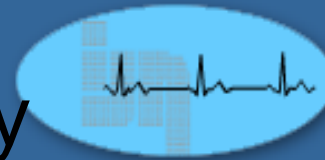


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National Heart Institute



Takayasu's Arteritis : Renal Artery Stenosis



TAKAYASU'S ARTERITIS EPIDEMIOLOGY

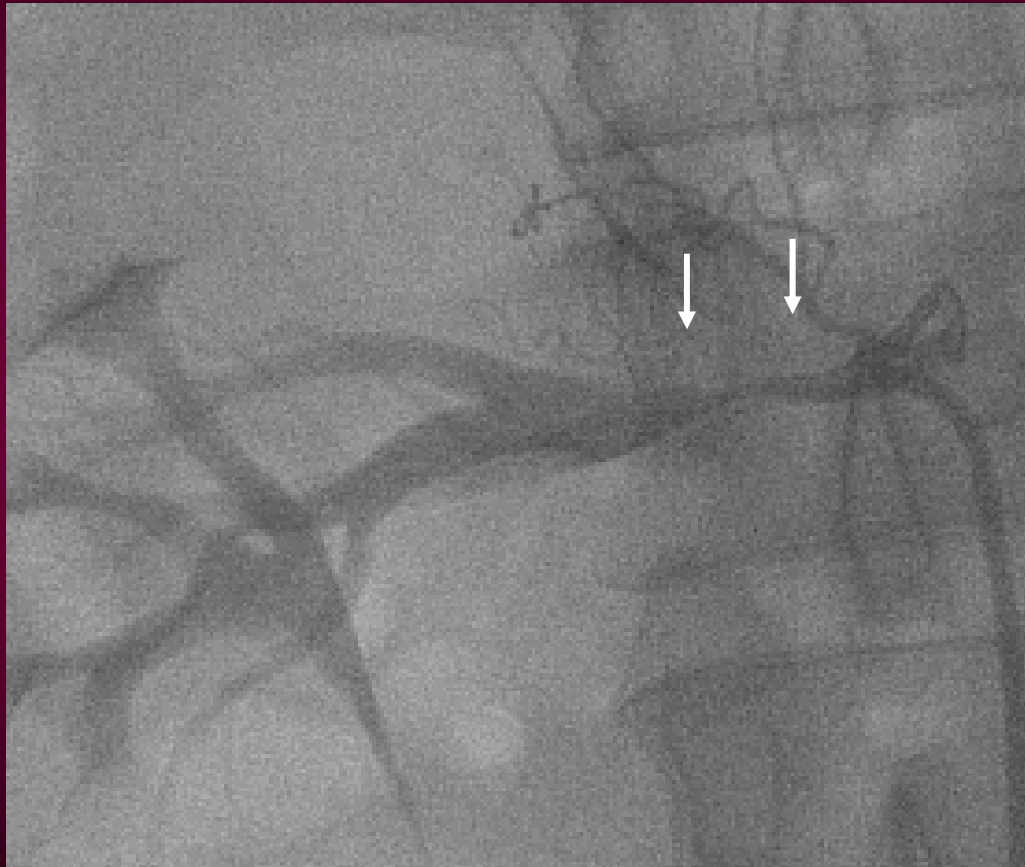
- First described by Dr. M Takayasu in 1908
- Majority < 50 years old
- Preponderance in women (80%)
- More common in Japan, India, China & Southeast Asia

	<u>Western countries</u>	<u>Japan</u>
Incidence	2.6 / 1,000,000	-
Prevalence	9 / 1,000,000	30,000 / 1,000,000

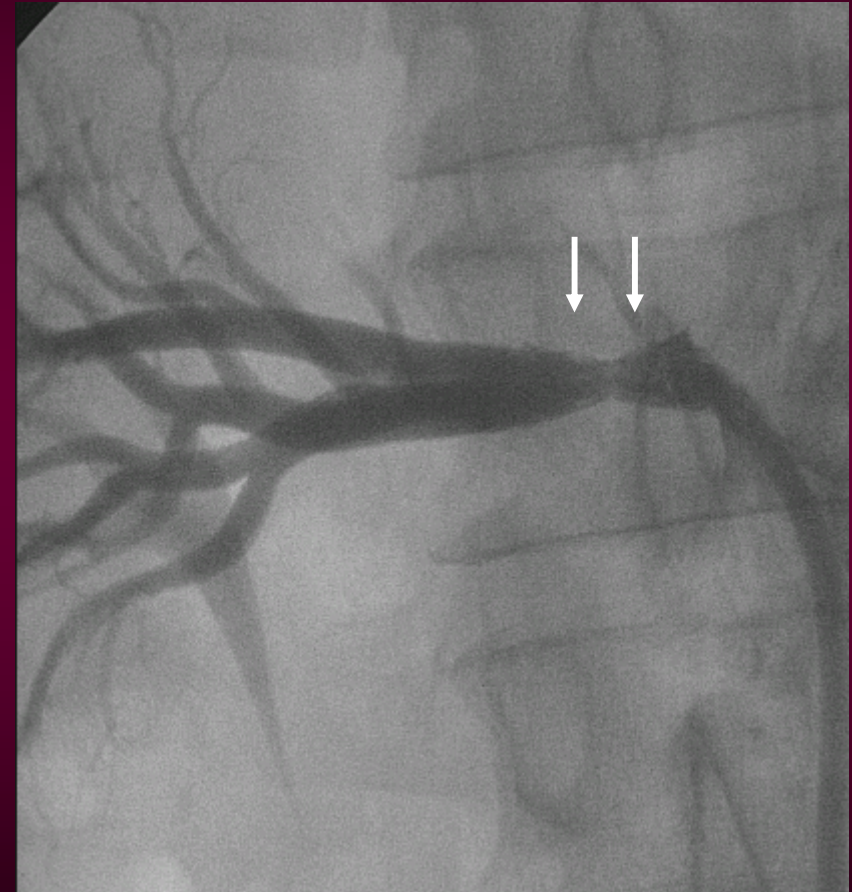


PTA Right Renal Artery : Jan. 2002

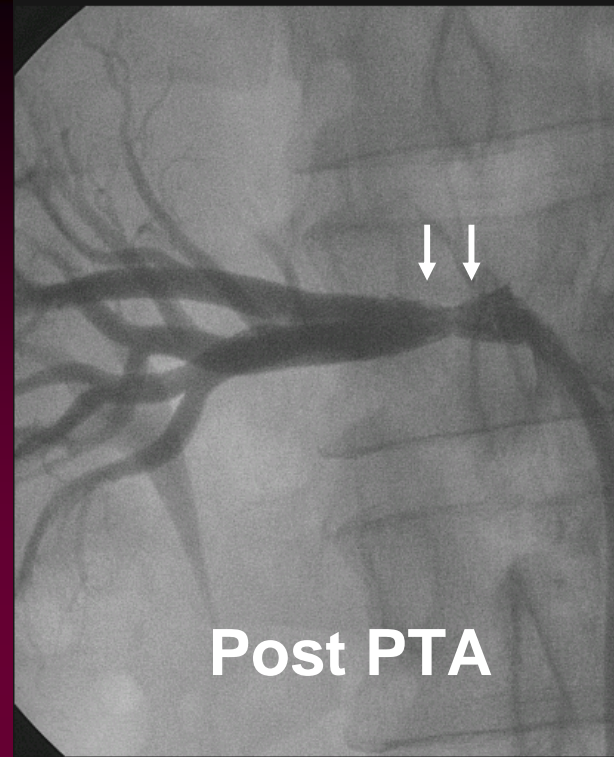
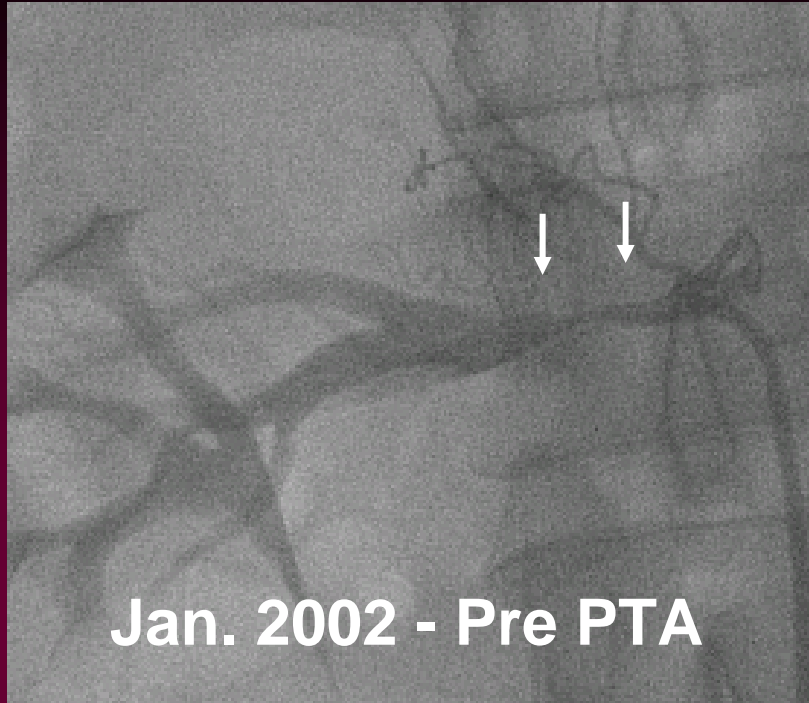
Balloon & Stent – Palmaz Corinthian 6 x 15 mm



