Paris 27-28 Janvier 2012

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CATHETER-DIRECTED THROMBOLYSIS OF ILIO-FEMORAL DVT 2012

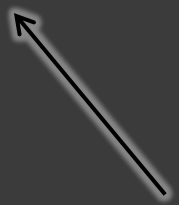
The Copenhagen (**longest follow-up**) and Oslo experience (**RCT**)

The options

AC **CDT**

Which patients could benefit from CDT?

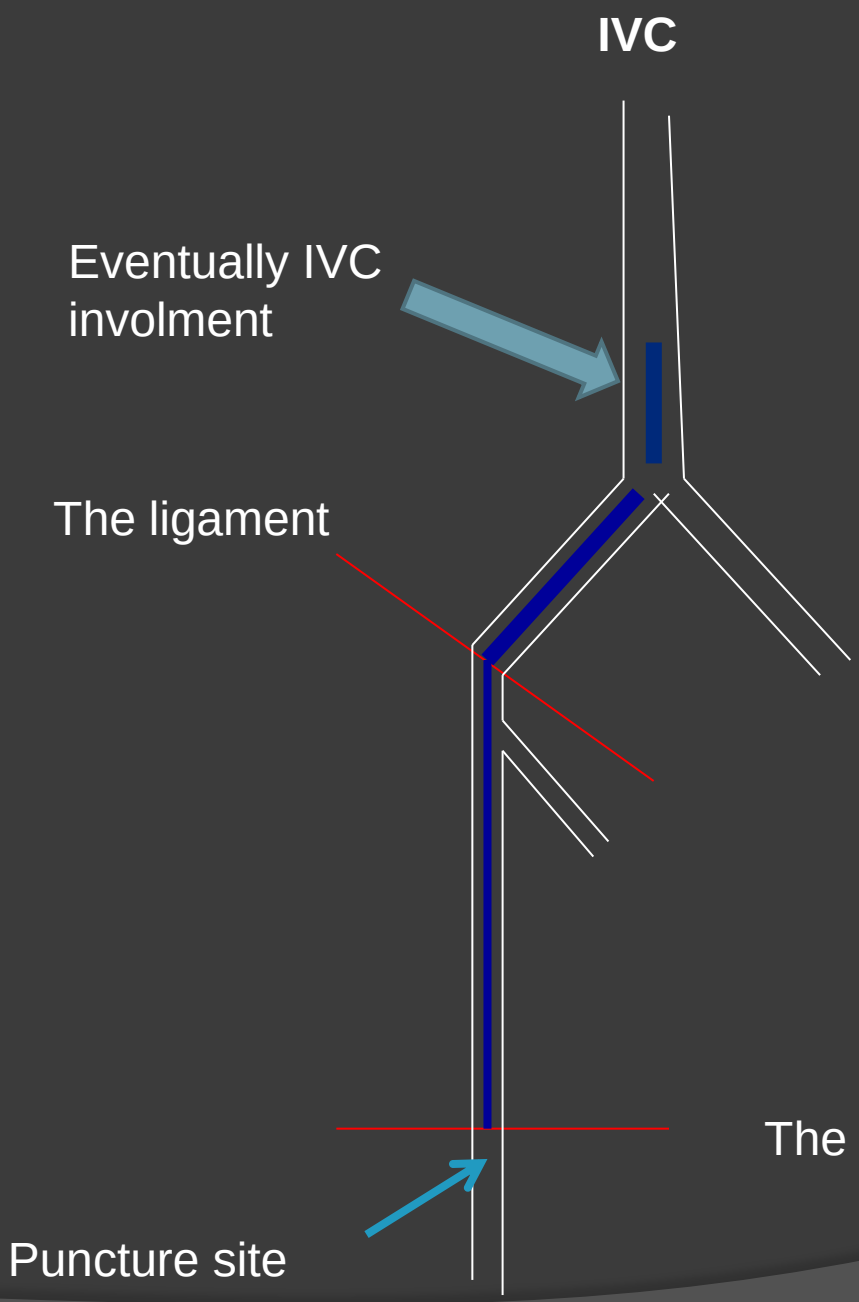
Location	Distribution	Risk of PTS
Crural DVT	30%	low+
Crur/popl/fem DVT	25%	low++
Ilio-femoral DVT	**25%**	**40%**
Full-leg DVT	20%	50%++

