Recent Developments in Thrombolytic Therapy

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Recent Developments in Thrombolytic Therapy

- New thrombolytic agents
- Mechanical thrombectomy
- PTA and stents

New Thrombolytic Agents

Altephlase

Reteplase

Tenecteplase

Recombinant Tissue Plasminogen Activator Versus Urokinase for Local Thrombolysis of Femoropopliteal Occlusions: A Prospective, Randomized Multicenter Trial

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Felix Mahler, MD; Ernst Schneider, MD; and Hans Hess, MD

J Endovasc Therapy
2001;8:638-647

Bleeding Complications

	TPA	UK
Local hematoma	9.6%	7.3%
Other bleeding	2.4%	1.8%
Cerebral hemorrhage	0.8%	0%
Total	12.8%	9.1%

Intra-arterial Infusion of rt-PA for Transcatheter Acute Limb Ischemia

Patients	70	
Limbs	74	
Success	64/74	86%
Major bleeding complications	33/70	47%
Amputation	4/70	6%
Death	1/70	1.4%

James L. Swischuk, et al SCVIR 2001

Reteplase Treatment of Lower Extremity Arterial Occlusions: Initial Results

Patients	15	100%
Success	13/15	86%
Major bleeding complications	1/15	6%

Davidian et al JVIR March 2000

Safety of Alteplase and Reteplase in Peripheral Vascular Disease

Bleeding complications requiring transfusions

Alteplase	33%
Reteplase	7 .5%

McNamara, T. Poster Presentation SCVIR 2000

Reteplase in the Treatment of Peripheral Arterial and Venous Occlusions: A Pilot Study

Patients	37	100%
Arteries	26	100%
Success	23/26	88.5%
Bleeding complications	8/26	30.8%
Major bleeding	5/26	19.2%
Veins	11	100%
Success	8/11	72.7%
Bleeding complications	3/11	27.3%
Major bleeding	1/11	9.1%
Cerebral bleeding	0	0%

Kenneth Ouriel et al JVIR July 2000

Thrombolysis

Dosage:

High dose - short infusion

Low dose - long infusion

Thrombolysis Using TPA

Dosage

0.5-1 mg/hr	Single Port
1.0-2 mg/hr	Coaxial Port

Thrombolysis Using TPA

Patients	136
Native Arteries	73
Femoral-Popliteal Grafts	9
ABG	2
Veins (DVT)	2
Hemodialysis access	50

Unpublished data at MVI

Thrombolysis Using TPA

Success

Arteries	70/73	95%
Femoral-Popliteal Grafts	8/9	89%
ABG	2/2	100%
Veins	2/2	100%
HDA	49/50	98%
Total	131/136	96%

Unpublished data at MVI

Thrombolysis Using TPA

Bleeding Complications

Minor hematoma	10/136	7.3%
Major bleeding	3/136	2.2%
Death	2/136	1.5%

Unpublished data at MVI

Thrombolysis Using TPA

Clinical Observations

There was no significant difference between higher dose of 3-8 mg/hr and lower dose of 2 mg/hr, but there was a significant difference between 2 mg and 0.5 mg/hr.

Thrombolysis Using TPA

Clinical Observations

Not effective in clots older than five months

Thrombolysis Using r-PA

Dose

0.125 to 1 u/hr single port

0.75 to 1.5 u/hr coaxial

Thrombolysis Using r-PA

Patients	70
Arteries	41
Femoral-Popliteal Grafts	4
ABG	2
Veins (DVT)	5
HDA	18

Unpublished data at MVI

Thrombolysis Using r-PA

Success

Arteries	37/41	90%
Femoral-Popliteal Grafts	4/4	100%
ABG	2/2	100%
Veins	5/5	100%
HDA	15/18	83%
Total	63/70	90%

Unpublished data at MVI

Thrombolysis Using r-PA

Bleeding Complications

Minor hematoma	5/70	7.0%
Major bleeding	4/70	5.7%
Death	1/70	1.4%

Unpublished data at MVI

Thrombolysis Post Urokinase

Clinical Observations

Bleeding complications of TPA and rPA are the same and both are higher than UK.