Pre PTA



Post PTA



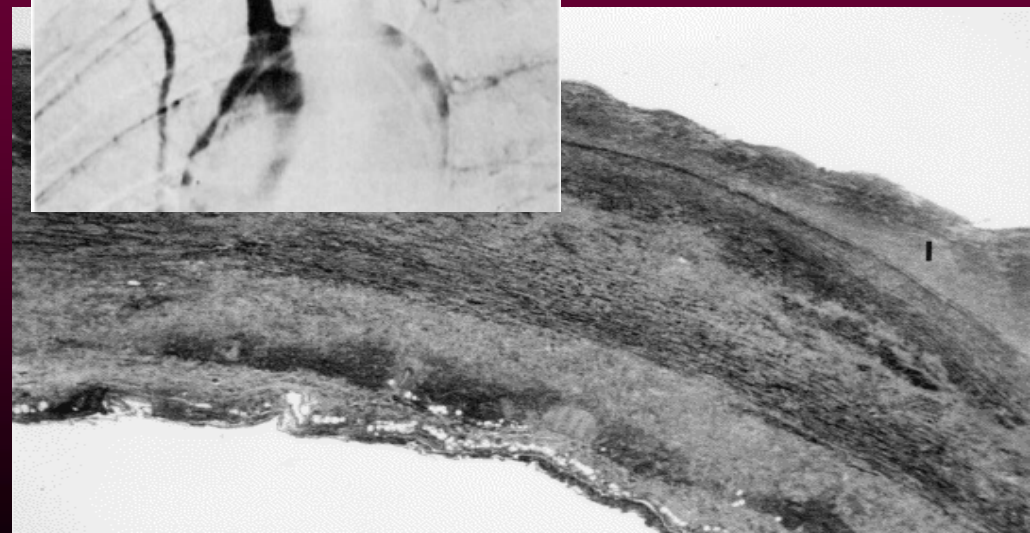
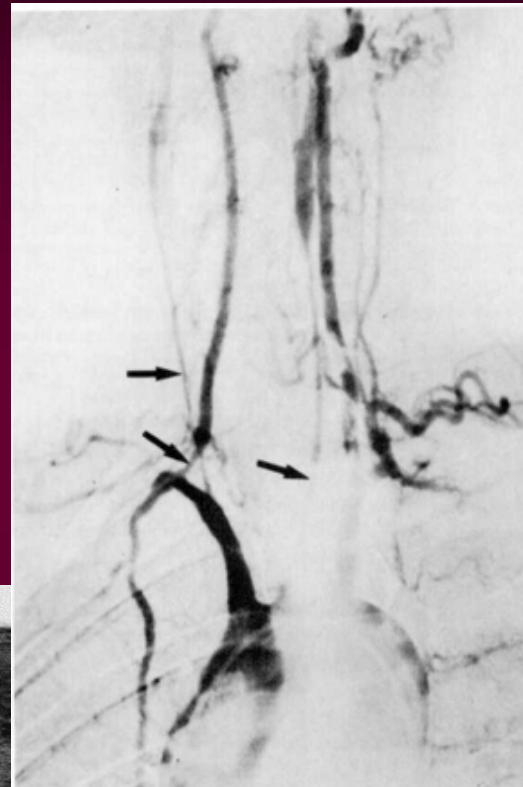


Takayasu's Arteritis

- Affects younger population
- Chronic inflammation
- Progressive course
- Diffuse disease
- Multivessel involvement
- Fibrotic lesion

TAKAYASU'S ARTERITIS PATHOGENESIS

- Idiopathic chronic granulomatous vasculitis
- Large arteries
- Inflammatory process causing thickening and stenosis / aneurysmal formation

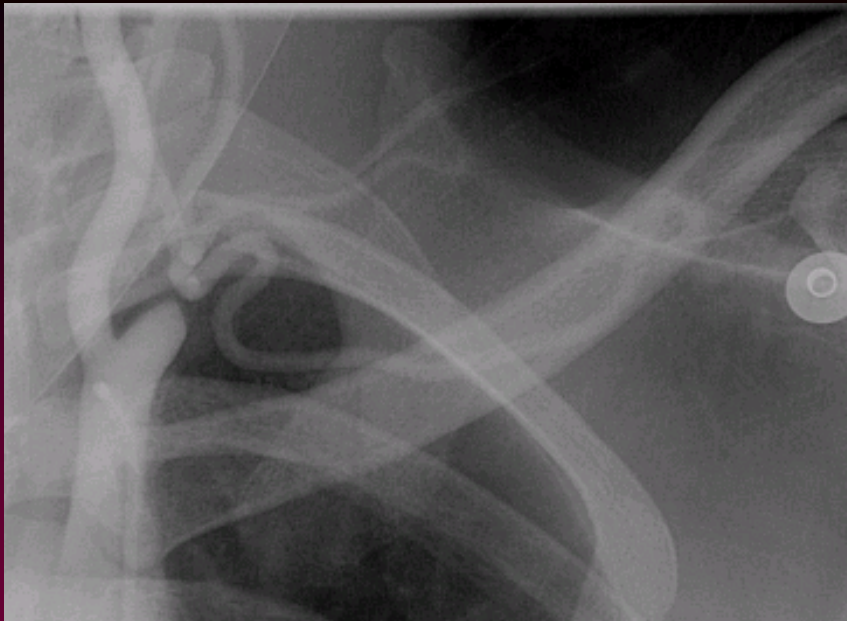




Takayasu's arteritis:

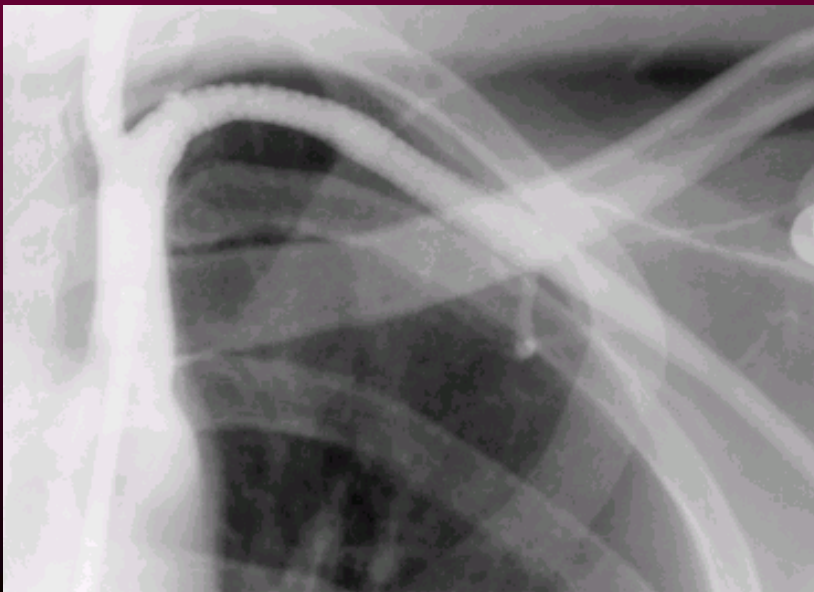
Occluded

Lt. Subclavian Art.



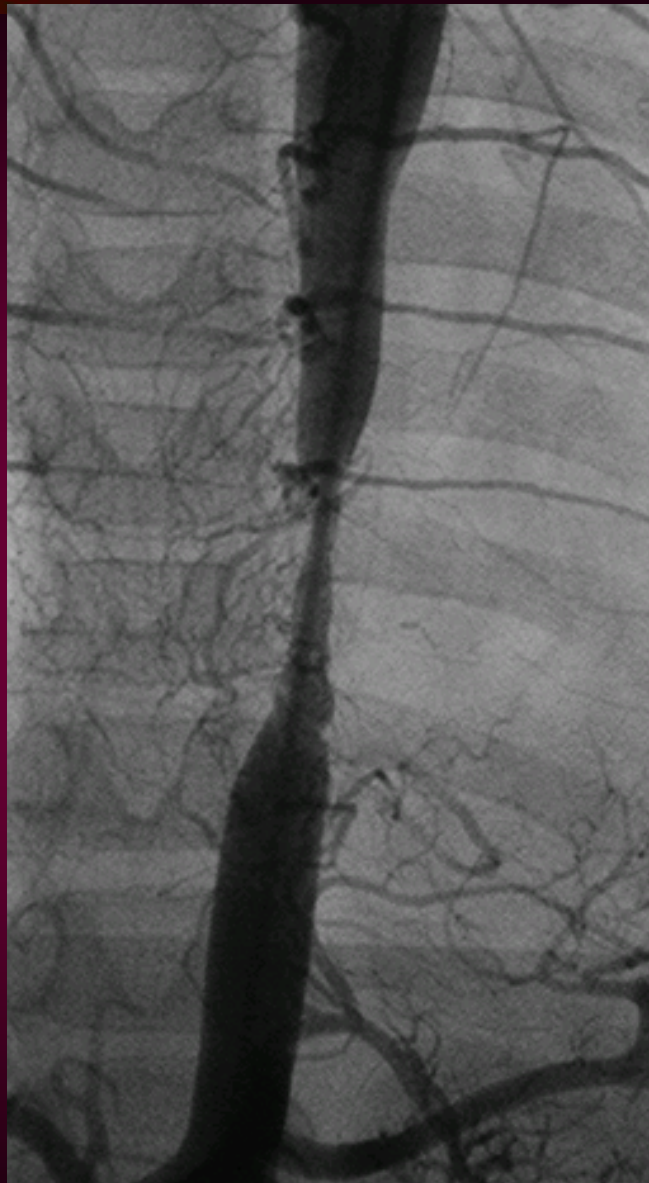
Stenosed Rt Subclavian
& occluded Lt Subclavian