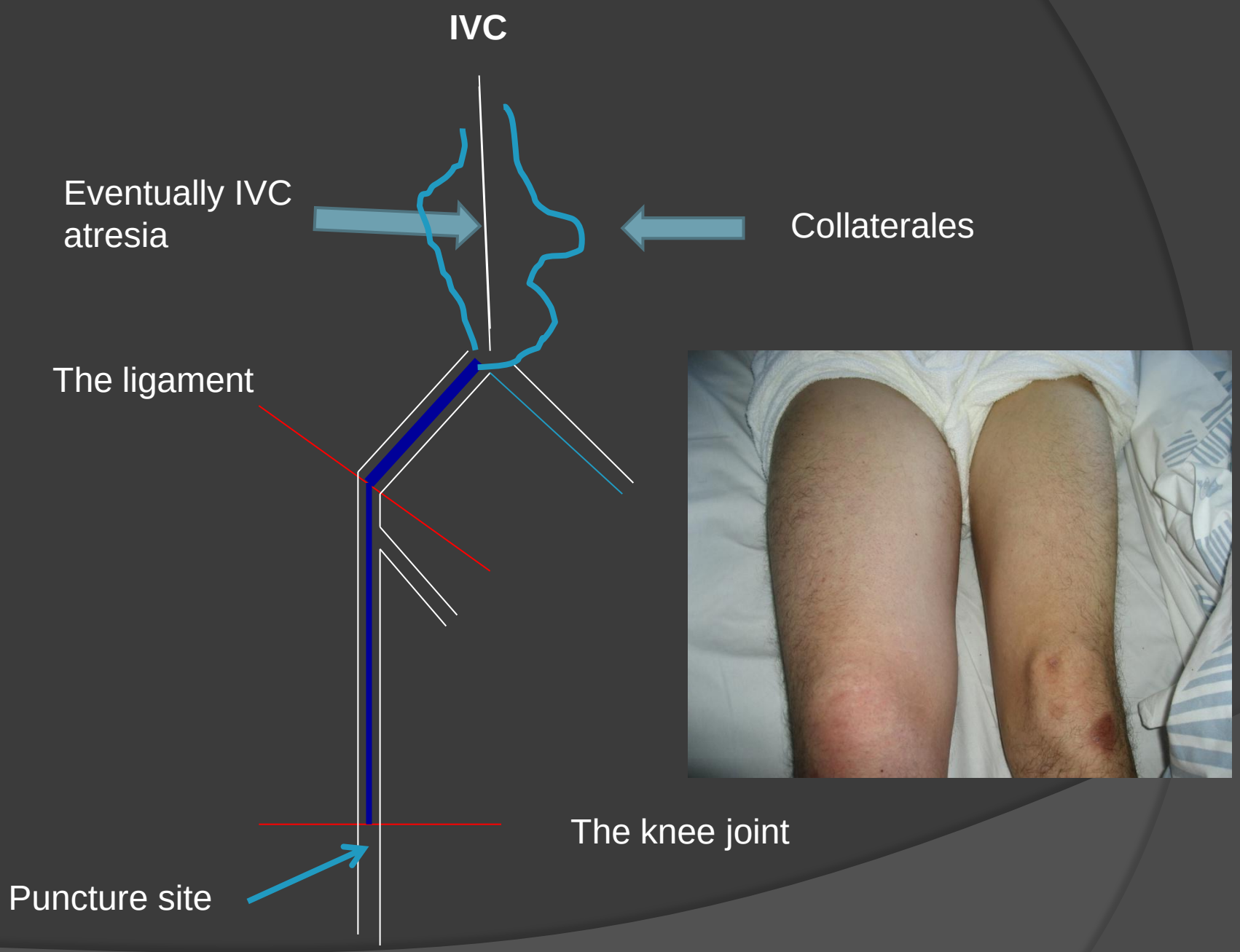


Most papers on this level: Can we do something here?

R.Broholm, L. Panduro Jensen & N.Bækgaard, 2010.
Catheter-directed thrombolysis of ilio-femoral venous thrombosis. A review.
Int Angiol 2010

