

GP IIB/IIIa Inhibitor Use During Endovascular Intervention

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Presenter Disclosure Information

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Nothing to Disclose Related to this Presentation



GP IIb/IIIa Receptor Blockade in Peripheral Vascular Intervention: Rationale

- ◆ Underlying pathophysiology of PVD is atherosclerosis
- ◆ Plaque rupture (spontaneous or due to vascular intervention) is a potent stimulus for platelet activation and aggregation
- ◆ Coagulation system is activated by vessel damage and activated platelets generate thrombin
- ◆ Diabetes incidence high in patients with PVD
- ◆ GP IIb/IIIa inhibitors not associated with increased incidence of ICH (unlike fibrinolytics)



GP IIB/IIIa Inhibitor Use During Endovascular Intervention

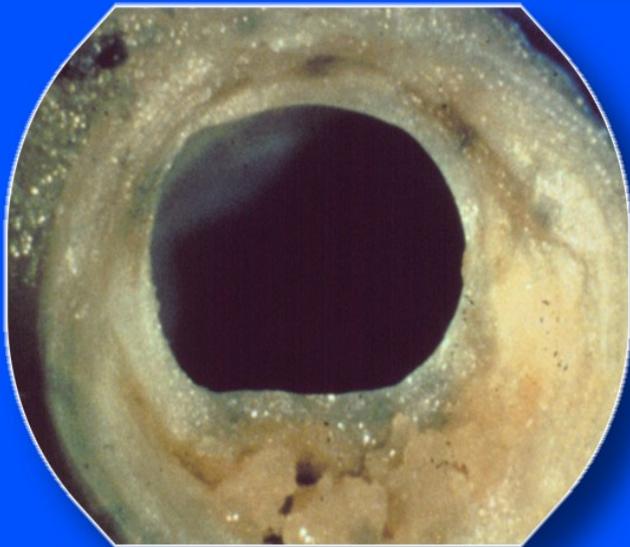
- ◆ Safety
- ◆ Benefit
- ◆ Cost

Acute Coronary Syndromes

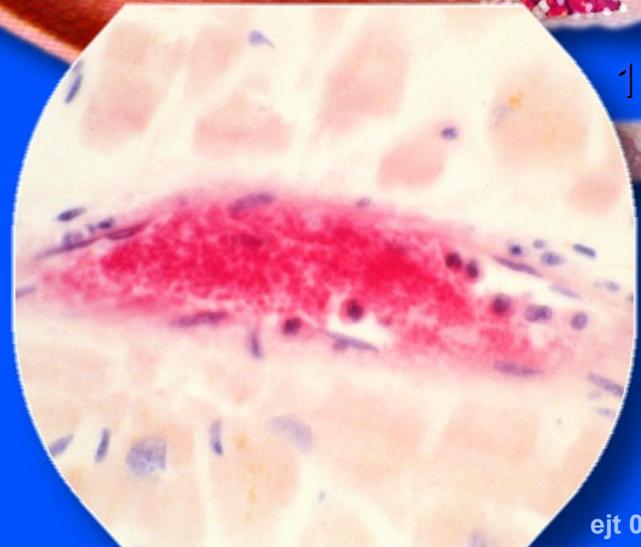
The "Hot" Vessel

Microvascular Obstruction

5x



1000x



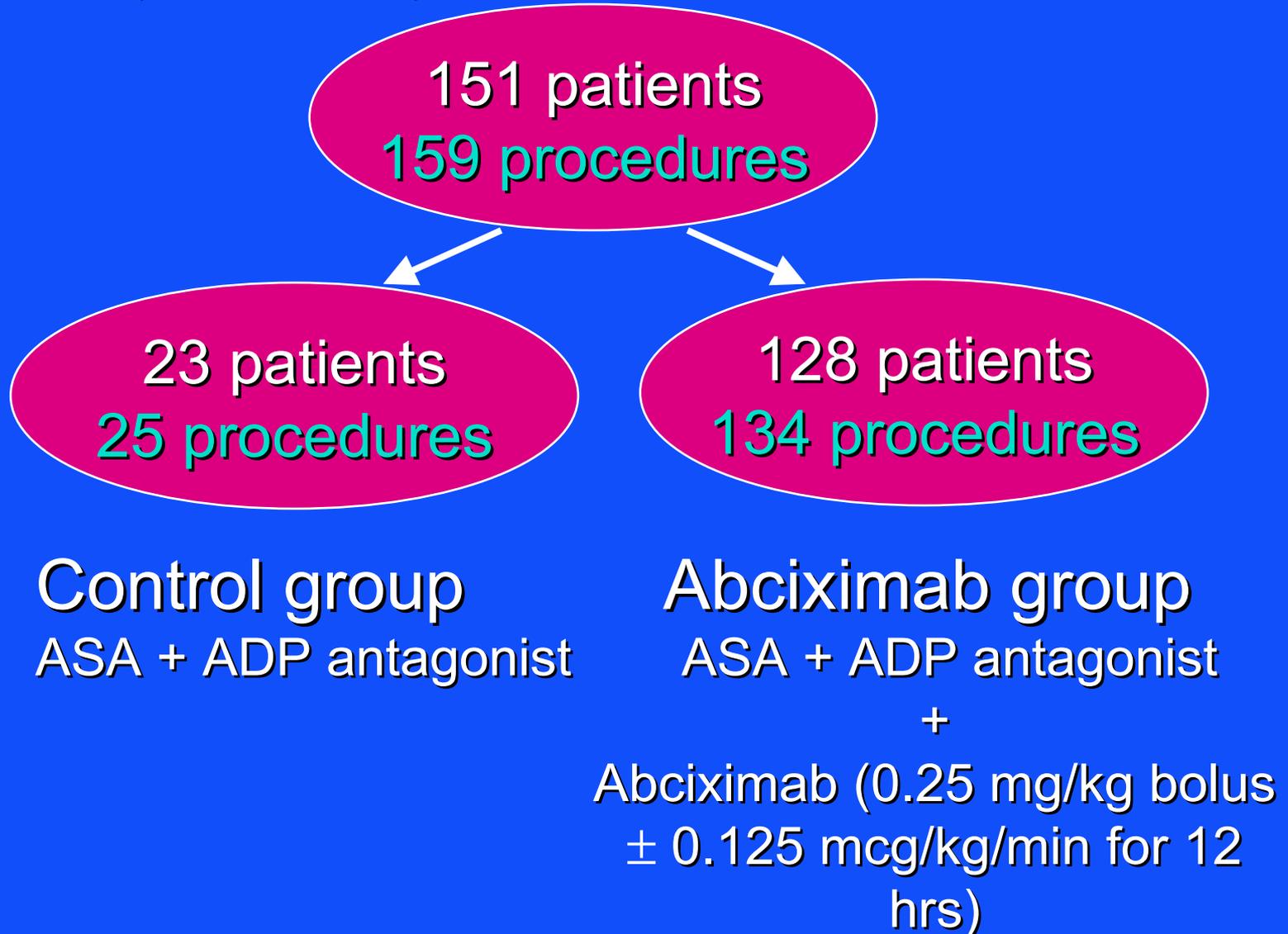


Intracerebral Hemorrhage Rates in GP IIb/IIIa Receptor Inhibitor Coronary Intervention Trials

Trial	N	Placebo (%)	Inhibitor
(%)	2,099		
EPIC	4,010	0.3	0.3
IMPACT	2,139	0.1	0.1
RESTORE	1,265	0.2	0.1
CAPTURE	2,792	0.0	0.0
EPILOG	12,305	0.0	0.1
Pooled		0.1	0.1

Abciximab in Carotid Stenting

Kapadia et al, Stroke 2001, 32: 2328-32





Procedural Events

	Control (n=25)	Abciximab (n=134)
Minor strokes	0	1 (0.8%)
Major strokes	1 (4%)	0
Retinal infarct	0	1 (0.8%)
ICH	1 (4%)	0
MI	0	0
Death	1 (4%)	0
Total events	2 (8%)	2 (1.6%)
p=0.05		

