XXII Jornadas SOLACI
7° Región Cono Sur
21 / 22 de Noviembre 2013

SOLACI
SOCIEDAD LATINOAMERICANA DE CARDIOLOGIA INTERVENCIONISTA

Denervación renal como tratamiento de la HTA refractaria: Inicio de un comienzo

HOSPITAL ITALIANO de Buenos Aires
Instituto de Medicina Cardiovascular

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NO TENGO CONFLICTO DE INTERESES RESPECTO A ESTA PRESENTACIÓN

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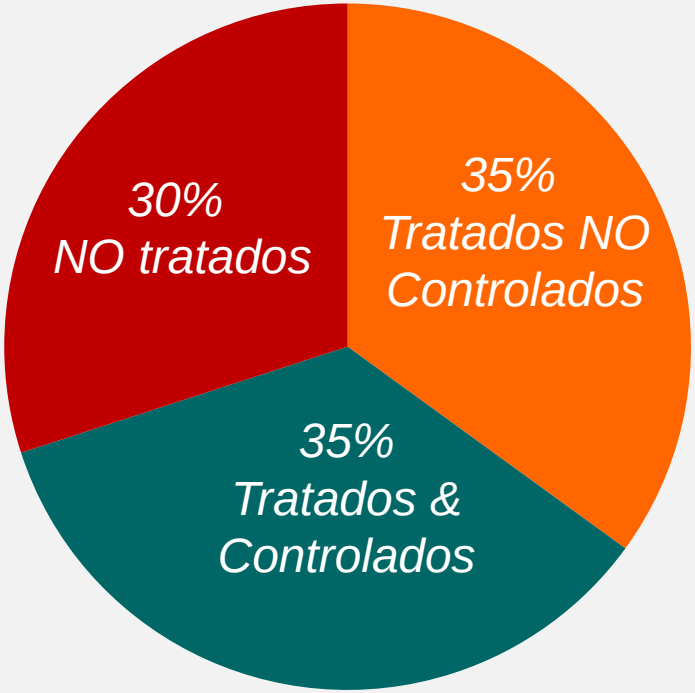
Hipertensión Arterial

- ✓ Mas de 1.000 millones de personas en el mundo[1]
- ✓ La hipertensión crónica no controlada, es un determinante mayor de Stroke, Infarto e Insuficiencia Cardiaca[2]
- ✓ Cada 20/10mmHg de aumento de valor de TA se duplica la mortalidad cardiovascular a 10 años[3,4]
- ✓ 7 millones de muertes al año atribuibles a hipertensión en todo el mundo[5]

[1] Kearney PM et al. Global burden of hypertension: Analysis of worldwide data. Lancet 2005; 365 (9455):217-23
[2] Roger VL et al. Heart disease and stroke. Statistics-2011 update: A report from the American Heart Assiciation. Circulation 2011: 123(4):e18-e209
[3] Lewington S et al. Age-specific relevance of usual blood pressure to vascular mortality. Ameta-analysis of individual data for one million adults in 61 prospective studies. Lancet 2002; 360: 1903-13
[4] Chobanian AV et al. The seventh report of the Joint National Comitee on Prevention, Detection, Evaluarion and Treatment of high blood pressure. The JNC 7 report. JAMA 2003; 289: 2560-2527
[5] Schmieder RE. Et al. ESH Renal Denervation – an interventional therapy of resistant hypertension. Journal of Hypertension 2012; 30: 837-841

Hipertensión Arterial



- ✓ Para 2025 se esperan en el mundo 1.600 millones de hipertensos

Chobanian et al. Hypertension. 2003;42(6):1206–1252.

Hipertensión Arterial

Hipertenso REFRACTARIO:

>3clases de antihipertensivos,

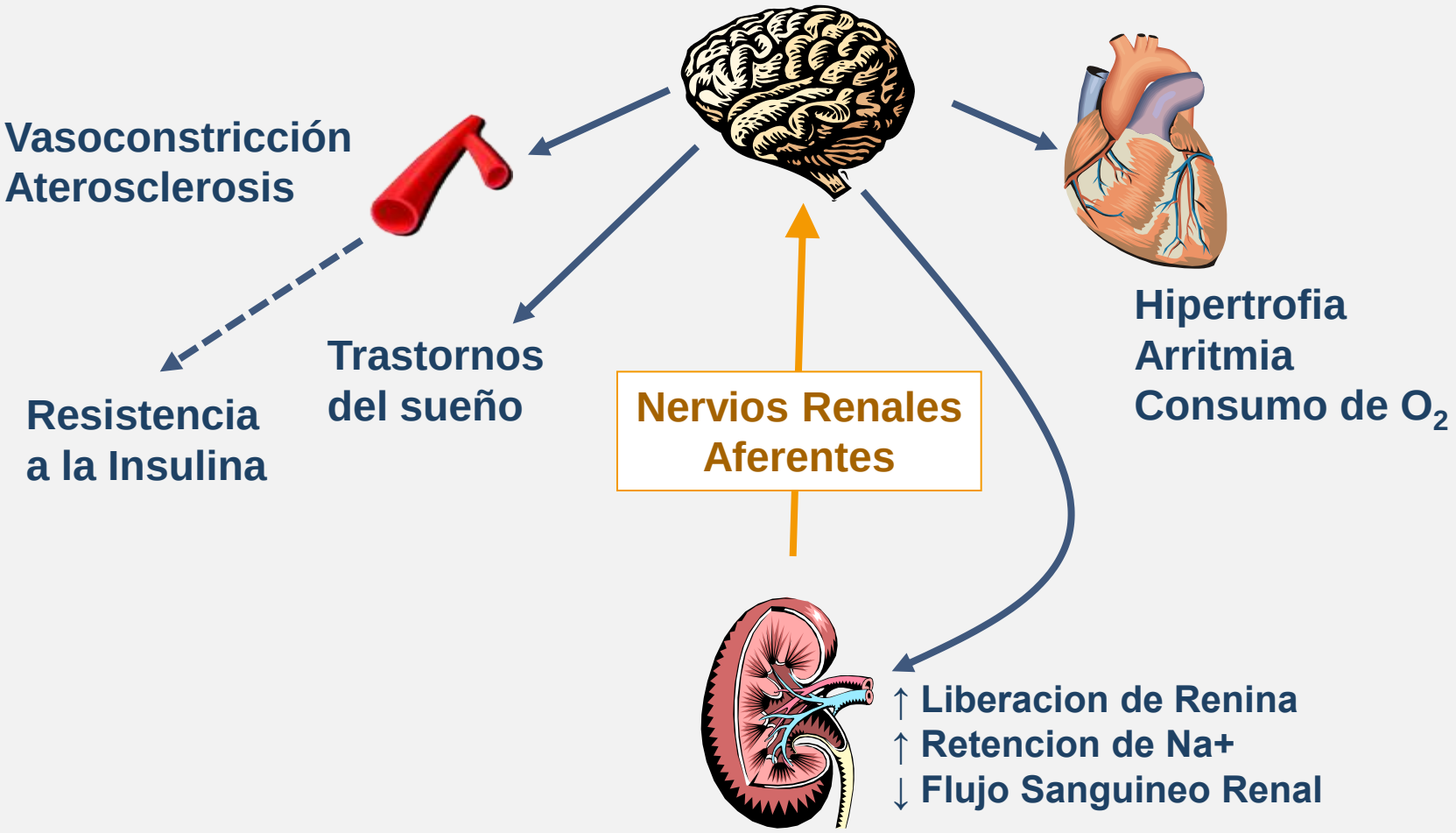
siendo uno de ellos un diurético,

a dosis máxima recomendada/tolerada [1]

Sarafadis PA, Bakris GL. Resistant hypertension:an overview of evaluation and treatment . J Am Coll Cardiol 2008;52:1749-1757

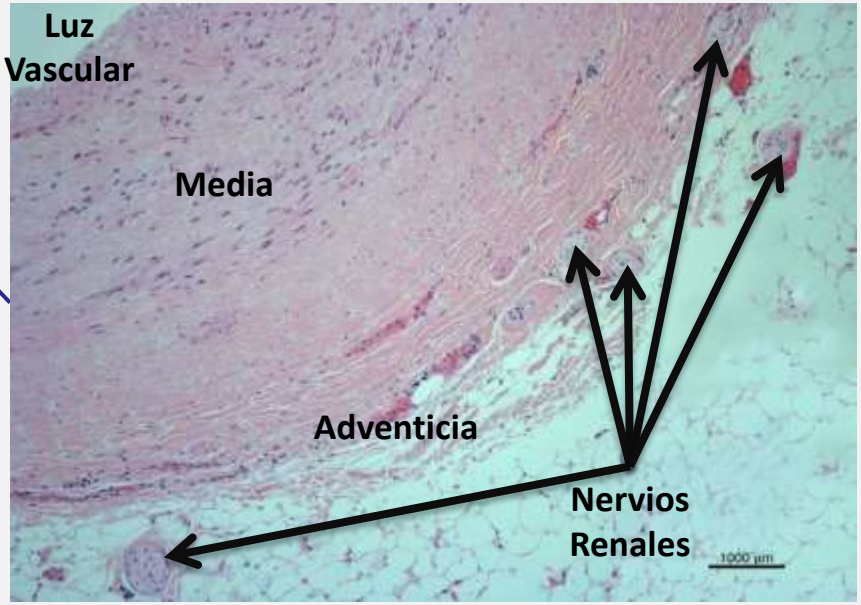
Activación Simpática Renal: Nervios Aferentes

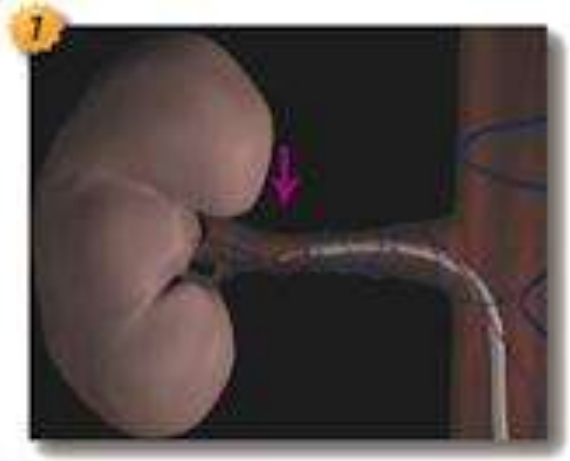
El Riñón como Origen de la Estimulación Simpática Central