SMART Control 8 x 60 mm



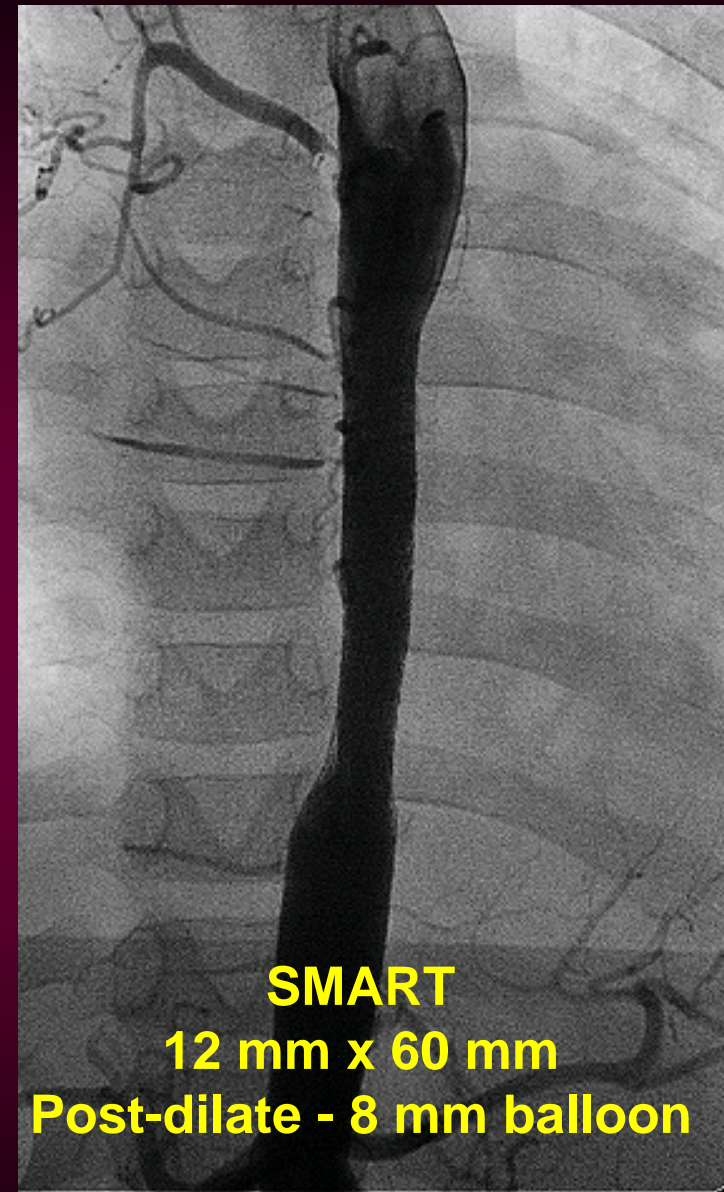


Takayasu's Arteritis in a 5 yr old child with HT



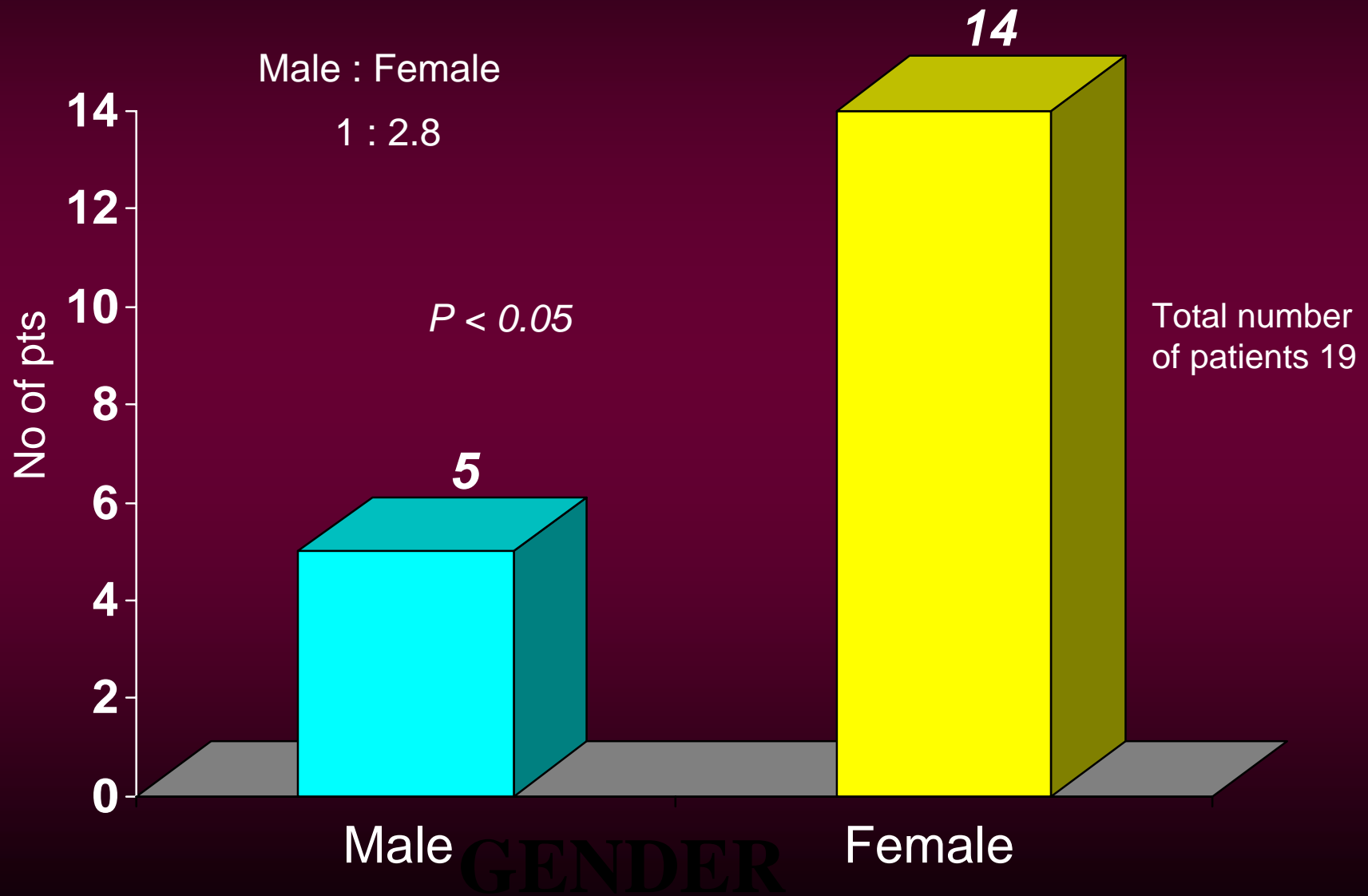
Pre PTA

July 2001

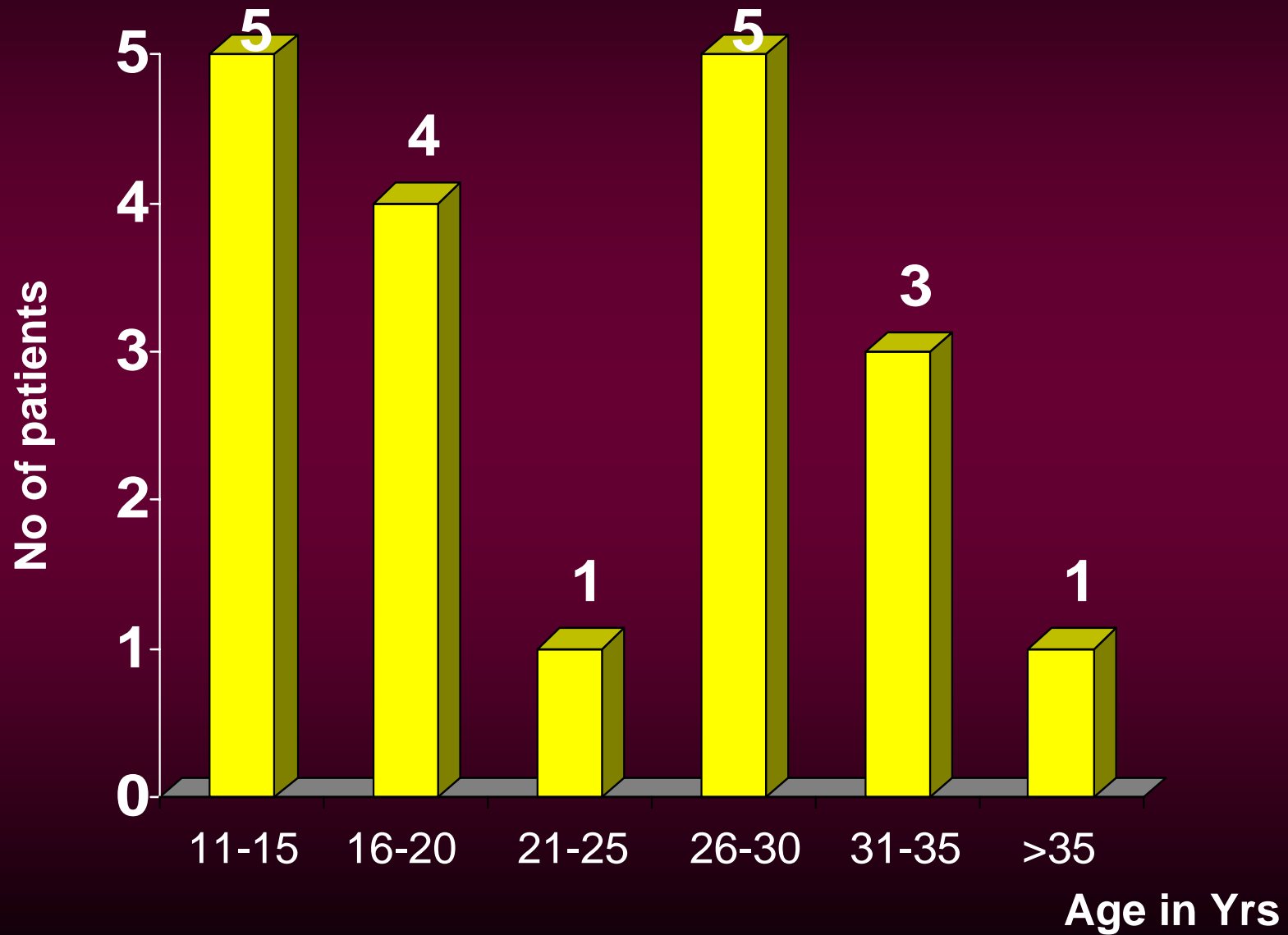


Post PTA

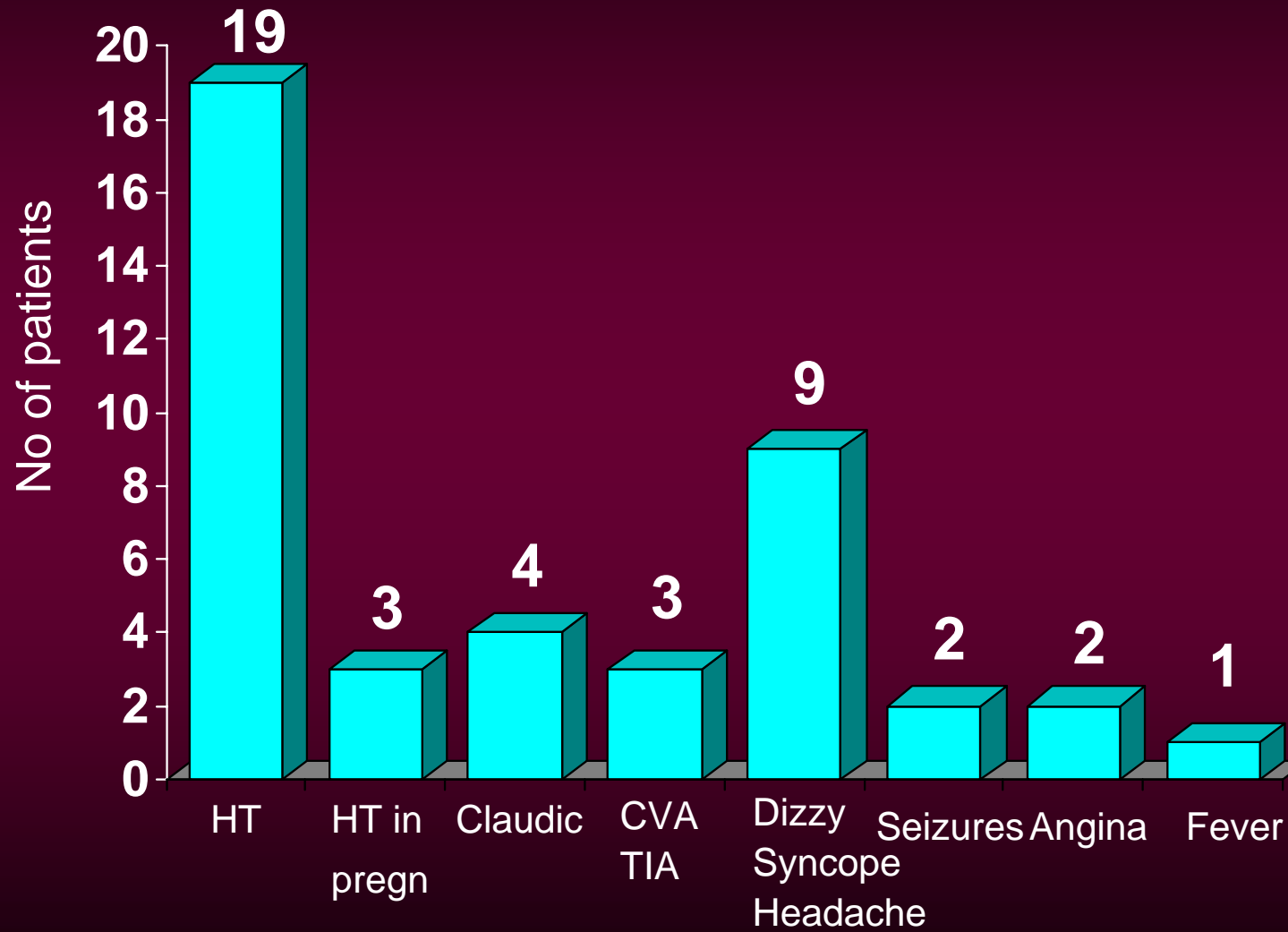
BASELINE CHARACTERISTICS



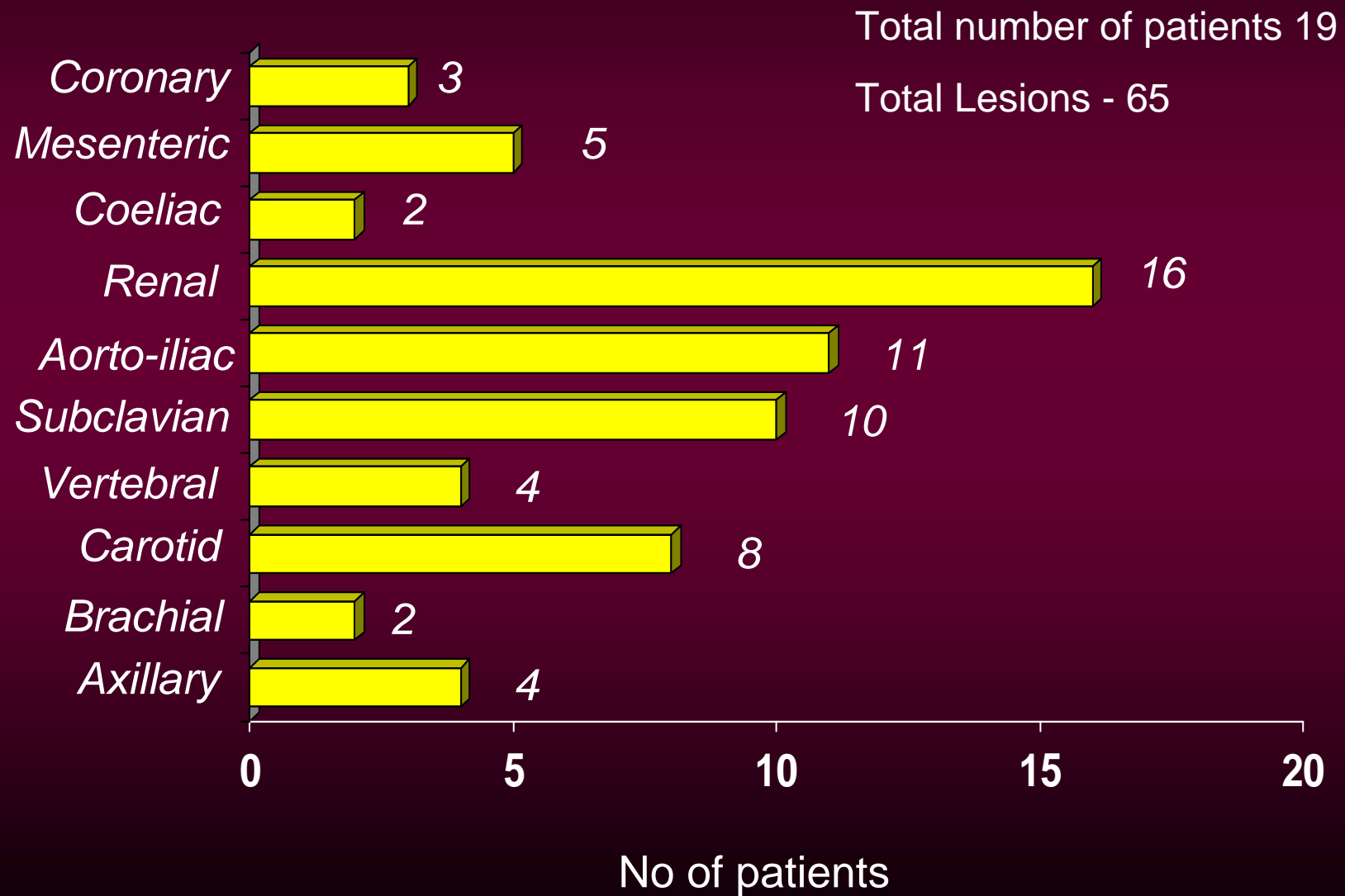
AGE AT DIAGNOSIS



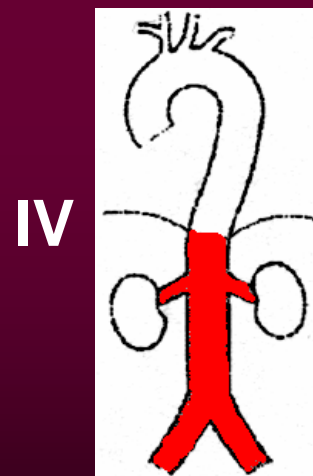
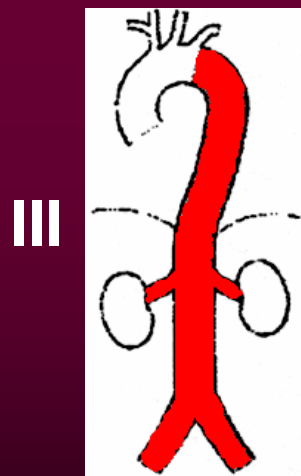
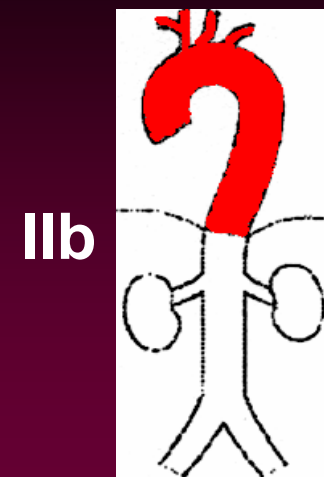
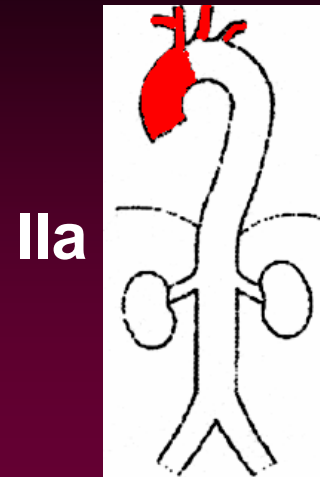
CLINICAL PRESENTATION



VESSEL INVOLVEMENT

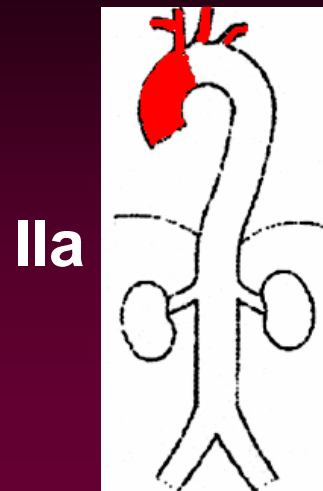


New Angiographic Classification of Takayasu's Arteritis



Coronary involvement – C+
Pulmonary involvement – P+

New Angiographic Classification of Takayasu's Arteritis



1 Pt

3 Pt

15 Pt

Total No. - 19



Takayasu's Arteritis

Treat active disease before intervention

1. Risk of complications higher *
dissection
perforation
2. Restenosis ^
3. Edge Aneurysms/stenosis

^ 2 had ISR and new sites of lesions

** 1 had perforation of abdominal aorta and retroperitoneal hemorrhage*



Takayasu's Arteritis

Active Disease:

Clinical

fever, arthralgia, malaise,
night sweats, myalgia

Serological Markers *

e.g. ESR, C-reactive Protein

Treatment

Steroids

immunosuppressives (cyclophosphamides, azathioprine,
methotrexate, TNF alpha)

** No tests reliably distinguished active from healthy individuals*

Renal PTA in Takayasu's Arteritis

Jan. 2000 – Dec. 2005

Total no. of patients - 19

Total no. of patients with RAS – 16 (84.2%)

