About OMICS Group

OMICS Group is an amalgamation of Open Access publications and worldwide international science conferences and events. Established in the year 2007 with the sole aim of making the information on Sciences and technology 'Open Access', OMICS Group publishes 500 online open access scholarly journals in all aspects of Science, Engineering, Management and Technology journals. OMICS Group has been instrumental in taking the knowledge on Science & technology to the doorsteps of ordinary men and women. Research Scholars, Students, Libraries, Educational Institutions, Research centers and the industry are main stakeholders that benefitted greatly from this knowledge dissemination. OMICS Group also organizes 500 International conferences annually across the globe, where knowledge transfer takes place through debates, round table discussions, poster presentations, workshops, symposia and exhibitions.

About OMICS International Conferences

OMICS International is a pioneer and leading science event organizer, which publishes around 500 open access journals and conducts over 500 Medical, Clinical, Engineering, Life Sciences, Pharma scientific conferences all over the globe annually with the support of more than 1000 scientific associations and 30,000 editorial board members and 3.5 million followers to its credit.

OMICS Group has organized 500 conferences, workshops and national symposiums across the major cities including San Francisco, Las Vegas, San Antonio, Omaha, Orlando, Raleigh, Santa Clara, Chicago, Philadelphia, Baltimore, United Kingdom, Valencia, Dubai, Beijing, Hyderabad, Bengaluru and Mumbai.

Thyroid Dysfunction and Atrial Fibrillation: the Role of Myocardial Hypothyroidism

Youhua Zhang, MD, PhD



Department of Biomedical Sciences
New York Institute of Technology
College of Osteopathic Medicine
Old Westbury, NY

April 27, 2015, Cardiology 2015

Disclosure: None

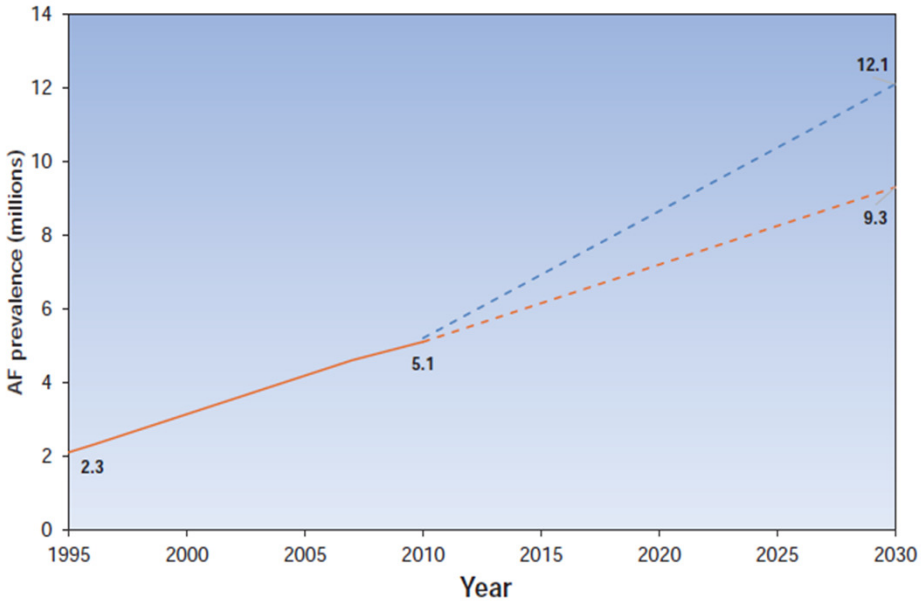
Heart Failure (HF)

1. >5 million in the U.S.
2. About half of patients die within 5 years of diagnosis

Go AS et al, Circulation. 2013;127:e6–e245

Atrial Fibrillation (AF)

Current and future US prevalence



Increases morbidity and mortality

Mozaffarian D, et al, Circulation. 2015;127:e202

HF begets AF, and AF begets HF

- HF: the strongest risk factor for AF

  AF increases with HF, up to 50% in severe HF patients
- AF exacerbates HF

- ≈40% of individuals with either AF or HF will develop the other condition
- They share many common risk factors:

  Age, diabetes, hypertension…thyroid dysfunction

Maisel WH, et al. Am J Cardiol 2003; 91:2D–8D.

Mozaffarian D, et al, Circulation. 2015;127:e202

Thyroid dysfunction, AF & HF

- Both hyper- and hypo-thyroidism can lead to HF
- Hyperthyroidism can increase AF
- How about Hypothyroidism and AF?

  Some case reports link hypo- to AF

  Few epidemiological evidence & contradicts

  No experimental data

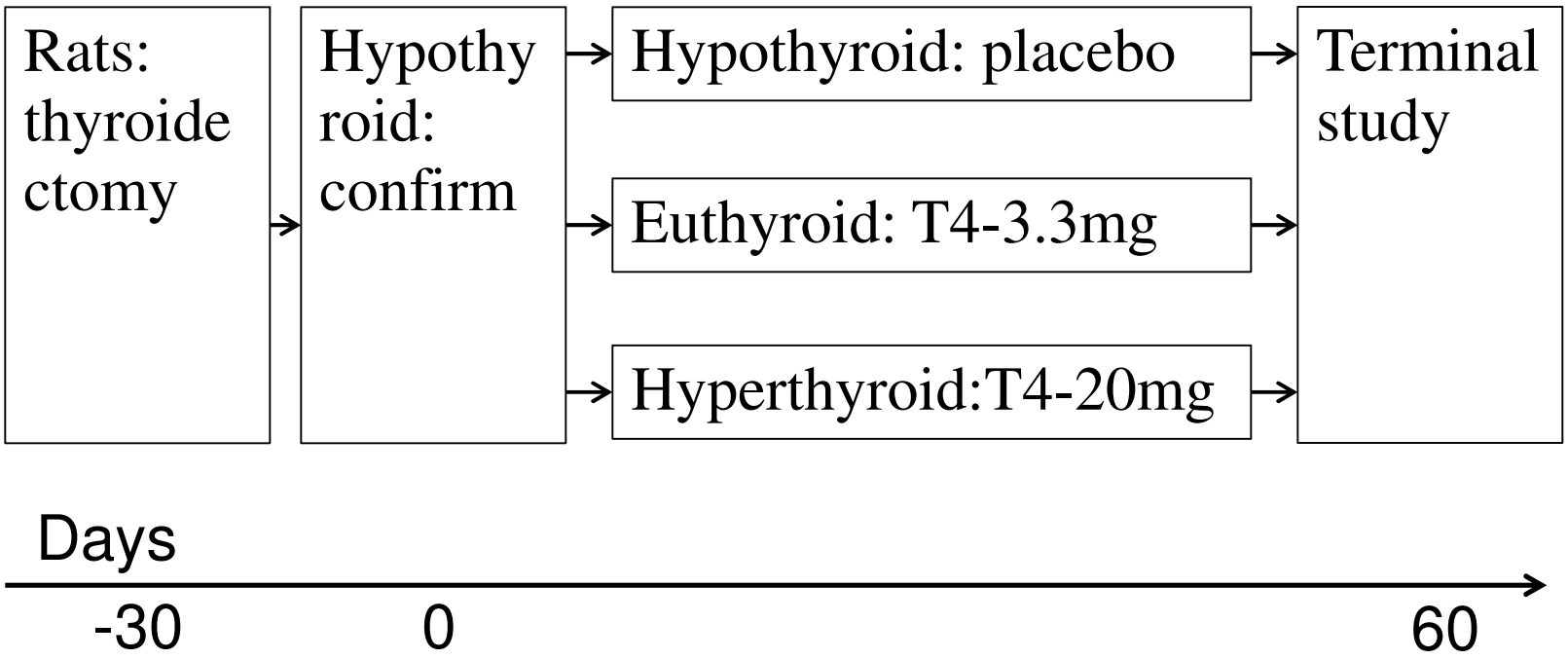
Gerdes AM, et al. Circulation 2010;122:385–393.
Fuster V, et al. Circulation. 2011;123:e269–367.
Zhang Y, et al, *Circ Arrhythm Electrophysiol. 2013;6:952-959*
Tănase, DM, et al. Rev Med Chir Soc Med Nat Iasi 2013;117:623-9.
Selmer C, et al. BMJ. 2012;345:e7895

