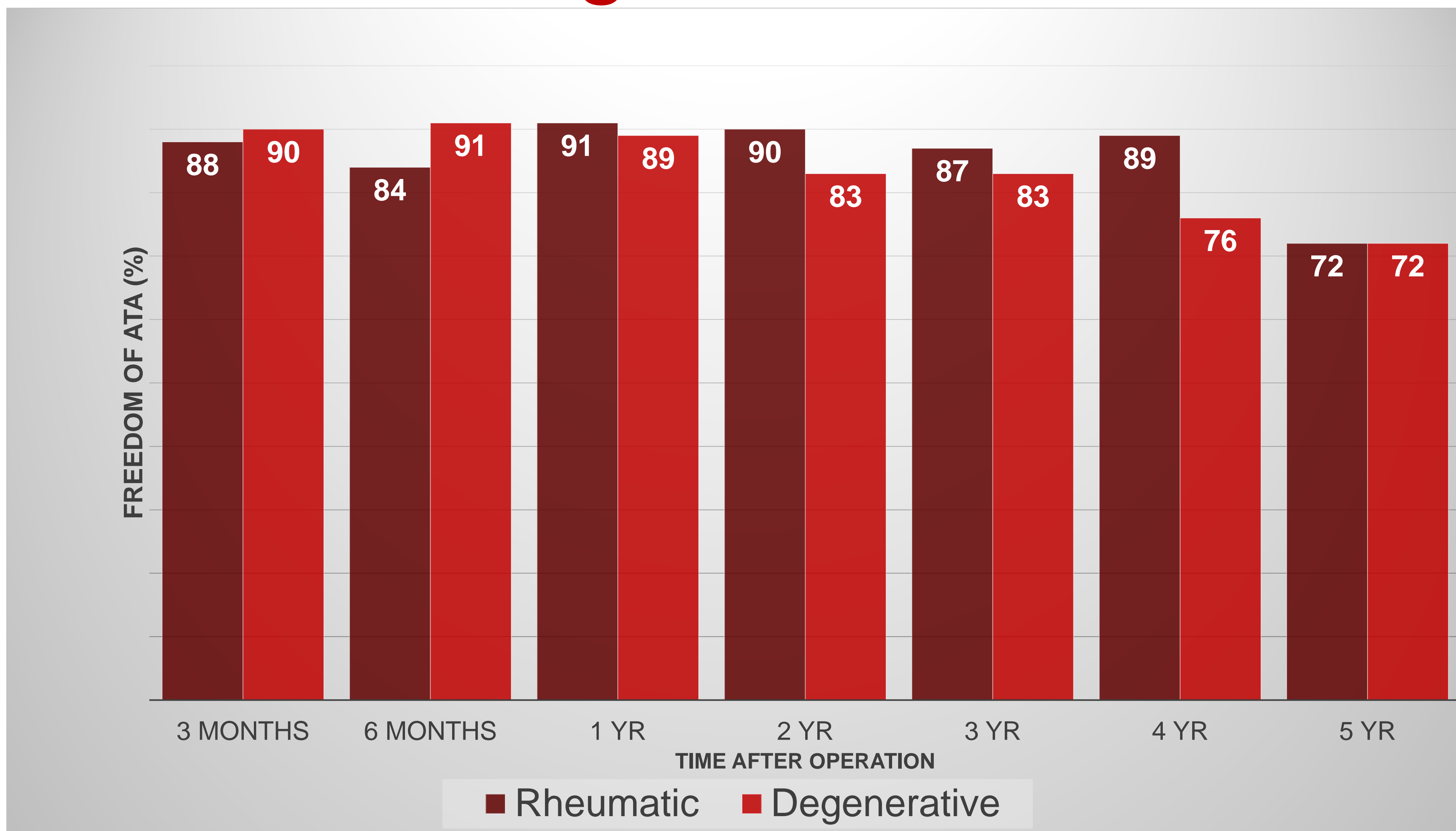


Byrd GD, et al. *Circulation* 2005; 112 [suppl I]: I-7-13