- Bilateral renal artery stenoses – 7 (43.75%)
- Unilateral renal artery stenosis – 9 (56%)

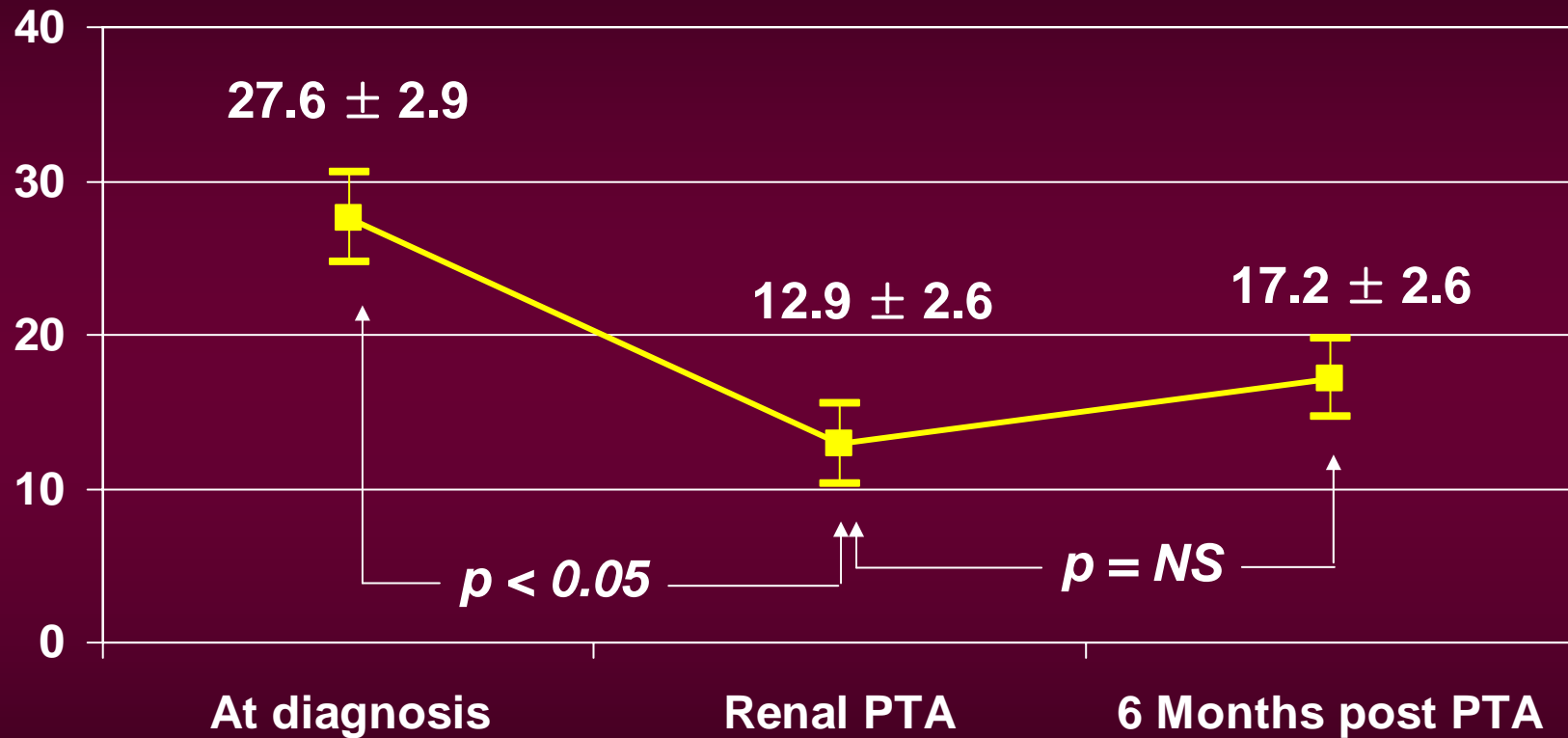
Total number of vessels intervened - 23

Successful PTA – 20 (87%)

(Failed PTA – 3 occluded vessels)