Initial Clinical Results of TNK in Catheter-Directed Thrombolytic Therapy

A Prospective Dose-ranging Study

0.25 mg/hr vs. 0.5 mg/hr

M.K. Razavi, et al Stanford University

Abstract No. 29: SCVIR 2002

Thrombolysis Using TNK

Patient	25
Acute arterial	9
Venous	16
Success	96%
Major bleeding	0
Minor bleeding	8%

M.K. Razavi et al

Thrombolysis of Occluded Peripheral Arteries and Veins with Tenecteplase: Pilot Study

	Arteries	Veins	Total
	13	5	18
Success	100%	100%	100%
Clinical Success	11/13 85%	4/5 80%	15/18 84%
Major Bleeding	1/13 7.7%	-0-	1/18 55%

Burkart, David et al JVIR 2002

Thrombolysis Using TNK

Patients	25
Arteries	12
Fem/Pop grafts	6
Veins	4
Hemodialysis access	3

Unpublished data at MVI

Thrombolysis Using TNK

Success

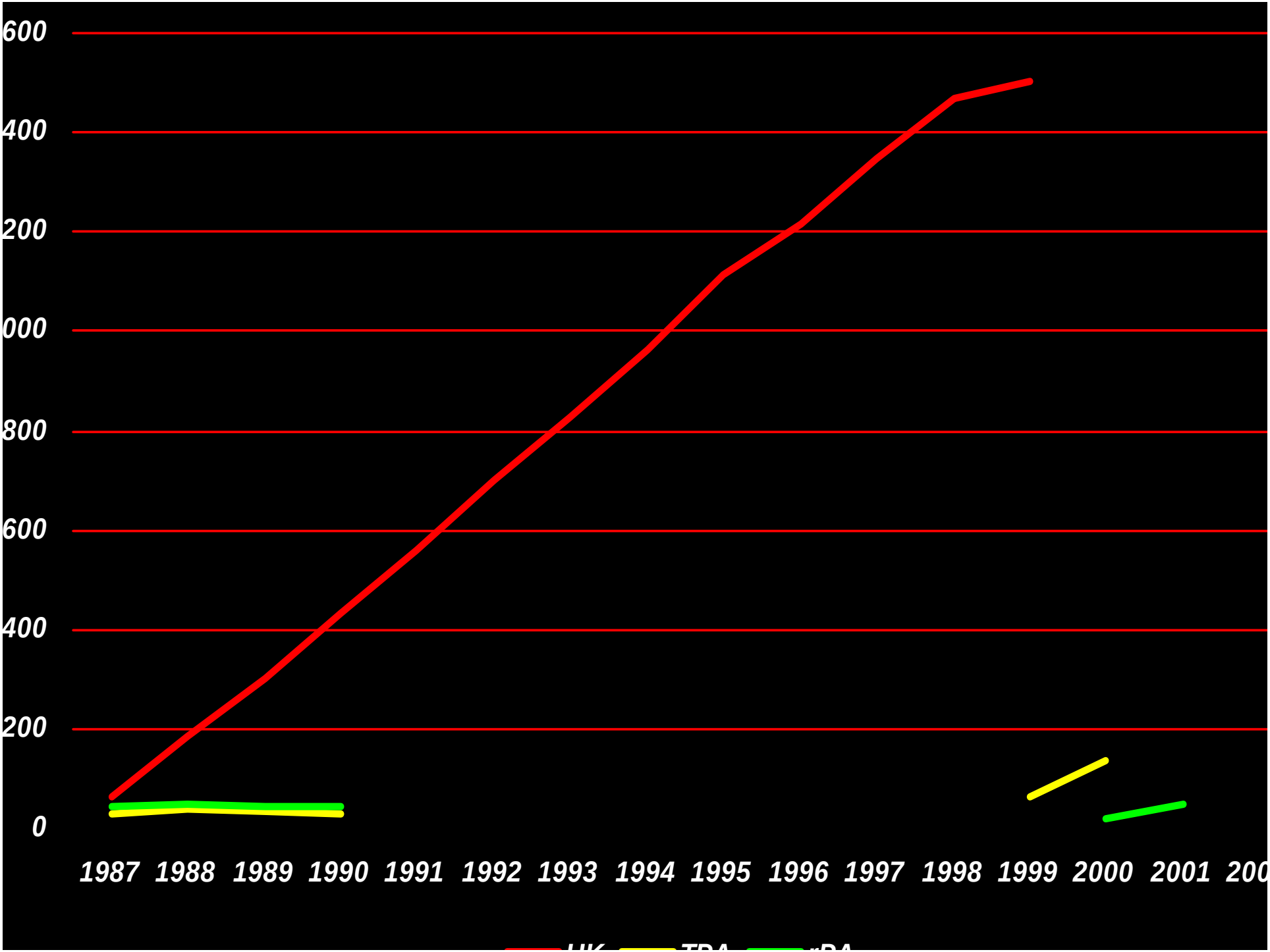
Arteries	6/12	50%
Fem/Pop grafts	5/6	83%
Veins	3/4	75%
Hemodialysis access	3/3	100%
Total	17/25	68%