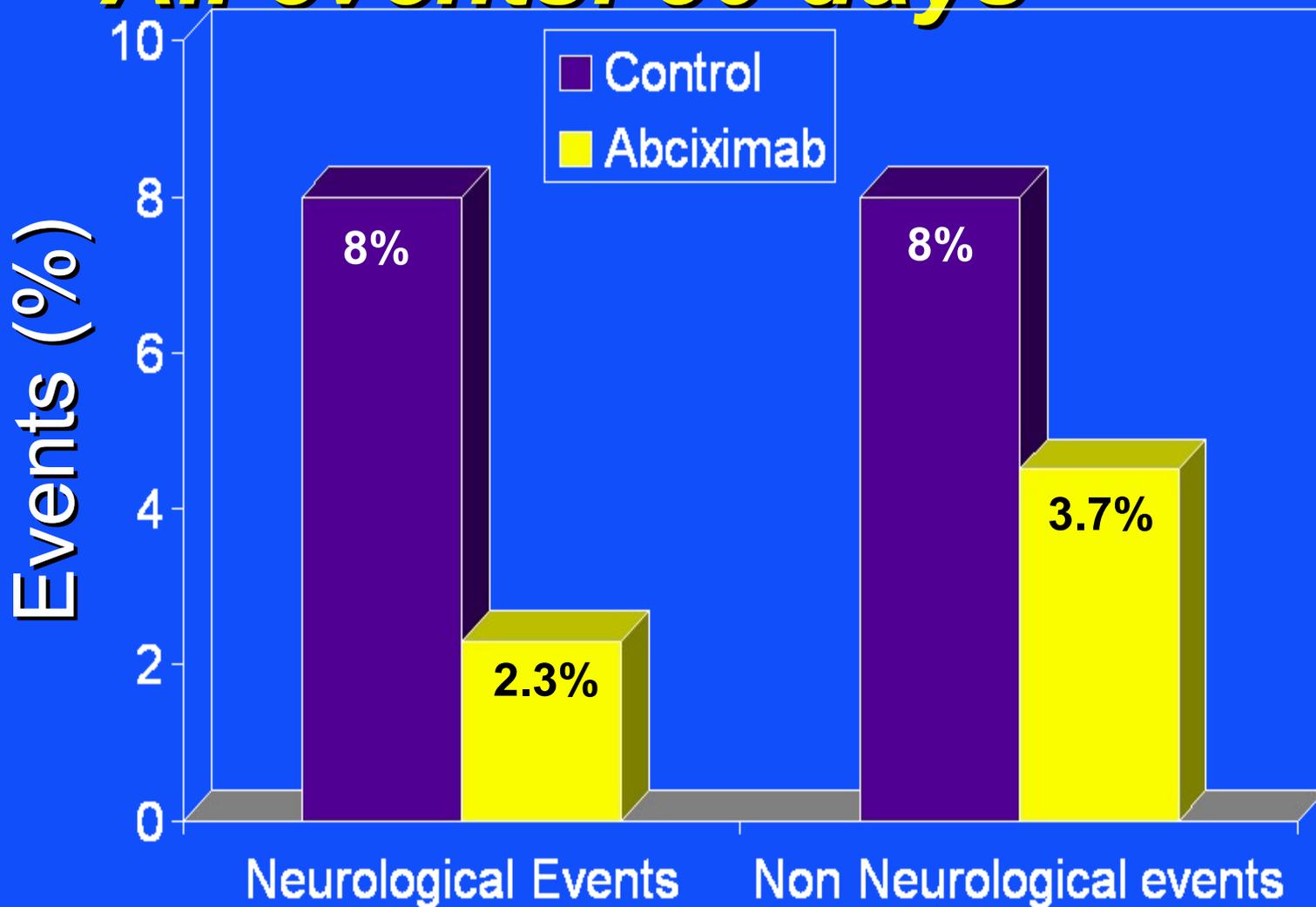


30 Day Follow-up: New Events

	Control	Abciximab
	(n=25)	(n=134)
Minor strokes	0	0
Major strokes	0	0
ICH	0	1 (0.8%)
MI	0	0
Death	2 (8%)	5 (3.7%)
Total events	2 (8%)	6 (4.5%)