Our hypothesis

Since hypothyroidism can lead to HF and HF can increase AF, hypothyroidism could lead to increased AF arrhythmogenesis

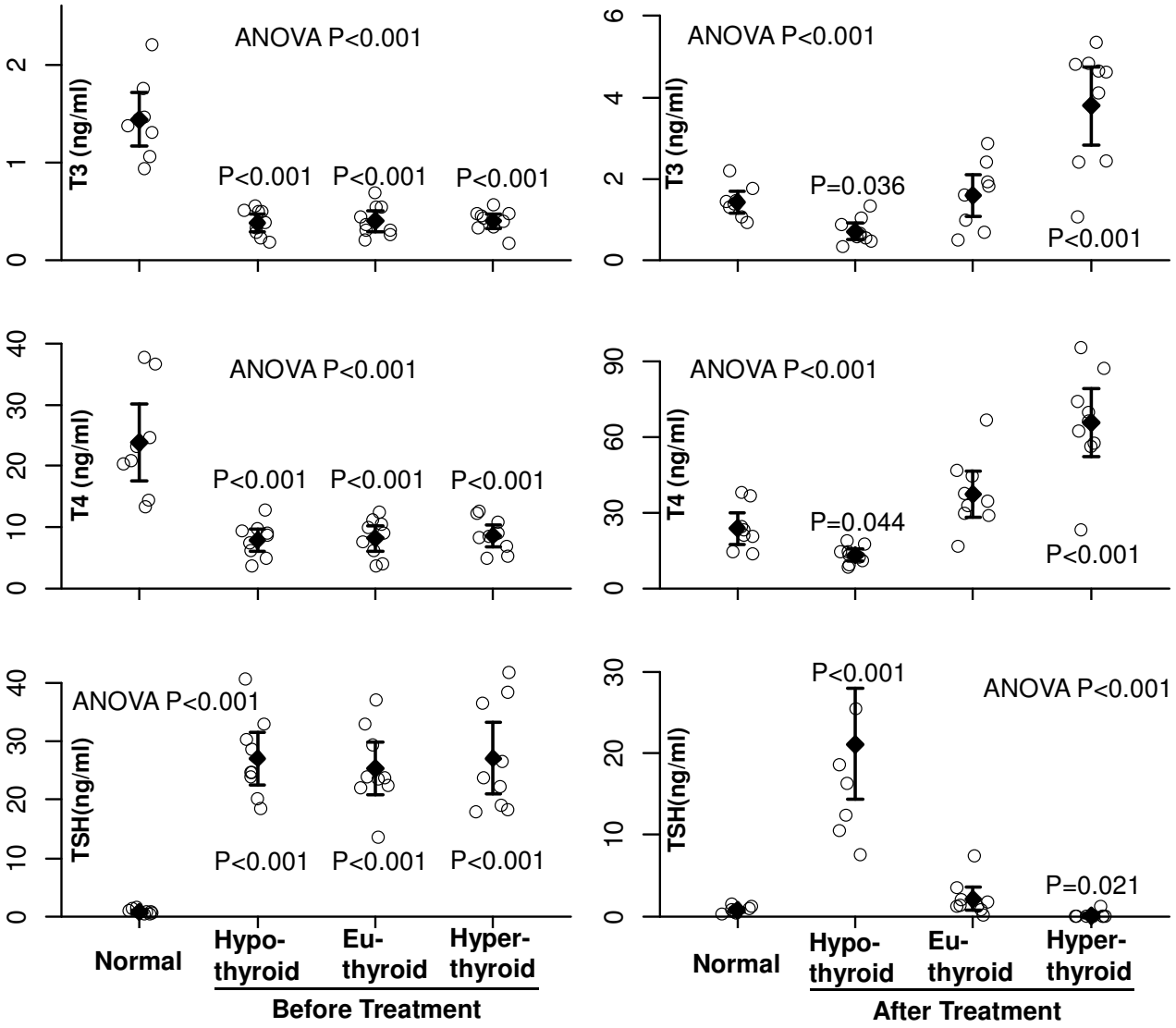
Zhang Y et al, *Circ Arrhythm Electrophysiol. 2013;6:952-959*