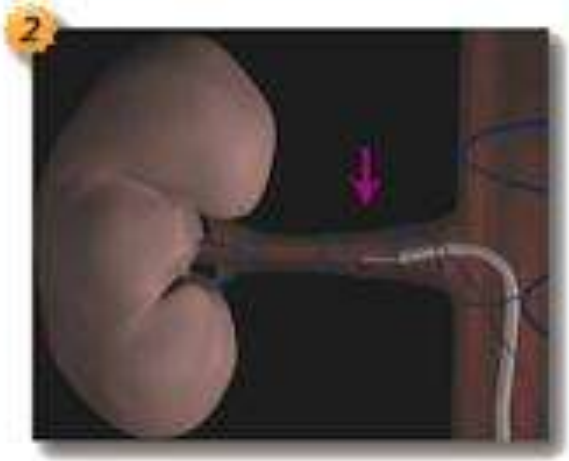


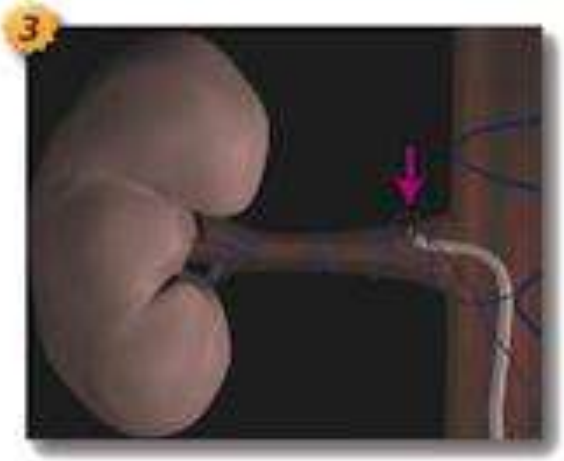
Nervio Renal

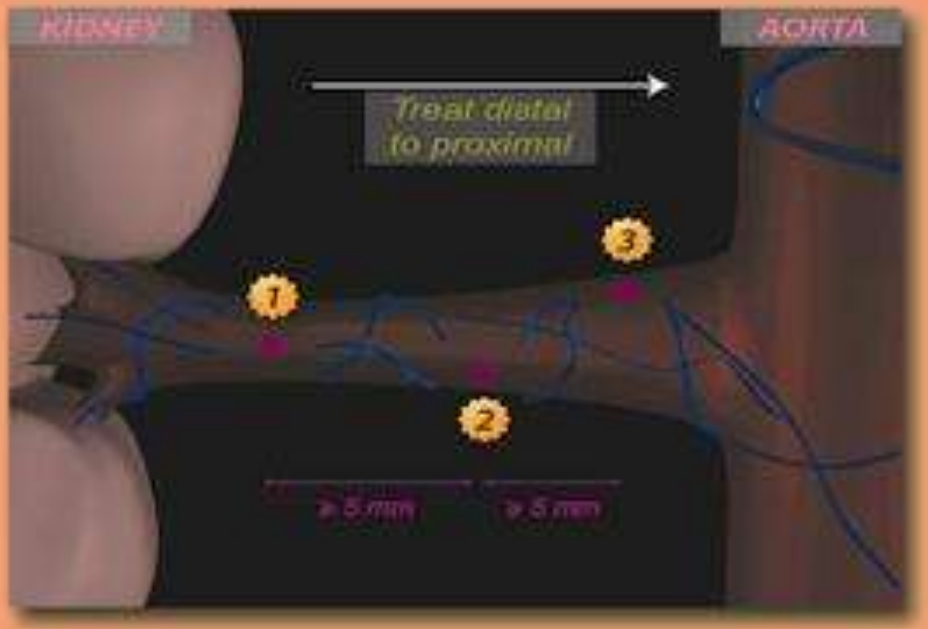
- ✓ Los nervios nacen en T10-L2
- ✓ Arborizan alrededor de la arteria
- ✓ Se encuentran primariamente en la adventicia







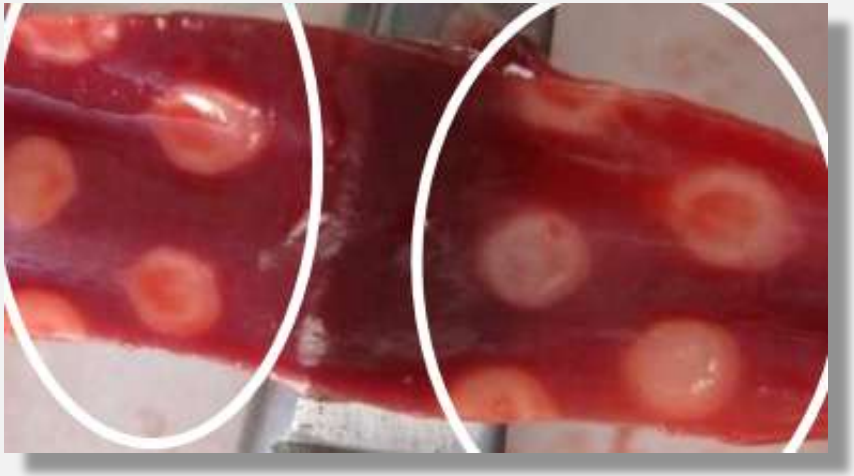




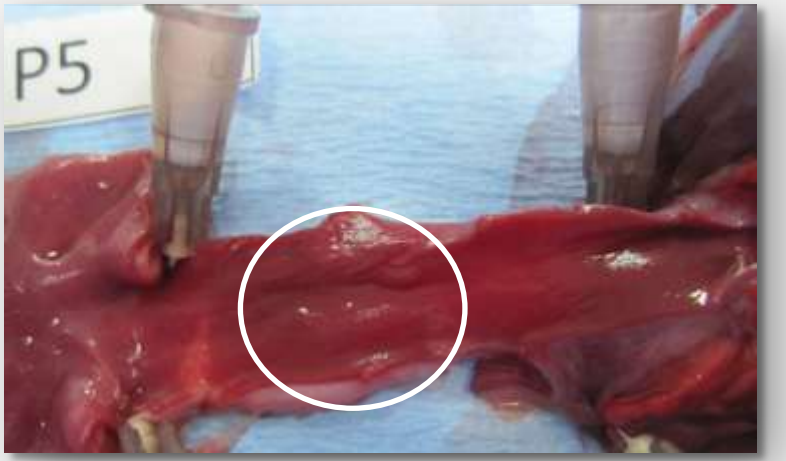
ARDIAN

Predictable Pattern. Repeatable Results*

ENLIGHTN I



Acute

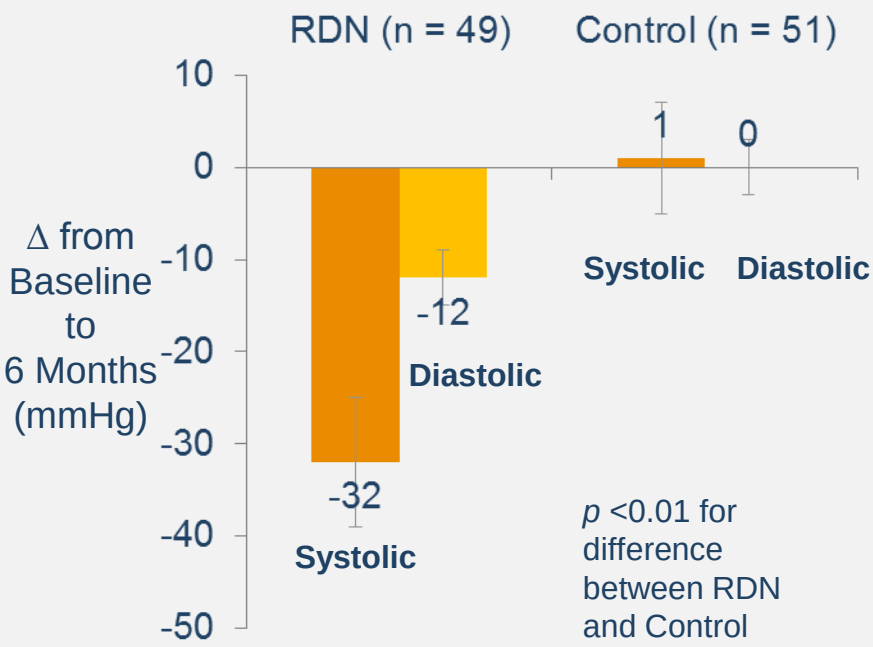


One Month

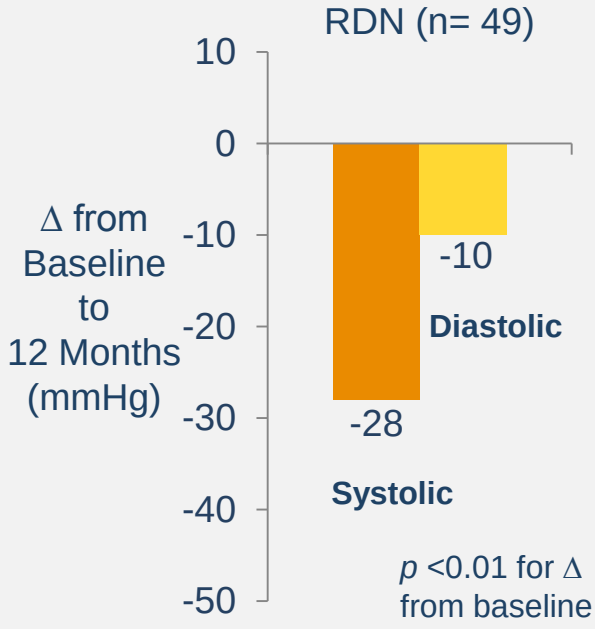
* Animal study and results on file at St. Jude Medical

Symplicity HTN-2: RDN Superior to Medical Management, Reductions Sustained to 12M

Primary Endpoint (6M post Randomisation)



Latest Follow-up (12M post Randomisation)



Primary Endpoint:

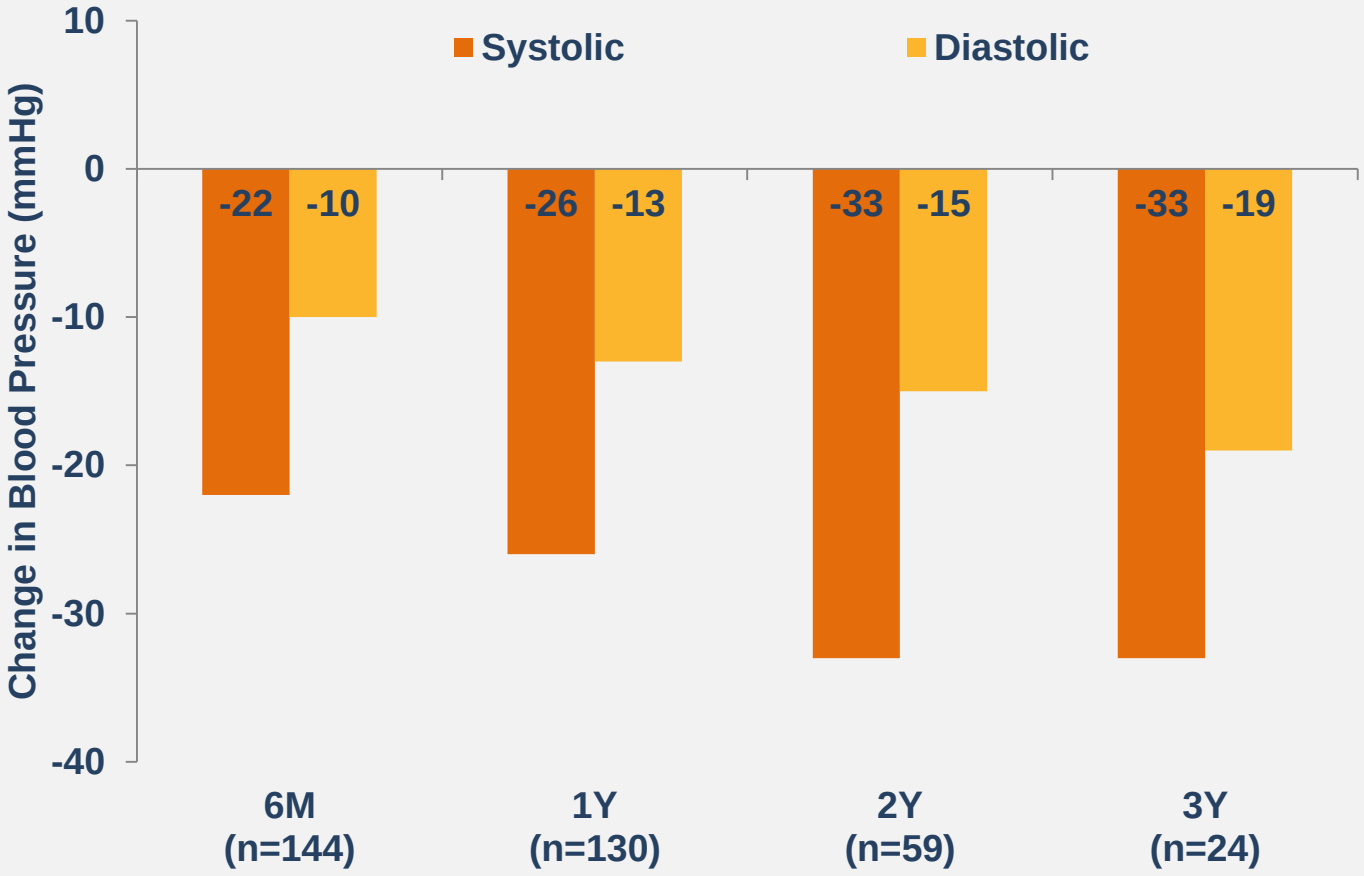
- 84% of RDN patients had ≥10 mmHg reduction in SBP
- 10% of RDN patients had no reduction in SBP

Latest Follow-up:

- Control crossover (n = 35): -24/-8 mmHg (Analysis on patients with SBP ≥ 160 mmHg at 6 M)

Expanded results presented at the American College of Cardiology Annual Meeting 2012 (Esler, M.)

Significant, Sustained Blood Pressure Reductions to at Least 3 Years

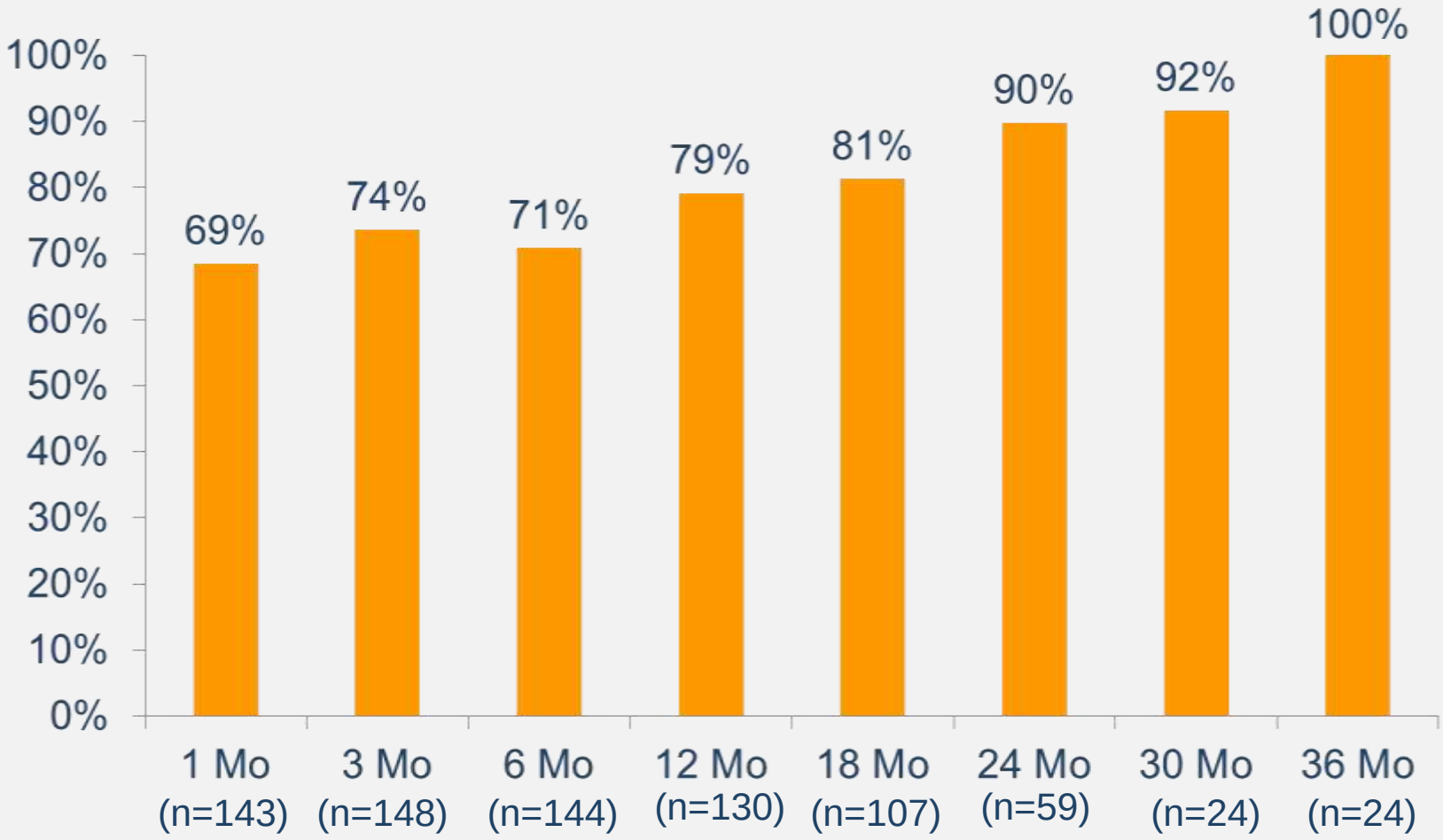


p <0.01 for Δ from baseline for all time points

Expanded results presented at the American College of Cardiology Annual Meeting 2012 (Krum, H.)

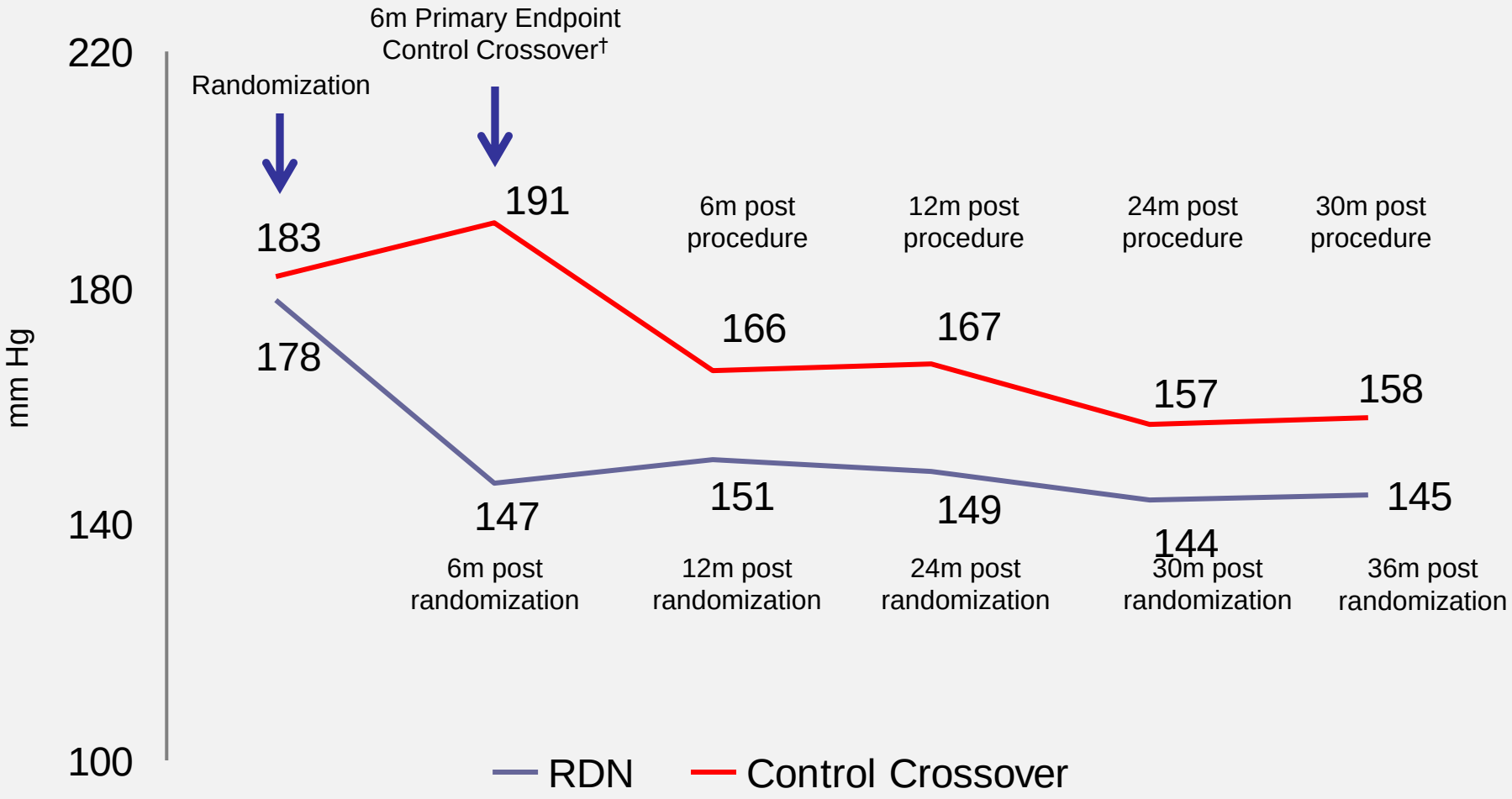
Percentage Responders Increases Over Time