ESR AND DISEASE ACTIVITY

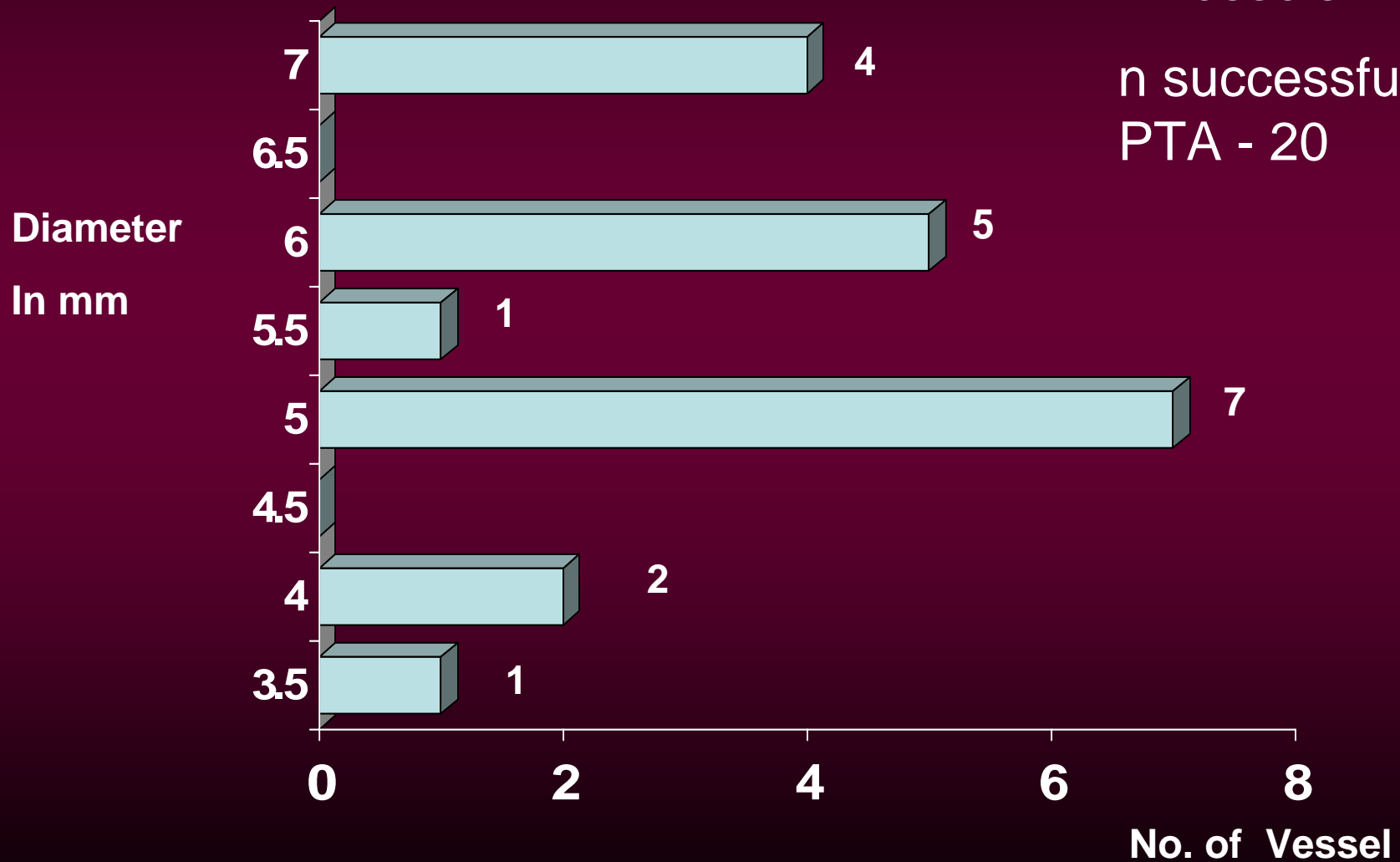


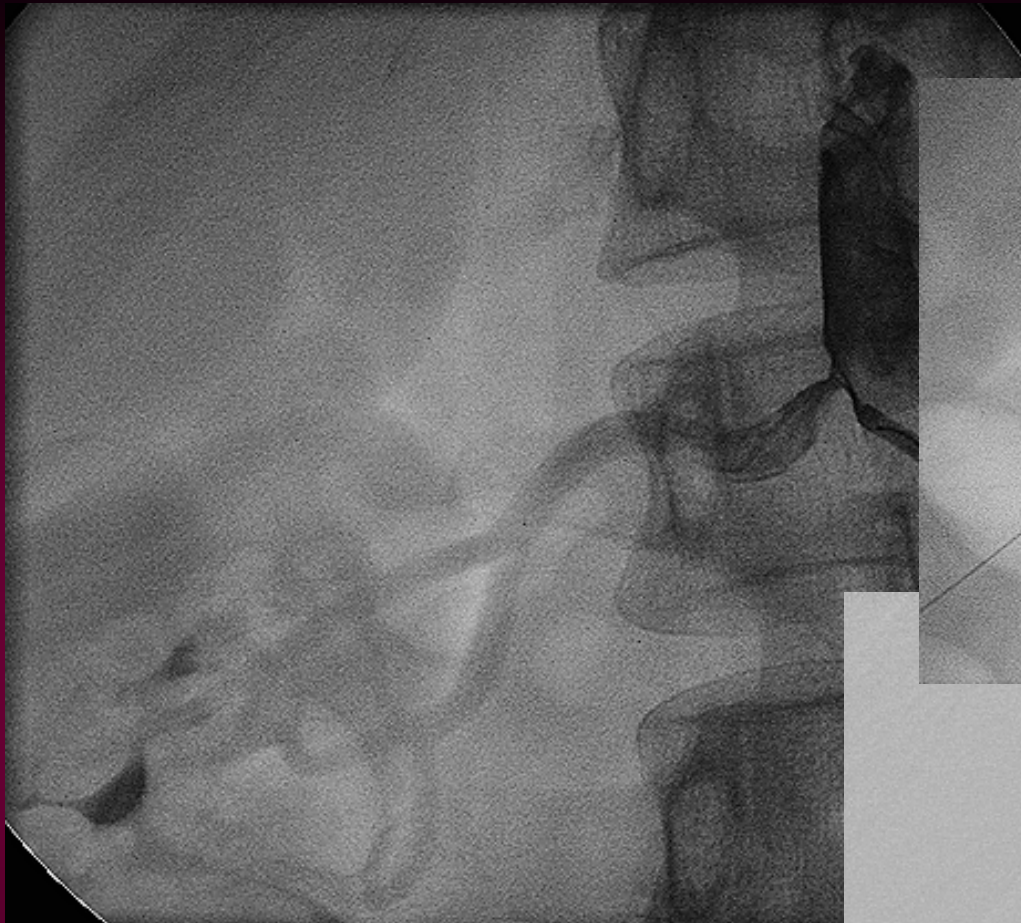
Renal Vessel Size

Average = 5.49 ± 1.07 mm

n vessels – 23

n successful
PTA - 20

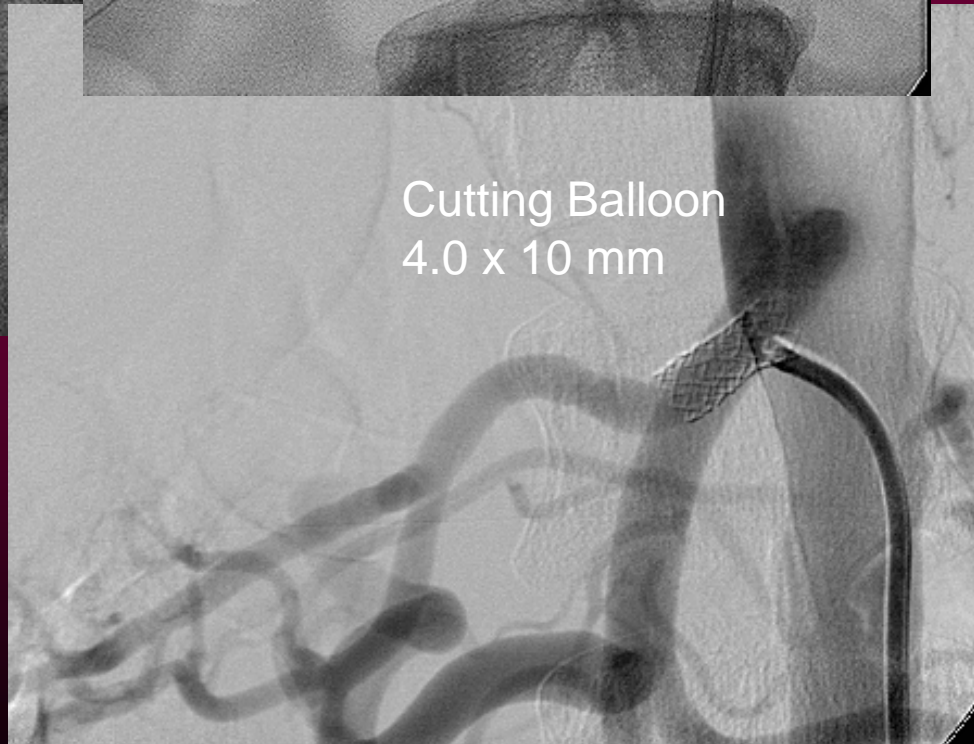




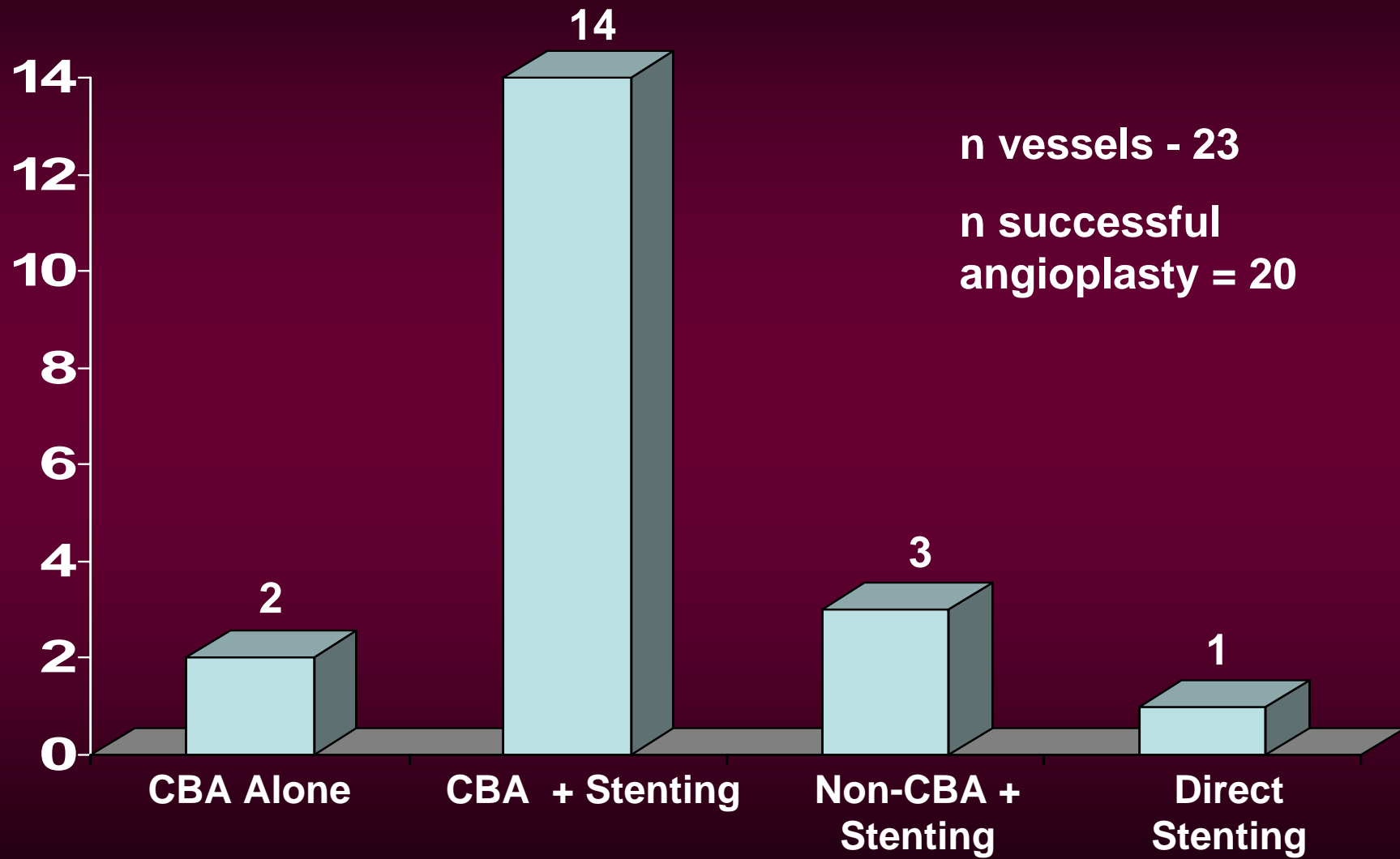
Palmaz Genesis
6 x 15 mm



Cutting Balloon
4.0 x 10 mm



RENAL ANGIOPLASTY

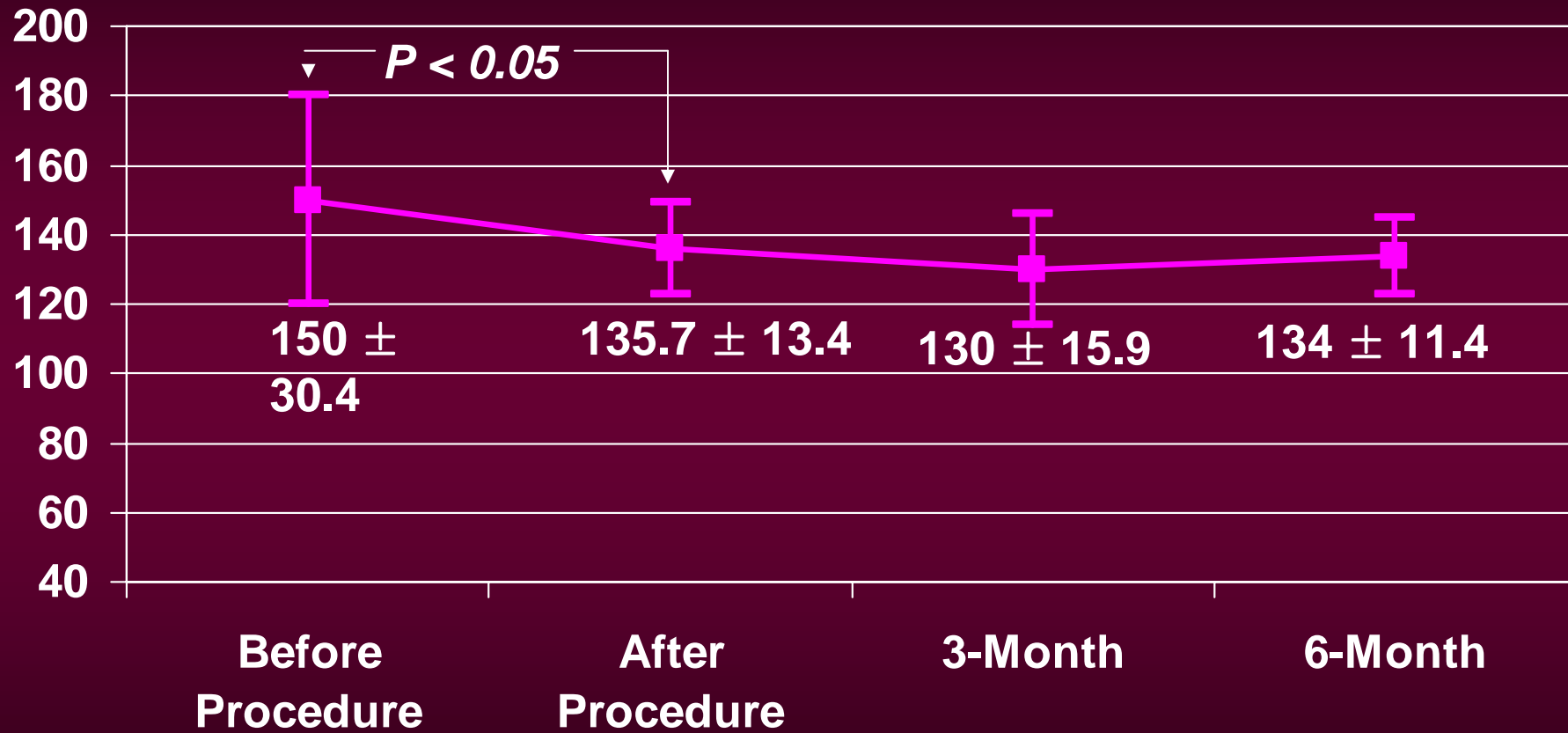


TYPE OF STENTS USED

Palmaz	2
Corinthian	9
Fox	1
Palmaz Genesis	1
Nir Royal	1
Express	4
TAXUS Liberte	1
<hr/>	
Total	19

