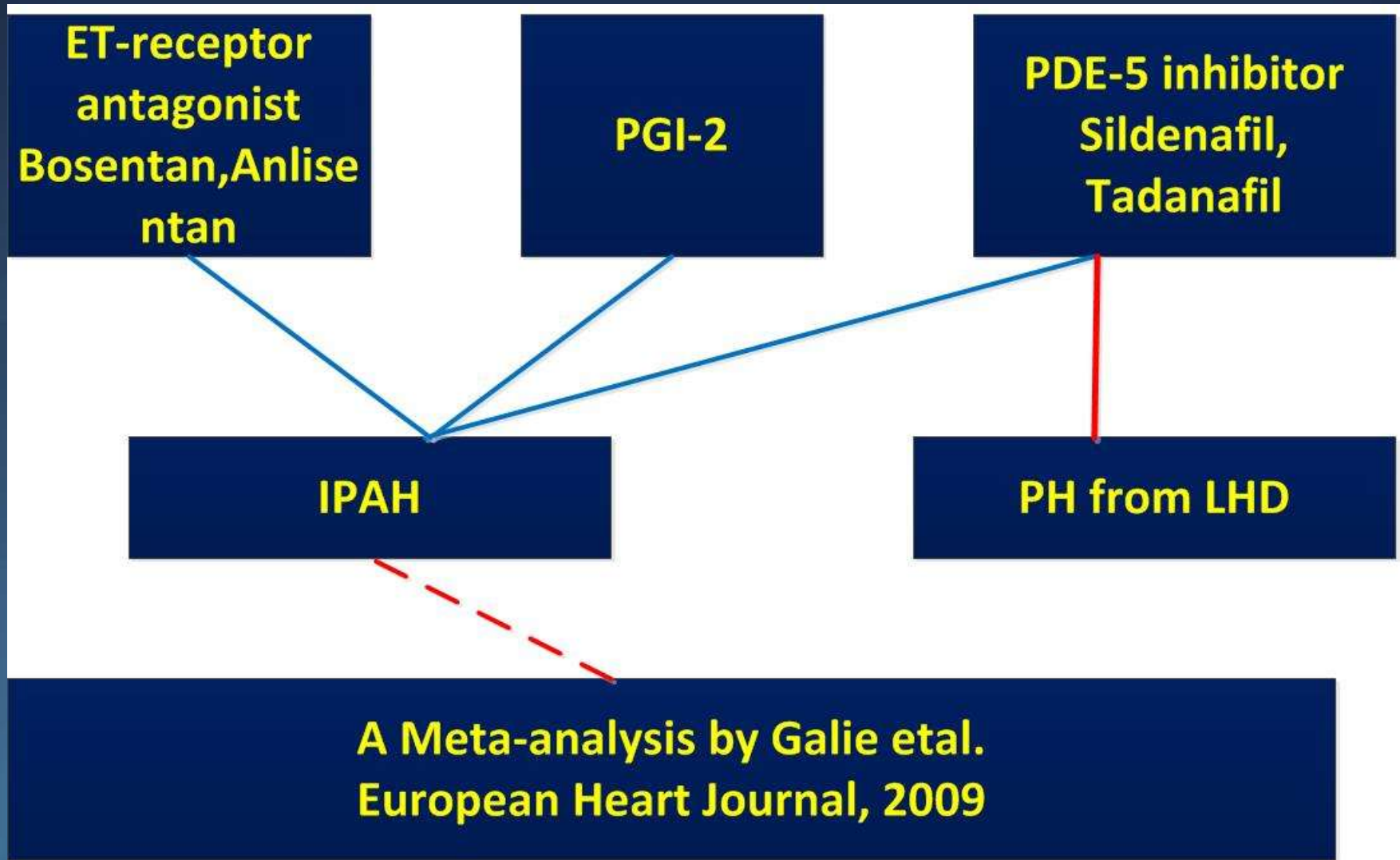


New approaches to Idiopathic pulmonary hypertension (IPAH)