Location


IVC
Eventually IVC involment
The ligament
The knee joint
Puncture site

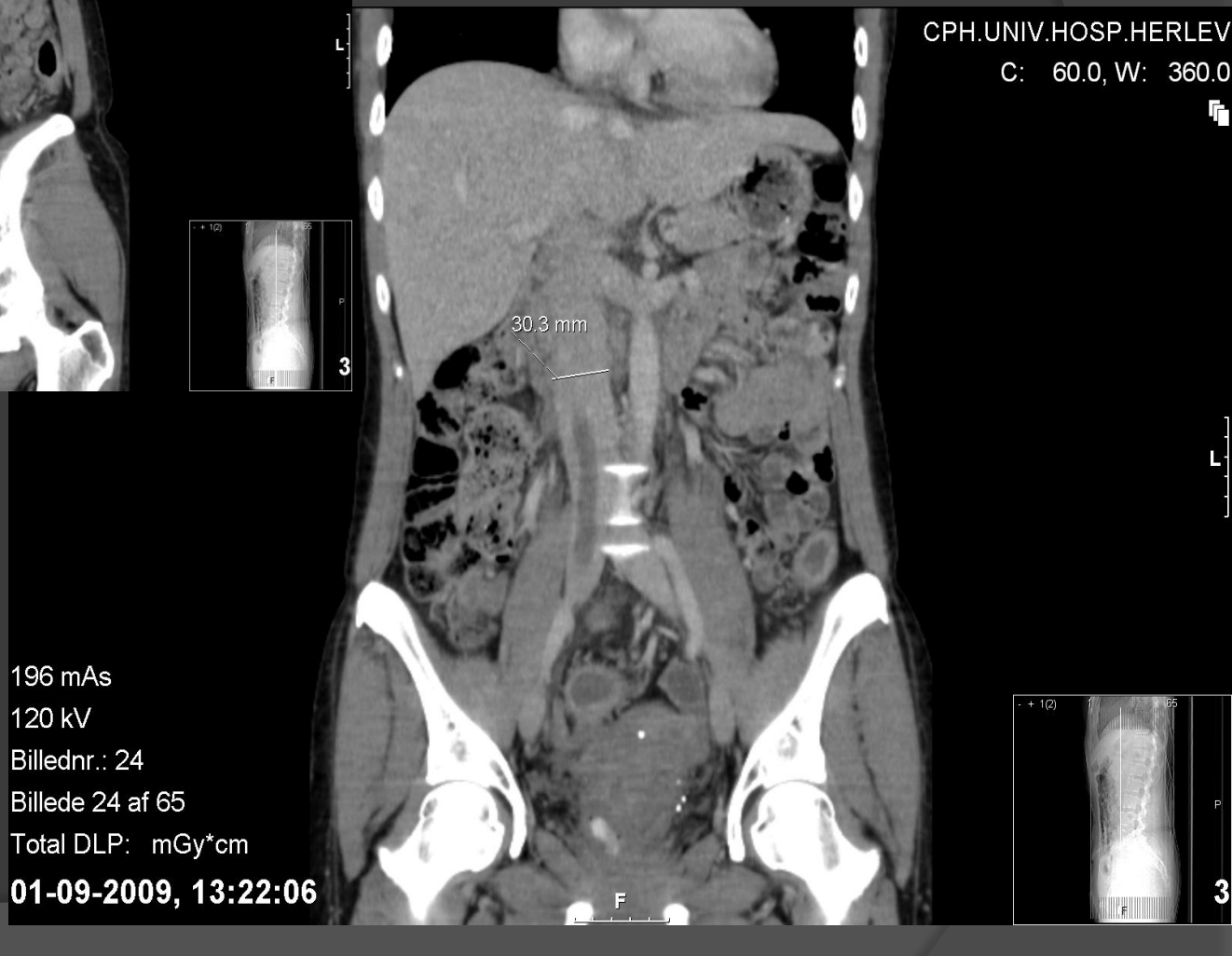

IVC
Eventually IVC atresia
Collaterales
The ligament
The knee joint
Puncture site

The Copenhagen experience

- Inclusion criteria for CDT of Ilio fem DVT
  - distal popliteal vein as access vein (US)
  - DVT duration ≤ 14 days
  - first episode of DVT
  - age < 60 years
  - informed consent from the patient
- Exclusion criteria
  - active cancer
  - surgery or delivery < 7 days
  - other contraindications to thrombolysis
- Diagnosis
  - US and CT

Baekgaard et al, EJVES 2010


CPH.UNIV.HOSP.HERLEV
C: 60.0, W: 360.0
Study: CT abdomen
Serie: MPR, +IV 3/3
Snit: 3 mm
Pos.: 90
HFS
CONTRAST
196 mAs
120 kV
Billednr.: 31
Billede 31 af 65
Total DLP: mGy*cm
01-09-2009, 13:22:06
L
F
3

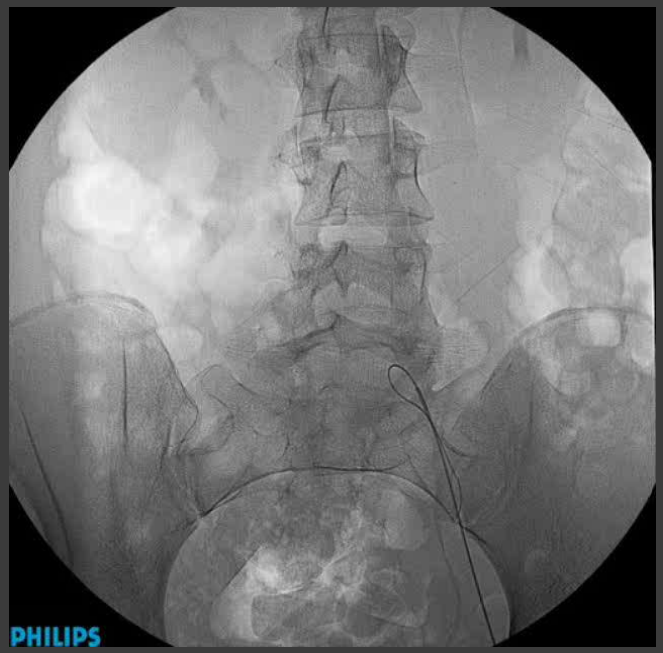

CPH.UNIV.HOSP.HERLEV
C: 60.0, W: 360.0
30.3 mm
196 mAs
120 kV
Billednr.: 24
Billede 24 af 65
Total DLP: mGy*cm
01-09-2009, 13:22:06
L
F
3