Study Protocol



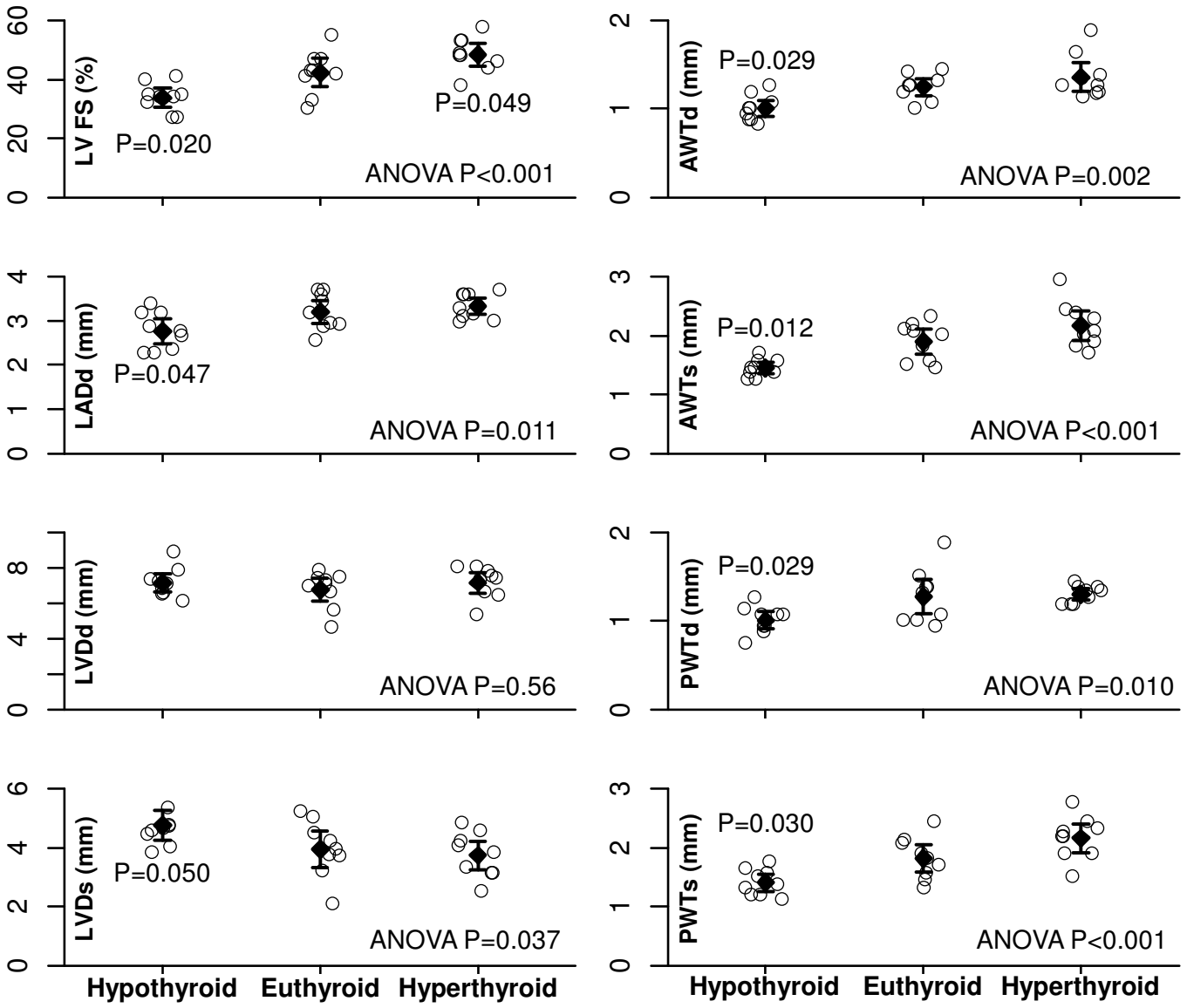
Zhang Y et al, *Circ Arrhythm Electrophysiol. 2013;6:952-959*

Thyroid Hormone levels



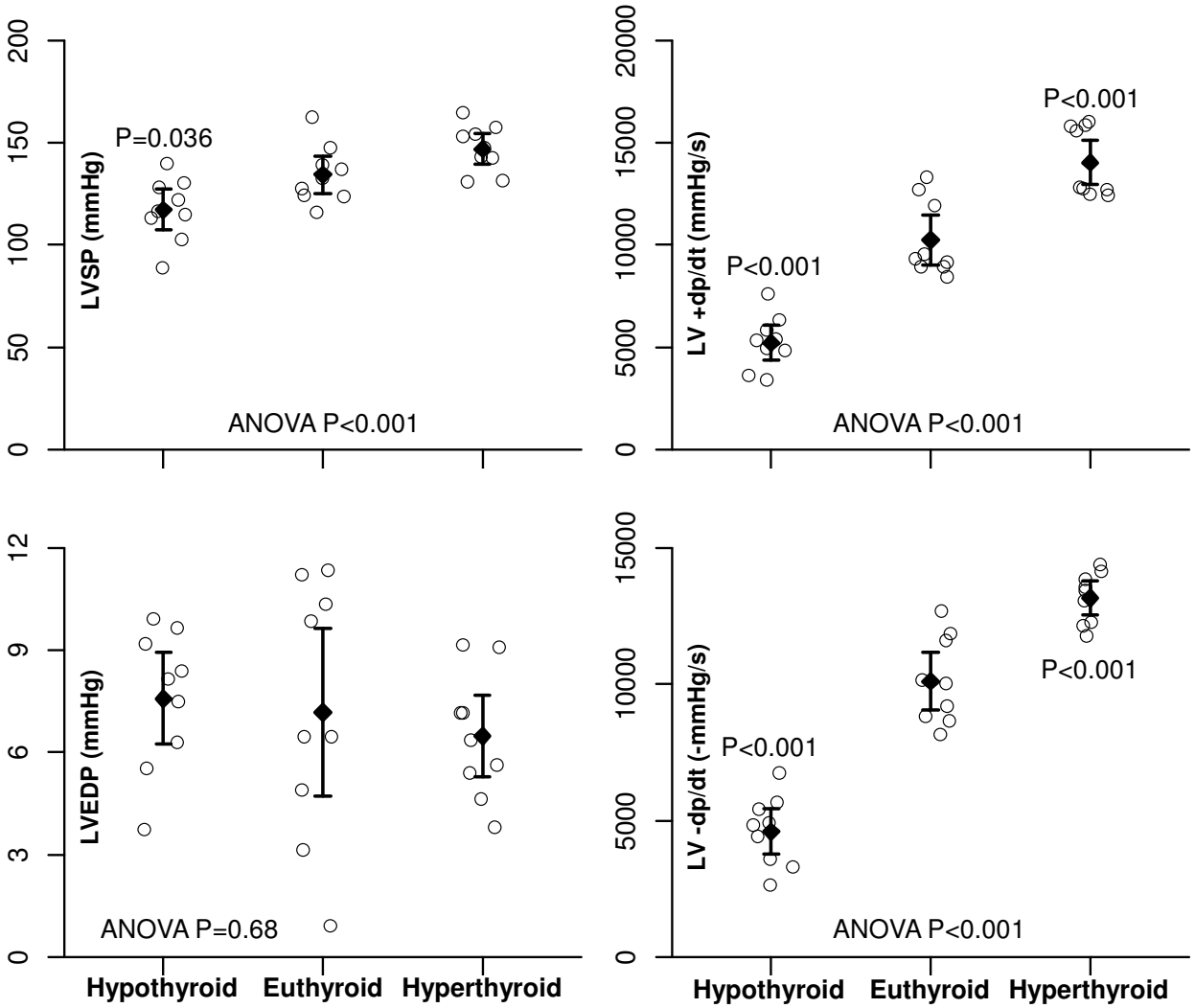
Zhang Y et al, *Circ Arrhythm Electrophysiol. 2013;6:952-959*

