Thrombolysis for DVT: Predictors of Success
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Background

• CDT & PMT are increasingly used in IFDVT
  – Early thrombus removal
  – Maintenance of valvular competence
  – PTS morbidity reduction
• Clinical benefit debated
• ACCP 2012 Guidelines suggest AC alone vs CDT
• AHA, SIR, SVS Guidelines
  – Catheter based therapy in selected patients

Objective

Determine predictors of immediate and longer term failure of thrombolysis for IFDVT.

Patient Selection

Physician Expectations

DISCLOSURES

• Nothing to disclose

Background

• Immediate failure 5-20%
  – US Registry 17% / CaVenT 9.8%
  – Pittsburgh UPMC 13%
• 1 & 2 year patency rates 65-90%
  – CaVenT 75.3% at 2y
  – Pittsburgh UPMC 83% at 4y

References


UPMC Heart and Vascular Institute
Methods

- Retrospective Study
  - Demographics, risk factors, intraprocedural data
  - Outpatient clinical records, venous studies
- Endpoints
  - Immediate failure (≤50% lysis / 30d recurrence)
  - Long term US patency (anatomic failure)
  - Post-thrombotic syndrome (Villalta ≥5)

Study Population

- 93 patients / 118 limbs
- Mean age 49.4 ±16.2 / 51% females / 55% Left DVT
- 46% Caval involvement
- 70% CDT+PMT, 22% PMT alone, 9% CDT
- 56% Iliac stenting
- US follow up: 16±14 months (range 1-65)
- Clinical follow up: 20±16 months (range 1-67)

Postprocedural Outcomes

- Immediate failure: 11 patients (12%)
- Potential Causes (other than DVT RF):
  - 7 patients: Recent Surgery / peri-interventional bleed
  - 3 patients: Acute on chronic DVT / Chronic DVT lesions
  - 1 patient: No identifiable cause (hypercoagulable state)

Postoperative Outcomes

- Multivariate Analysis for Immediate Failures

<table>
<thead>
<tr>
<th>Predictors</th>
<th>OR</th>
<th>P-value</th>
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</thead>
<tbody>
<tr>
<td>Recent Surgery</td>
<td>19.60</td>
<td>.018</td>
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<tr>
<td>Phlegmasia</td>
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<td>.042</td>
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<tr>
<td>Male gender</td>
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<td>.084</td>
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<tr>
<td>Age</td>
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<td>.074</td>
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- Complications
  - 1 Major: Access bleed → surgical evacuation
  - 14 minor
  - 2 Deaths

Anatomic Failure / DVT Recurrence

<table>
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<tr>
<th>% Freedom from DVT Recurrence</th>
<th>HR</th>
<th>P-Value</th>
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<tbody>
<tr>
<td>Lysis ≤50%</td>
<td>0.83</td>
<td>&lt;.001</td>
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<td>Malignancy</td>
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<td>Recent Surgery</td>
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Clinical Failure / PTS

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<th>% Post-thrombotic Syndrome</th>
<th>HR</th>
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<tr>
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<td>Age</td>
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<tr>
<td>Iliacaval</td>
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</table>
Conclusions

- Thrombolysis can achieve high rates of immediate thrombus clearance and PTS morbidity reduction
- Yet a considerable rate of patients experience early or late failure (anatomical or clinical)
  - Recent surgery, Males
  - Phlegmasia, Malignancy
- Lysis needs to be complete >50% to achieve the lowest rates of DVT recurrence & PTS

Conclusions

- Thrombolysis for symptomatic IFDVT can be successful and efficacious in the short and long term with careful patient selection
- RCTs long term results are awaited

Thank you. chaerra@upmc.edu