Techniques for thrombus removal in acute DVT and acute limb ischemia with the Aspirex and Rotarex system

Benefits of an Endovascular Approach for Rapid Flow Restoration in DVT

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Disclosure
Speaker name: Michael Lichtenberg
I have the following potential conflicts of interest to report:
Consulting (Penumbra, CR Bard, Veniti, Volcano, Biotronik, Terumo, Boston, Straub Medical,Veyhan, TVA medical, Spectranetics, Cook)
Employment in industry
Stockholder of a healthcare company
Owner of a healthcare company
Other(s)
I do not have any potential conflict of interest

Awareness of therapeutic options is rising
Iliofemoral vein interventions per year Venous Center Arnsberg

Proactive Endovascular Mechanical Treatment Approach

• Eliminates the thrombus
• Early treatment increases probability of
  – Maintaining normal valve function
  – Maintaining vein function
• Decreases risk of post-thrombotic syndrome

Catheter-Directed Thrombolysis (CDT)

• Endovascular placement of infusion catheter into affected area
• Thrombolytic drug migrates into clot

Advantages
• Technologically simple
• Minimally invasive
• Resolves thrombus
• Low equipment expense

Limitations
• Extensive exposure to thrombolytics
• Extended ICU stay
• Post-treatment care can be complicated
• Logistically challenging (ICU, Labs, Nursing)
• Requires specialized skills
• Multiple visits to the procedure lab

Country: Western Europe
Population ≥ 18 Years Age

2016 Projection
Incidence
Annual Patients
Annual Treatable Patients

DVT 0.25% 833,237 61%

CEAP Classification Prevalence
Affected Population Treatable Patients

C0 No Disease 9.7% 32,396,246 N/A 0
C1 Reticular Veins 59.0% 196,643,879 N/A 0
C2 Varicose Veins 14.3% 47,627,814 22.00% 10,478,119
C3 Edema 13.4% 44,694,821 21.80% 9,743,471
C4 Skin Pigmentation 2.9% 9,532,229 21.80% 2,078,026
C5 Healed Ulcers 0.6% 2,066,427 21.80% 450,481
C6 Active Ulcers 0.1% 333,295 60.00% 199,977

CVD (C2-C6): 104,254,585 23,458,348

% Obstuctive Component
Venous Outflow Obstruction
Acute
333,294,710
Chronic
3,204,527

2013
2014
2015 till 10/2016
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Indication for iliofemoral venous thrombectomy

- Young and active patient
- Descending iliofemoral thrombosis
- May-Thurner Syndrome
- Phlegmasia, descending IVC thrombosis
- Bowel cancer
- Stenosis of right iliac vein
- With thrombus
- Lymphocele compression

**Mechanical Thrombectomy**

Rotational thrombectomy (Aspirex® / Rotarex)

- 6 – 10 French
- 8 F: blood volume aspiration up to 75 ml/min
- 10 F: blood volume aspiration up to 130 ml/min

**Pure mechanical approach**

- Pure mechanical thrombectomy, no thrombolytics
- Age of thrombus not so relevant
- Chance to finish in the Angiolab
- No RCT data, only registry data

**Aspirex / Rotarex**

- Time consuming
- Additional thrombolytics
- Bleeding risks
- Re-angi after finishing treatment for stent placement etc. (EKOS)
- Organized thrombus > 4 weeks = possible ineffectivenss

**EKOS®, Trellis®, Angiojet®**

- Additional ICU stay in EKOS
- RCT data for EKOS and Angiojet
Conclusions

- Fast and effective removal of venous and arterial thrombus in many perfusion areas
- No systemic complication in comparison to local lysis therapy
- Lower complication rates in comparison to surgical intervention (no general anesthesia)
- Short hospital stay
- Good option also for subacute occlusions
- Multicenter randomized study for direct comparison of PMT and local lysis in DVT