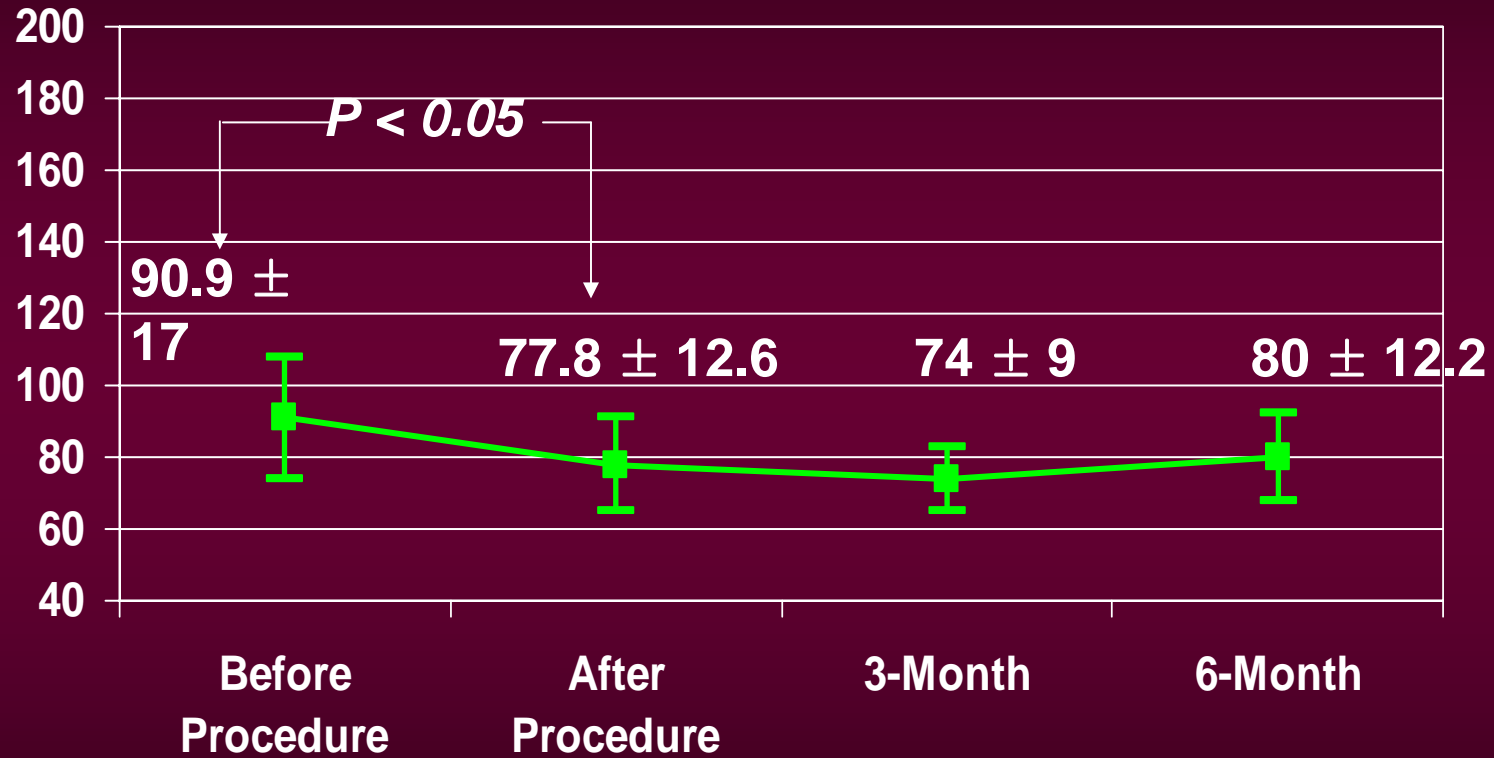


SYSTOLIC BP



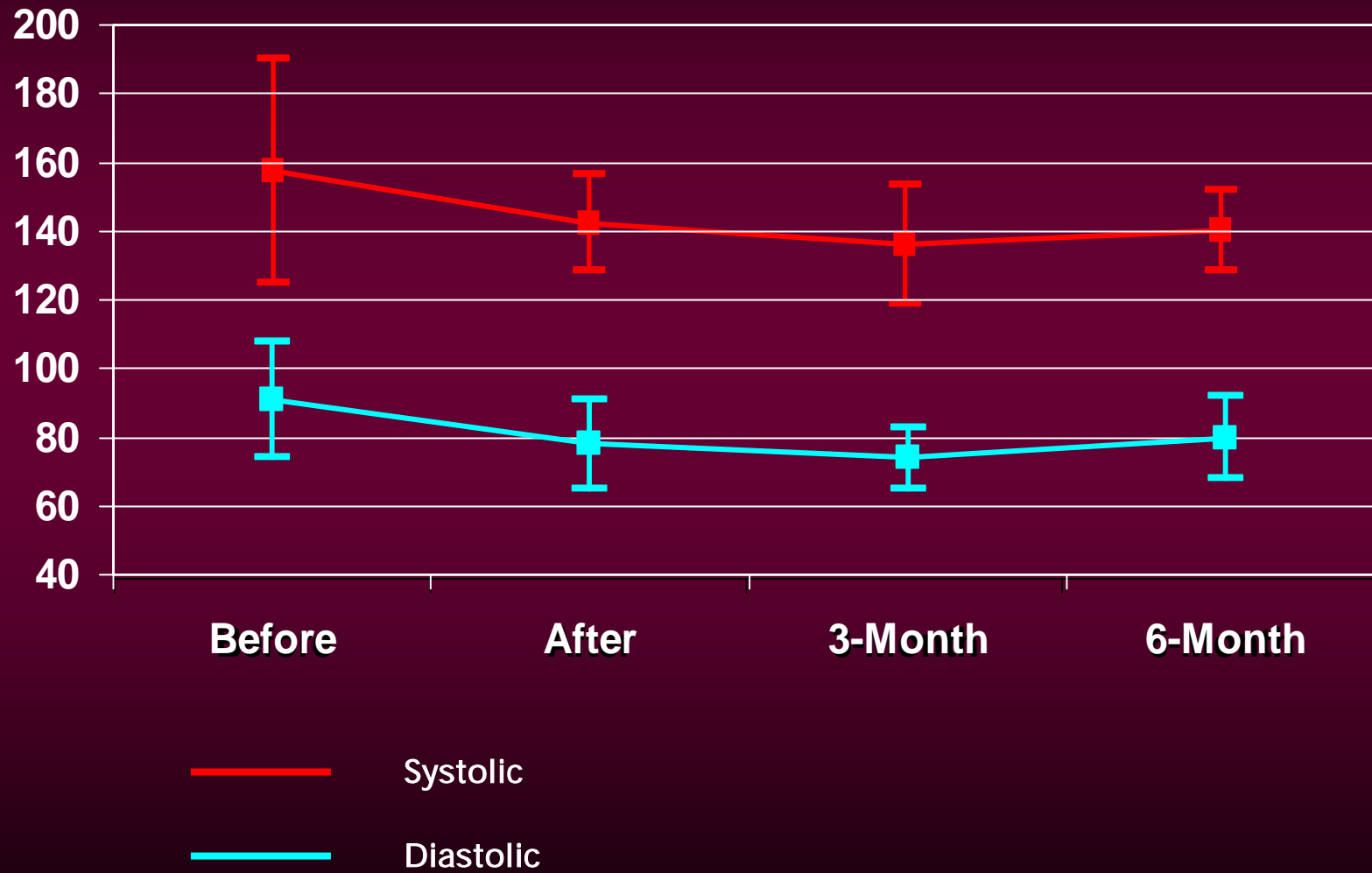


DIASTOLIC BP





BP CHANGE WITH RENAL PTA



Renal Instent Restenosis

11 patients restudied (68.8%)

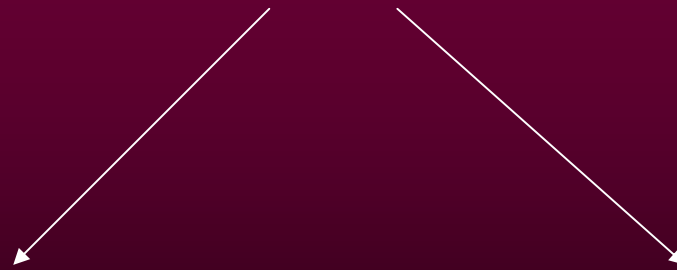
4 pts had renal ISR

1 had active disease with raised ESR

All presented with recurrence of high BP

Total of 5 vessels with ISR (25%)

5 vessels with instent restenosis



3 treated with balloon
angioplasty alone

2 treated with
angioplasty & stenting

Renal Instent Restenosis

No. of Pts. – 4

No. of vessels - 5

Restenosis rate :

No of vessels

Diagnosis of ISR (mo.)