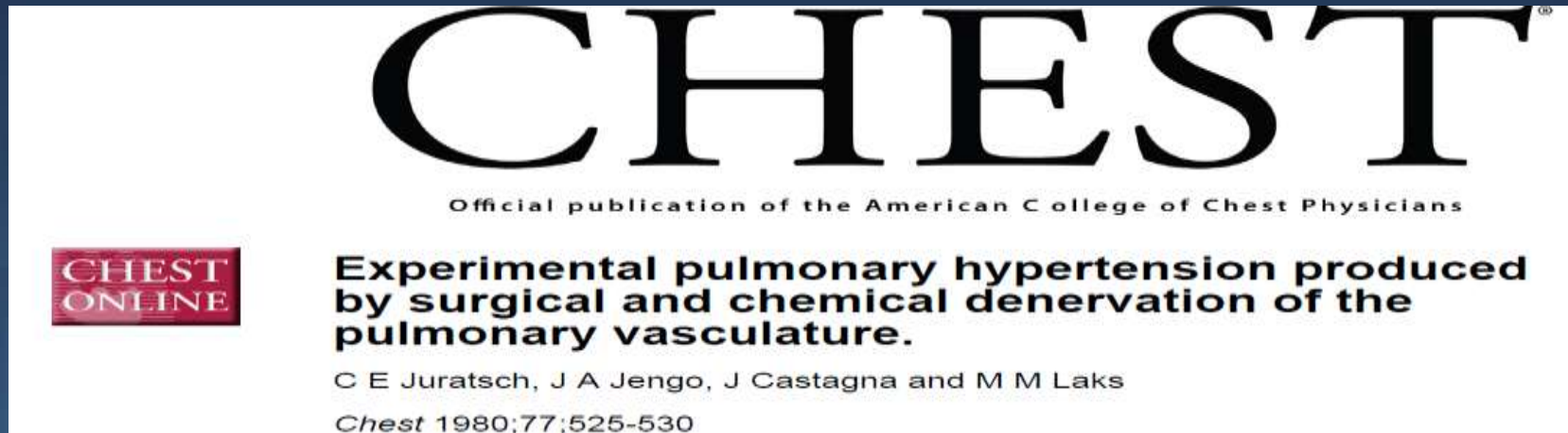
Shao-Liang Chen, MD

Nanjing First Hospital, Nanjing Medical University, China

Current medications

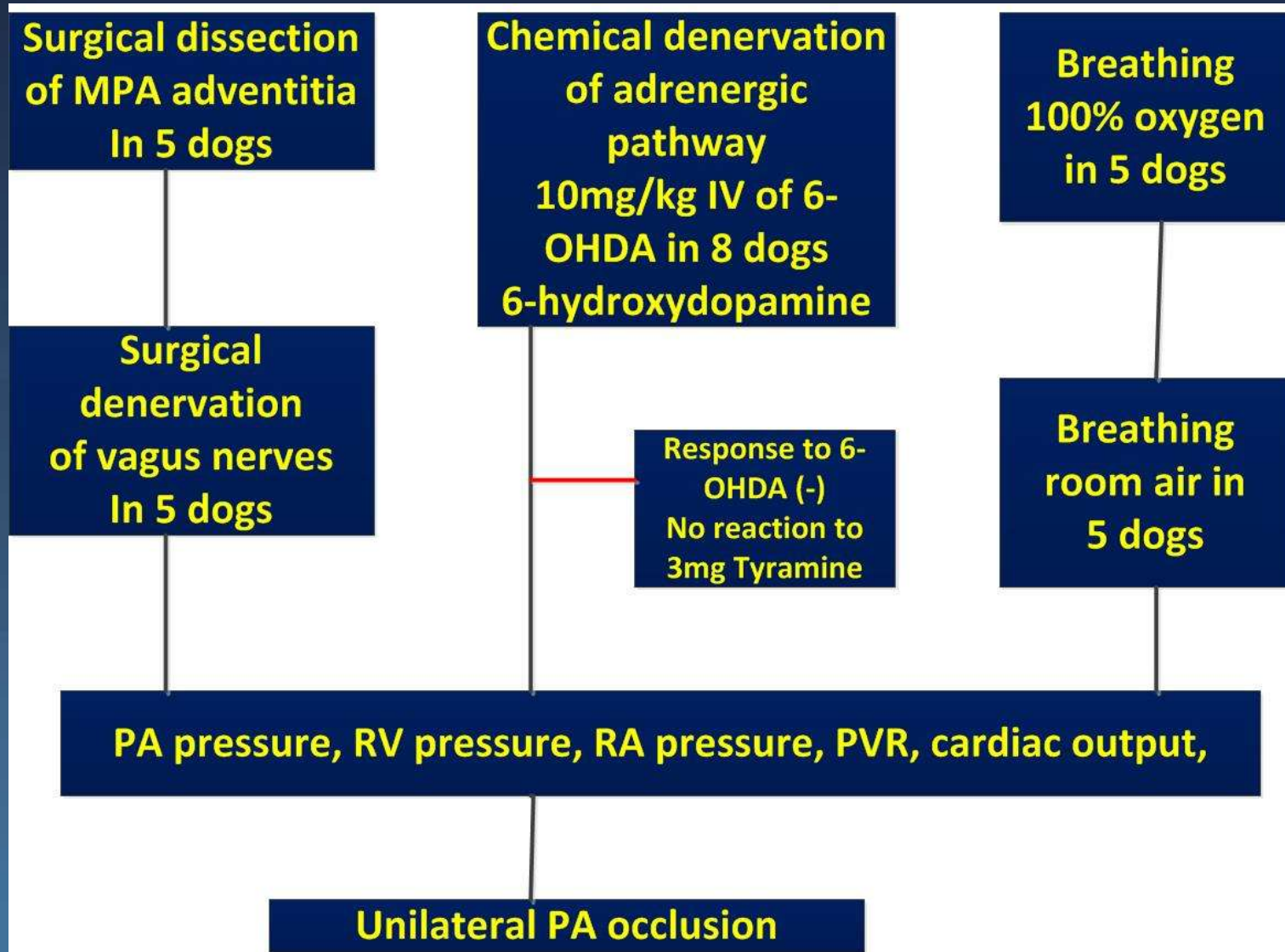


Direct evidences of sympathetic nerves in PAH



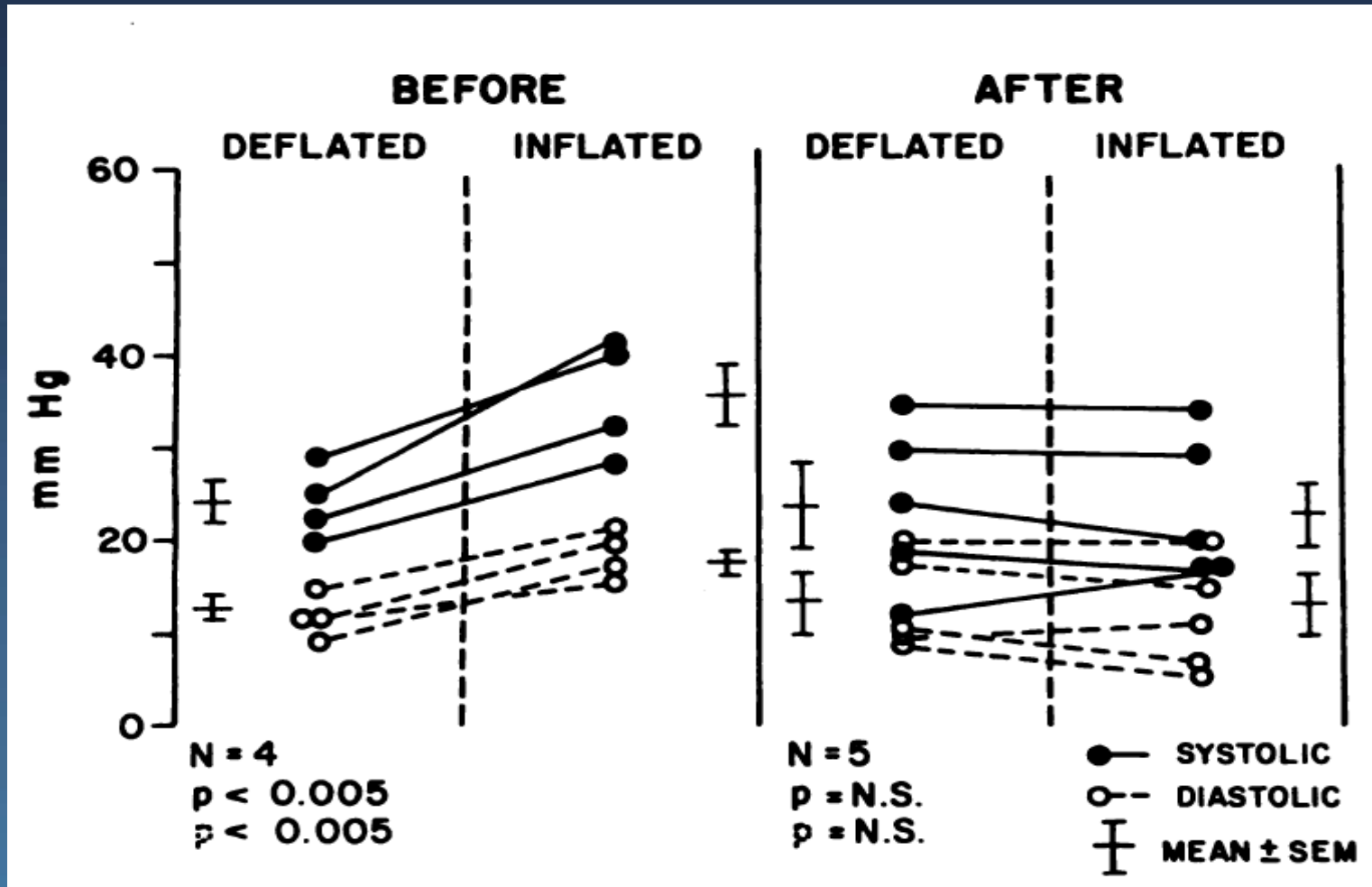