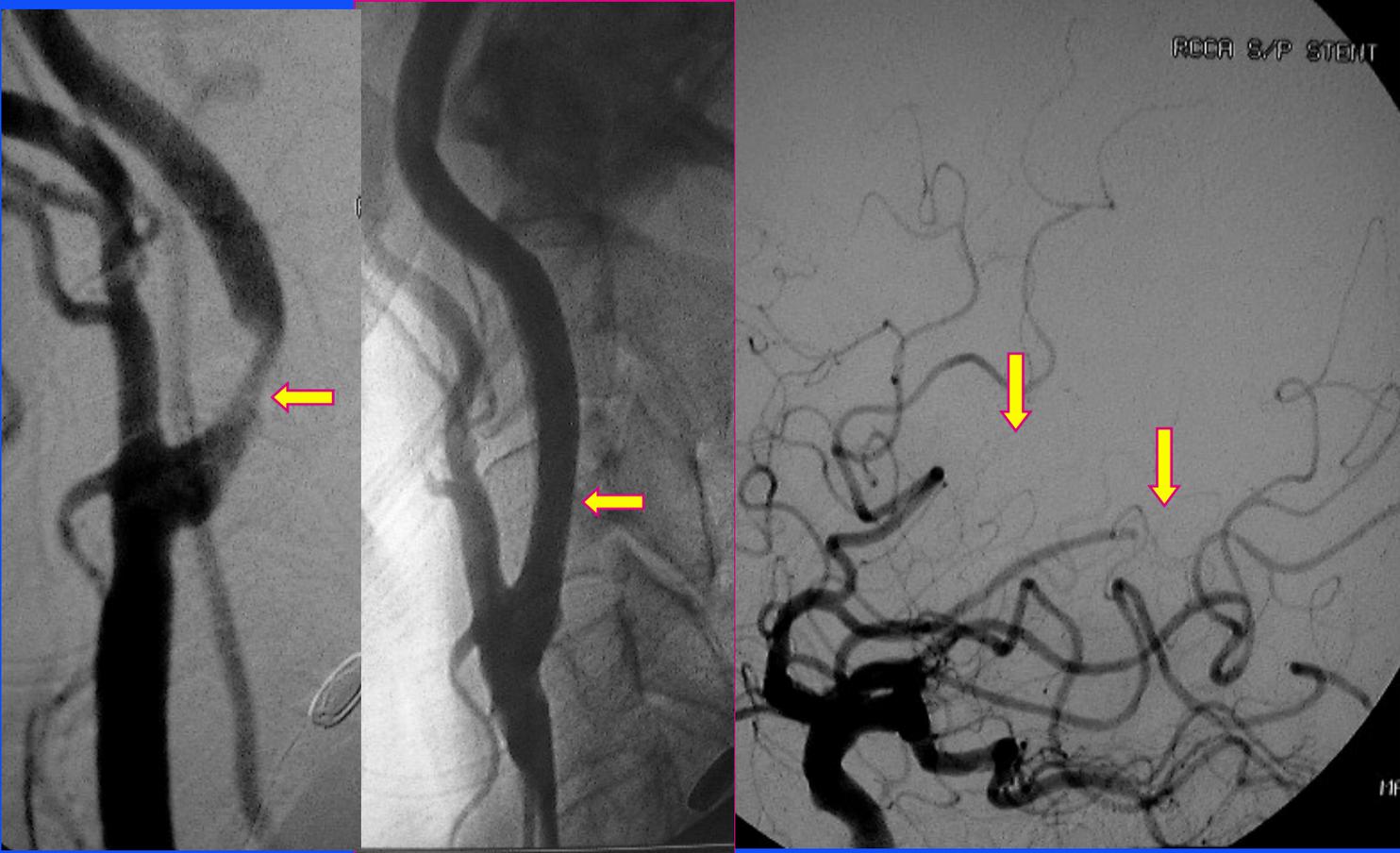


All events: 30 days



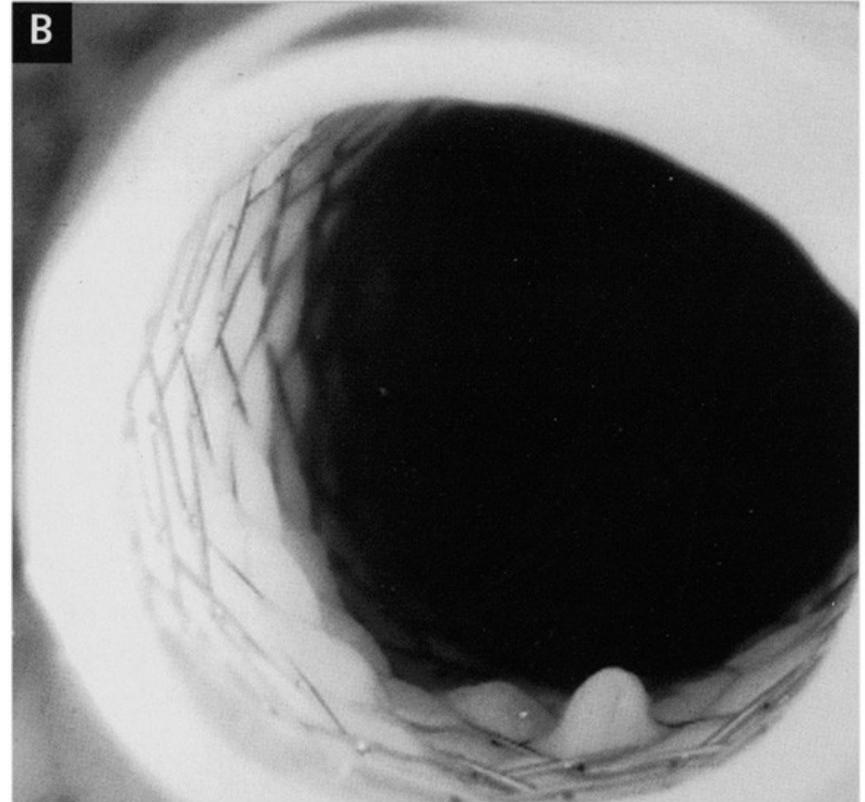
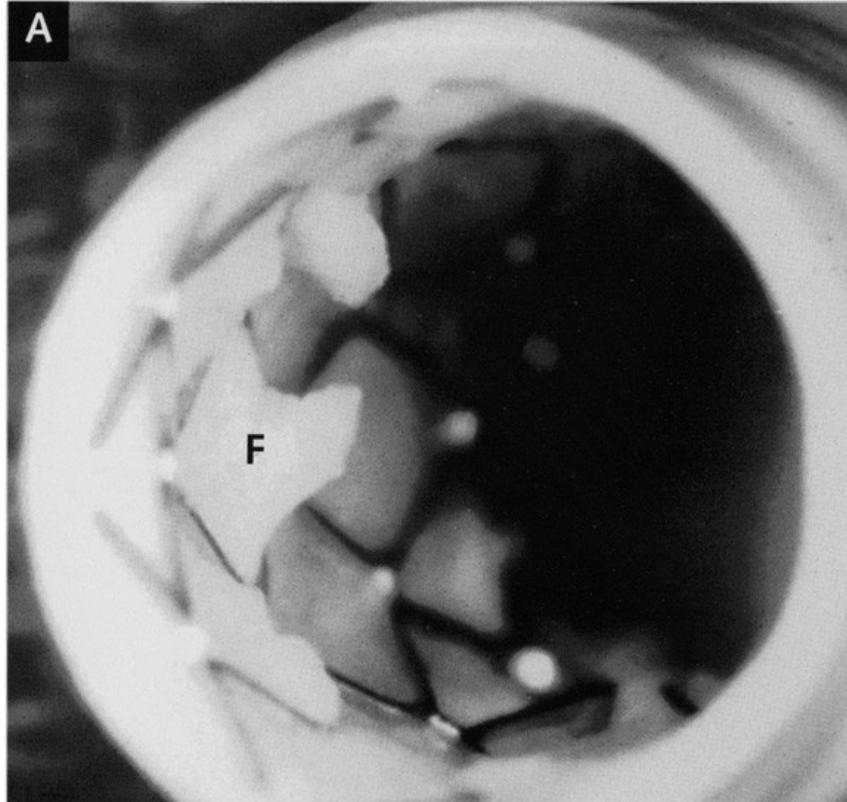


Severe Aortic Arch Tortuosity with MCA embolization





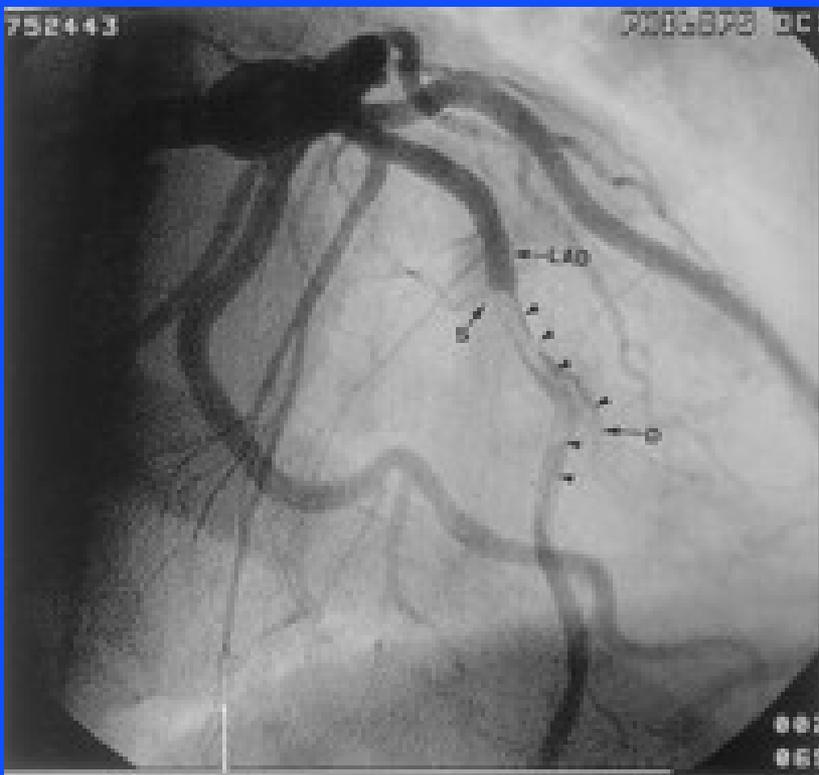
PLAQUE PROTRUSION THROUGH STENT STRUTS



F: large intimal flaps.