Echocardiographic Measurements



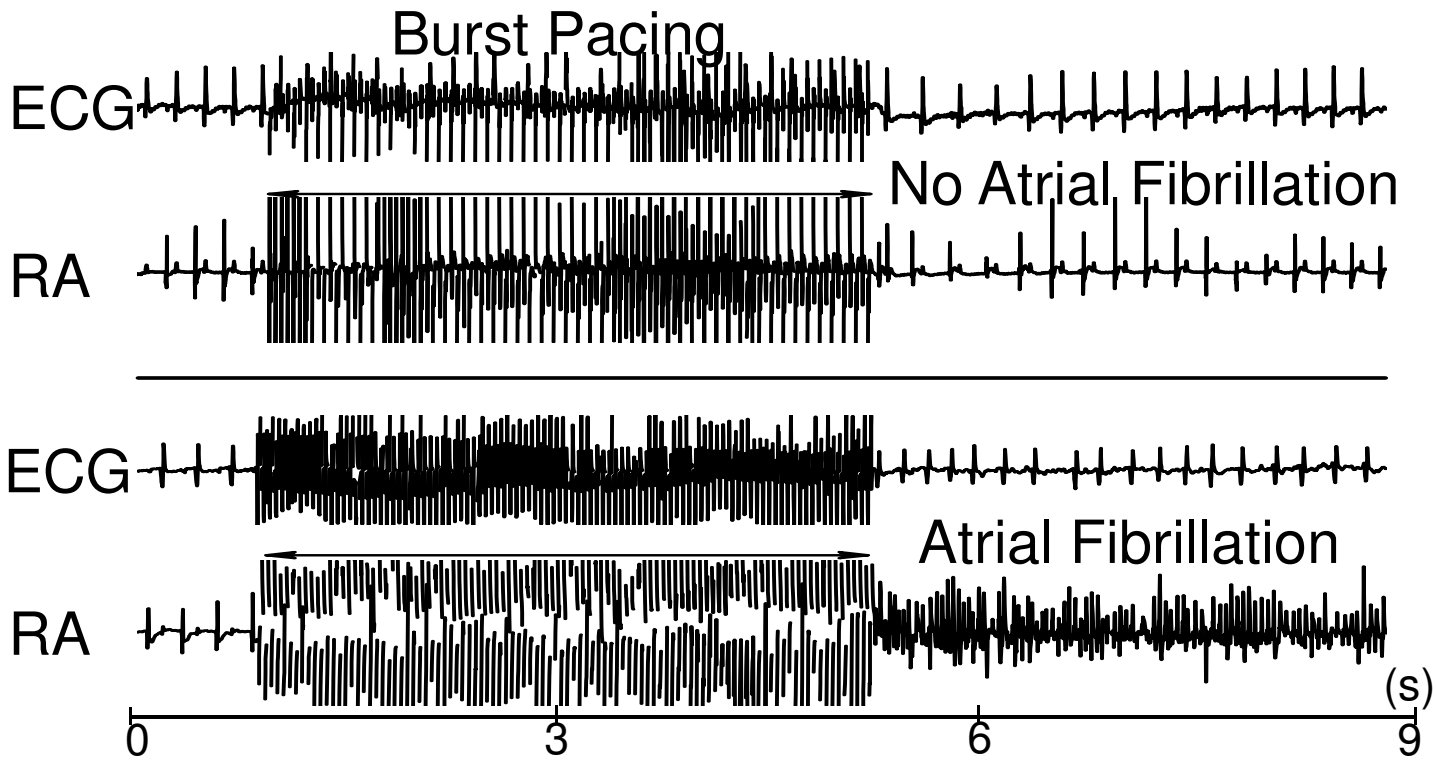
Zhang Y et al, *Circ Arrhythm Electrophysiol. 2013;6:952-959*