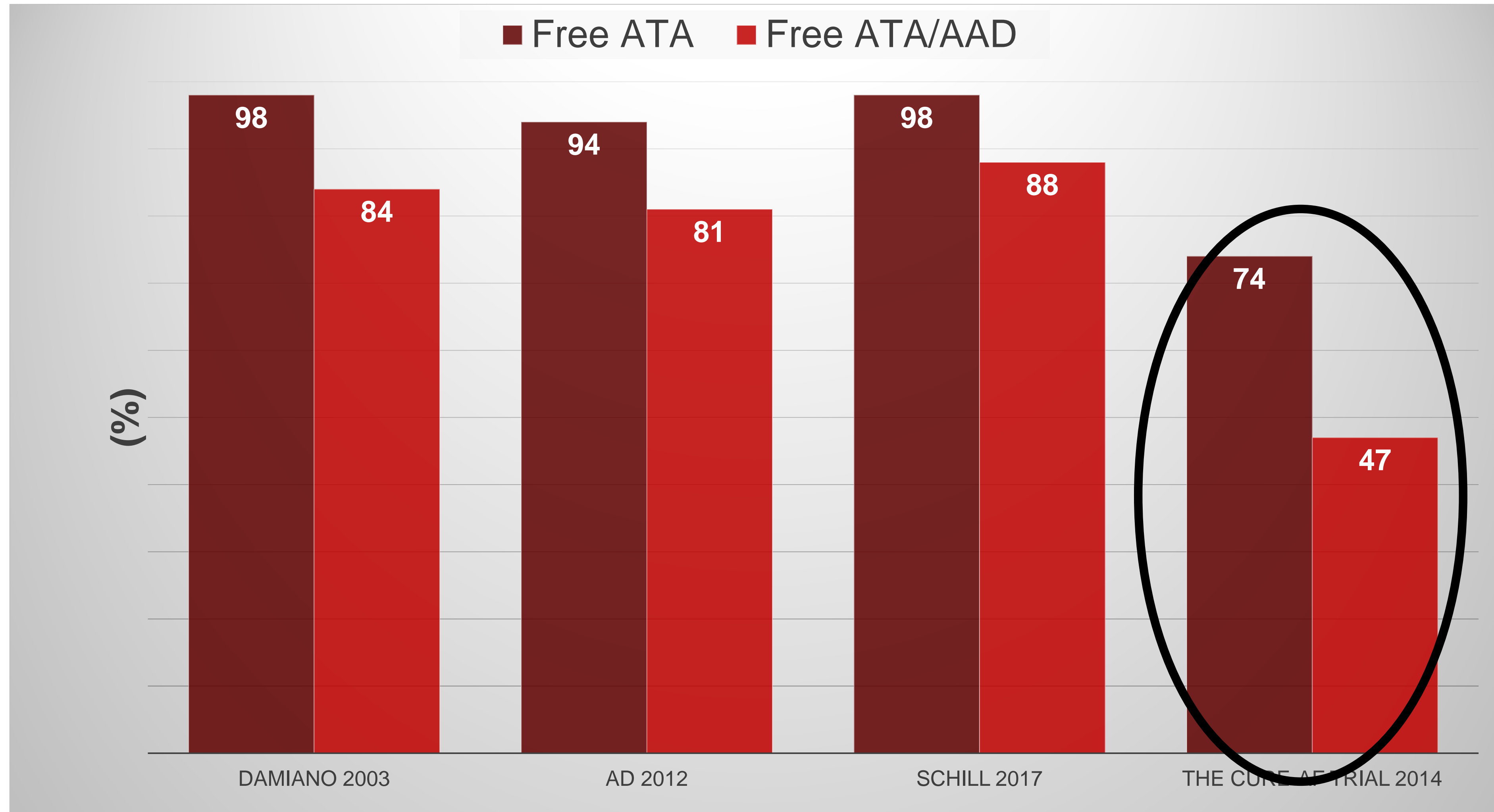
Type of AF (Lone vs Concomitant)