1

2 (active disease)

2

8

1

16

1

23

Size

No. of Vessels

4 mm

2

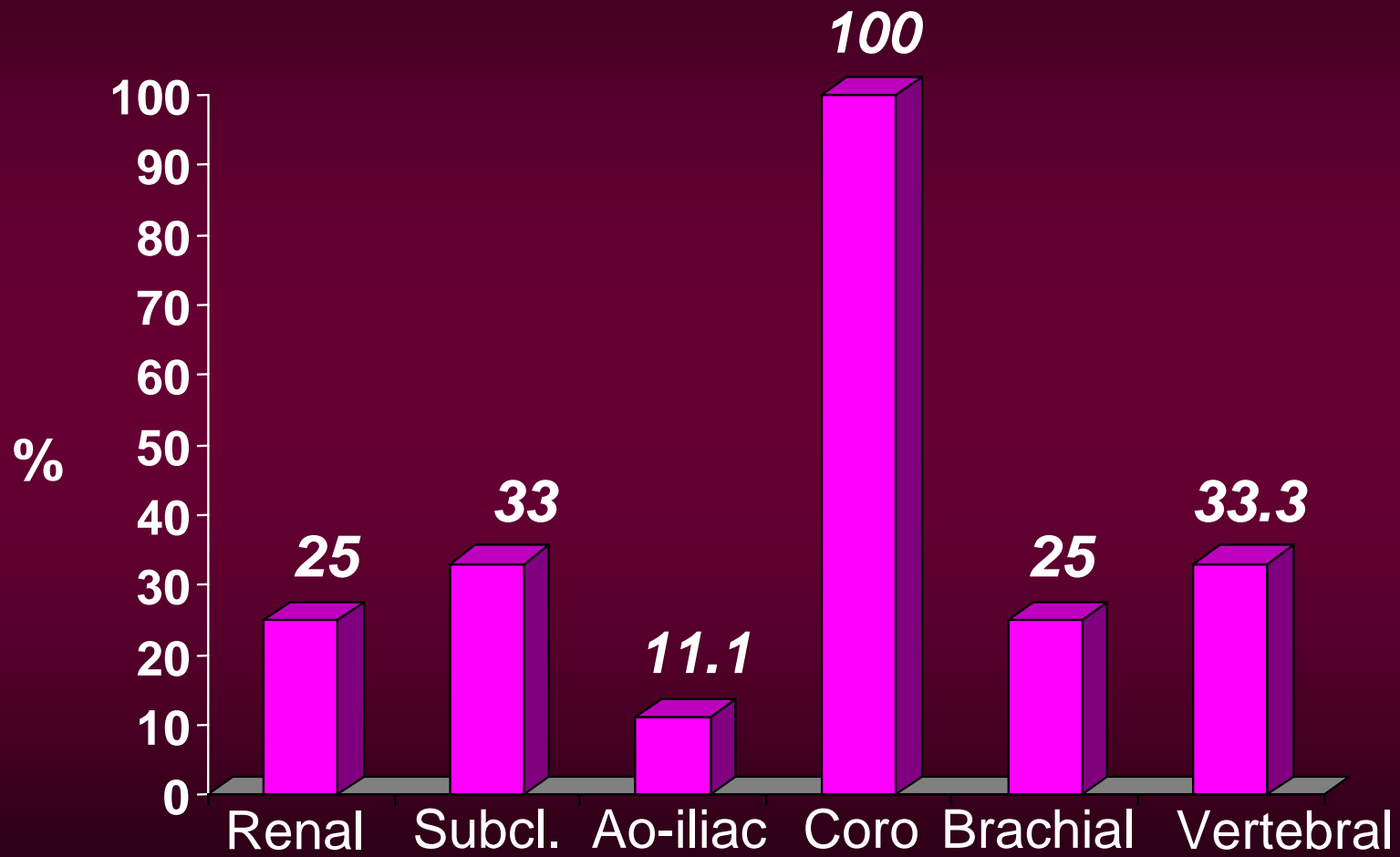
5 mm

1

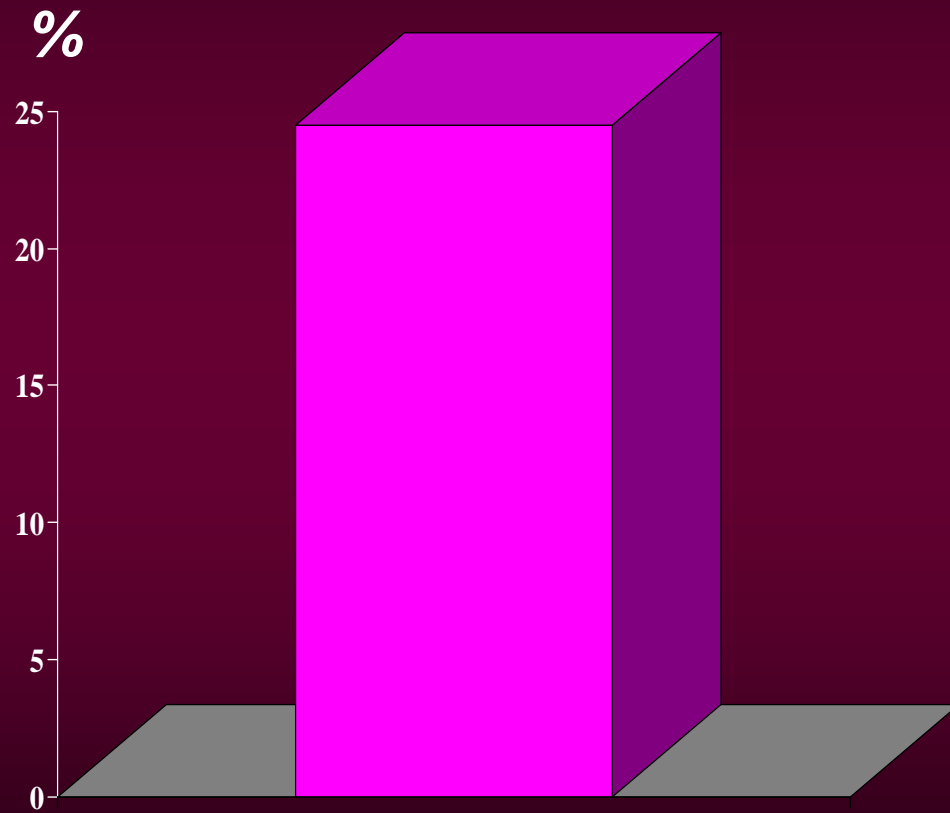
6 mm

2

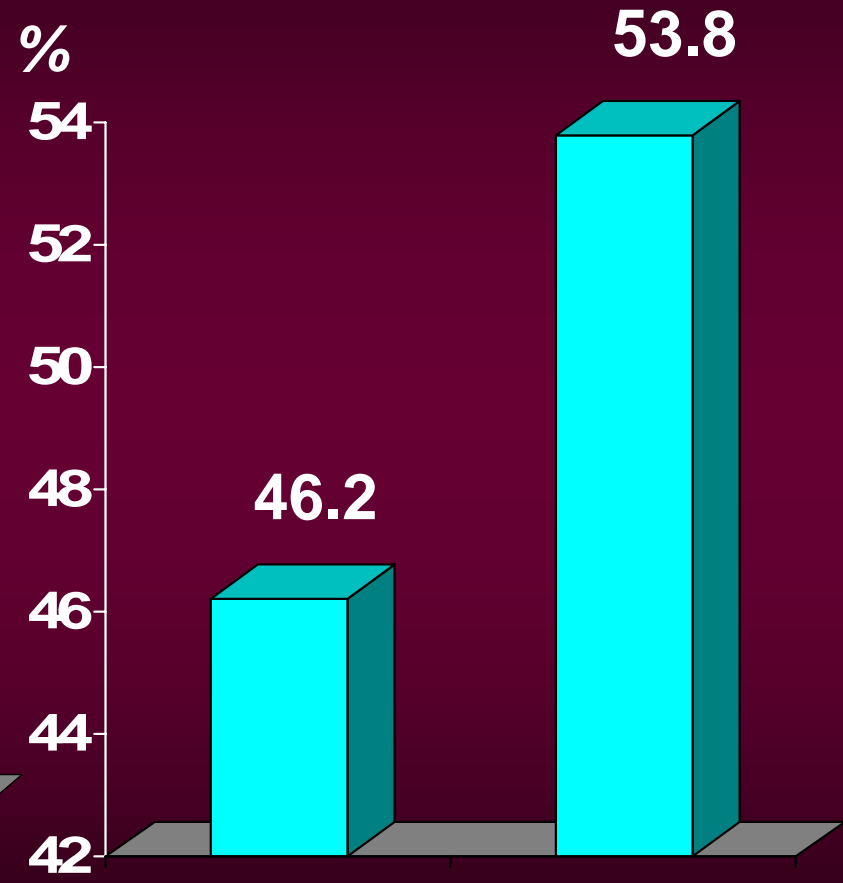
Vessel Restenosis Rate



PTA: Long Term Outcome



Restenosis Rate = 24.0%
13 out of 54 vessels



Balloon

Balloon & stenting



Takayasu's Arteritis

Conclusion

- A progressive disease affecting large vessels
- Need to diagnosis active disease and treat early
 - steroids +/- immunosuppressives
- PTA has a high success rate
- Significant restenosis rates
 - need to follow these pts. up



Takayasu's Arteritis

PTA Strategy

- Treat active disease first
- Cutting balloon and stent
- DES ?



Invasive Procedures in National Heart Institute KL

	2000	2001	2002	2003	2004	Gr. total
PTCA-total	1054	1404	1696	1728	1977	12004
PTCRA	55	59	54	38	56	384
PTA –total	76	134	112	105	109	619
Renal	32	63	46	31	39	246
Iliac/SFA	39	51	49	50	48	278
Subclavian						
Carotid	5	20	17	24	22	95

Renal Takayasu's arteritis: Anti-HT Medications

Medications	Pre-PTA(%)	Post-PTA(%)
CCB	11 (68.8)	11 (68.8)
ACE-I	1 (6.2)	1 (6.2)
ARB	1 (6.2)	1 (6.2)
Beta B	12 (75.0)	12 (75.0)
Diuretics	8 (50)	6 (37.5)
Alpha B	7 (43.8)	2 (12.5)

MEDICATION

MEDICATION	BEFORE PROCEDURE (Patient No)	BEFORE PROCEDURE (%)	AFTER PROCEDURE (Patient No)	AFTER PROCEDURE (%)
Prednisolone	8	50	7	43.8
Azathioprine	1	6.2	0	0
Aspirin	12	75	14	87.5
Clopidogrel	2	12.5	6	37.5
Ticlopidine	2	12.5	5	31.2
CCB	11	68.8	11	68.8
ACE Inhibitor	1	6.2	1	6.2
ARB	1	6.2	1	6.2
Beta Blocker	12	75	12	75

MEDICATION

MEDICATION	BEFORE PROCEDURE (Patient No)	BEFORE PROCEDURE (%)	AFTER PROCEDURE (Patient No)	AFTER PROCEDURE (%)
Diuretics	8	50	6	37.5
Alpha Blocker	7	43.8	2	12.5
Statin	2	12.5	2	12.5
Anticonvulsan ts	2	12.5	2	12.5
OHA	0	0	1	6.2

Dosages of anti-hypertensives were reduced after Renal PTA though the number of medications remains essentially the same