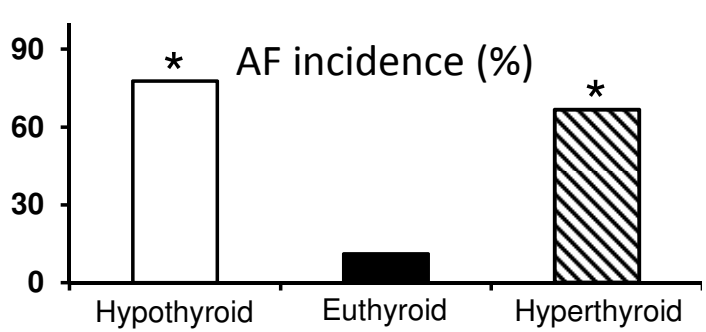
LV hemodynamics

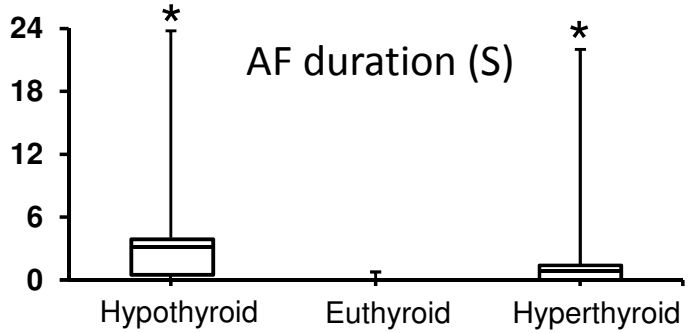


Zhang Y et al, *Circ Arrhythm Electrophysiol. 2013;6:952-959*

AF inducibility

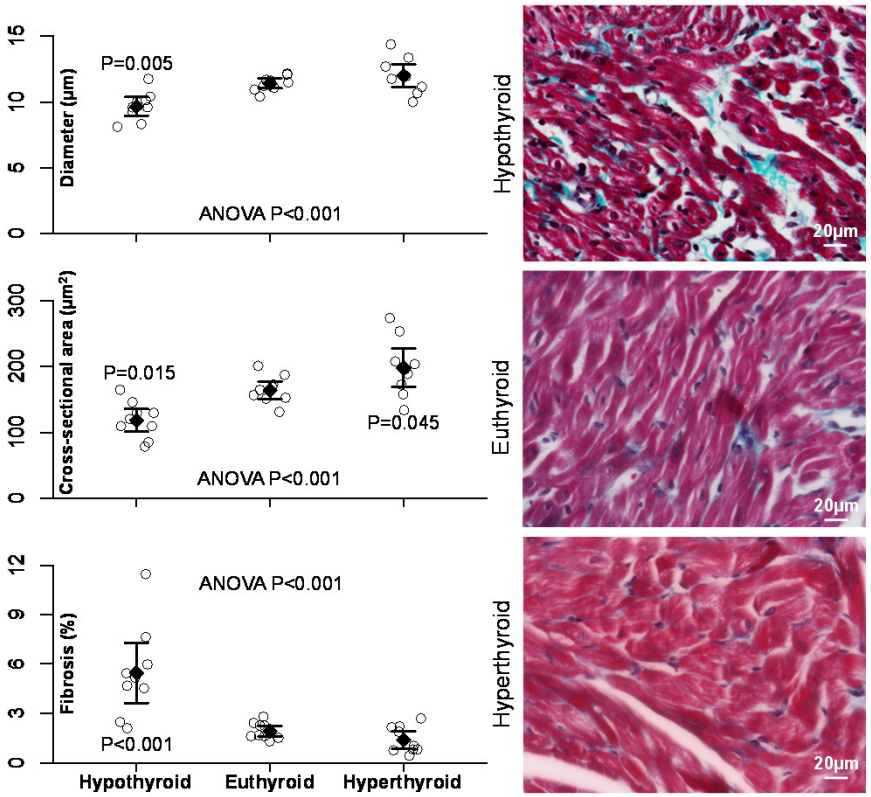


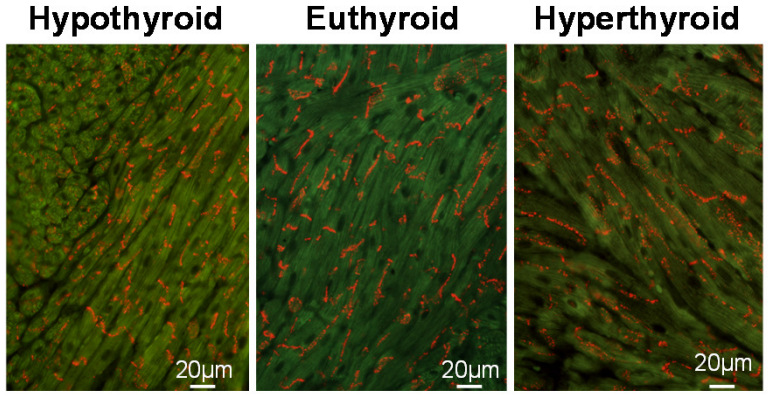


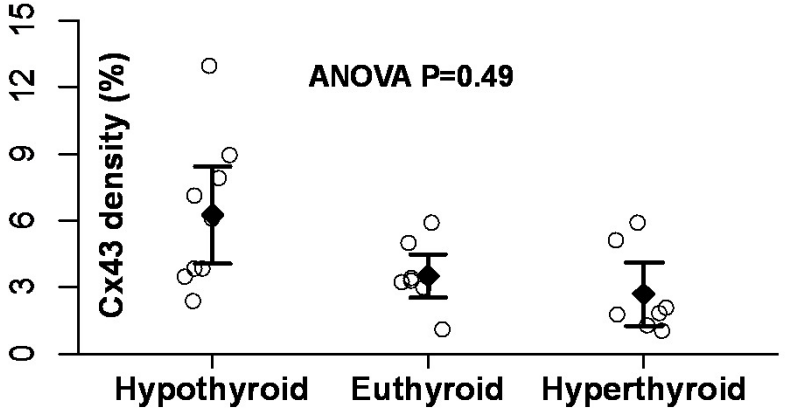


Zhang Y et al, *Circ Arrhythm Electrophysiol. 2013;6:952-959*

Atrial fibrosis and Cx43







Zhang Y et al, *Circ Arrhythm Electrophysiol. 2013;6:952-959*

Summary

Both hypo- and hyperthyroidism can increase AF

Concern of TH therapy in HF

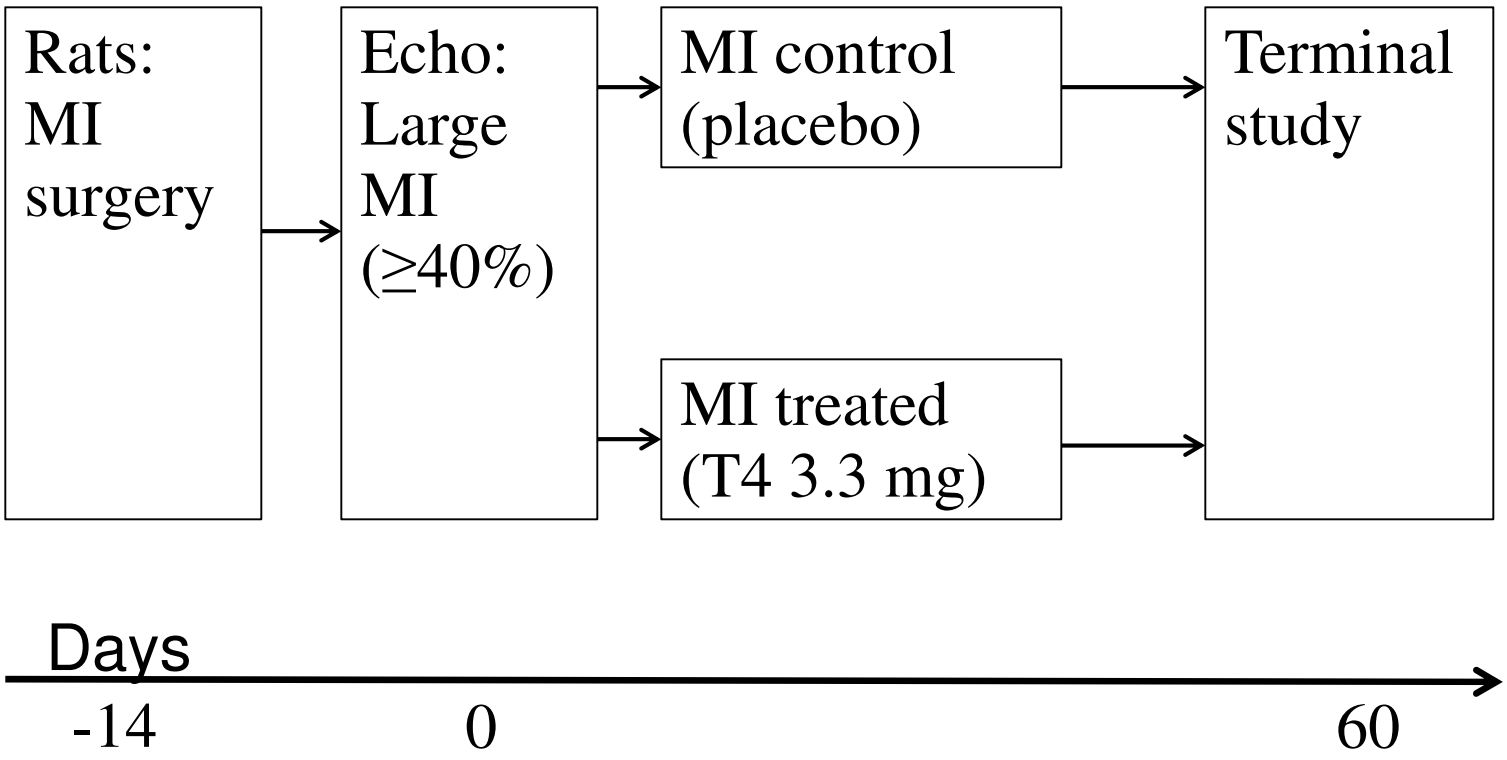
- Myocardial hypothyroidism contributes to HF development
- TH replacement therapy can improve cardiac function in HF
- **Clinical concern:** TH therapy may induce arrhythmias