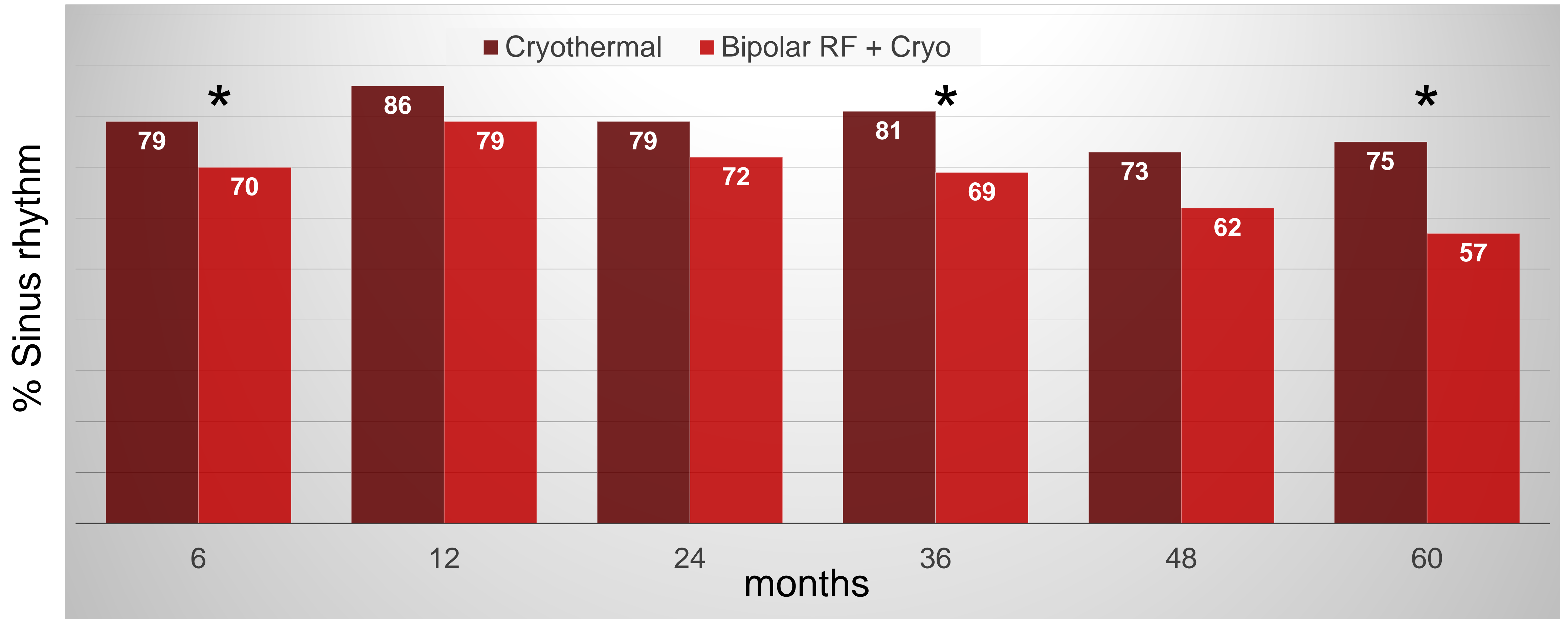
Rheumatic vs Degenerative MV Disease



Cox-maze III/IV + CABG / AVR



Comparison of ENERGY SOURCE groups on return to sinus rhythm without antiarrhythmic drugs during follow-up (asterisks denote significant differences).



SURGEON'S EXPERIENCE

- 1-year prediction model
 - a reduction by 50 cases of surgeon experience is associated with a 1.0% reduction in success.
- 2-year prediction model
 - a reduction by 50 cases of surgeon experience is associated with a 0.2% reduction in success.

- Ad N. J Thorac Cardiovasc Surg 2014; 148: 881-7

Clinical Factors Impacting Outcomes Following Surgical Ablation for Atrial Fibrillation

- **CONCLUSIONS:**
 - **Preoperative duration of AF**
 - **Left atrial size**
 - **Surgeon's experience**
 - **Energy source**

- Well standardized protocol
 - Full biatrial lesion pattern
 - RF ablation + Cryothermia
 - **Cryothermia alone**
 - Cut-and-sew + Cryothermia

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Thank You



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