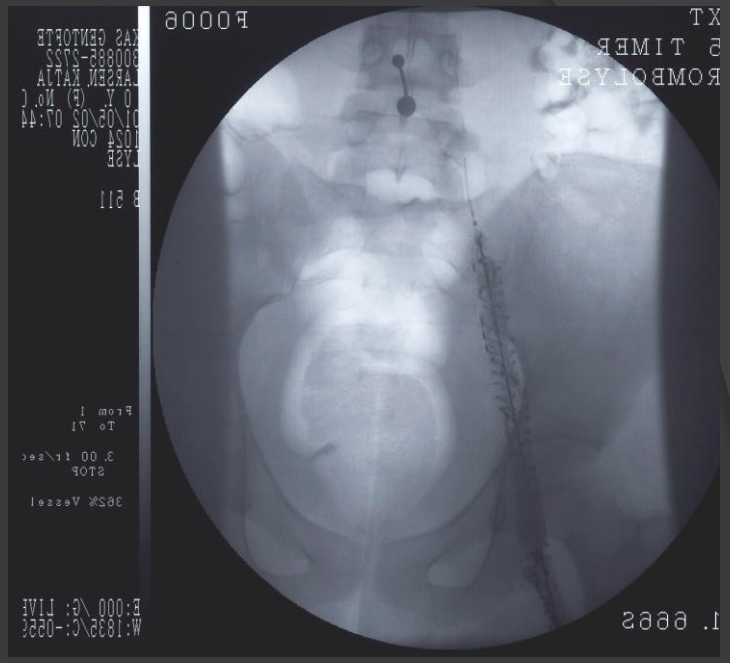
CDT of IF DVT

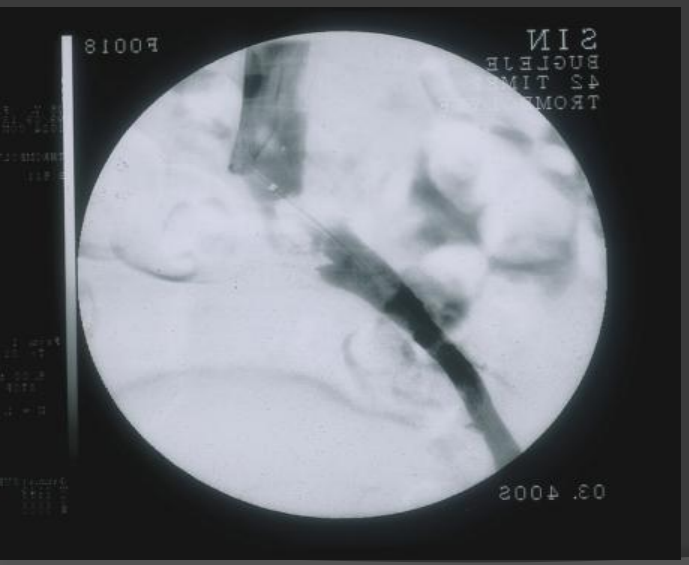
- The material
  - period 1999-2010, 11½ years
  - **150 limbs with IF DVT**
  - median age 30 (15-57) years
  - women/men 3:1
  - left/right 4:1
  - birth-control pills: 33%
  - after delivery: 13%
  - thrombophilia: 50%

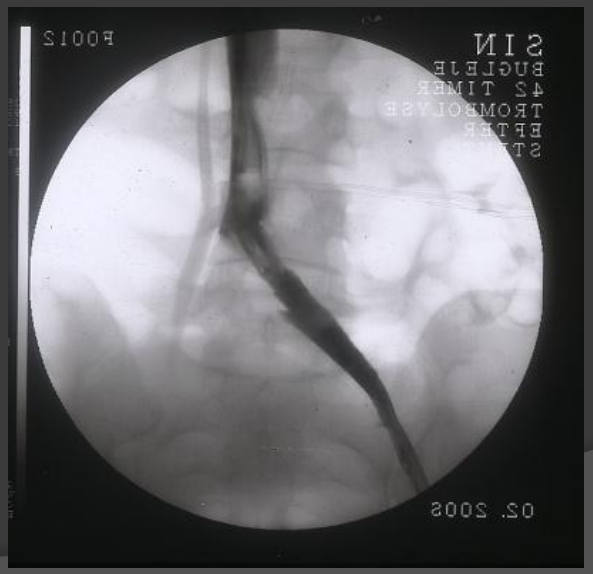
  - temporary cava filter: 6%
  - caval atresia: 10%
  - stenting (Wallstent): 60%
  - median (1-6) days treatment 2,7 days

11 % without risk factors


PHILIPS

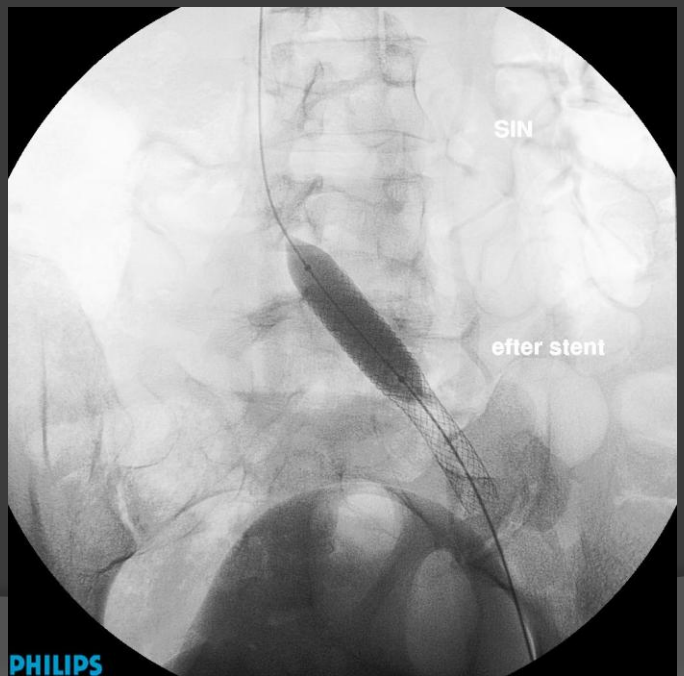


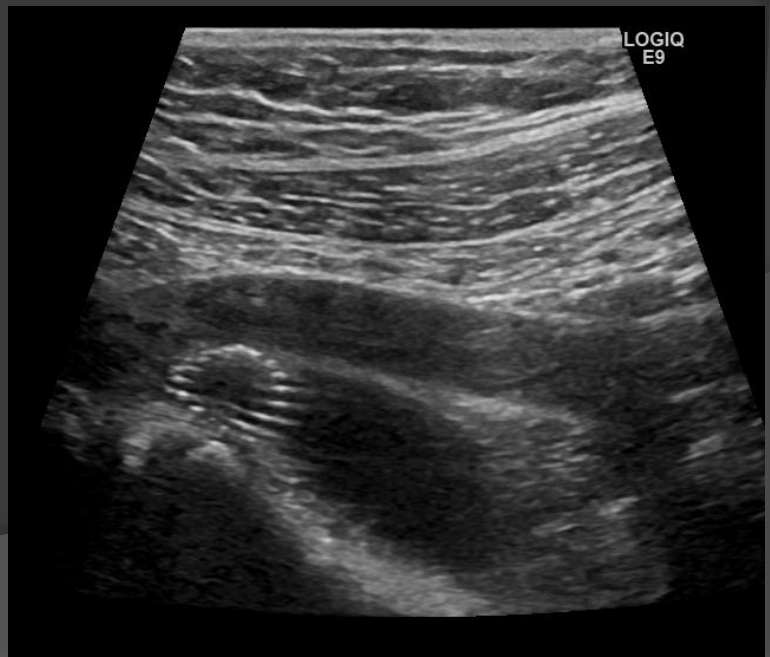





KAS GENTOFTE RUM 17
C: 511.5, W: 1023.0
SIN
trombolyse
48 timer
05-10-2011, 11:19:58
2