First description of PA denervation

Study design

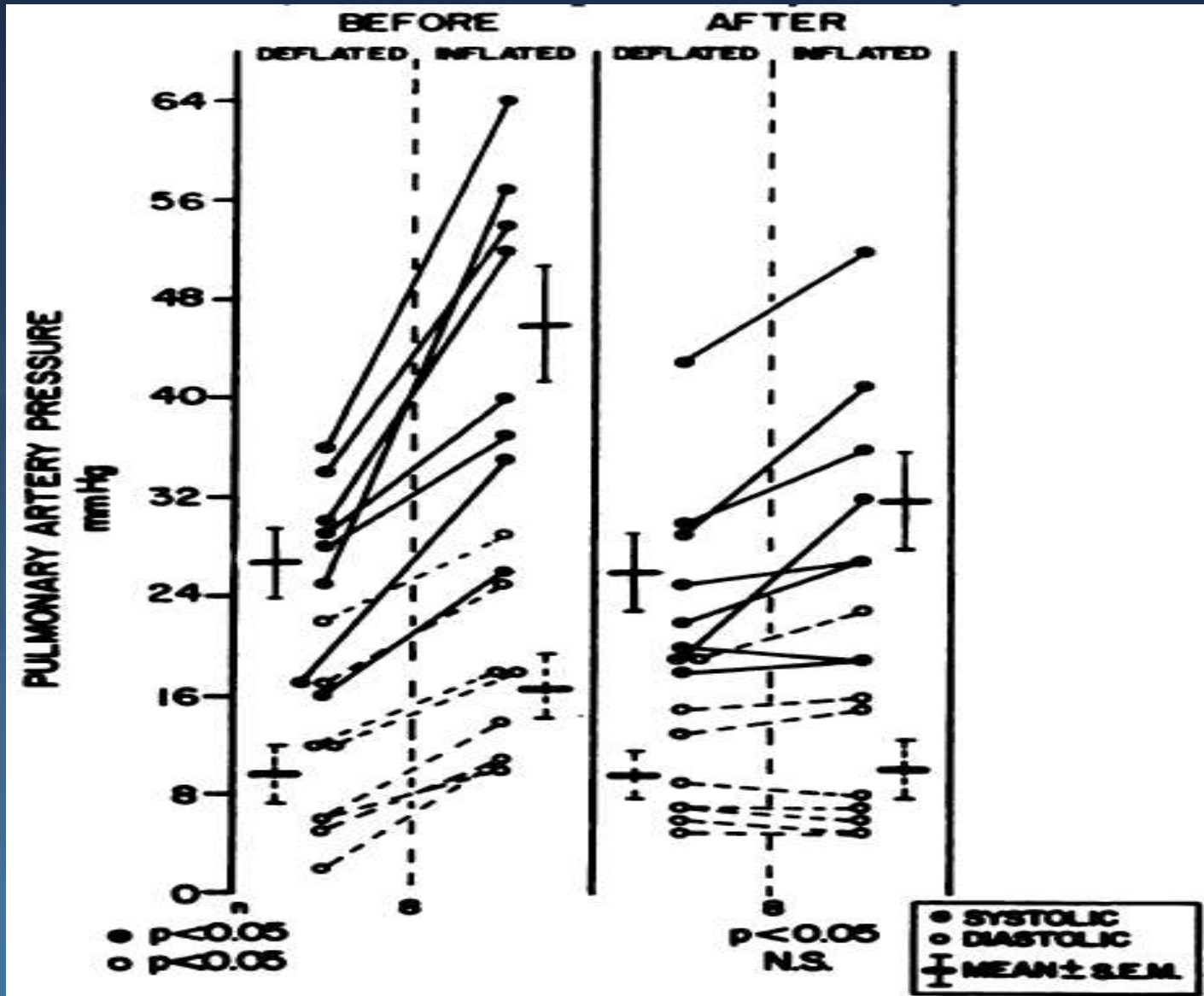


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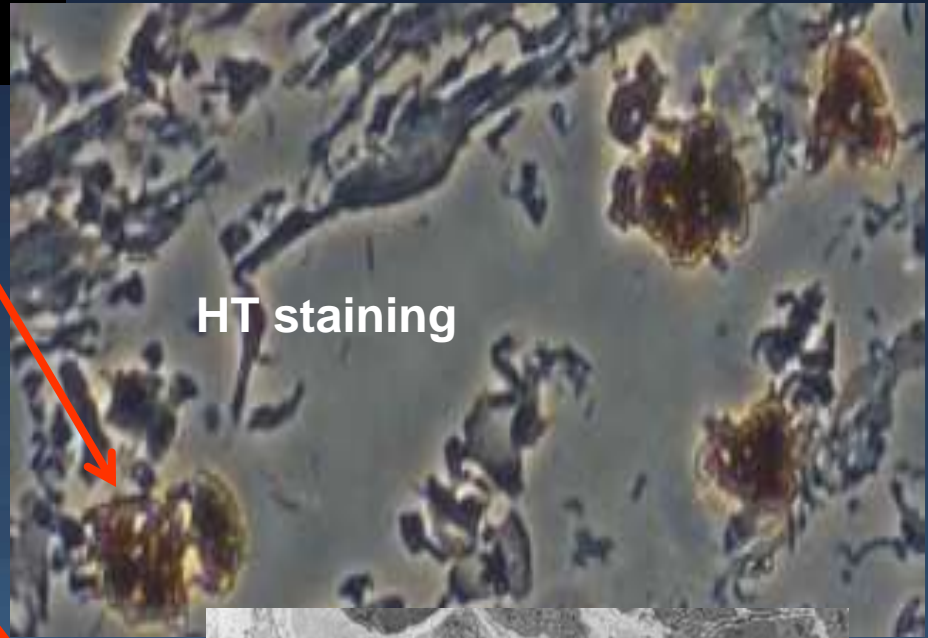
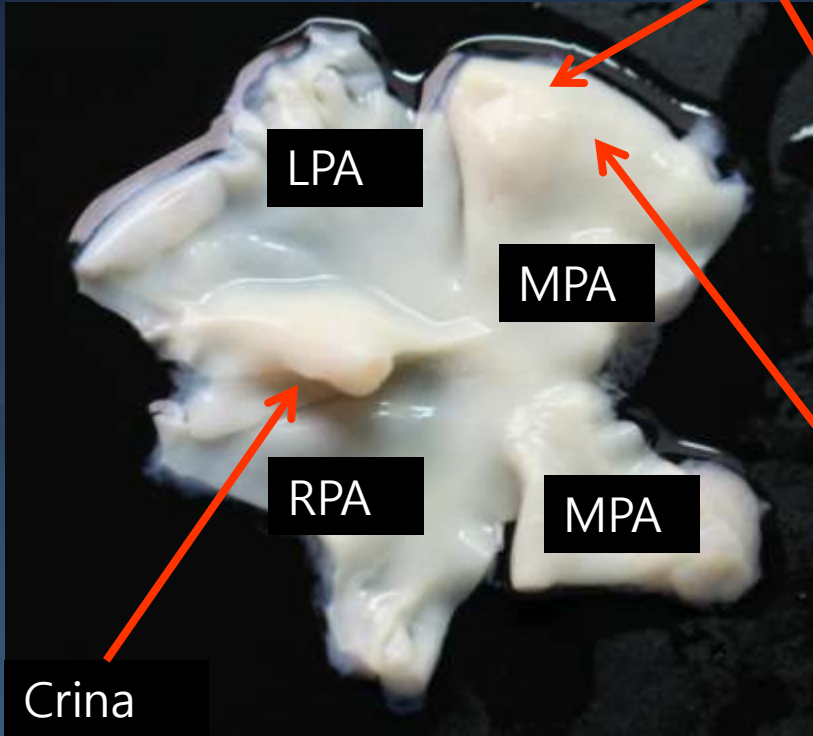
Surgical denervation on PAP