Dethrombosis of Left Anterior Descending Coronary Artery with Abciximab



Initial Angiogram



Angiogram Post Abciximab Bolus



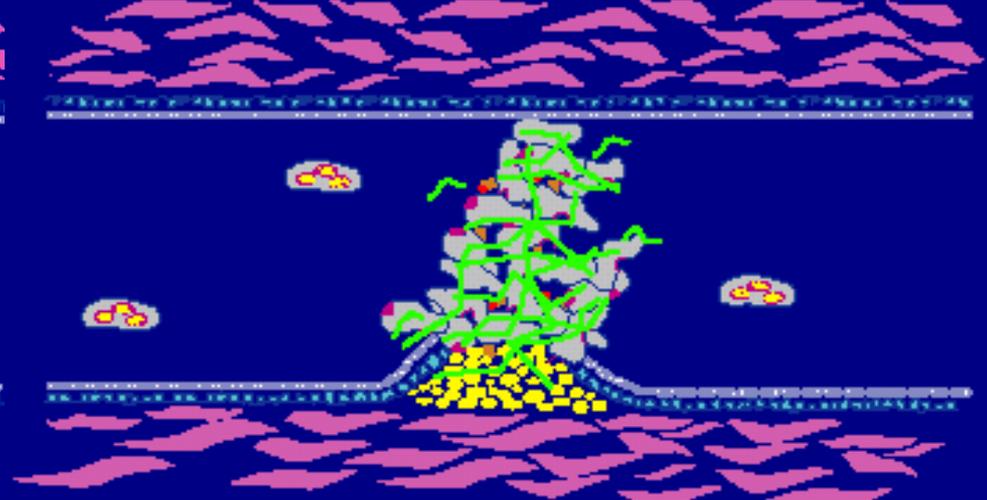
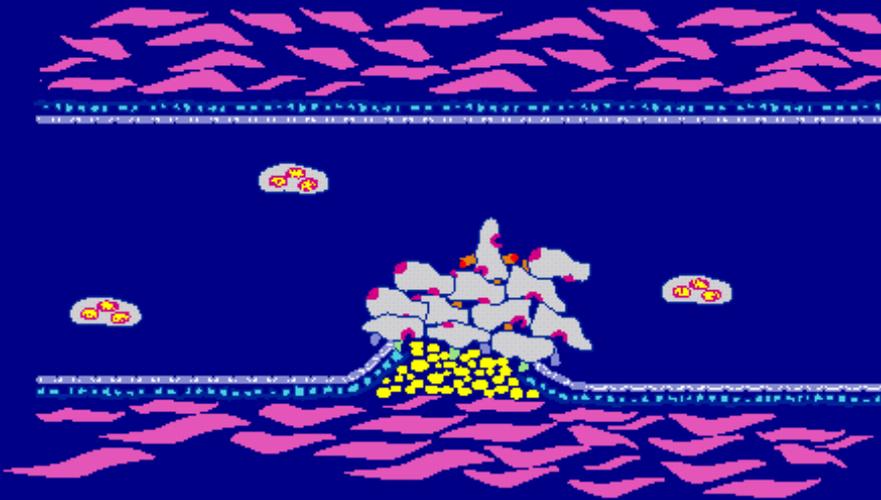
Combination Therapy in PVD