KAS GENTOFTE RUM 17
C: 511.5, W: 1023.0
8 mm ballon
05-10-2011, 11:39:04
3


SIN
efter stent
PHILIPS


LOGIQ
E9

Haemostatic parameters

- **Every 8 hours**
  - Haemoglobin
  - APTT
  - Fibrinogen
  - D-dimer

  - Antitrombin
  - Anti-Xa
  - Platelets

These patients do not stay in the ICU

Complications

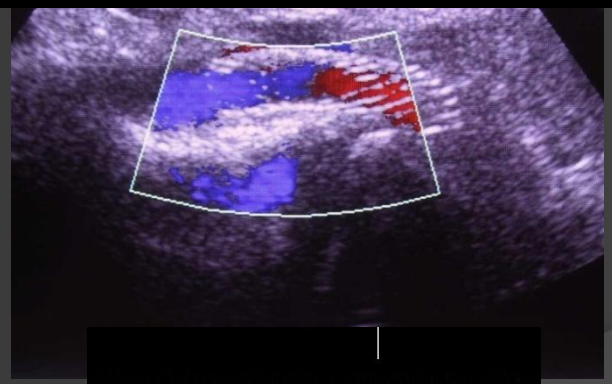
- **Minor bleeding**
  - 27 %,
    - from the puncture site
    - haematuria
- **Major bleeding**
  - 2 %, from arterial puncture site, fasciotomy
- **PE**
  - 0 %

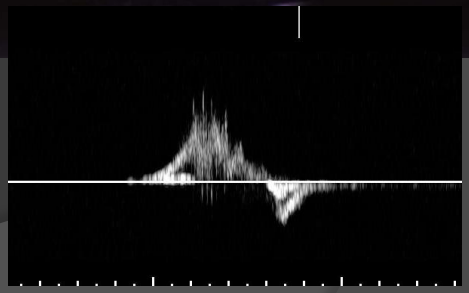
Follow-up

- **6 w – 3 m - 6m – 12m – yearly**
- Clinical exam.:
  - Hawaii classification
- Ultrasonography: same intervals
  - supine
    - the iliac vein/stent
    - the femoral vein
  - standing
    - the com.fem.vein
    - the femoral vein
    - the popliteal vein