Responder was defined as an office SBP reduction ≥10 mmHg



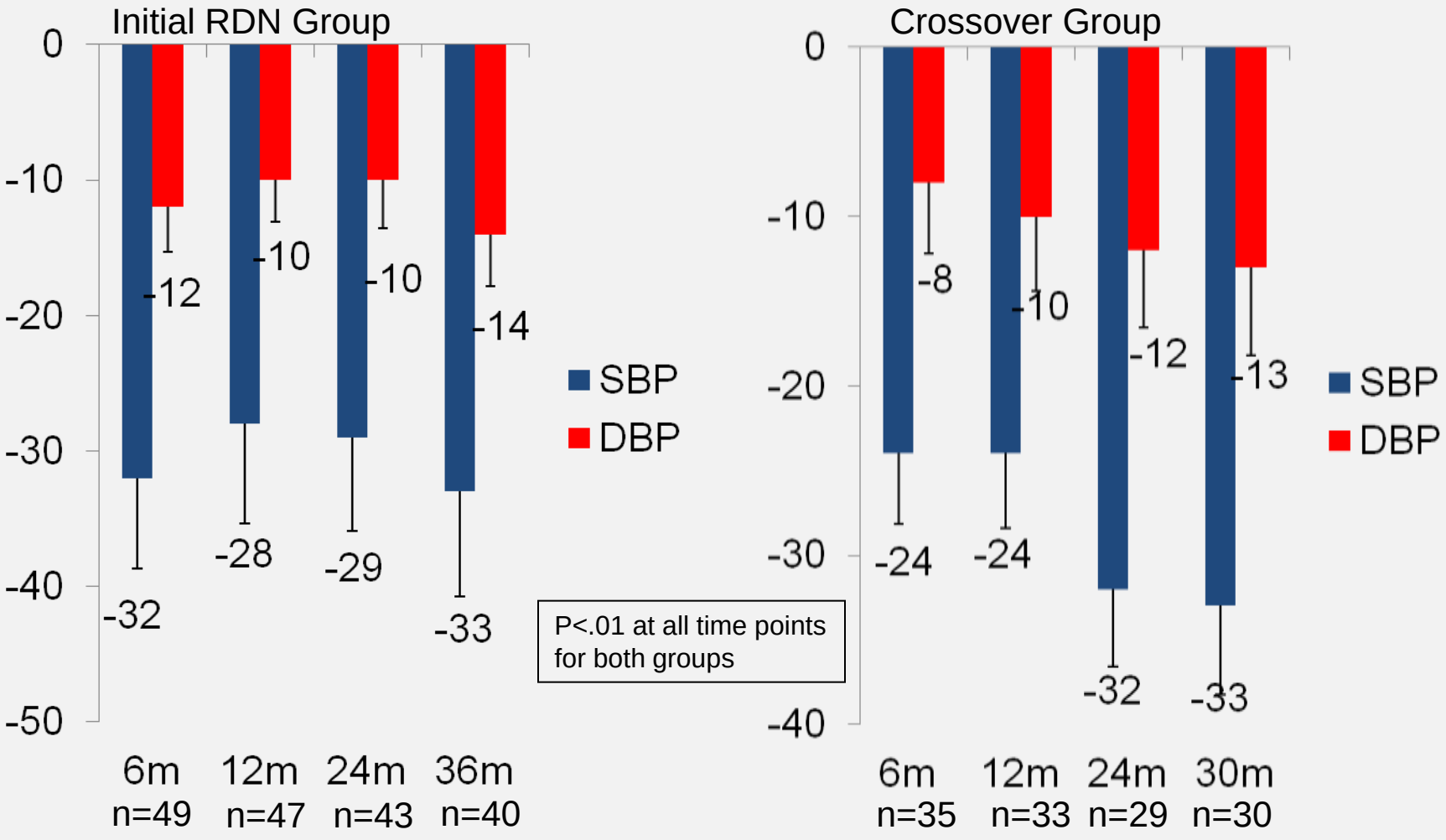
Expanded results presented at the American College of Cardiology Annual Meeting 2012 (Krum, H.)

Office SBP through 36 Months*



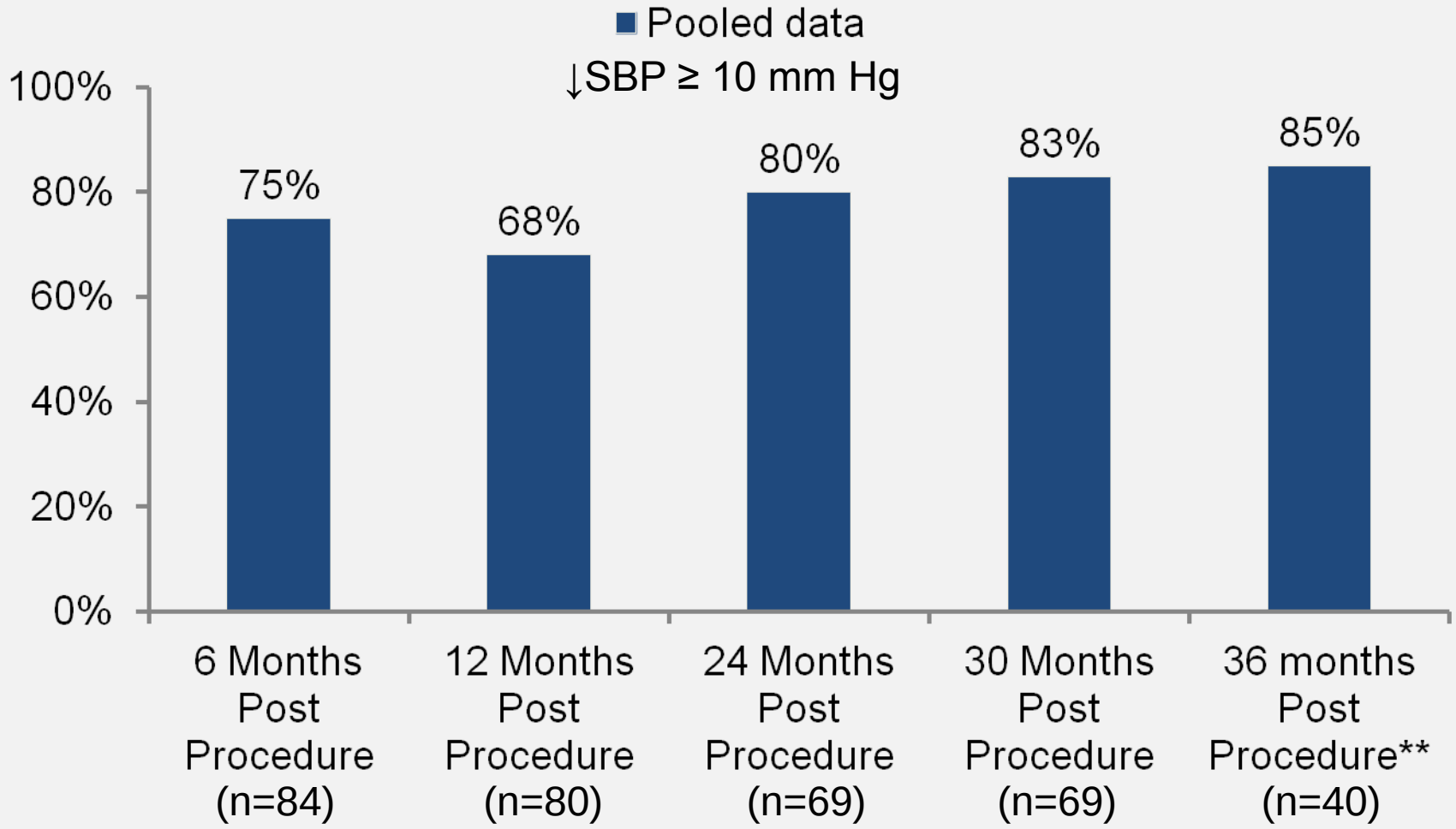
*only patients in the RDN group reached their 36 month post procedure visit
†Patients randomized to control were offered RDN following the primary endpoint assessment. Only patients still meeting entry criteria (SBP ≥ 160 mmHg) were included in this analysis (n=37)

Change in Office Blood Pressure through 36-Months Post-Randomization*



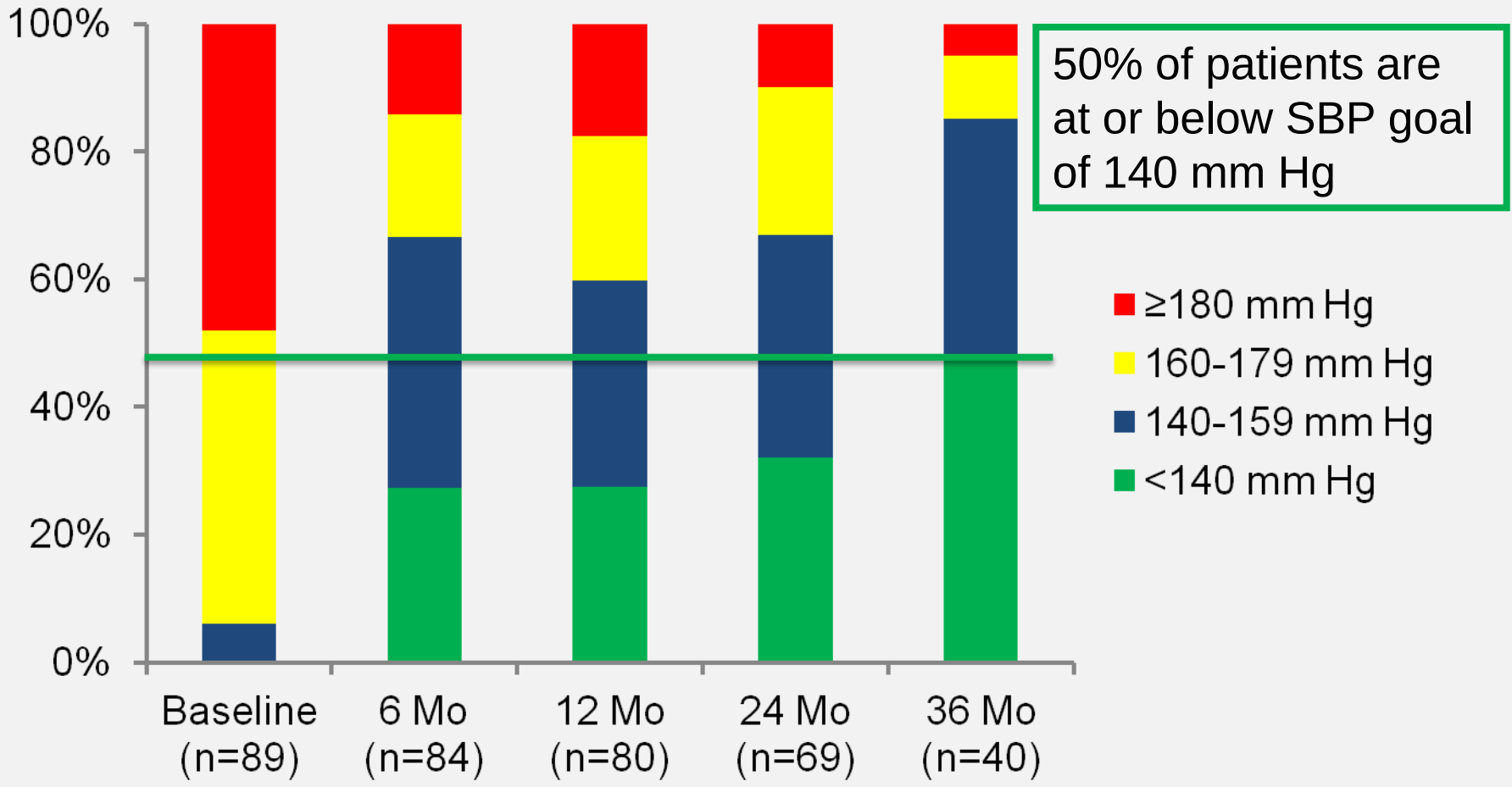
*Crossover patients only had 30 months post procedure data