Gerdes AM, et al. Circulation 2010;122:385–393
Chen YF, et al. Journal of translational medicine 2013;11:40
Henderson KK, et al, Circ Heart failure 2009;2:243-52

Our hypothesis

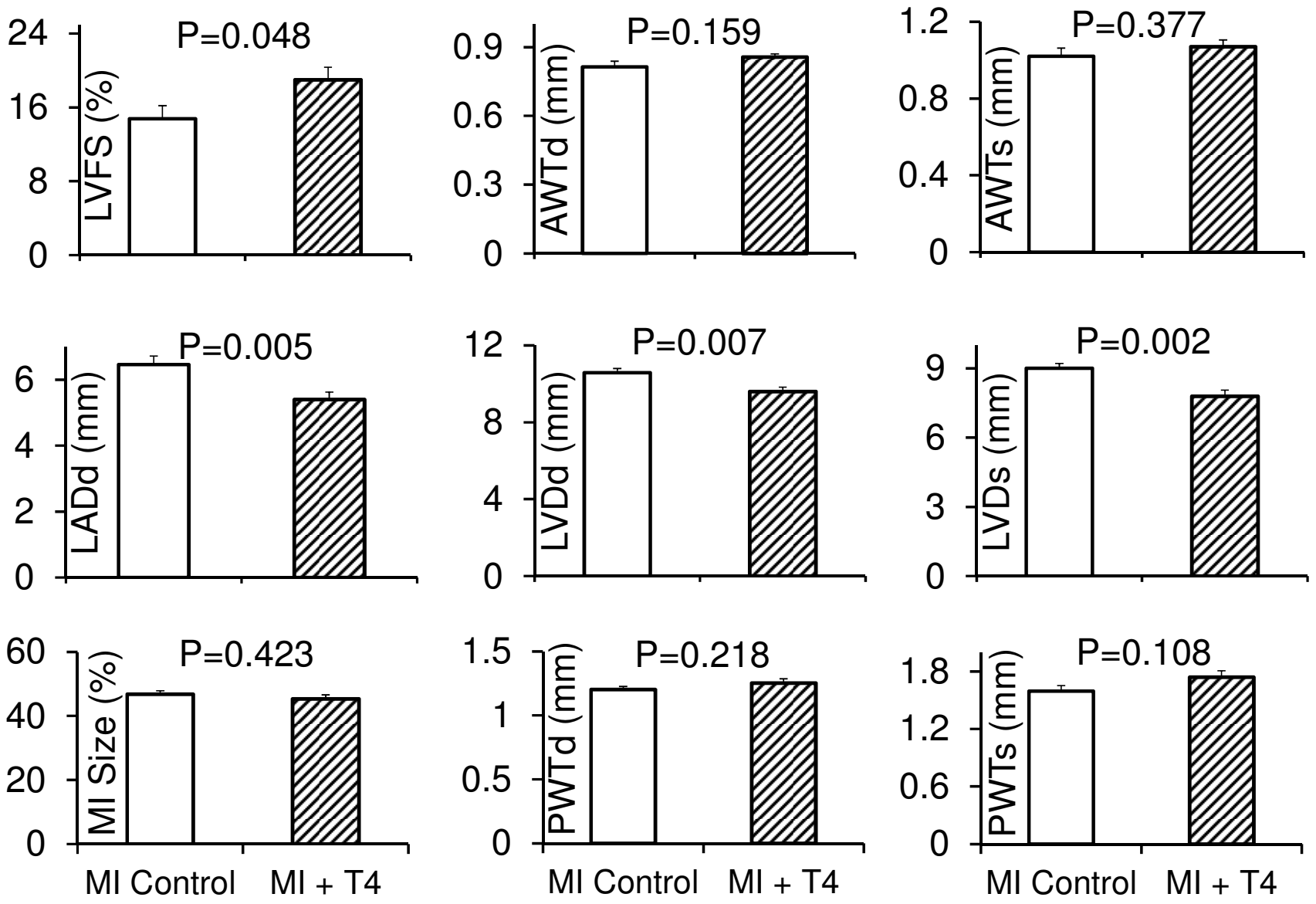
Since hypothyroidism increases AF, we hypothesized that myocardial hypothyroidism in HF is arrhythmogenic and TH replacement therapy may reduce AF in HF.