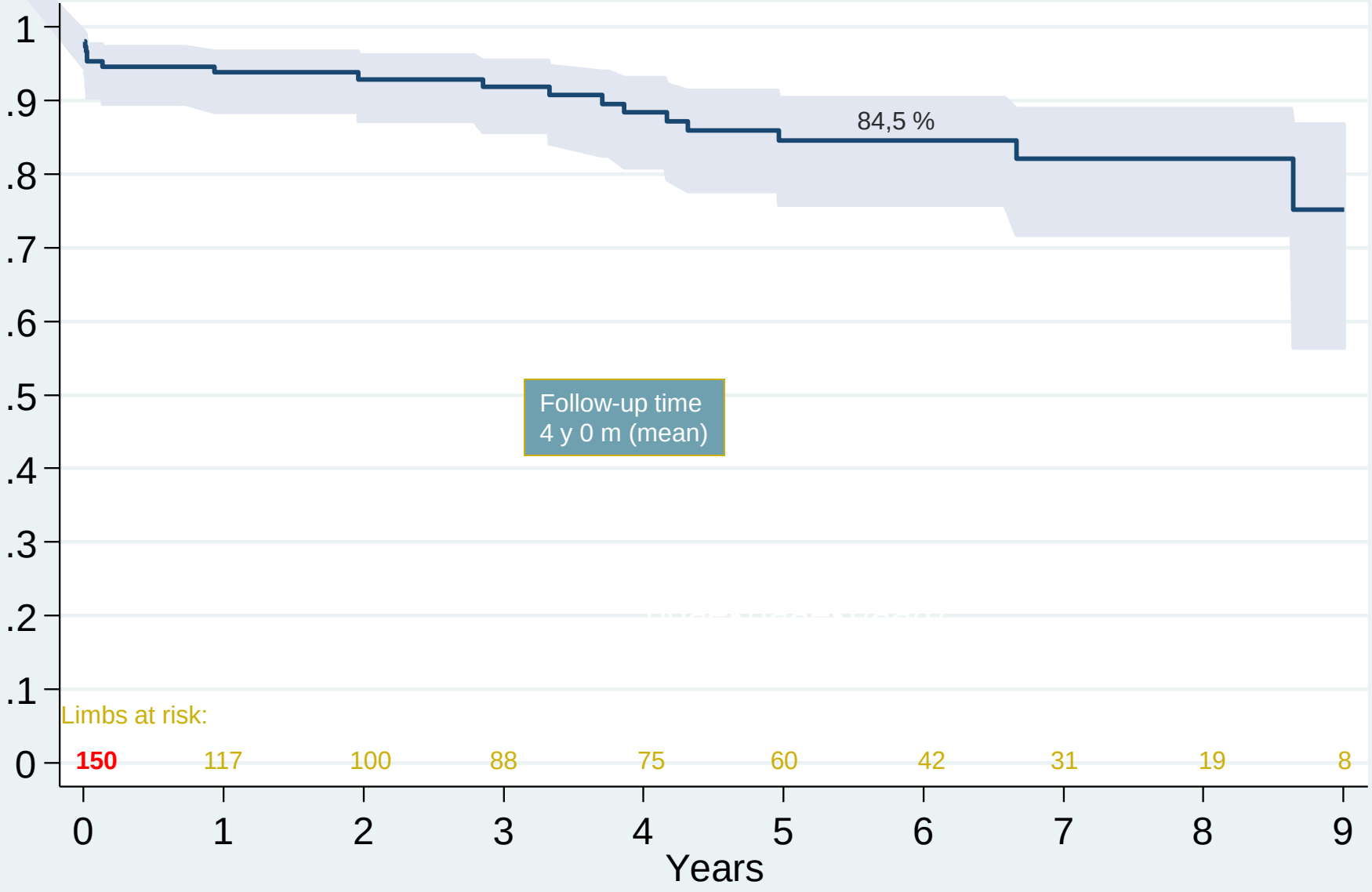
patency

valve sufficiency



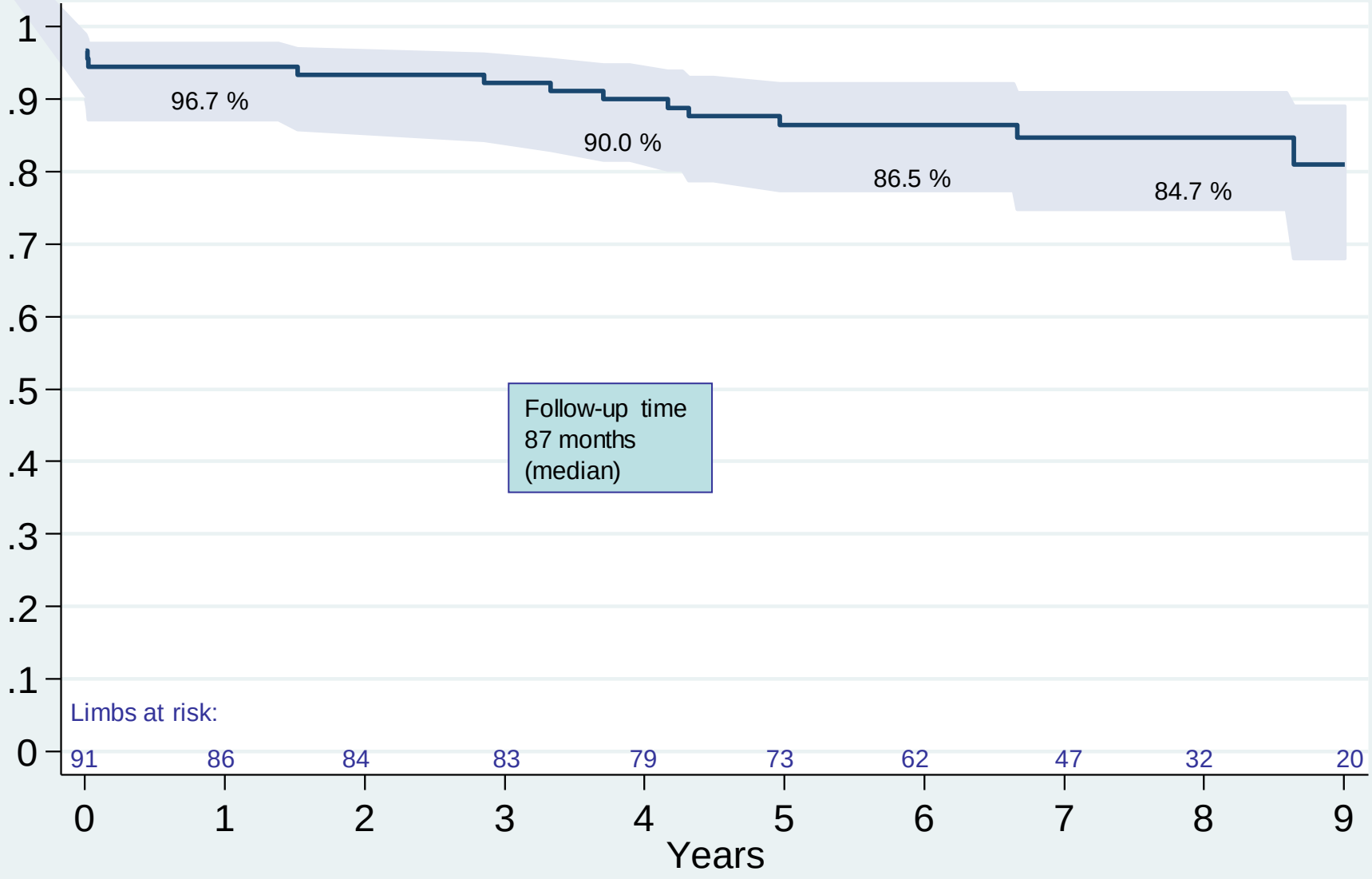


Intention to Treat - Kaplan-Meier Plot



Intention to Treat - Kaplan-Meier Plot

Patency without reflux



PTS

Villalta score
CEAP
SF-36
VEINES

- 109 patients
- 71 months mean follow-up
- 16 % PTS (½ mild)
- With significantly worse QoL scores
- Patients with competent veins had significantly higher QoL than patients with insufficiency

Broholm et al. JVS 2011

The Oslo trial

N= 90 CDT + AC
N= 99 AC

- Results after **6 months**
  - Patency IF vein
    - CDT+AC: 66%
    - AC: 45%

Disappointing results

  - Reflux in CF vein
    - CDT+AC: 60%
    - AC: 66%

Reported on 50 patients

Enden et al, J Thromb Haemost 2009, Lancet 2012

The Oslo trial

- Results after **2 years**
  - **PTS**
    - **CDT + AC** **41 %**
    - **AC** **55 %**