SBP Response Rate Through 36 Months Post Randomization



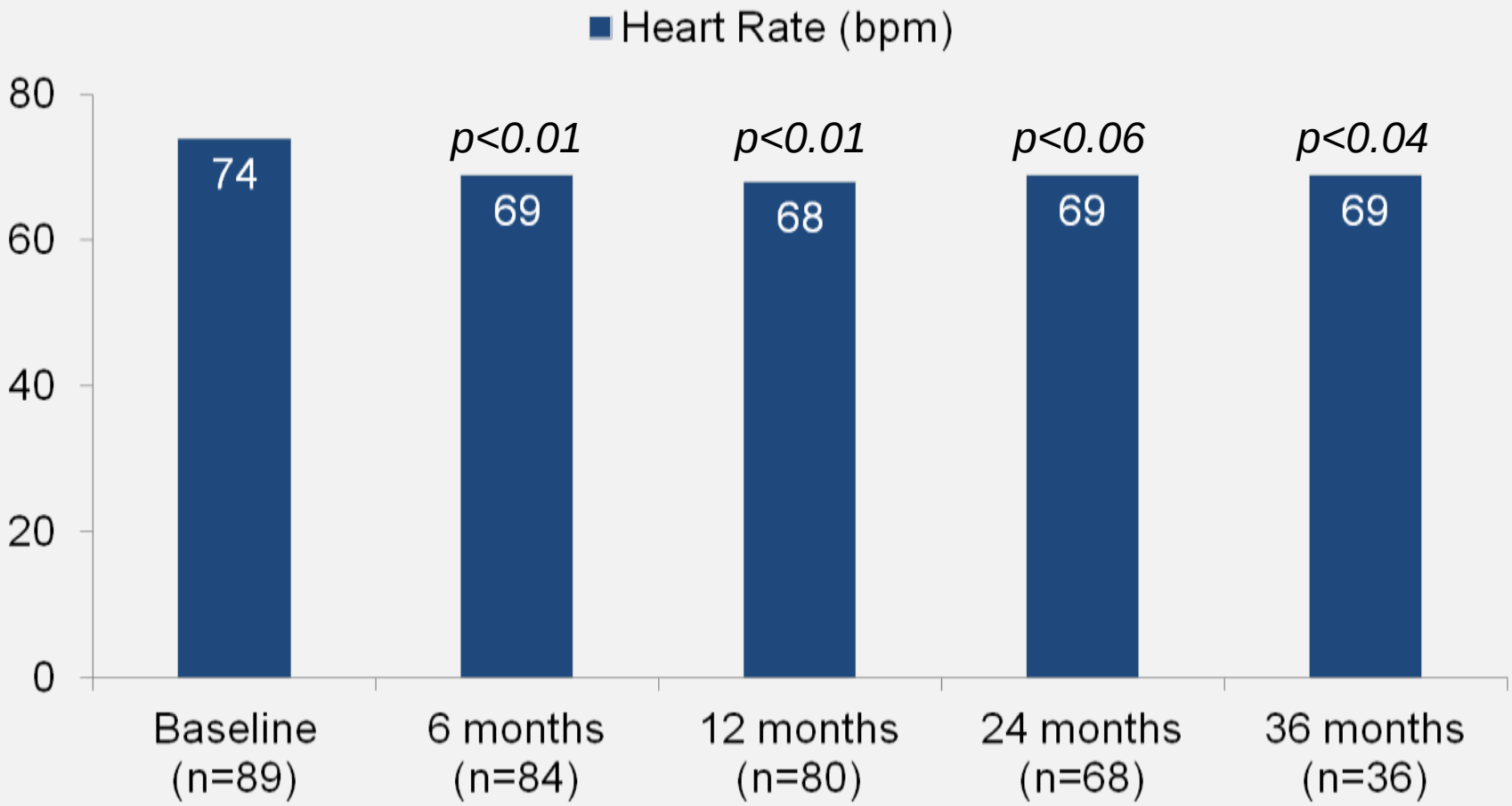
**No crossover patients reached their 36 month post procedure visit

Distribution of SBP Post-Procedure



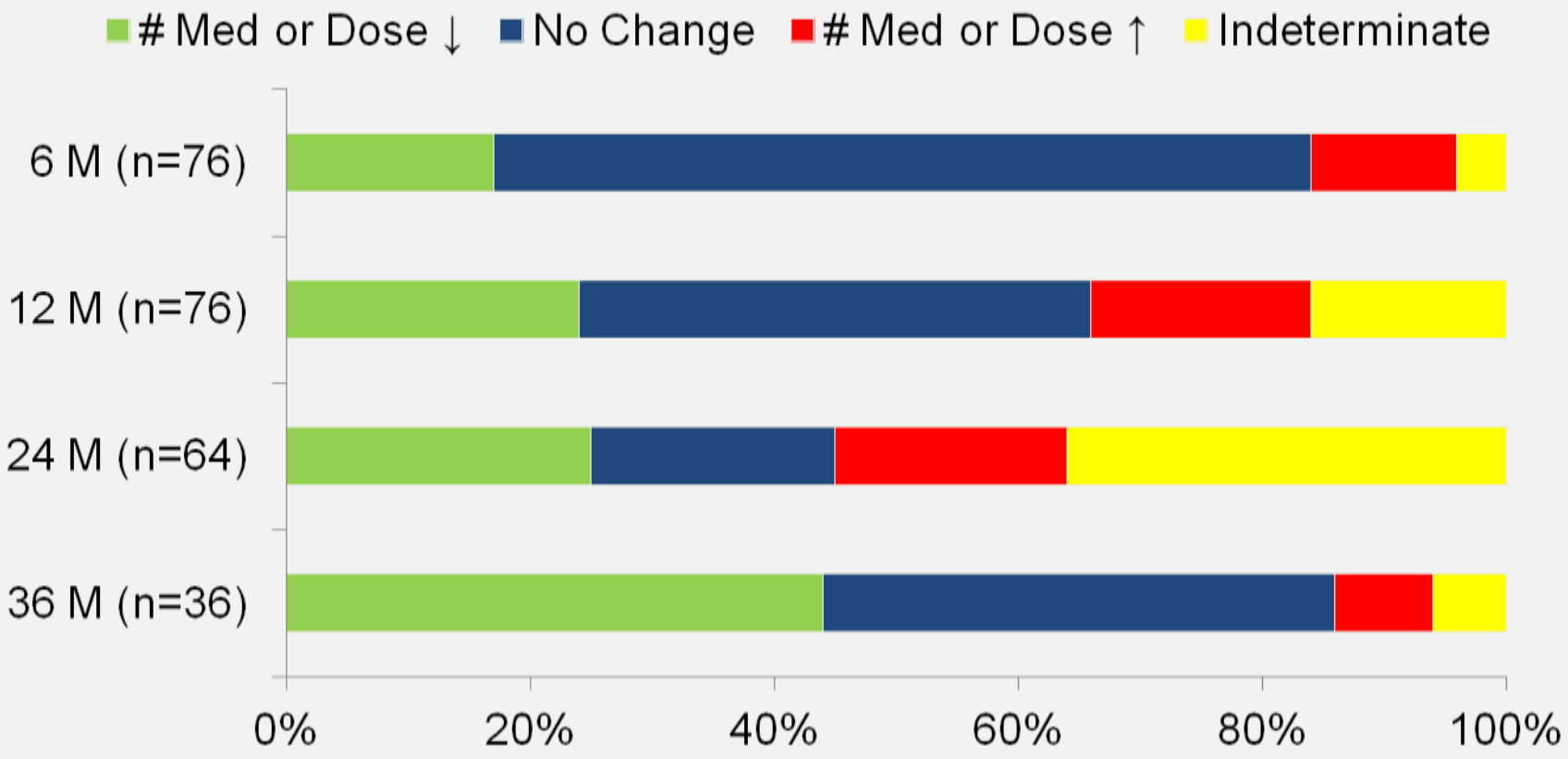
Represents Pooled data. No crossover patients reached 36 months post procedure visit

Heart rate to 36 months*



All *p-values* are as compared to pre-procedure values
*Represents pooled data. None of the crossover patients reached their 36 month follow up visit

Medication changes to 36 months*



*None of the crossover patients reached 36 months post-procedure follow up
Increase: if any or both meds and/or dose increase,
Decrease: if any or both meds and/or dose decrease. Indeterminate combination of med/dose increase and decrease.

Medication for patients with 36 months follow up (n=40)

Pooled Treated Patients (n=40)	Baseline	36 Months	p-value
Number of Medications (Mean±SD)	5.1 ± 1.5	4.6 ± 1.6	0.023
Angiotensin Receptor blocker	70.0%	70.0%	1.000
Aldosterone antagonists	20.0%	35.0%	0.083
ACE inhibitor	47.5%	35.0%	0.025
Centrally-acting sympatholytics	57.5%	32.5%	0.002
Direct renin inhibitors	20.0%	7.5%	0.059
Beta blockers	82.5%	75.0%	0.083
Calcium Channel blocker	75.0%	67.5%	0.257
Diuretic	87.5%	80.0%	0.366
Alpha-adrenergic blocker	5.0%	5.0%	1.000
Direct-acting vasodilators	7.5%	10.0%	0.564