- ◆ Low Dose Retavase
- ◆ Full Dose ReoPro
- ◆ Low Dose, Weight-Adjusted Heparin

Platelet Thrombus vs Stabilized Clot

Fibrinolytic ineffective
Antiplatelet effective

Fibrinolytic effective
Antiplatelet effective



Platelet-Rich Thrombus

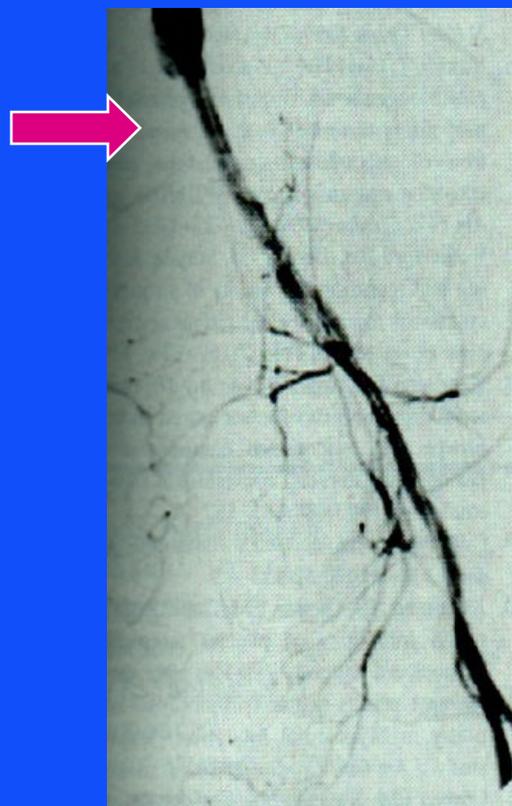
“White” Thrombus

Platelet/Fibrin Thrombus

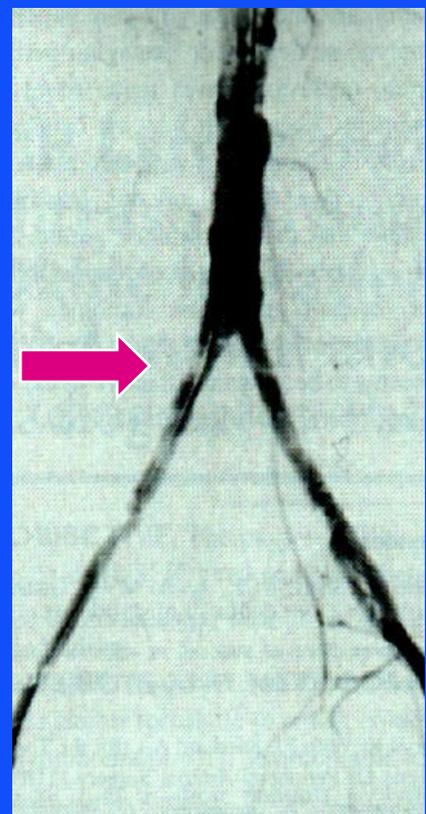
“Red” Thrombus



Abciximab + Urokinase in Peripheral Arterial Thrombolysis



Baseline



After 1 Hour of Treatment

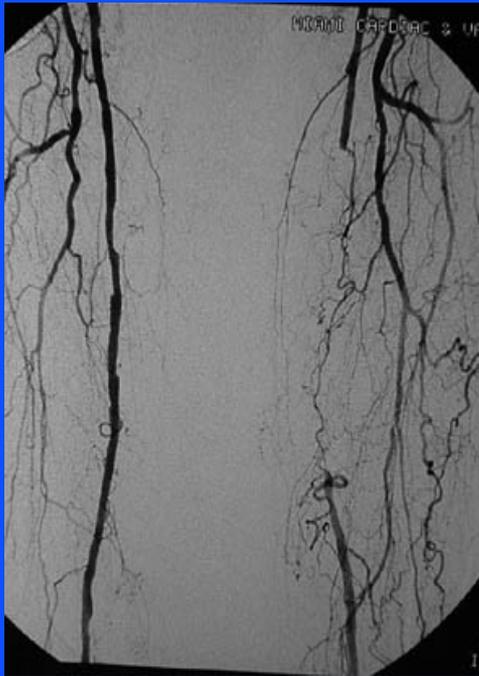
Tepe et al

Digital subtraction angiogram of a right common iliac artery occlusion



Abciximab + Reteplase in Chronic SFA Occlusion

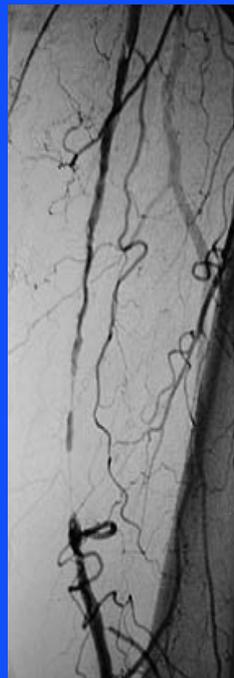
Katzen



Baseline
lysis

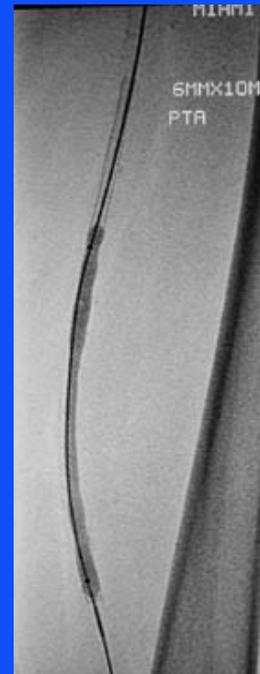


After 2 hours



After

6 hours



At 6.5 hours



After

and

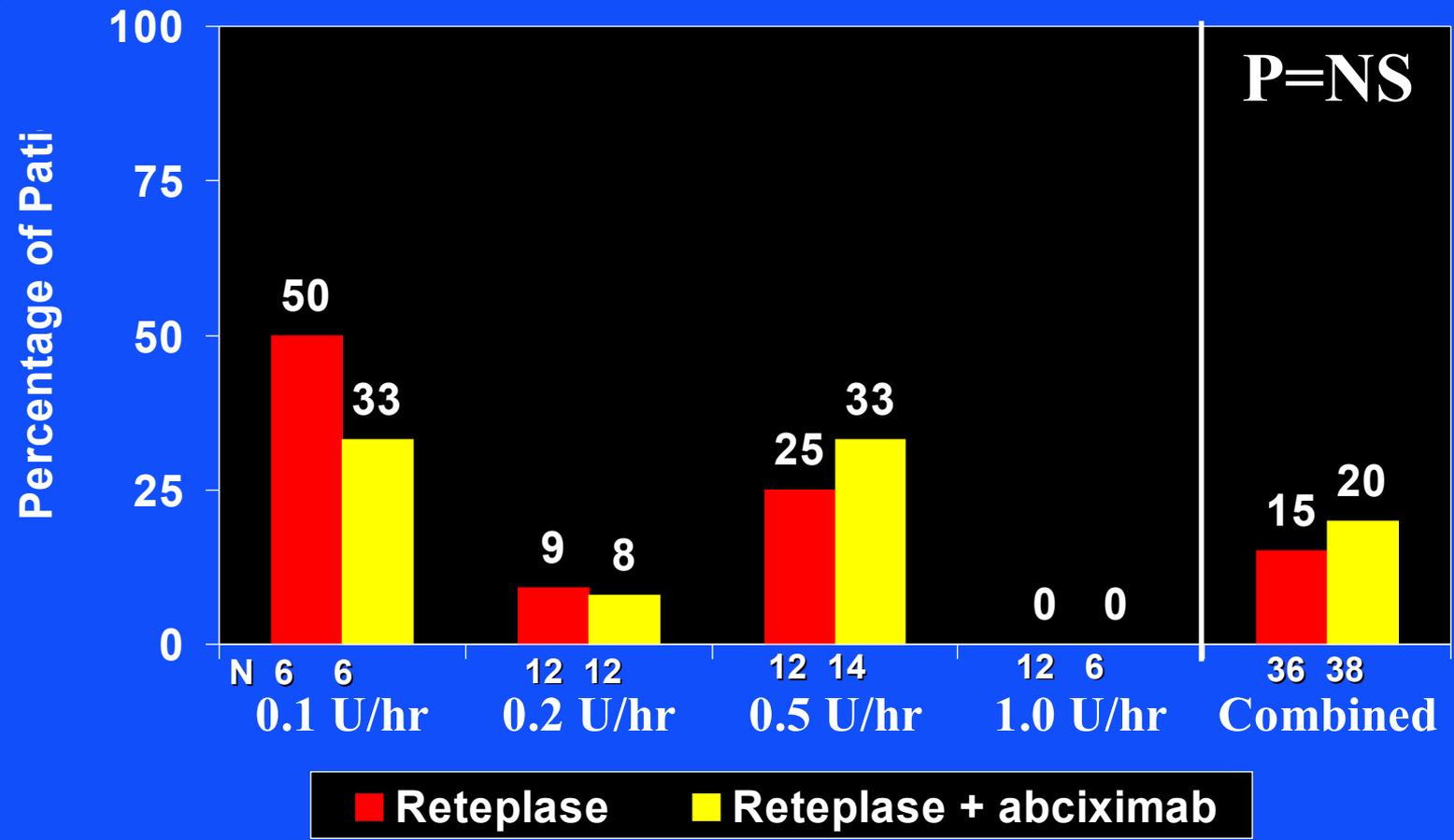
stent

Katzen B. Presented at the 11th Annual Symposium of Transcatheter Cardiovascular Therapeutics; September 22, 1999; Washington, DC.

(palpable pulse)



Major Bleeding at Discharge/Day 7 by Abciximab

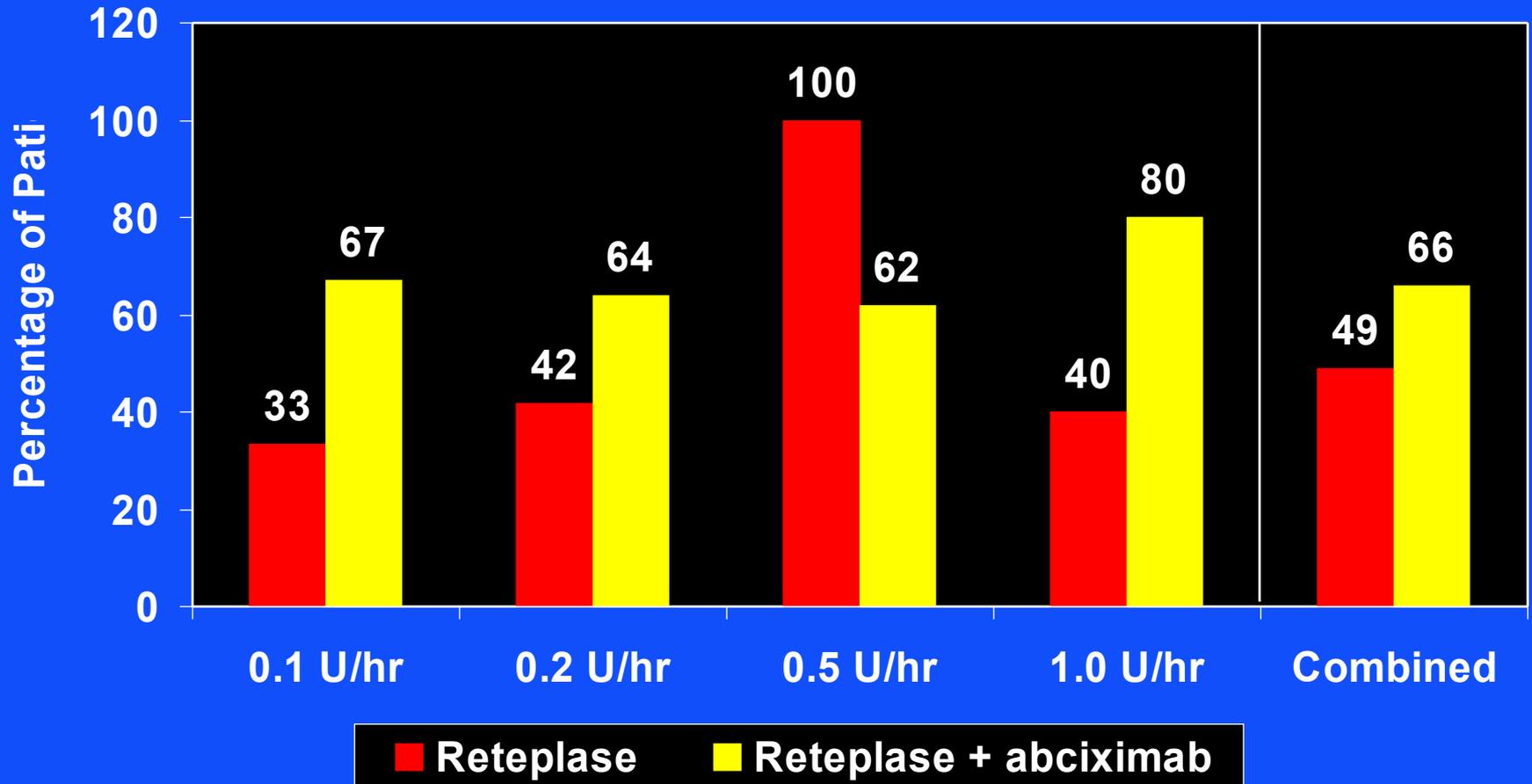


Note: No incidence of intracranial hemorrhage or stroke among the subjects in the study.