P=0,047

  - **No needed to treat** **7**

Disappointing results

  - **Risk reduction** **14 %**

Enden et al. Lancet 2012

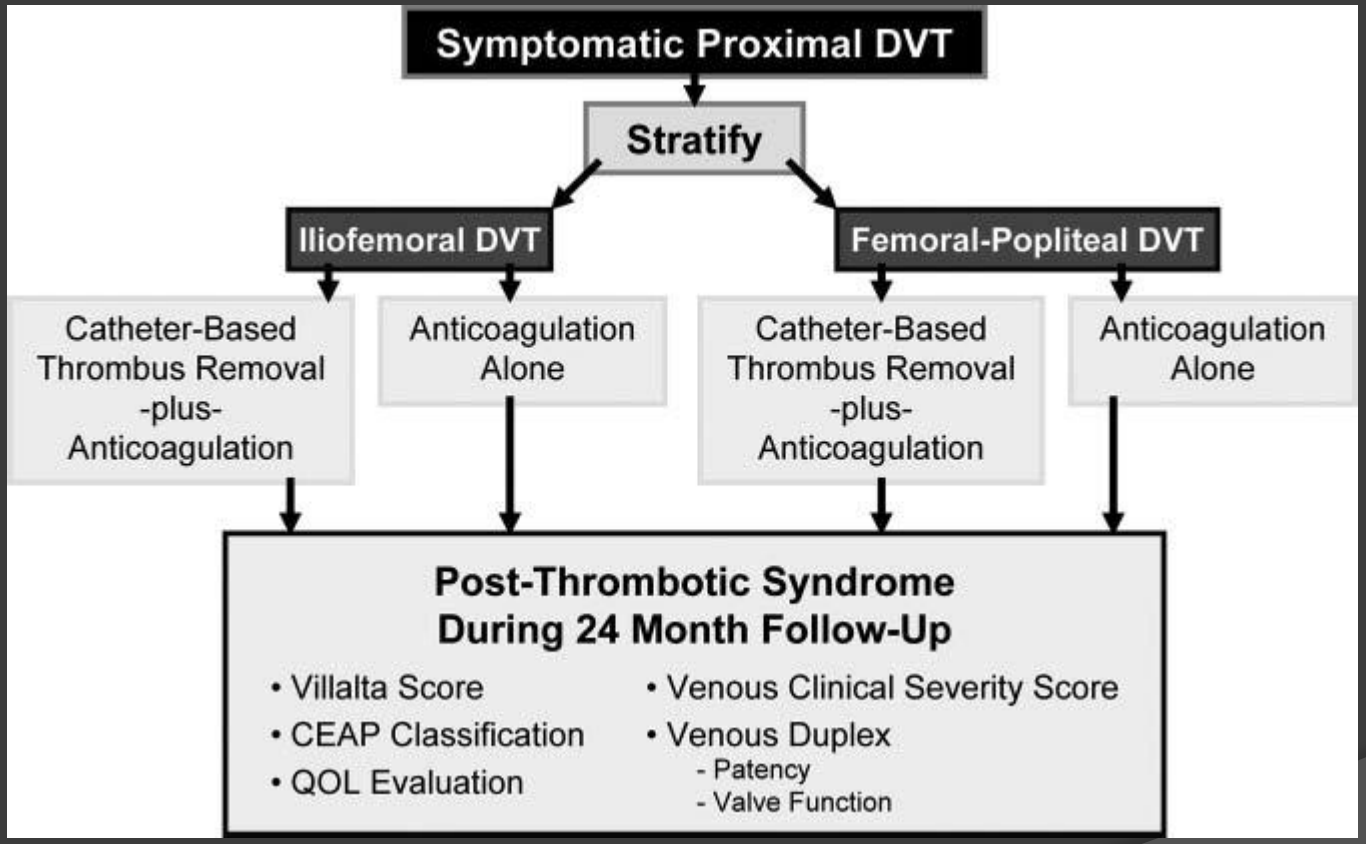
Copenhagen contra Oslo

Age of the patient	younger
Duration of symptoms	shorter
Iliofemoral DVT	all
rt-PA	½ x more
APTT	higher
Pulsespray/cont.	pulse
Volumen per hour	4 x more
D-dimer	yes
IPC	yes
Stent	yes

Better results!!!

Location	Distribution %	Risk of PTS
Crural DVT	30%	low
Crural-popl/fem DVT	25%	low++
Ilio-femoral DVT: CDT	**25%**	**< 20 %**
Full-leg DVT: Surgery	20%	50 % ++

The Attract trial



Comerota. Perspect Vasc Surg Endovasc Ther 2009; 21: 221-4

Conclusion

- **Ilio-fem DVT** (“treat the easy ones”) in 2012, some evidence
  - CDT is safe
  - Easy to perform
  - No need for ICU
  - Caval atresia is not a contraindication
  - Takes a couple of days
  - Excellent medium and long-term results
  - PTS and QOL correlates to these results
  - The treatment duration can maybe be shorter with mechanical devices