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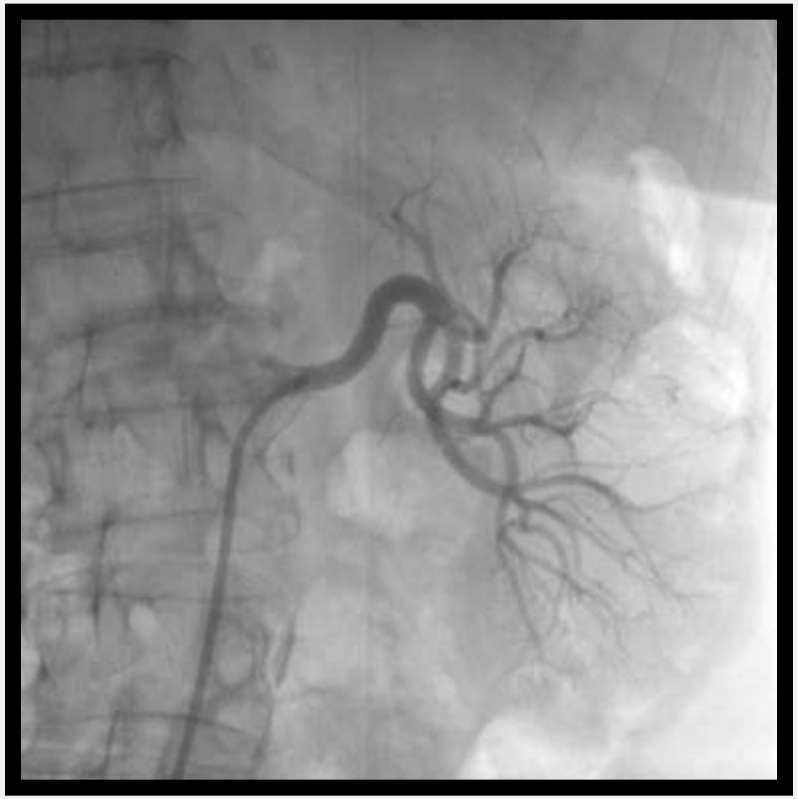
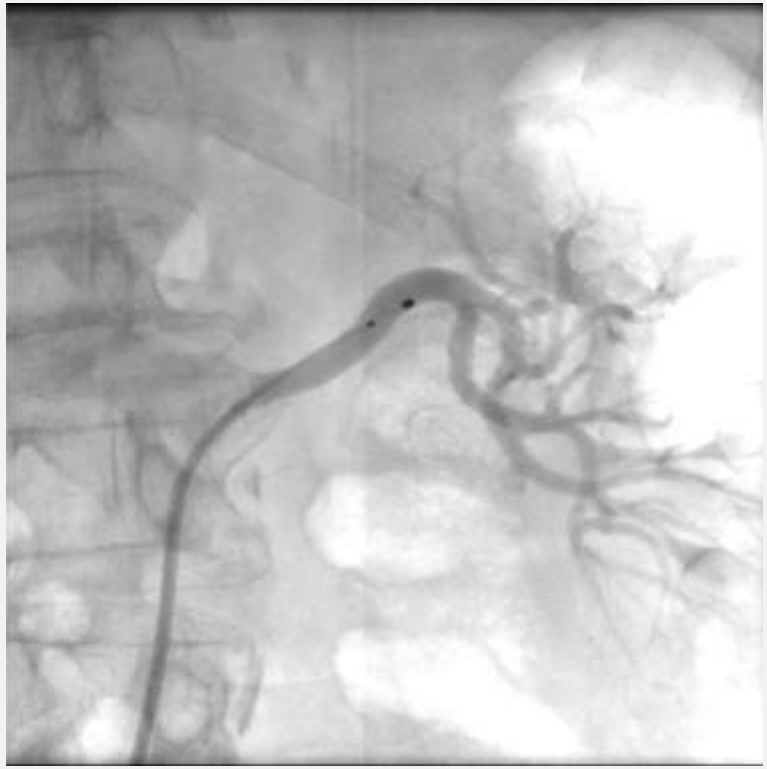
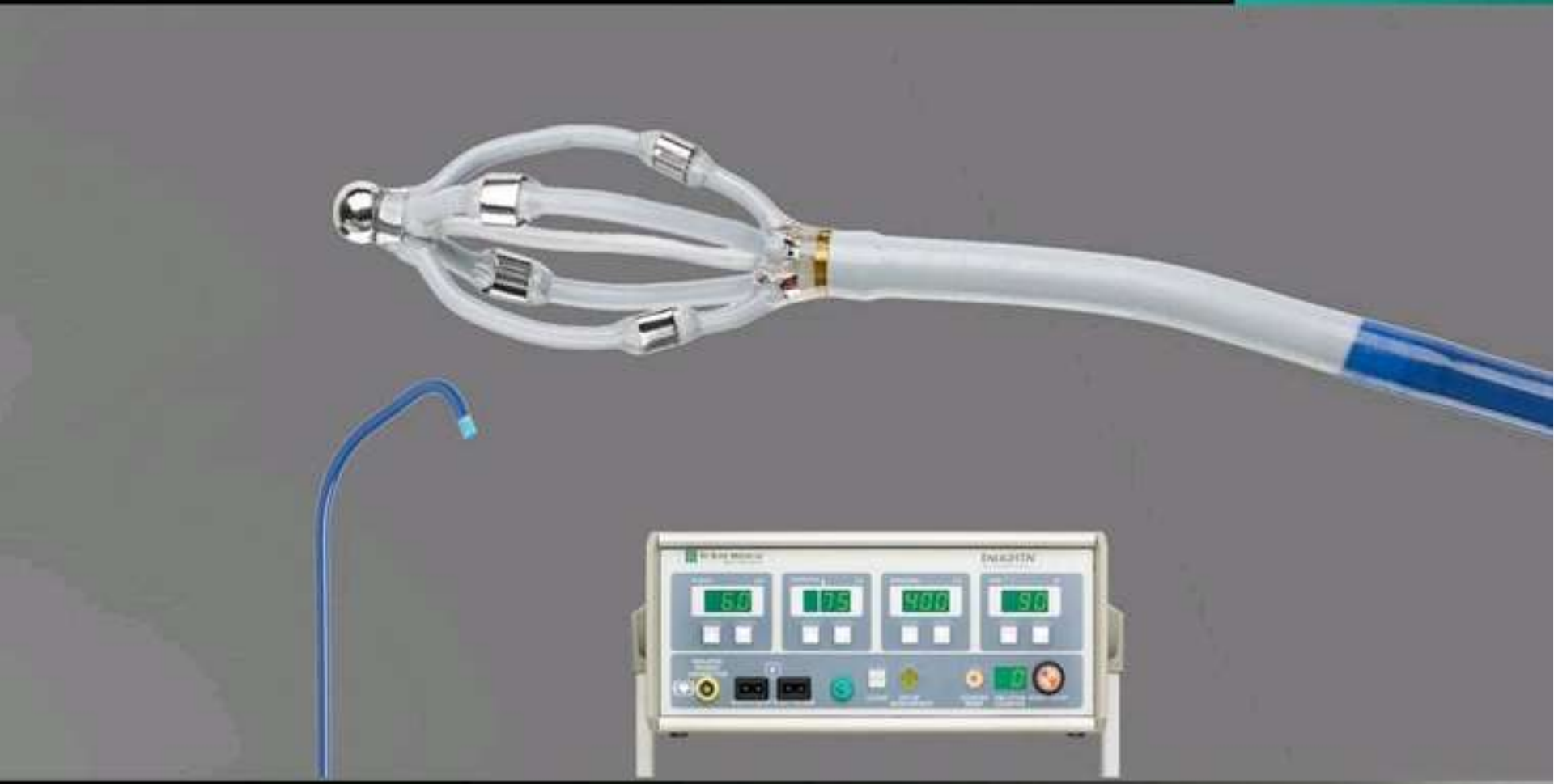




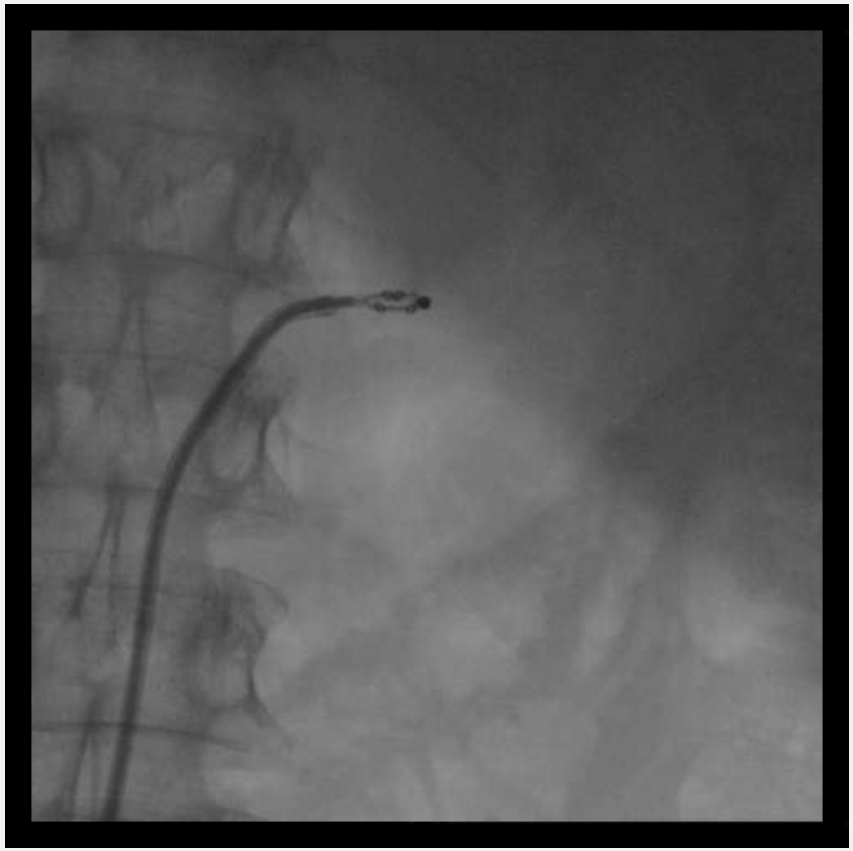
EnligHTN™ Renal Denervation System

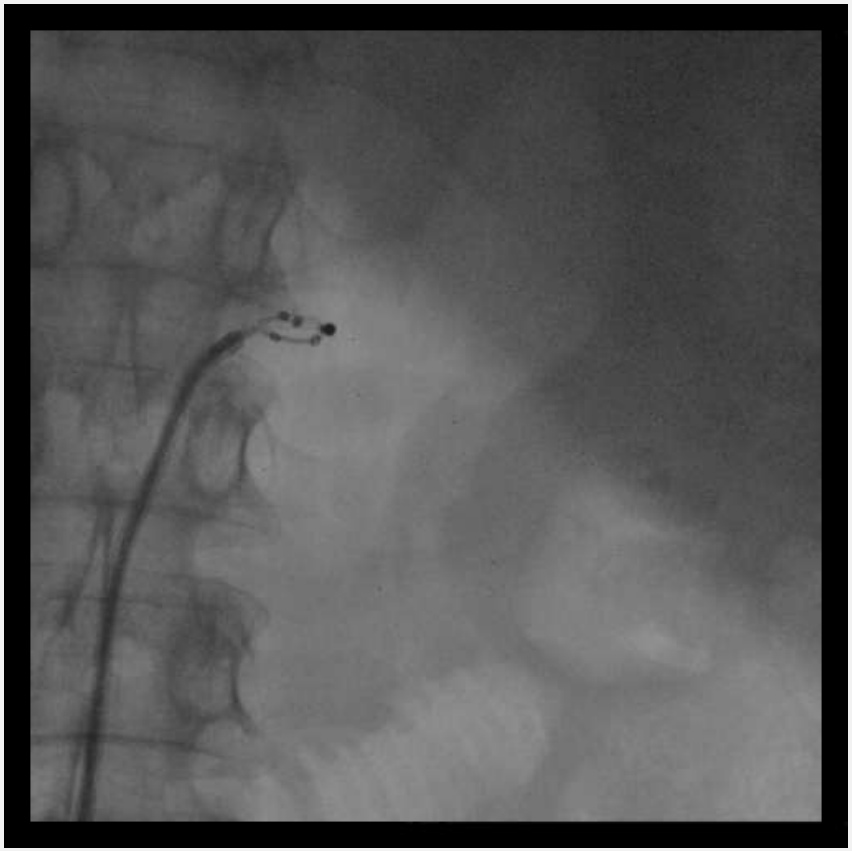
ENLIGHTN I



Collapsed and Expanded Basket in the Left Renal Artery

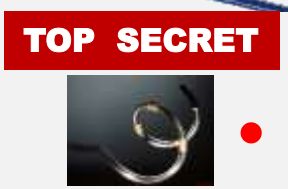
ENLIGHTN I

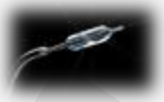




New devices

- Radiofrequency catheters
  - St. Jude Medical
  - Cordis
  - Medtronic
- Radiofrequency balloons
  - Covidien – Maya
  - Vessix Vascular
- Nano particles
  - Apex Nano