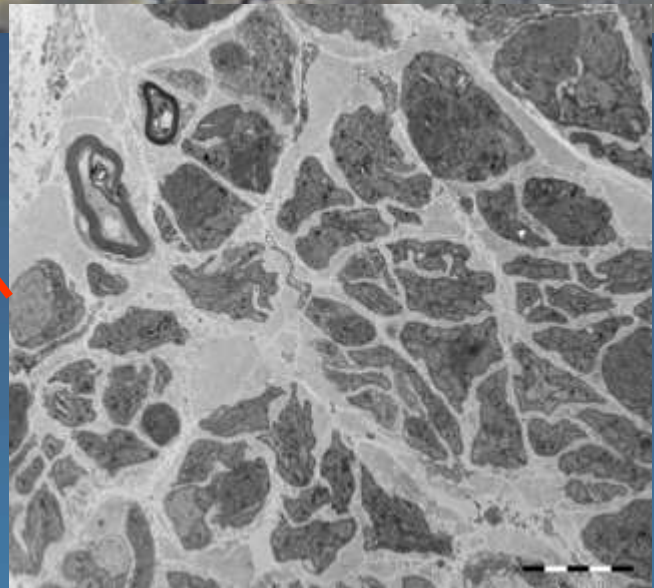
Effect of 6-OHDA on PAP



Cyst



HT staining



Electron microscope

Evidence of sympathetic nerves in PAH



Experimental studies

Study on PAH model

- * Monocrotaline, 2mg/kg
- * after 8 weeks
- * RHC confirmed PAH:
PAP_m ≥ 25 mmHg
- * PADN at Level 1
- * 5 weeks after PADN
 - Repeat RHC
 - conduction velocity
 - Molecular study
 - Pathological study

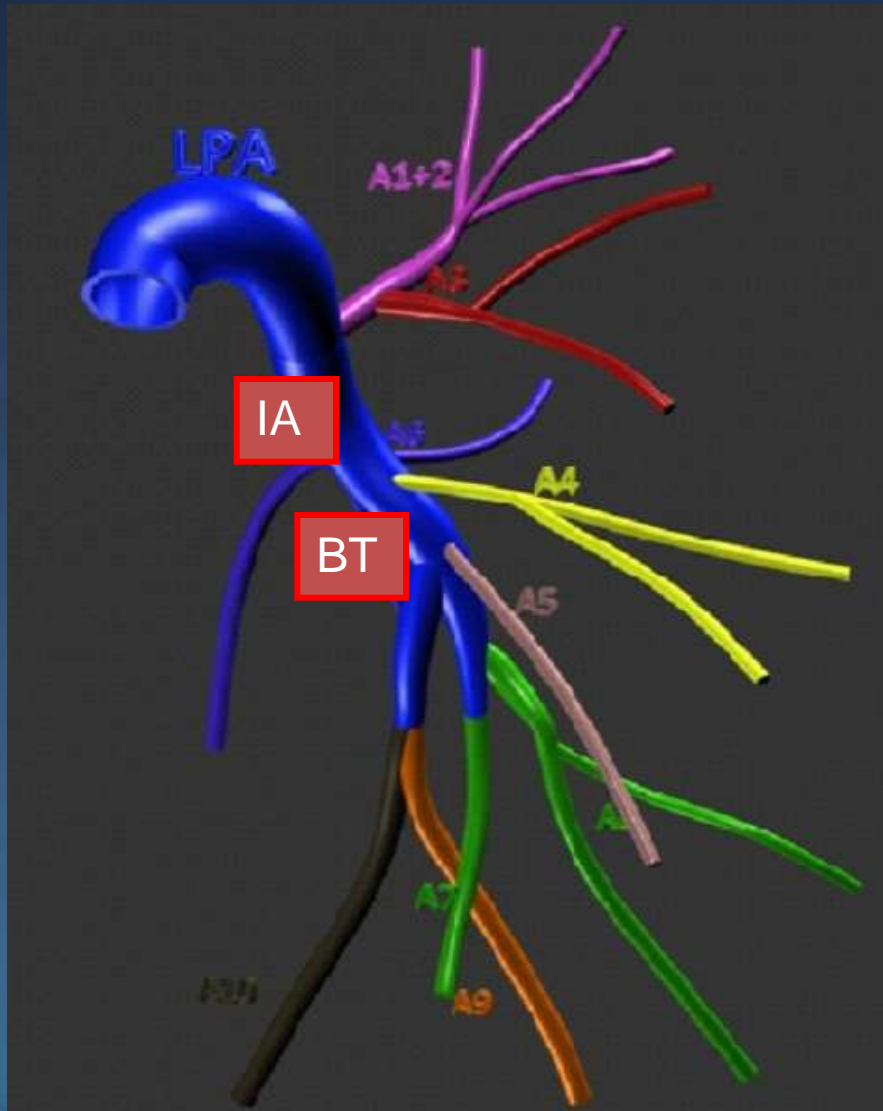
Acute study: 12 Mongolia dogs

Group 1
IA
occlusion

Group 2
BT
occlusion

During 10-minute occlusion:
Hemodynamics measurement
was performed at each minute