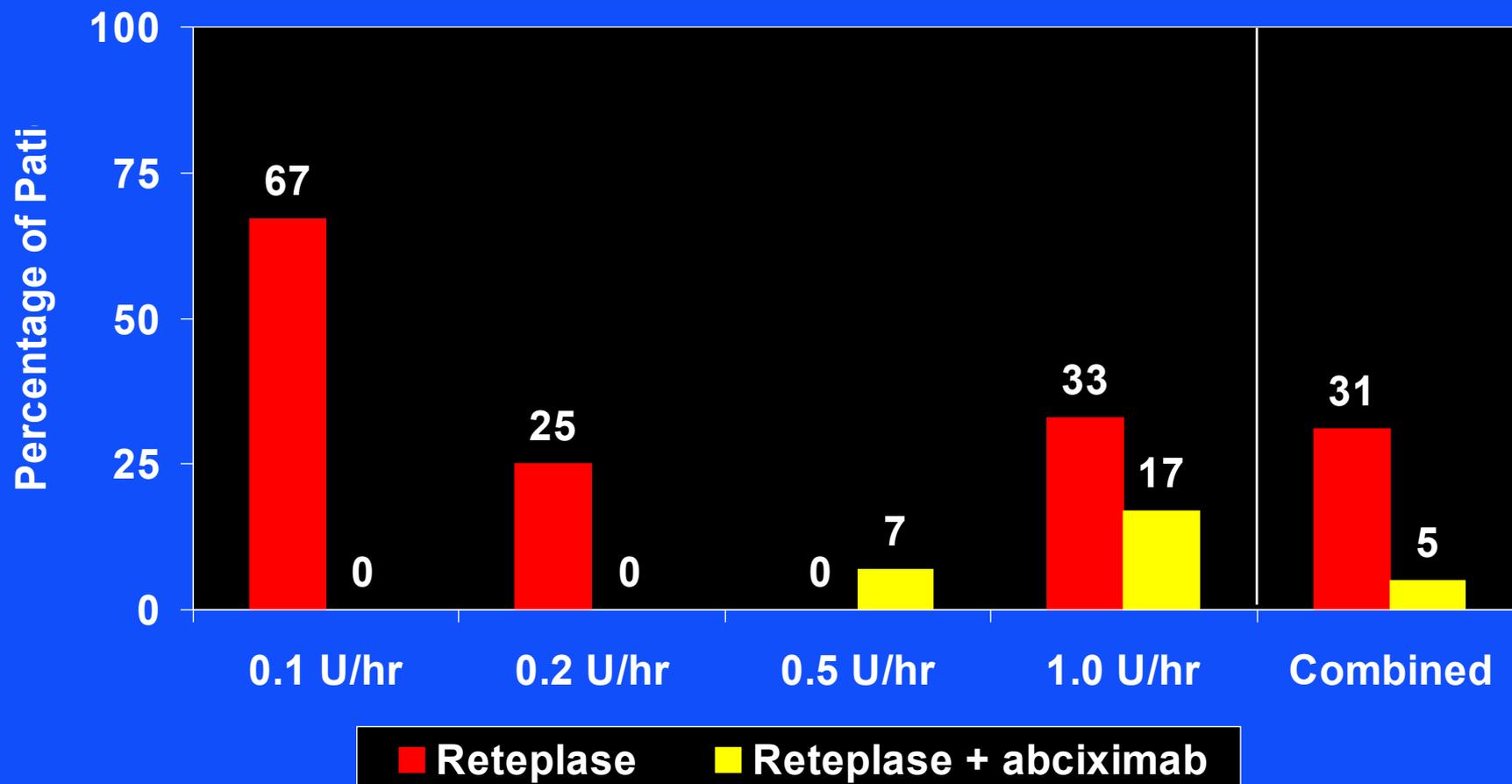




Patency on 20-hour Angiogram



Distal Embolization (Sufficient to Require Intervention)





Case Examples of GP IIB/IIIA Use

Bilateral Carotid Dissection with Acute Stroke

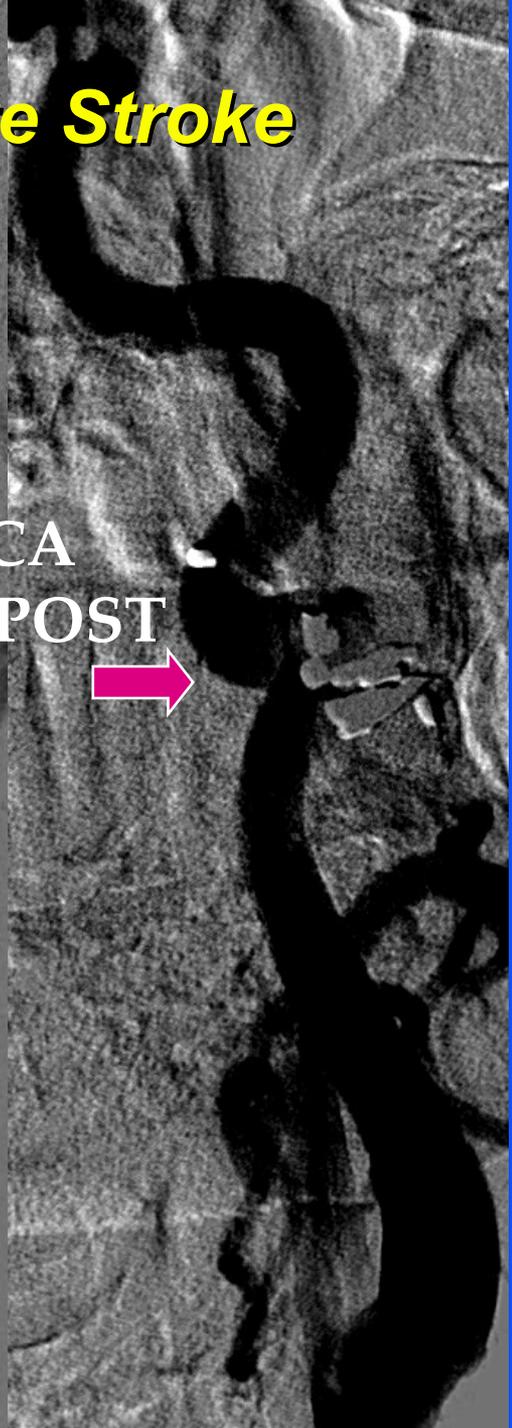
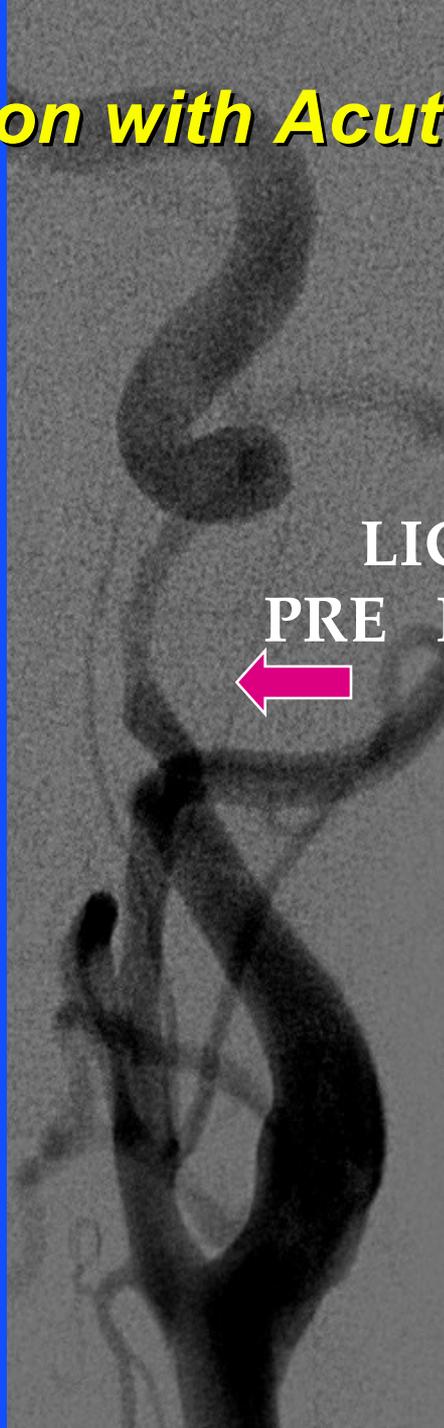
RICA