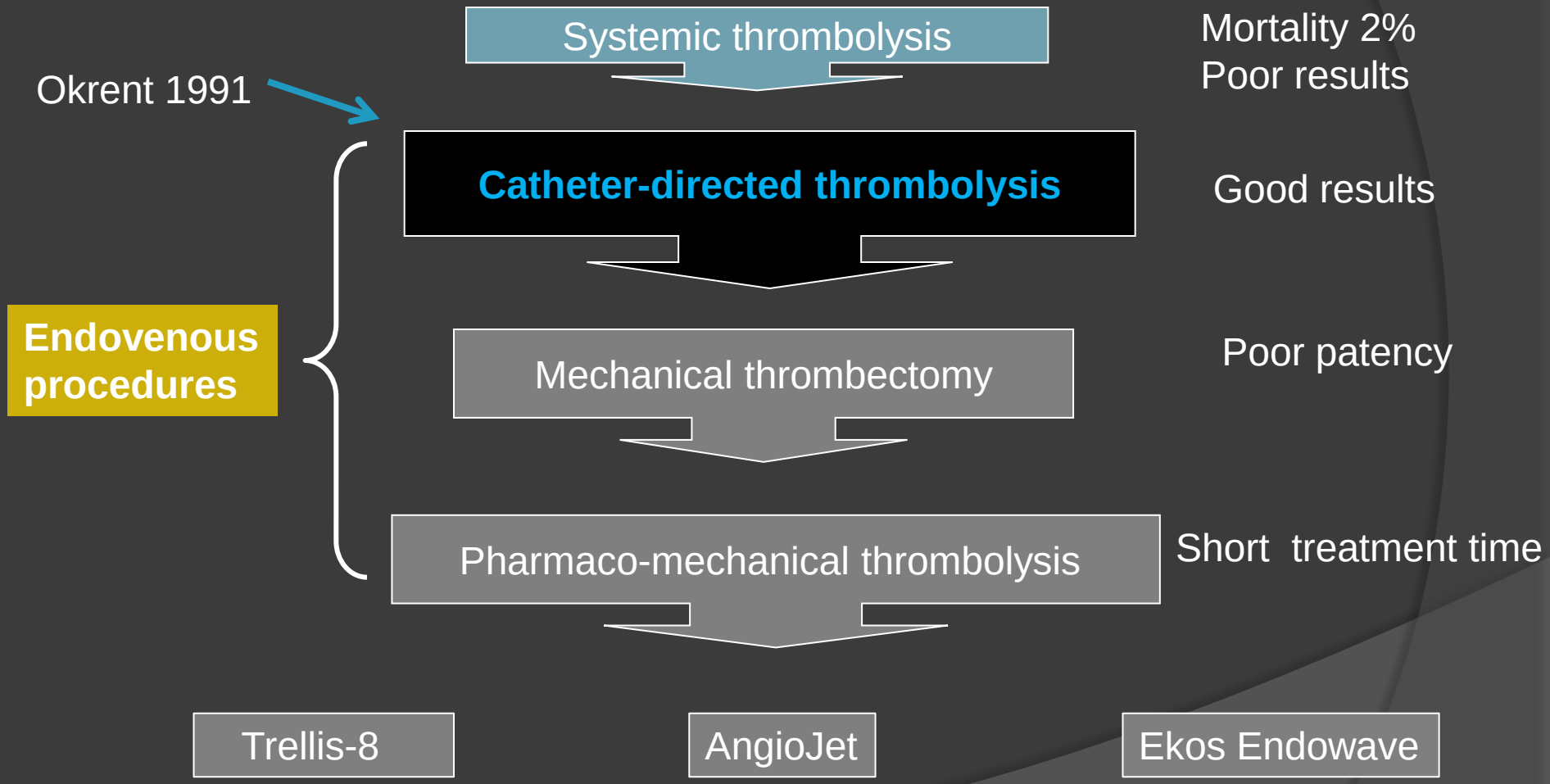
We are waiting for:

ATTRACT Trial (USA)

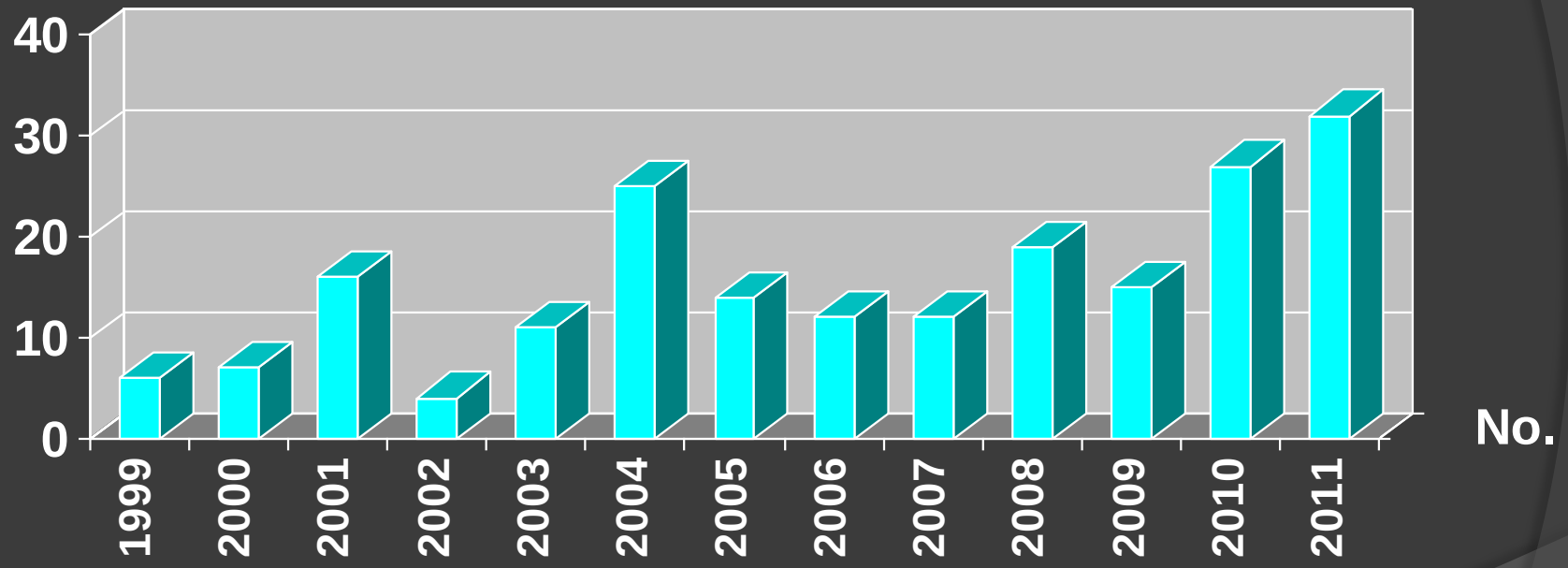
CAVA Trial (NL)

Thank you

The progress of thrombolysis



Teatments per year/Denmark



195 patients