Segments of left pulmonary artery



**Occlusion
at BT**

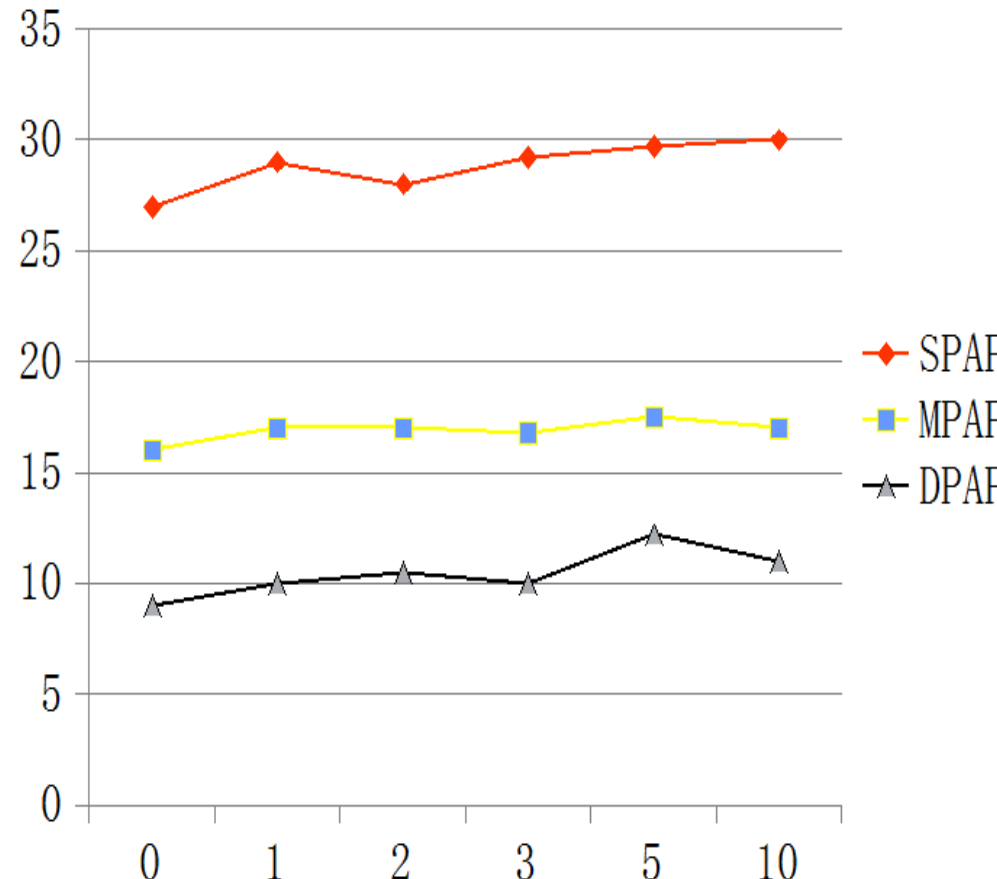
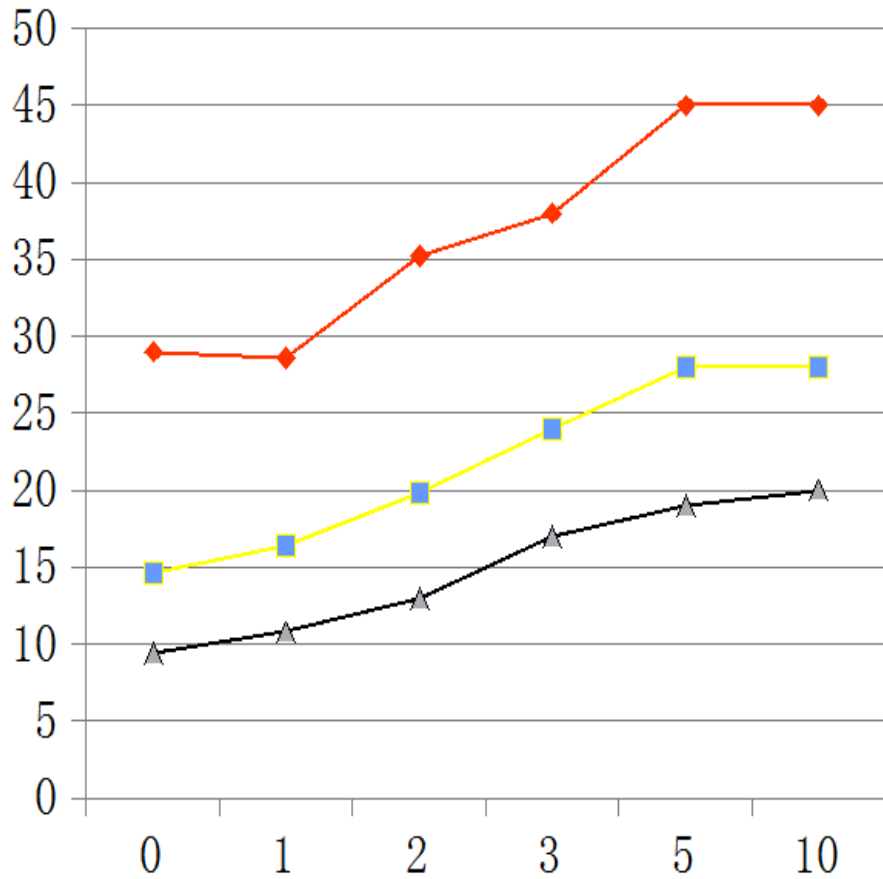


**Occlusion
at IA**

Before PADN

Group 1: interlobar occlusion

Group 2: basal occlusion



Chen SL, et al. Eurointervention, March 2013

Experimental studies

Study on PAH model

- * Monocrotaline, 2mg/kg
- * after 8 weeks
- * RHC confirmed PAH:
PAPm \geq 25 mmHg
- * PADN at Level 1
- * 5 weeks after PADN
 - Repeat RHC
 - conduction velocity
 - Molecular study
 - Pathological study