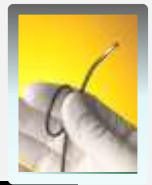




- Drugs
  - Mercator
  - Kipprokration Hospital, Athens

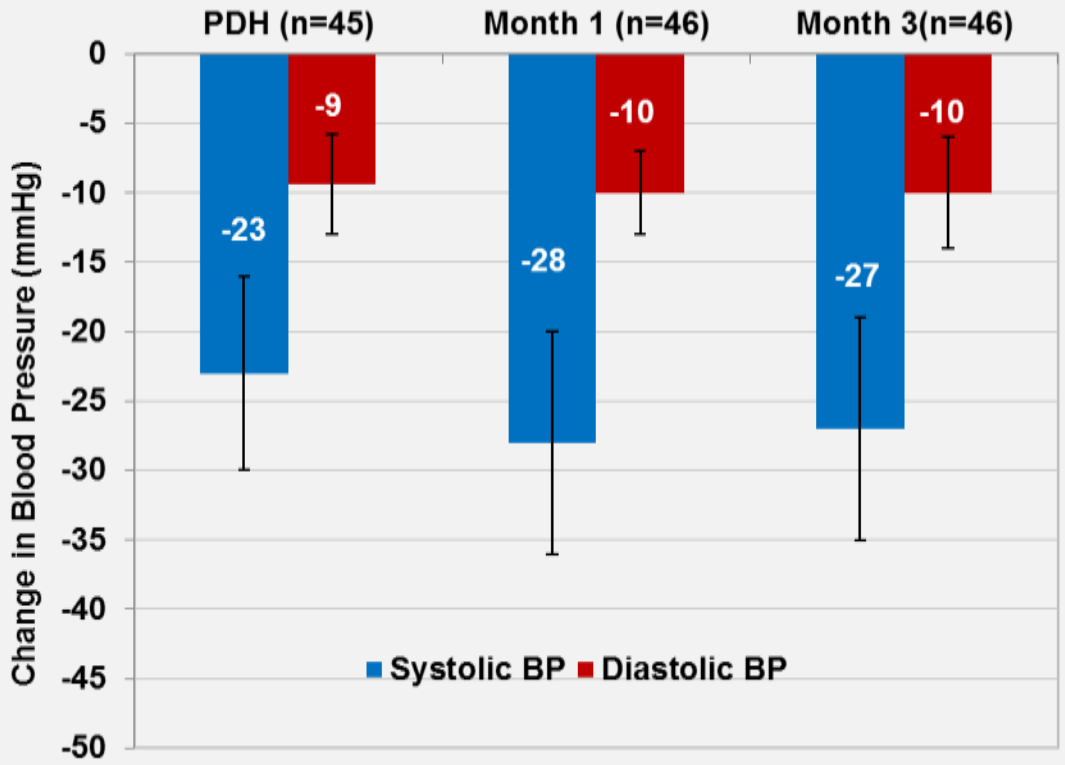
- Radiation
  - Best Medical Int.

- Ultrasound
  - Recor Medical
  - CardioSonic
  - Sound Interventions
  - Kona



Results: Office BP Reduction
3 Month

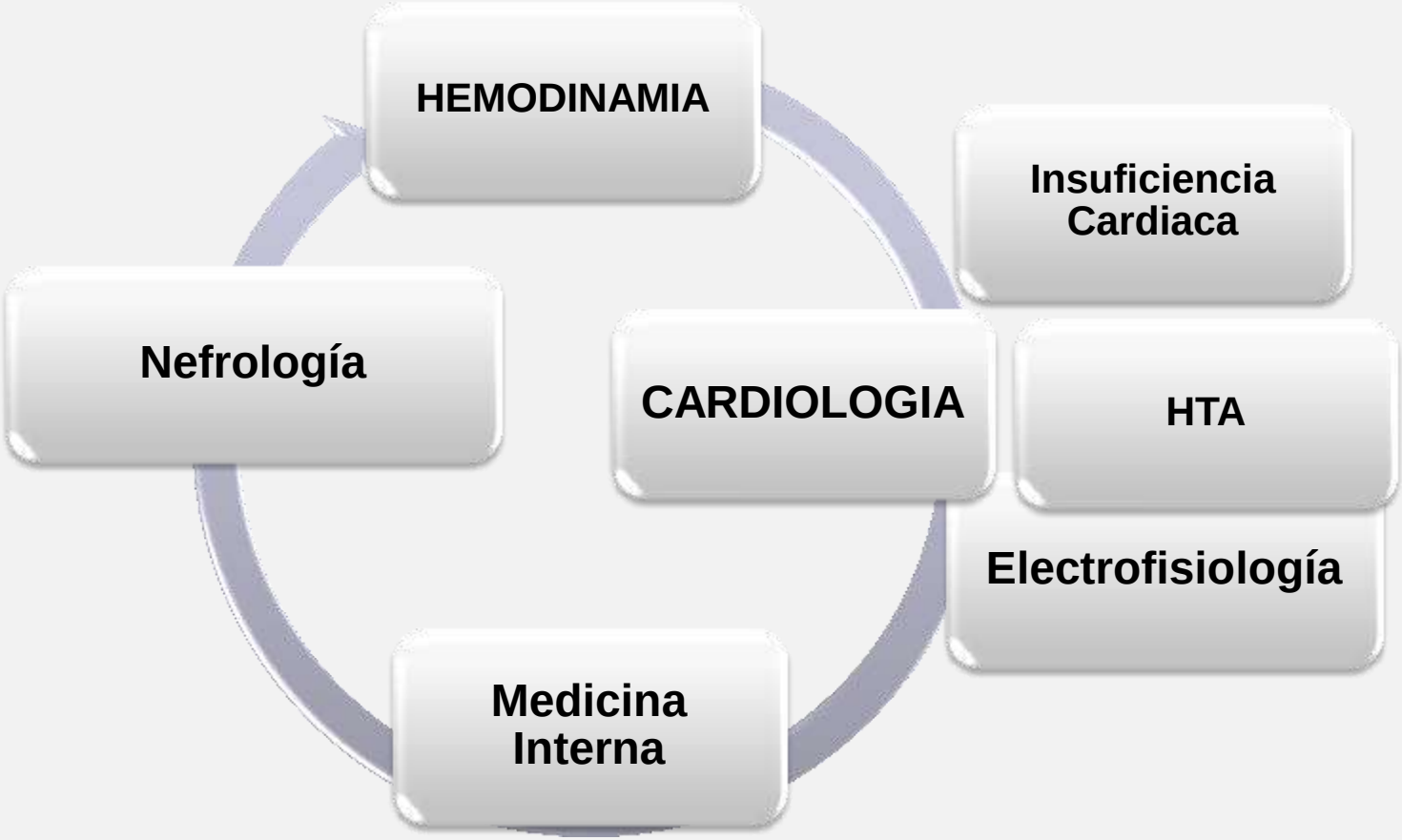
ENLIGHTN I



* p <0.0001

95% CI

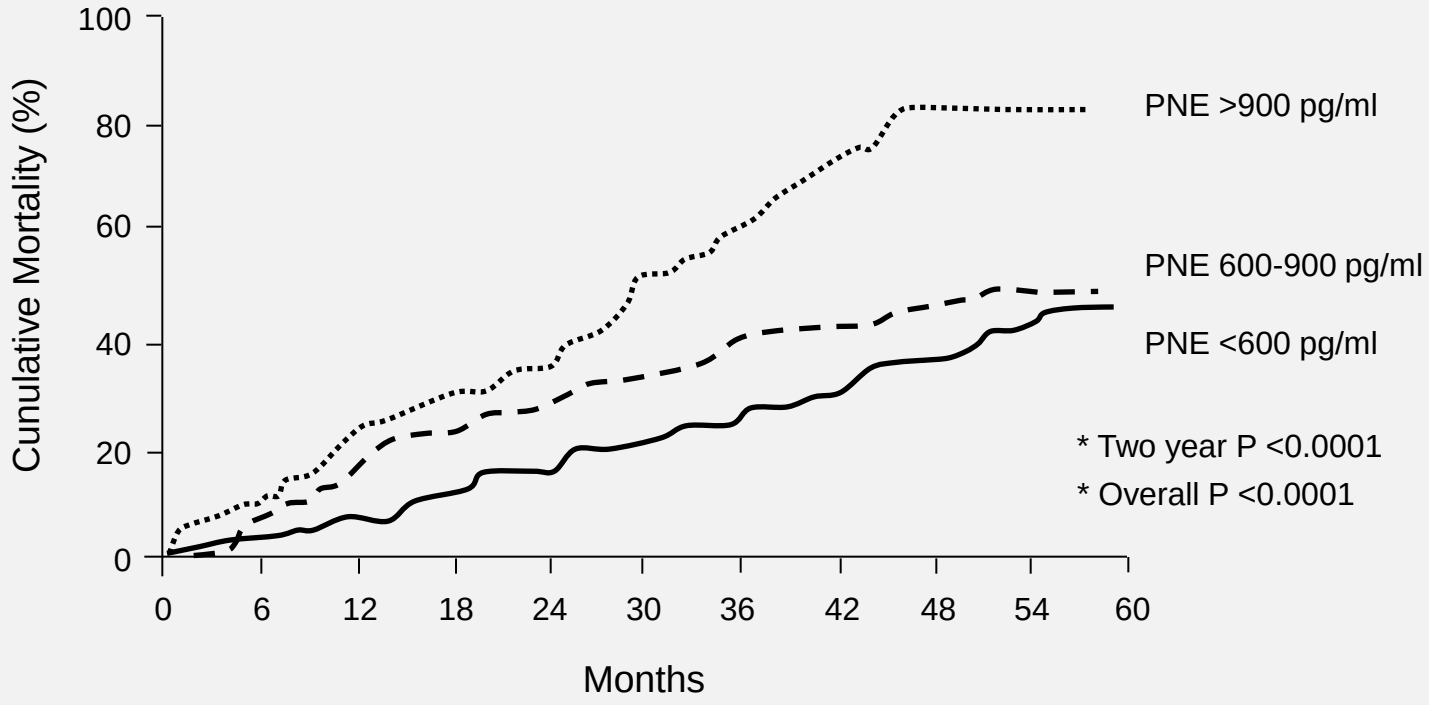
Team: Etapa Selección



Efectos del aumento del tono simpático en la I.C.

