Deep vein thrombosis: Indication, best practice, tip and tricks

Marzia Lugli
DEEP VEIN THROMBOSIS

Waiting or applying "early thrombus removal" techniques?
Why applying a "early thrombus removal" technique?
Their role in pulmonary embolism is not under discussion
early DVT treatment to prevent PTS
early DVT treatment to prevent PTS

still under discussion, despite the clinical evidence
After DVT treated by conservative treatment with anticoagulation alone

30% of patients will develop PTS

Venous Function Assessed During a 5 Year Period after Acute Iliofemoral Venous Thrombosis Treated with Anticoagulation*

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Eur J Vas Surg 1990; 4:43
RCT
Brandjes 1997
Prandoni 2004
Khan 2013

Il Sox trial (Khan) states that CT is not able to prevent occurrence of PTS at 2 years.
“Early Thrombus Removal”

- Surgical thrombectomy
- Mechanical thrombectomy
- Catheter directed thrombolysis
- Pharmaco-mechanical thrombolysis
Surgical thrombectomy

Rare indications

High complication rate

Limited series
Catheter directed thrombolysis

- Adequate penetration of the lytic agent in the thrombus

- Treatment time reduction compared to systemic

- Good results
195 iliofemoral DVT patients treated by catheter-directed thrombolysis mean follow up 52 months

85% patency – no distal reflux

> 60% associated stenting

*Baekgaard N. et al. Copenhagen 2013*
Thrombolysis/Thrombectomy pharmaco-mechanical

Need for time treatment and lytic dose reduction

- lower complication rate
- increased indications
Early thrombus removal techniques

- **Angiojet power pulse** – BSCI
- **Ekos Endowave** – Bothel, W/BTG
- **Aspirex** – Straub Medical
Early thrombus removal techniques

**Advantages**

- Lytic agent reduction or absence
- Short treatment time
- ICU stay reduction
Early thrombus removal techniques

Critical points
Early thrombus removal techniques

Critical points

✓ need for cava filter?
Early thrombus removal techniques

Critical points

✓ possible, not routinely applied
Early thrombus removal techniques

Critical points

✓ need for stenting after ERT?
Critical points

- need for stenting after ERT?

60 - 80% of cases
Early thrombus removal techniques

✓ stenting rate after ETR

- Mewissen 1999 33%
- Bækgaard 2010 55%
- Enden 2012 18%
- Grommes 2011 30%
- Oguzkurt 2012 67%
- Engelberger 2014 83%
- Zhu 2014 92%
Early thrombus removal techniques

In our Deep Vein Reconstructive Surgery Centre

over 400 procedures of iliocaval stenting
Early thrombus removal techniques

Critical points

✓ do results justify costs??
Early thrombus removal techniques

Critical points

✓ do results justify costs??

**RCT**

- **CaVenT, Norway**: CDT vs AK
- **ATTRACT, USA**: CDT/pharmacomechanical TL vs AK.
- **CAVA, The Netherlands**: ultrasound-assisted thrombolysis vs AK.
- **The Bern Study**: Ekos on iliofemoral DVT
Guidelines
Recommendation

In patients with acute proximal DVT of the leg, we suggest anticoagulant therapy alone over Catheter Directed Thrombolysis

Grade 2C
Recommendation

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Grade 2C

No recommendation for thrombus removal

Do not recognize ilio-femoral DVT as a high risk subset for post-thrombotic syndrome
Recommendation
CTD is recommended for patients with acute iliofemoral DVT

Level of evidence: moderate

Patients with acute iliofemoral DVT at a center lacking expertise in CDT should be transferred to a center where expertise exists if indications for CDT are present.
Recommendation

CDT and PCDT in experienced centers may be considered in selected patients with acute (≤14 days) symptomatic, extensive proximal DVT who have good functional capacity, ≥1 year life expectancy and low expected bleeding risk

Class IIb, Level of evidence B

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JVS 2012; 55: 1449 - 62
"Early thrombus removal": indications

"early thrombus removal" indication criteria:

✓ First episode of iliofemoral DVT
✓ Symptom occurrence < 14 days
✓ Low bleeding risk
✓ Effectiv edeambulation, good life expectancy

Recommendation 2C
"Early thrombus removal": indications

Uncertain onset

Jailing technique
"Early thrombus removal": indications

Venous ischemia

Recommendation 1A
”Early thrombus removal”: indications

- Percutaneous thrombolysis is recommended as first choice treatment
- Thrombolysis pharmaco-mechanical is recommended over CDT if the expertise of the centre allows it

Recommendation 2B
CDT vs AngioJet vs Trellis vs anticoagulation

in symptomatic proximal DVT involving the iliac, common femoral, and/or femoral vein

Primary Outcomes:
Cumulative incidence of Post-Thrombotic Syndrome (Villalta Scale)
[Time Frame: within 24 months after randomization]

Enrollment: 692 pts.
Study Start Date: November 2009
Study Completion Date: 2015
Final Result Publication: 2017