Acute study: 12 Mongolia dogs

Group 3
PADN at
level 1-3,

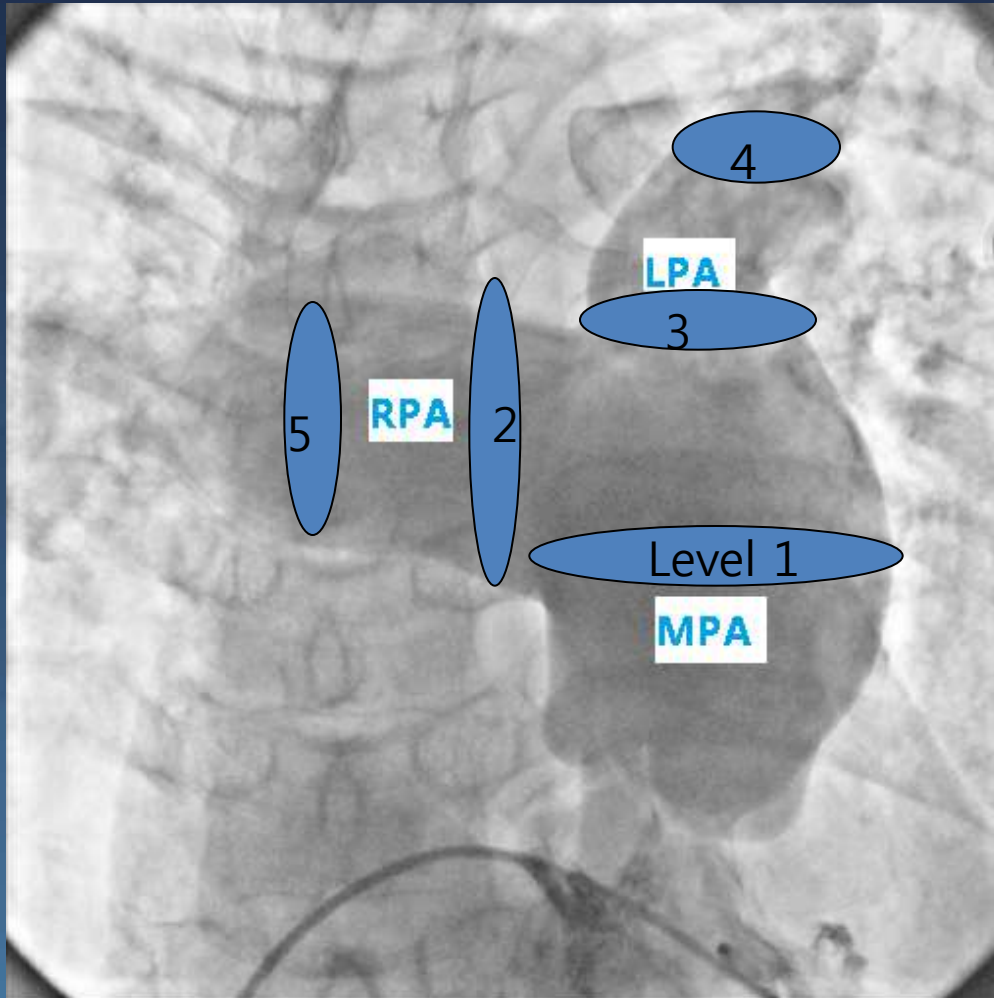
Group 4
PADN at
level 4,5

IA occlusion

IA occlusion

**During 10-minute occlusion:
Hemodynamics measurement
was performed at each minute**

PADN levels



Level 1: distal MP

Level 2: ostial LPA

Level 3: ostial RPA

Level 4: 5mm distal to
ostial LPA

Level 5: 5 mm distal to
ostial RPA

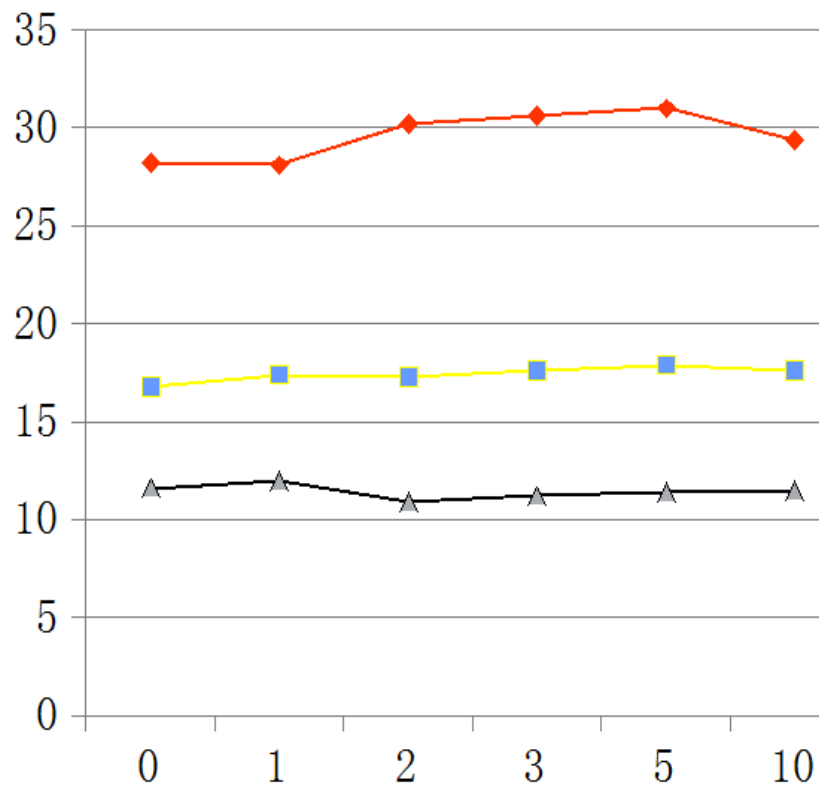
Chen SL, et al. Eurointervention , March 2013

Chen SL, et al. JACC September 2013

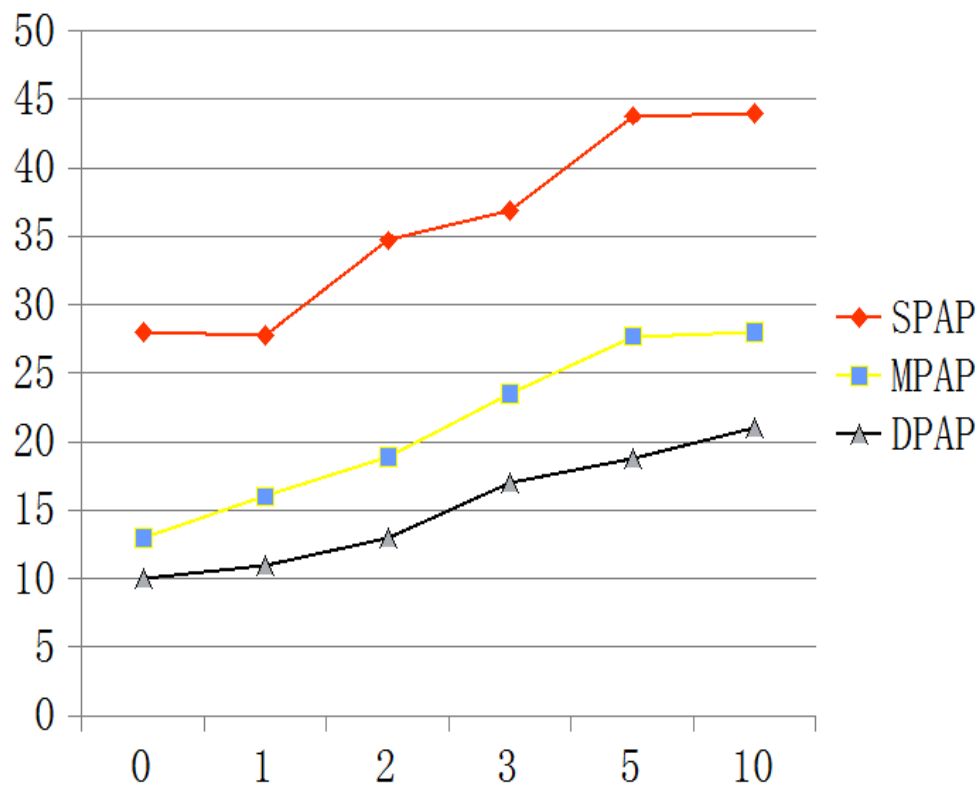
During IA occlusion

Group 3: PADN at level 1-3

Group 4: PADN at level 4,5



distal MPA, ostial LPA and RPA



5mm distal to ostial RPA or LPA

Chen SL, et al. Eurointervention, March 2013

First-In-Man: PADN-1 study

22 patients unresponsive to medication between March and May 2012

1 patient excluded: (+) adenosine test

21 patients

8 patients refused PADN

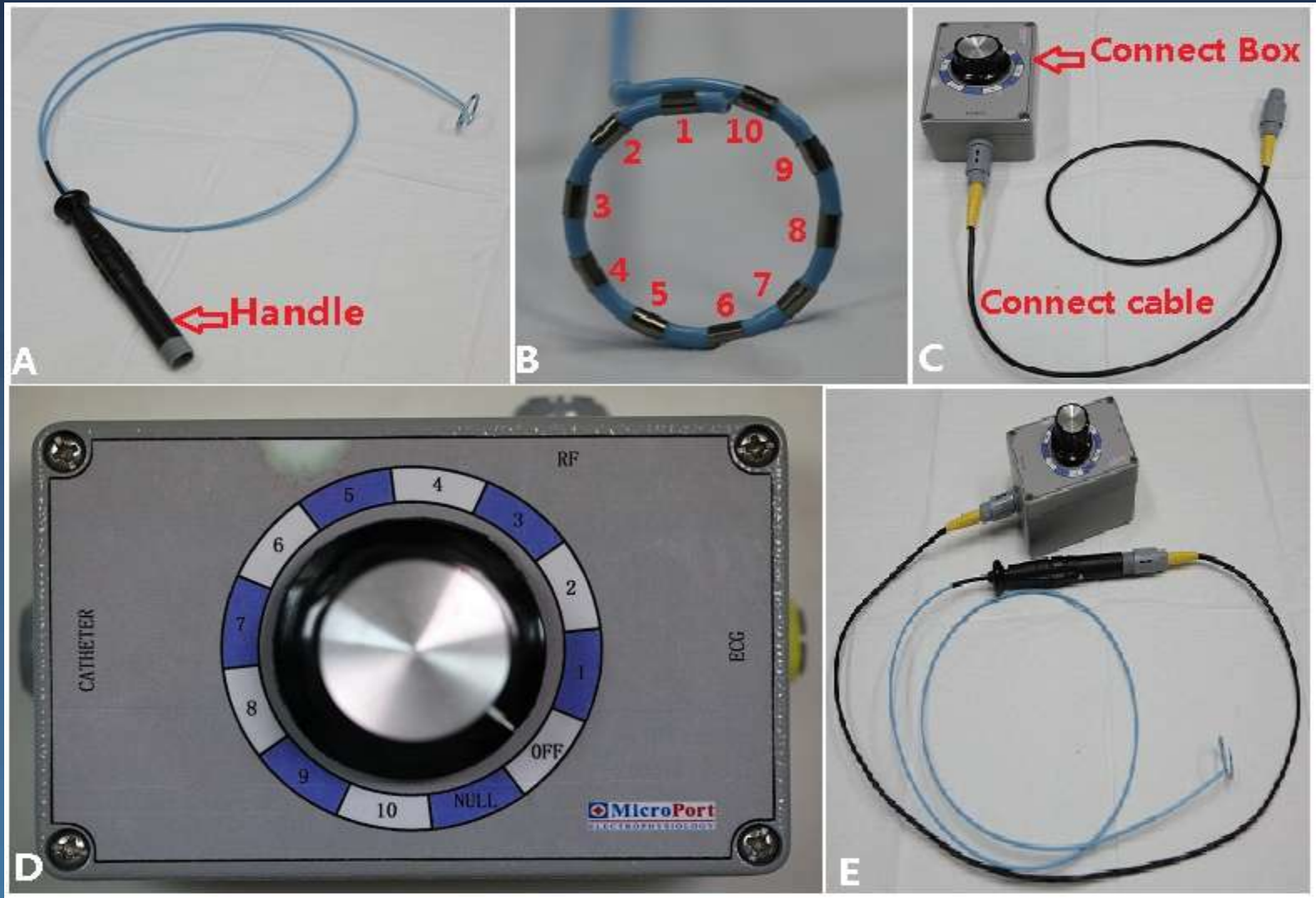
PADN group(N=13)