Unpublished data at MVI

Thrombolysis Using TNK

Bleeding Complications

Minor hematoma 1/25 4%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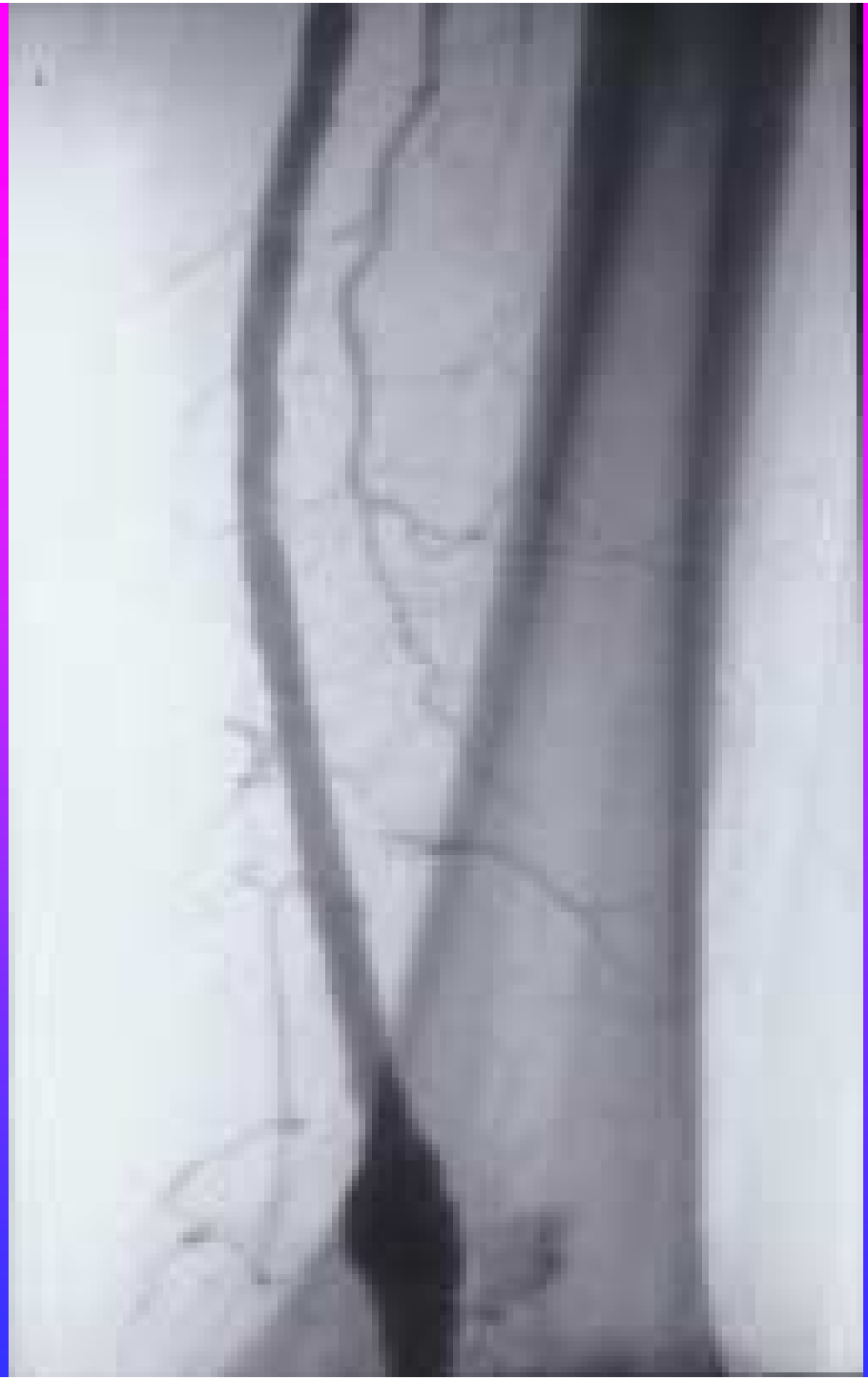
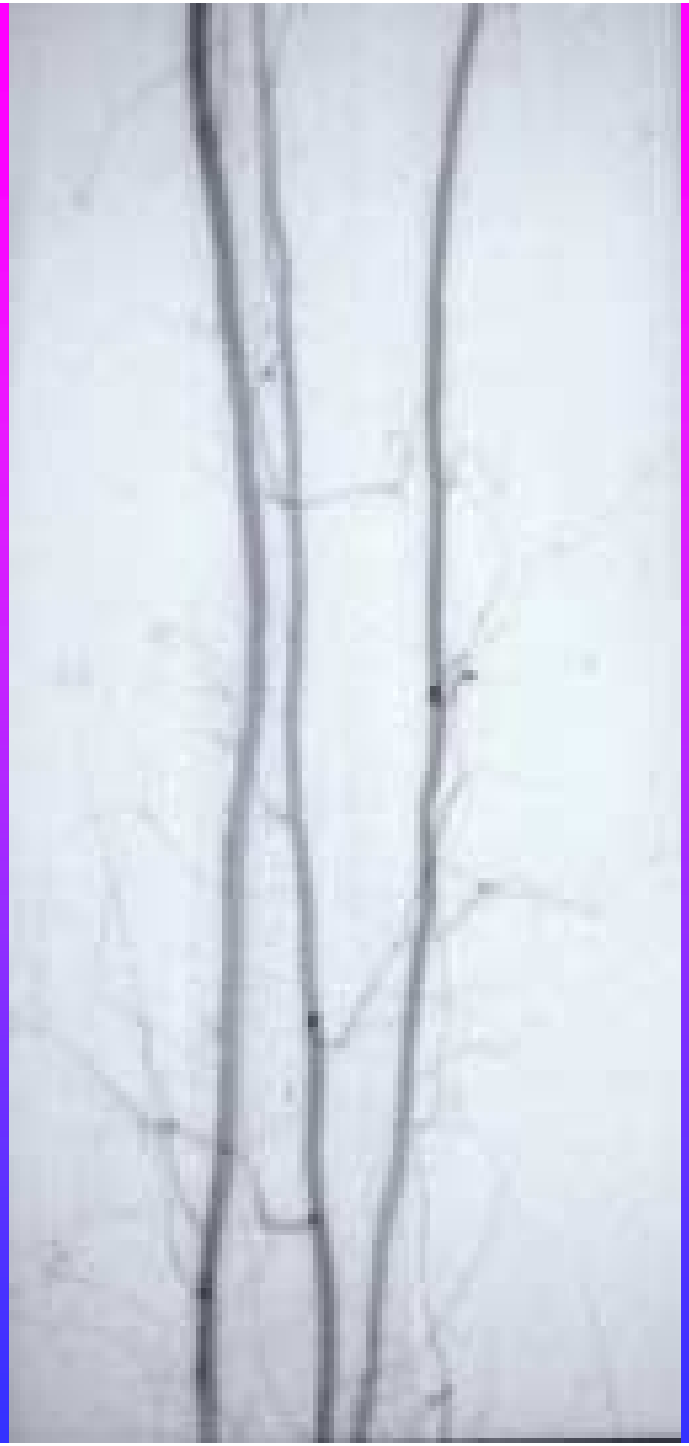
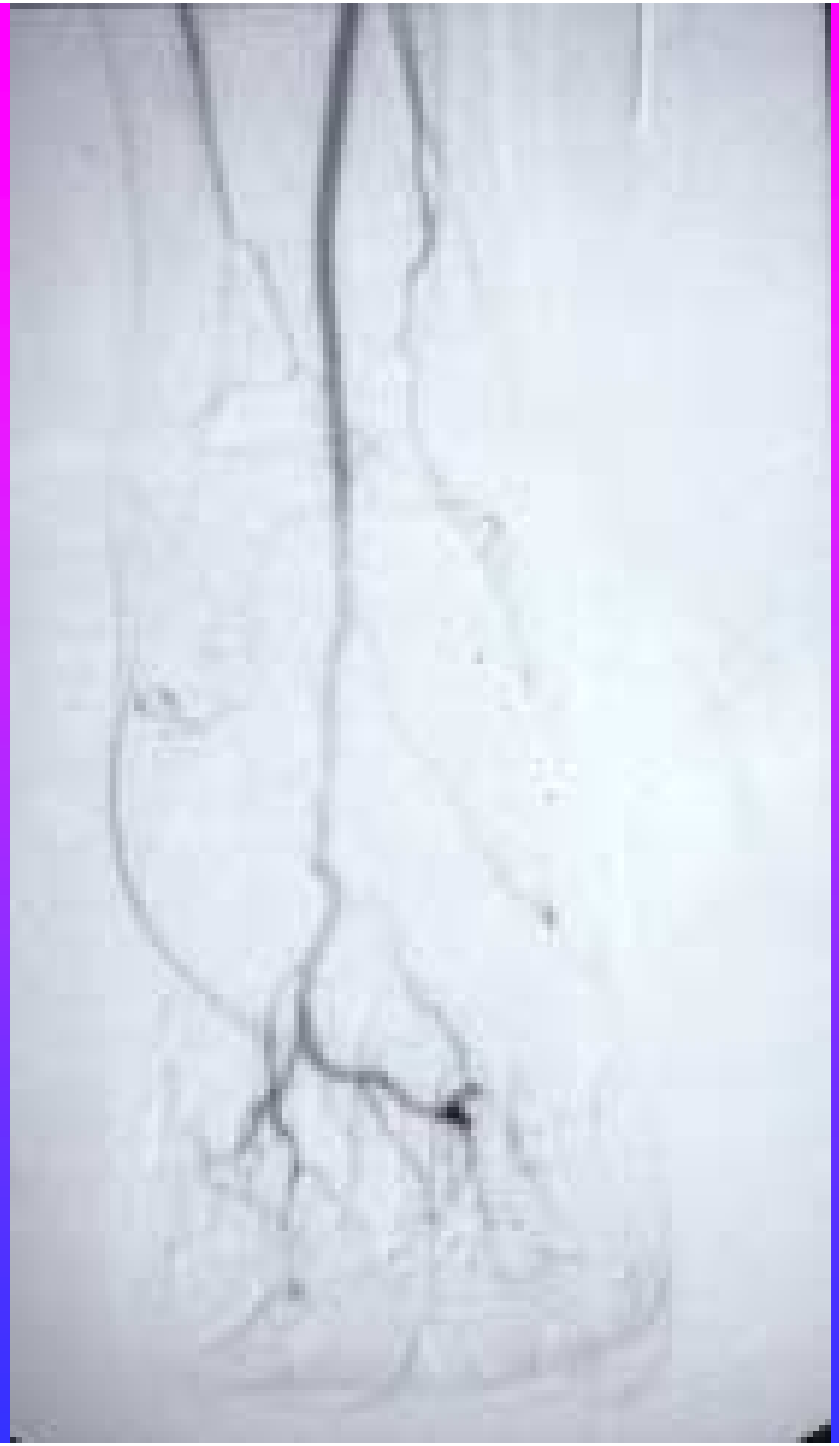
Thrombolysis

Cerebral Hemorrhage

UK	5/1500	0.33%
TPA	1/136	0.73%
r-PA	2/70	2.85%
TNK	0/25	0%





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