PRE POST



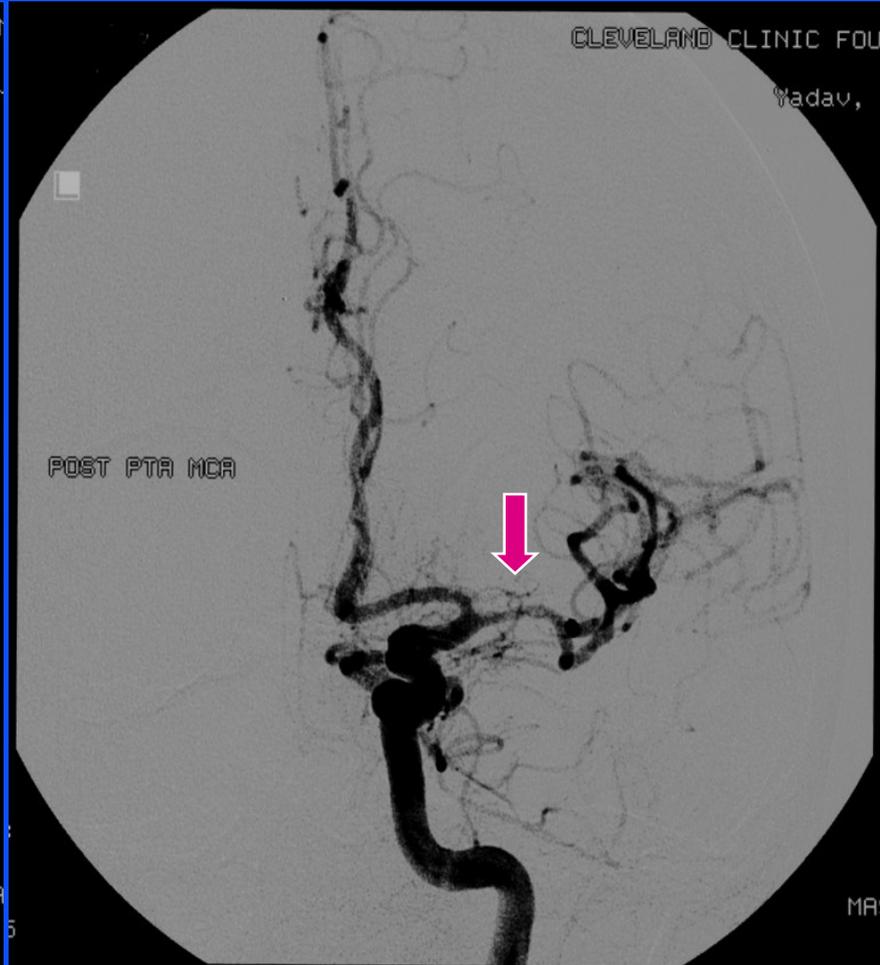
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PRE POST



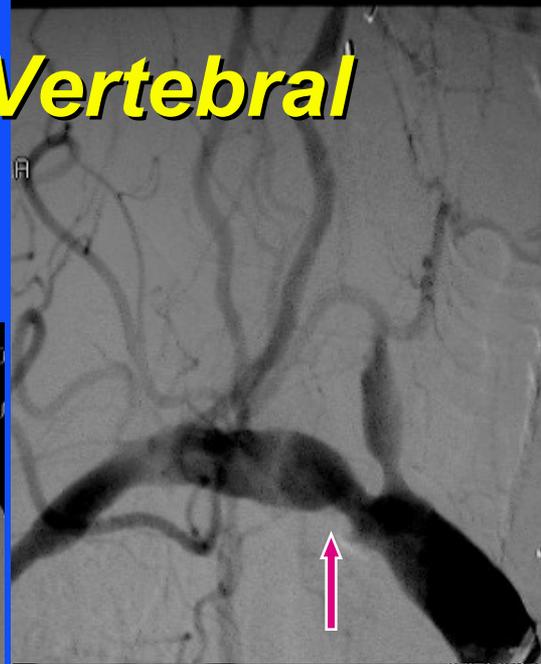
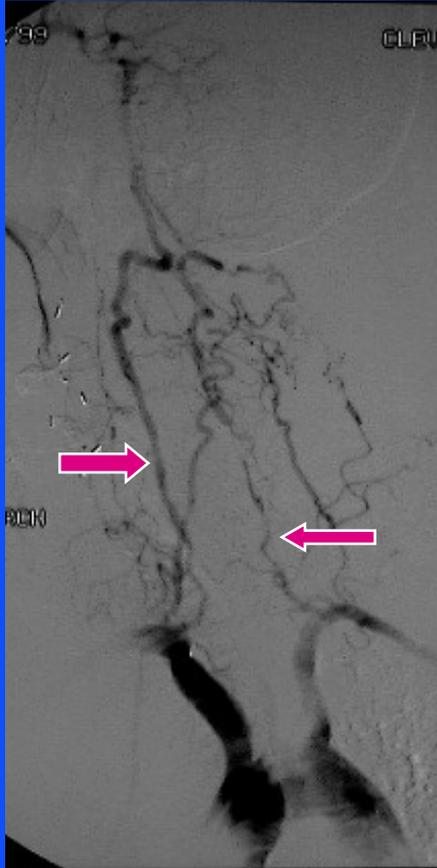


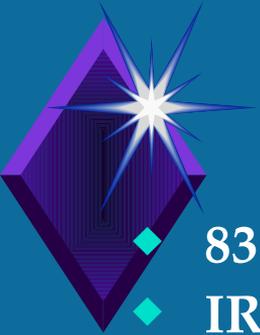
Middle Cerebral Artery Intervention





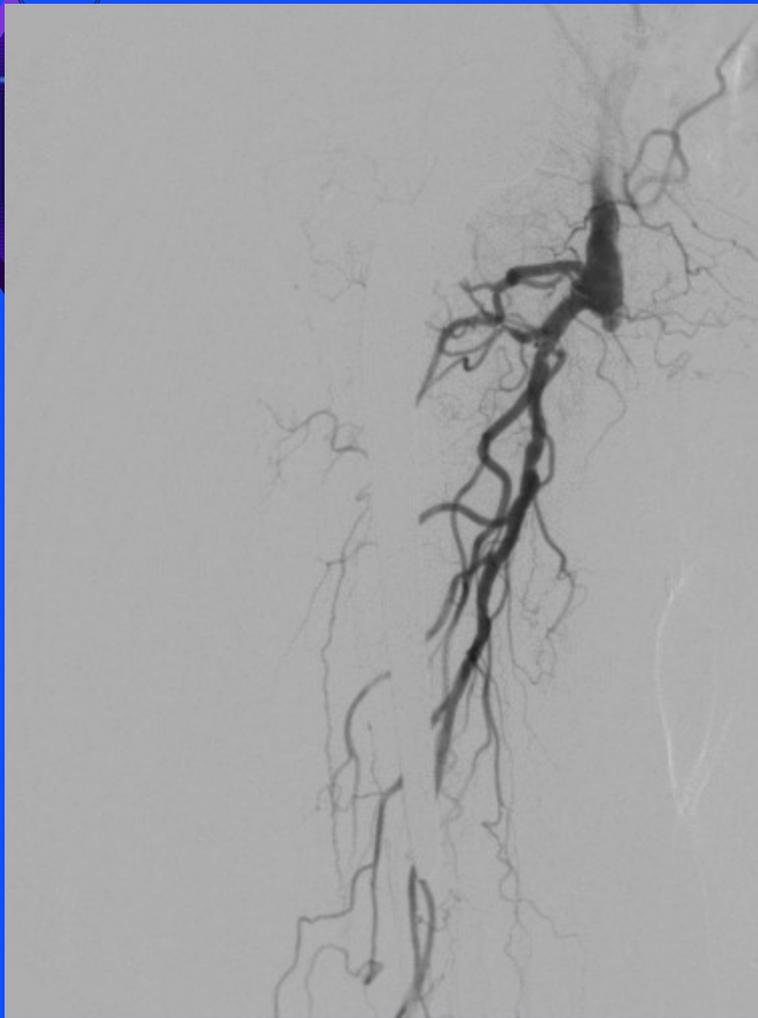
Symptomatic Pt with Single Vertebral Supplying Entire Brain