Control group(N=8)

Clinical follow-up at 3-month in all patients
Hemodynamic measurements: post, 24h,1w,3-m

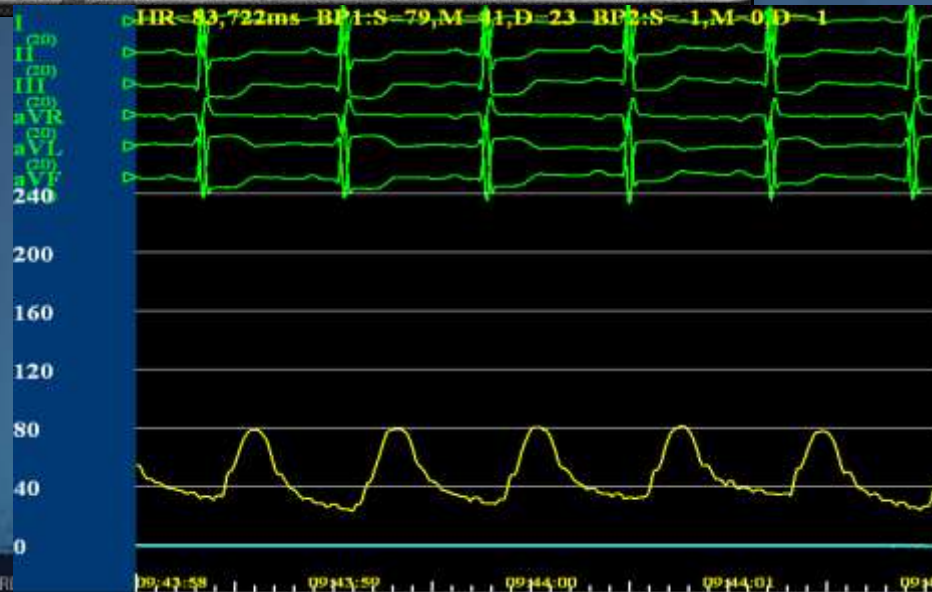
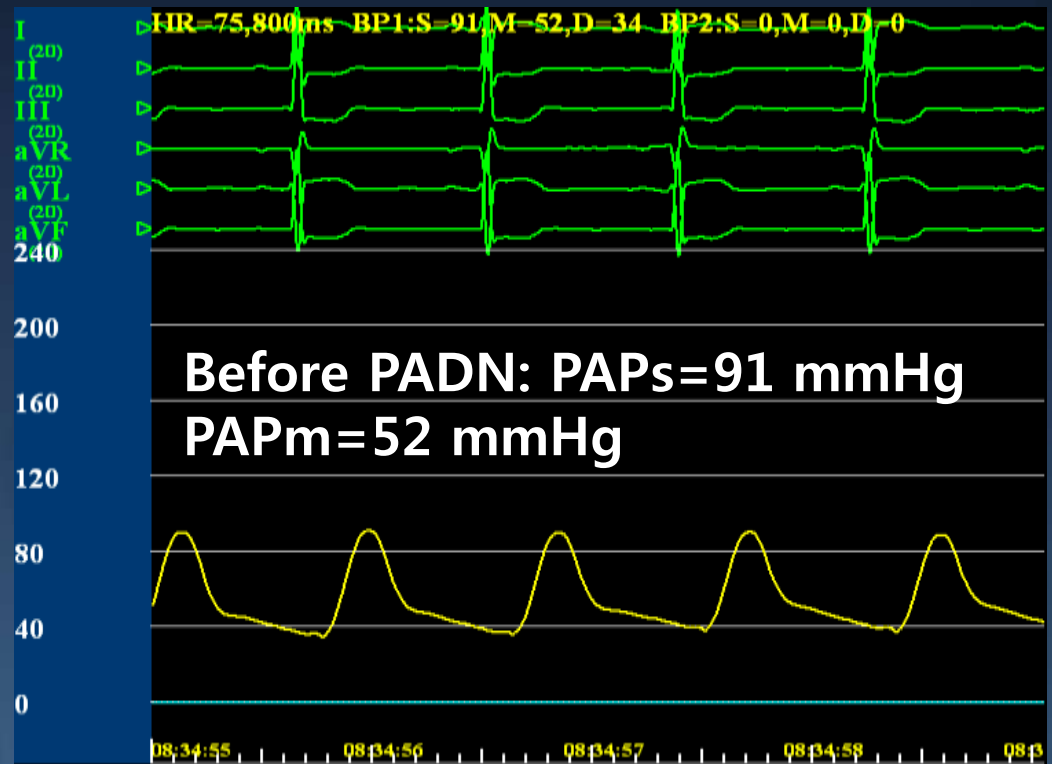
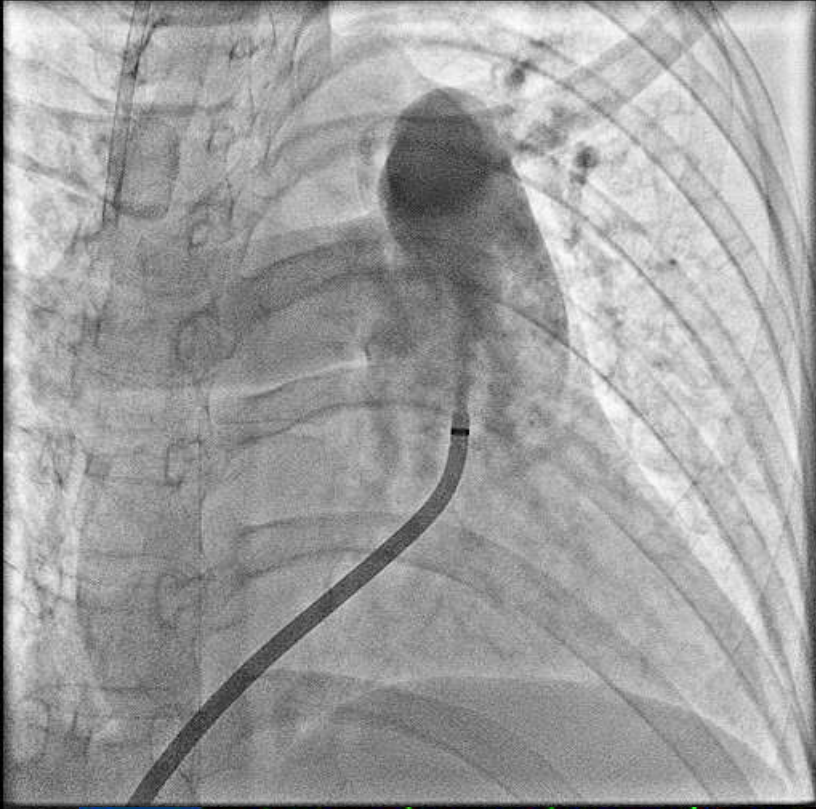
Chen SL,et al. JACC September 2013