Study Protocol



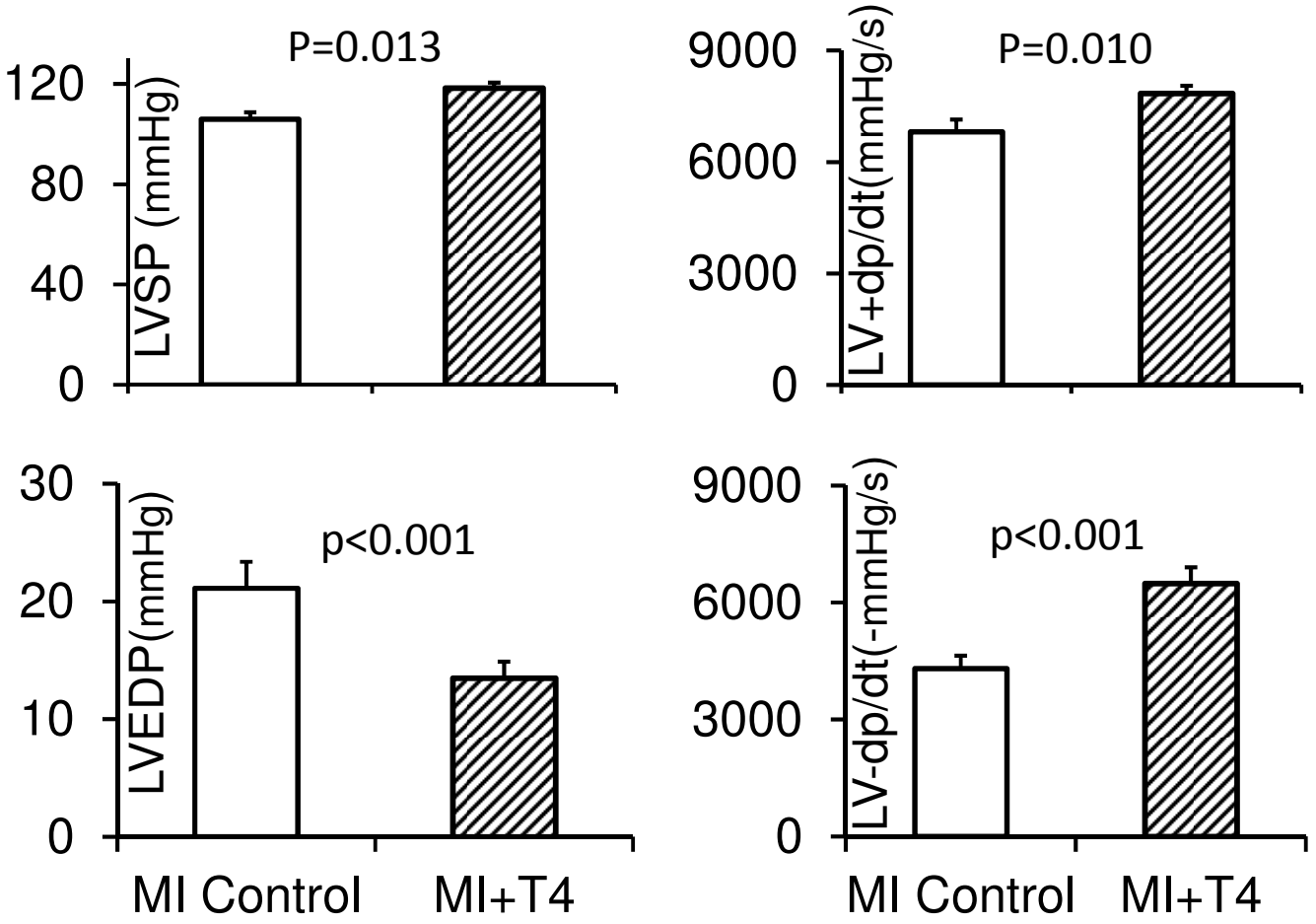
J Cardiac Fail 2014;20:1012-1019

Echocardiographic data



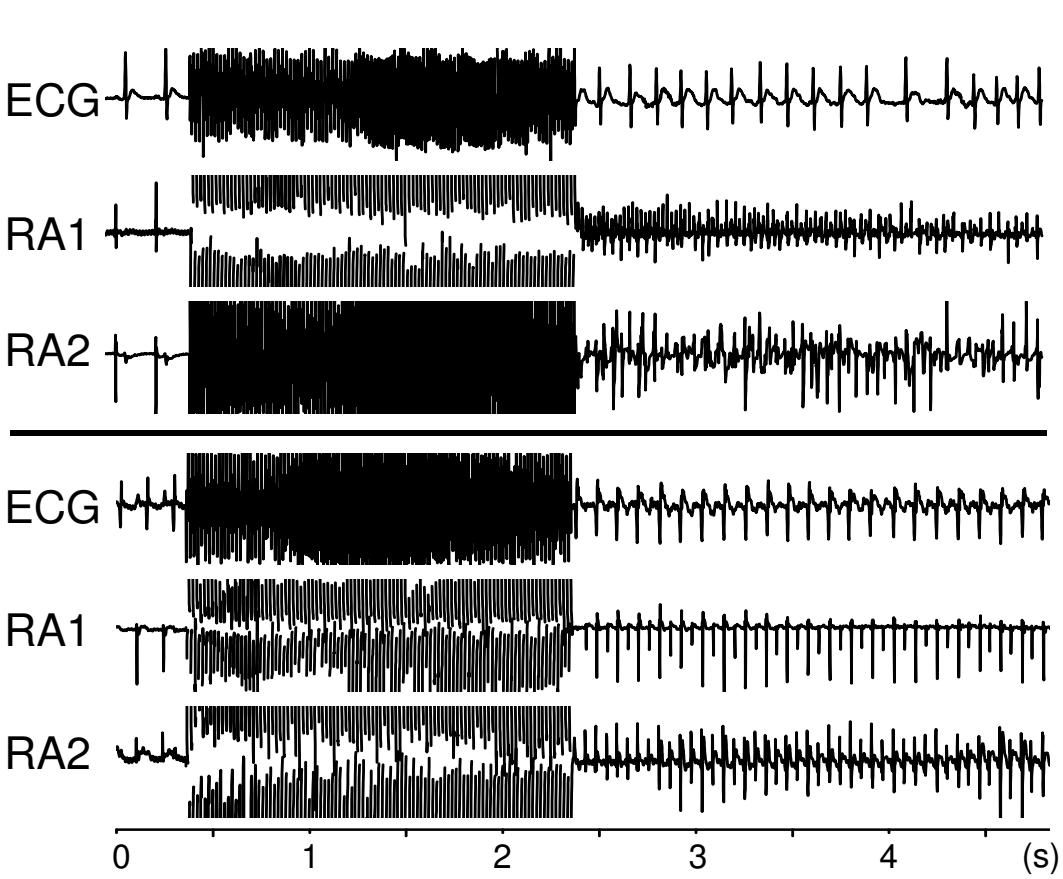
J Cardiac Fail 2014;20:1012-1019

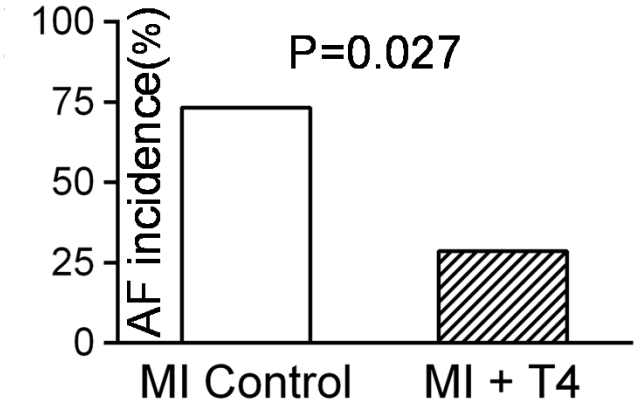
LV Hemodynamics

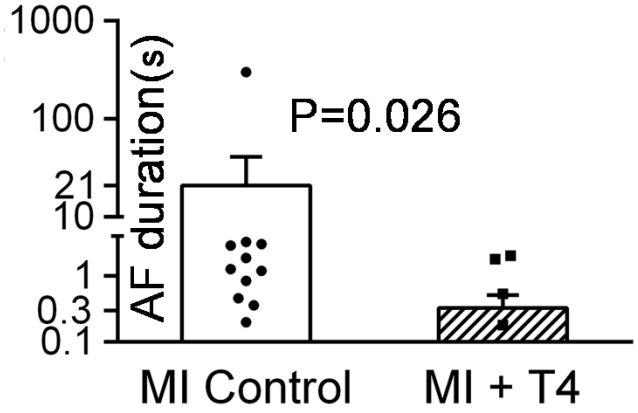


J Cardiac Fail 2014;20:1012-1019

AF inducibility

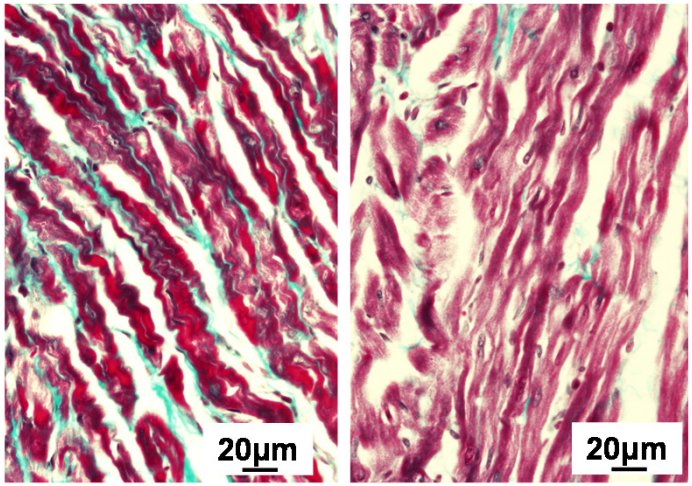


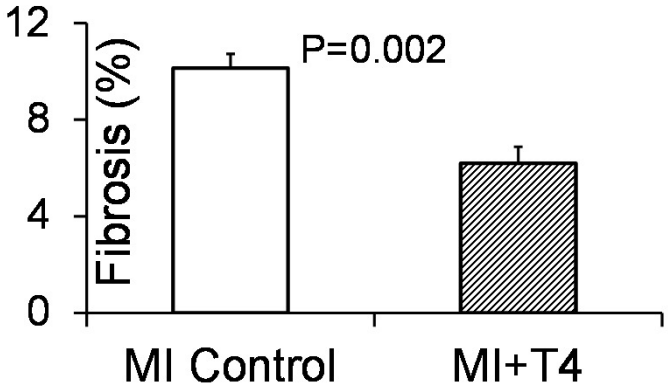


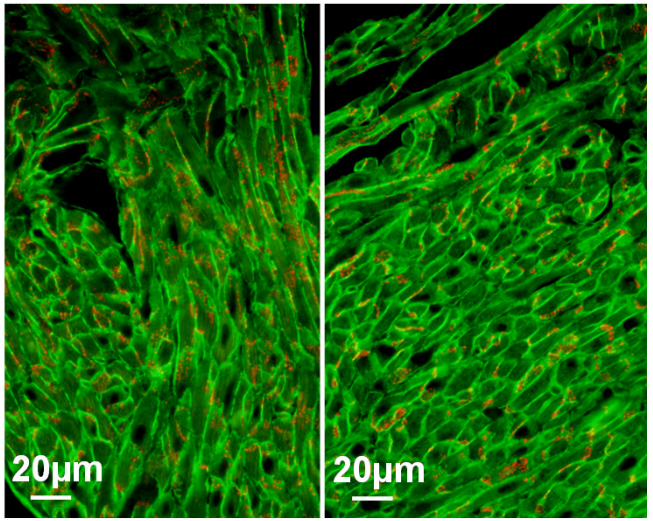


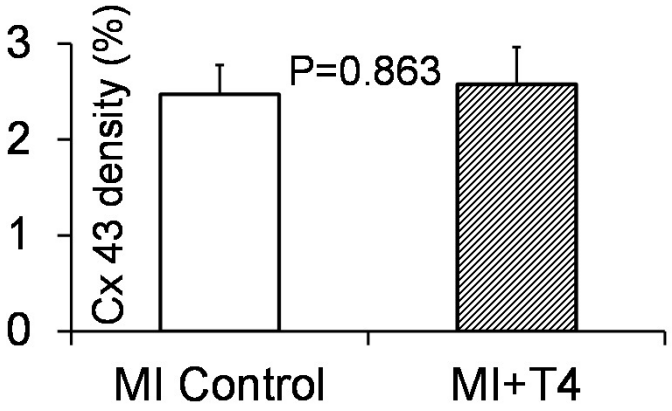
J Cardiac Fail 2014;20:1012-1019

Atrial fibrosis and Cx43









J Cardiac Fail 2014;20:1012-1019

Summary

Contrary to the common concern of increased arrhythmogenesis, TH replacement therapy in HF attenuates atrial remodeling and reduces AF inducibility after MI-HF.

Acknowledgement

A. Martin Gerdes, PhD

Eduard I. Dedkov, MD, PhD
Diana Teplitsky, DO
Nathan Y. Weltman, MD, PhD
Viswanathan Rajagopalan, PhD
Christine J. Pol, PhD
Bianca Lee, OMS-III
Ying Li, BS
Khusbu Pun, OMS I

Thanks' for your kind attention!!!!!!



Let Us Meet Again

We welcome you all to our future conferences of OMICS International

Please Visit:

http://cardiology.conferenceseries.com

http://www.conferenceseries.com/

http://www.conferenceseries.com/clinical-research-conferences.php