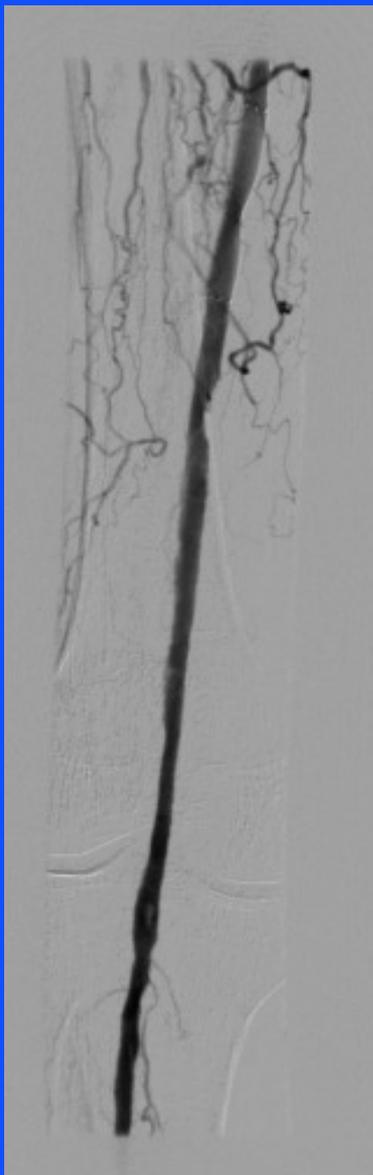




- ◆ 83 y.o. woman
- ◆ IRDM x 30 yrs
- ◆ PMHx:
 - ◆ Left CEA
 - ◆ S/p CABG
 - ◆ Renal artery disease
- ◆ Aug 01: right femoral-anterior tibial bypass for claudication
- ◆ Jan 02: bypass thrombectomy for acute leg ischemia
- ◆ Apr 02: Non-healing ulcer, gangrenous toe, redo femoral-AT bypass
- ◆ May 02: graft occlusion by U/S









- ◆ 64 yo Sx Rica
- ◆ Severe ankylosing spondylitis-
 - ◆ Cannot move neck in any plane
 - ◆ Cervical and thoracic spine anteriorly flexed at 45 degrees
- ◆ Chronic renal insuffic – Cr 4.2
- ◆ Gadolinium









Case 1

- ◆ 59 yo Male w HTN, ↑Chol, Cigs undergoing L Heart Cath
- ◆ Immediately upon withdrawal of Pigtail Catheter from LV developed Neurological Sx
 - ◆ Global Aphasia
 - ◆ R Hemianopsia
 - ◆ Flacid R Hemiparesis
 - ◆ NIHSS=22



Angiogram

- ◆ **Acute Cutoff of L MCA Trunk**
- Few Pial Collaterals from ACA to MCA





Endovascular Approach

- ◆ 4500U IA Heparin
- 6F MPA1 Guide Inserted into L ICA over 0.035”
Glide Wire
- 2.3F Microcatheter advanced into MCA over
0.014” Soft Hydrophilic Wire



Endovascular Approach

- ◆ **Wire Advanced Through Thrombus for More Support**
- Results in Thrombus Migration into MCA Superior Division
 - 21 min after onset





Endovascular Approach

- ◆ **Microcatheter is Placed Within Thrombus in Superior Division**
 - 1 U Retevase Infused over 1 min
 - Repeat Angiogram after 5 min Unchanged





Endovascular Approach

- ◆ **Reopro 1mg Injected Into Thrombus**
- Five min Later Partial Recannalization of Superior Division
- Persistent Slow Flow in Distal Branches of Inferior Division and Proximal Superior Division





Endovascular Approach

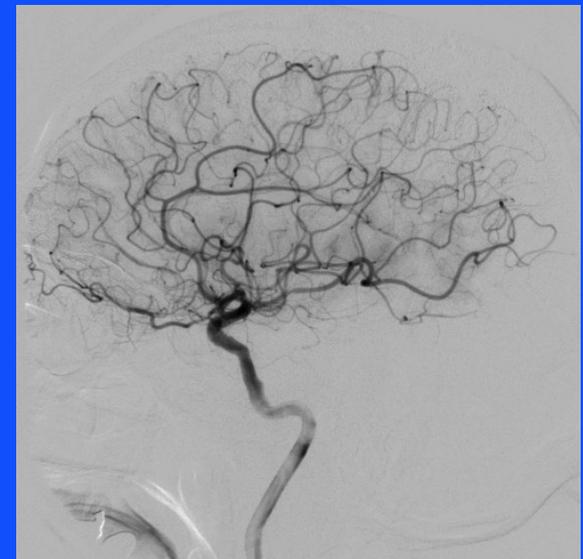
- ◆ Retevase 1U followed by Reopro 5mg (1/4 Bolus) Injected into Sup Division
- 10 min Later Nearly Complete Flow Except for One Distal Branch Occlusion





Outcome

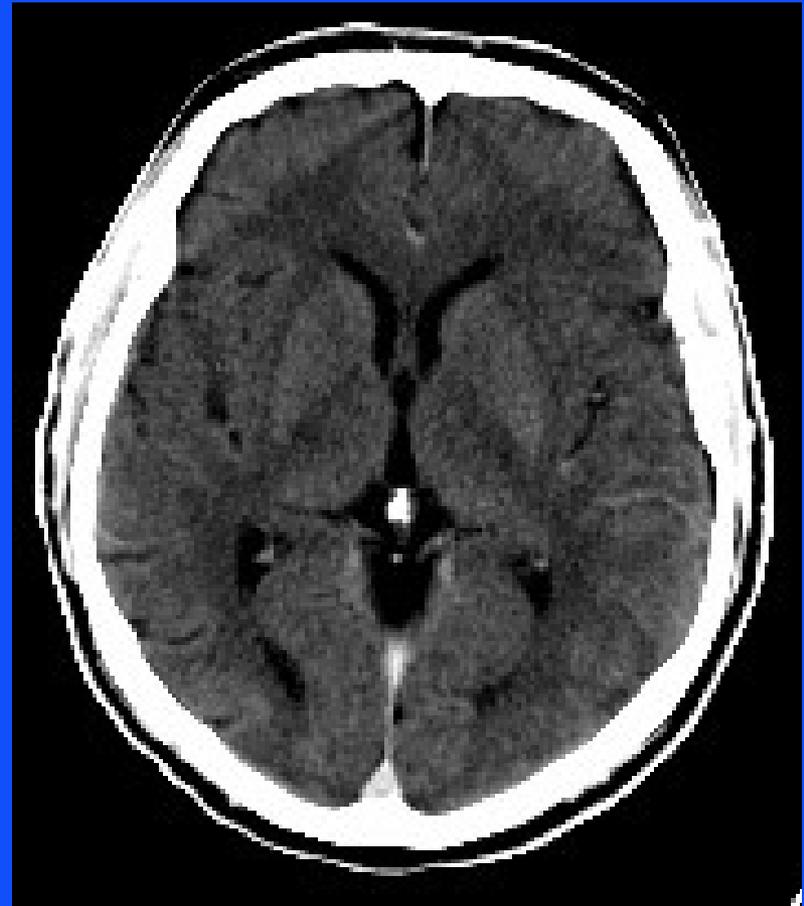
- ◆ Speech and R Arm Movement Began To Return on the “Table”
- Final Angiogram at 75 min After Onset is Normal





Outcome

- ◆ By Next AM
NIHSS=1
- ◆ CT Normal
- ◆ D/C Day 2- Normal





CONCLUSIONS – Carotid Use

- ◆ GP IIb/IIIa antagonists are safe in carotid stenting
- ◆ Role with Emboli prevention devices is not clear
- ◆ Acute stroke / carotid thrombosis



Conclusions – Carotid Use

- ◆ **May Reduce Post Procedure Embolization from Plaque Protruding through Stent Struts**
- ◆ **Careful Dosing/Monitoring Critical:**
 - ◆ **50 u/kg heparin, ACT, PAU**
 - ◆ **Heparin and ACT correlates of ICH**



General Suggestions for 2b3a in Endovascular Cases

- ◆ High Risk for Acute/Sub-acute Thrombosis
- ◆ Consequence of AT/SAT Catastrophic
- ◆ High Risk of Embolization during or immediately Post-Procedure

And

- ◆ No Adventitial Wire Perforation



CONCLUSIONS

- ◆ **Below the Knee**
- ◆ **Combination with Lytics**
- ◆ **Inability to Stent**
- ◆ **Acute Thrombosis**
- ◆ **Active Embolizers – Shaggy Aorta**