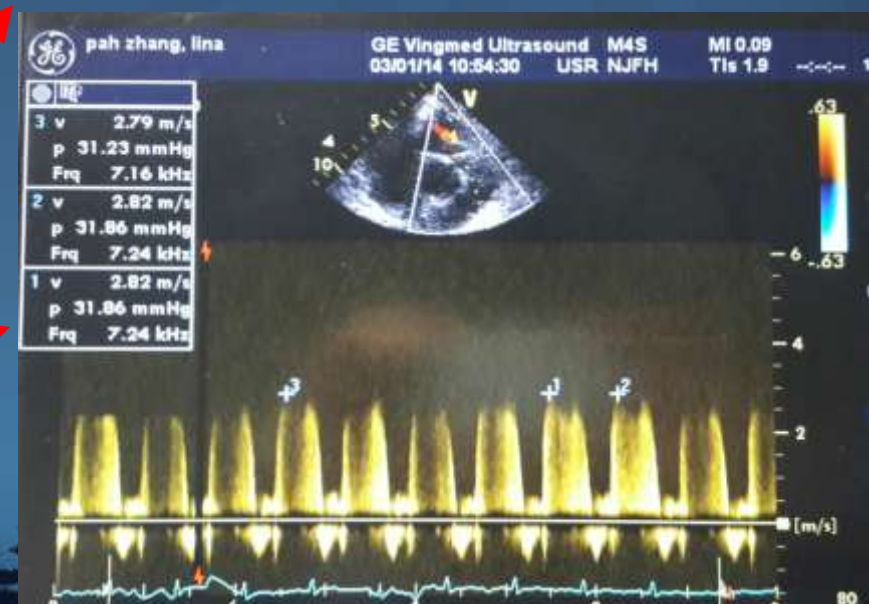
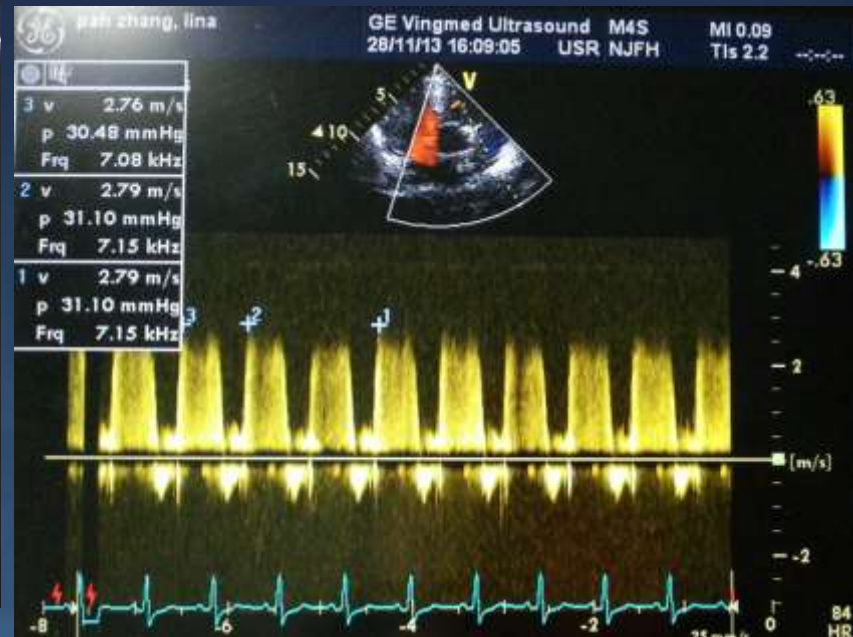
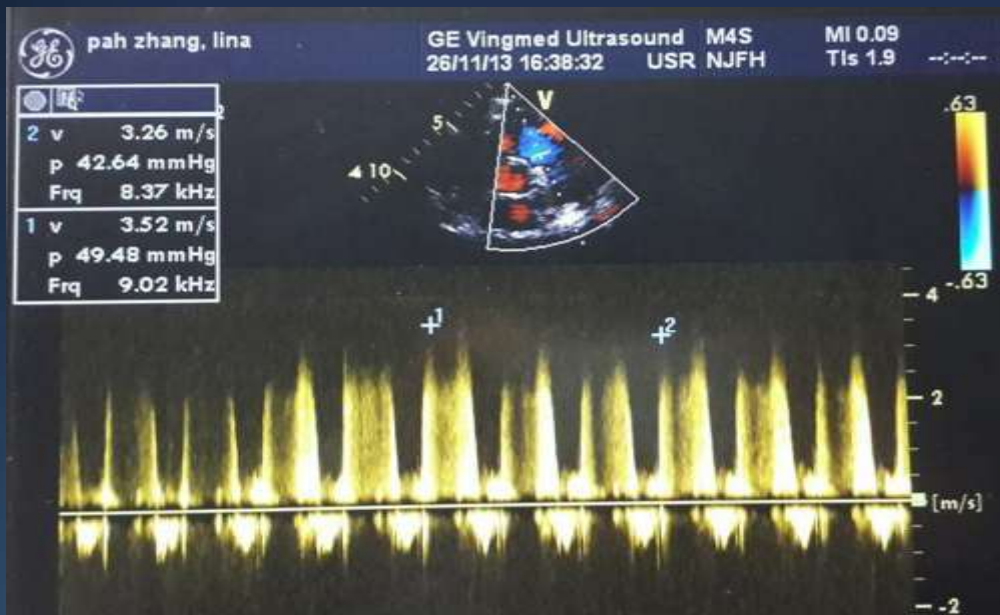
PADN system



Final results

- ◇ Reduction of mean PAP >15%
- ◇ PVR/NT-BNP ↓
- ◇ 6MWD ↑ by 100 m
- ◇ Less rehospitalization/death





Baseline:PAPm=42mmHg

Post-PADN:PAPm=30.48mmHg

10-month:PAPm=31.33mmHg

In conclusion

* PADN-I, a FIM study, showed the potential of PADN for IPAHA

- PADN has been testified in animal model
- and PH patients with varying etiologies of PAH
- Further RCTs are required

Thanks for your attention!