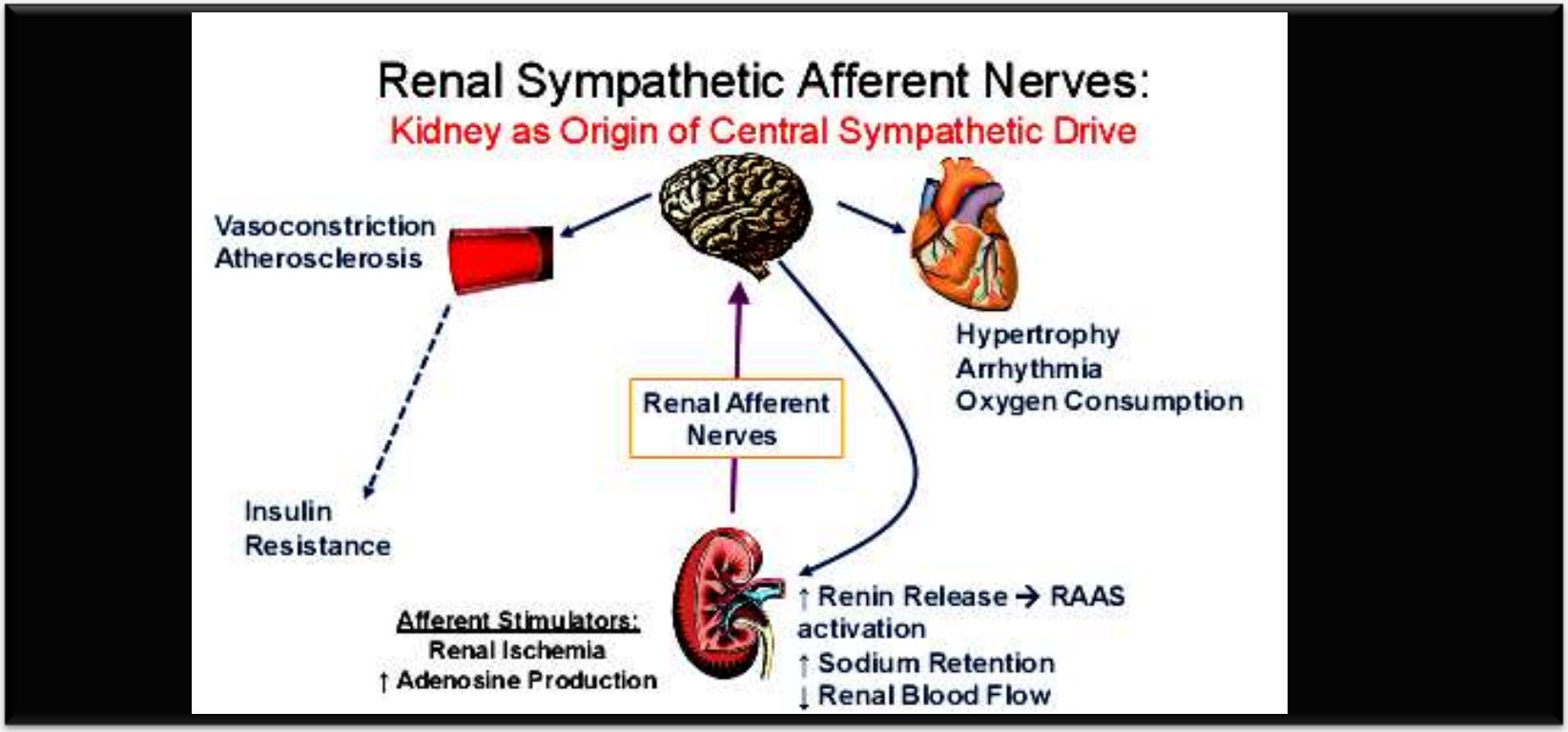
- Vasoconstricción periférica arterial y venosa
- Aumento del trabajo cardiaco y consumo de oxígeno
- Activación del SRA
- Estimulación de la producción de endotelina
- Retención de sodio y agua
- Hipertrofia y remodelación cardiaca
- Taquicardia y otras arritmias
- Toxicidad miocárdica (sobrecarga de Ca^{++}, apoptosis)

INSUFICIENCIA CARDIACA
Norepinefrina Plasmática y Mortalidad



Vasodilator Heart Failure Trial II. Francis (1993)

La FA es la arritmia mas frecuente.
En el estudio Symplicity HTN 2 se estudio en el punto secundario combinado la incidencia de FA.



- La asociación entre FA e HTA es muy común.
- Aproximadamente entre un 60 a 70% de los pacientes con FA son HTA.
- El mejor control del tono simpático y de la HTA colaboraría en el control de esta arritmia

Renal sympathetic denervation for treatment of electrical storm: first-in-man experience

INTRODUCTION:

Sympathetic activity plays an important role in the pathogenesis of ventricular tachyarrhythmia. Catheter-based renal sympathetic denervation (RDN) is a novel treatment option for patients with resistant hypertension, proved to reduce local and whole-body sympathetic activity.

METHODS:

Two patients with chronic heart failure (CHF) (non-obstructive hypertrophic and dilated cardiomyopathy, NYHA III) suffering from therapy resistant electrical storm underwent therapeutic renal denervation. In both patients, RDN was conducted with agreement of the local ethics committee and after obtaining informed consent.

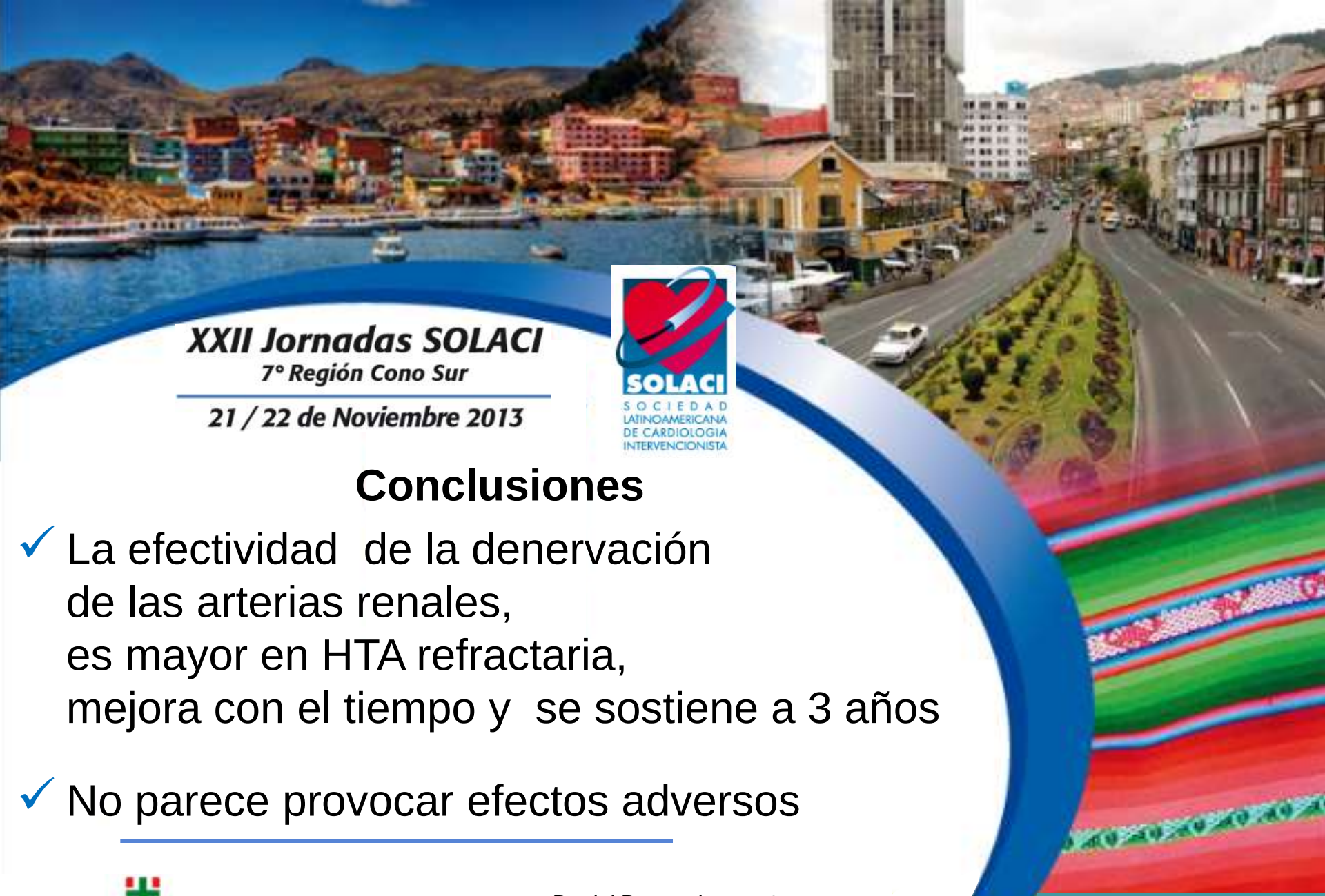
RESULTS:

The patient with hypertrophic cardiomyopathy had recurrent monomorphic ventricular tachycardia despite extensive antiarrhythmic therapy, following repeated endocardial and epicardial electrophysiological ablation attempts to destroy an arrhythmogenic intramural focus in the left ventricle. The second patient, with dilated nonischemic cardiomyopathy, suffered from recurrent episodes of polymorphic ventricular tachycardia and ventricular fibrillation. The patient declined catheter ablation of these tachycardias. In both patients, RDN was performed without procedure-related complications. Following RDN, ventricular tachyarrhythmias were significantly reduced in both patients. Blood pressure and clinical status remained stable during the procedure and follow-up in these patients with CHF.

CONCLUSION:

Our findings suggest that RDN is feasible even in cardiac unstable patients. Randomized controlled trials are urgently needed to study the effects of RD in patients with electrical storm and CHF.

Clin Res Cardiol. 2012 Jan;101(1):63-7



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Conclusiones

- ✓ La efectividad de la denervación de las arterias renales, es mayor en HTA refractaria, mejora con el tiempo y se sostiene a 3 años
- ✓ No parece provocar efectos adversos

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- ✓ Podria ser de utilidad en:
  - Algunas arritmias
  - Insuficiencia cardíaca
  - Apnea del sueño
  - Diabetes
- ✓ Deberemos manejar con prudencia sus indicaciones

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FUTURO

REDEFINICIONES EN HTA

TODOS LOS HIPERTENSOS!!!!!!!???????

60 EMPRESAS CREEN QUE SI

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