Vascular Complication Rates Comparing Retrograde versus Antegrade Access in Below the Knee Interventions

Maria Baldasare, MD

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Disclosure

NONE
Background

- Antegrade femoral access provides optimal catheter and wire support for treatment of distal disease and CTO.

- Little data is available regarding this technique and its potential complications and benefits.

- To review the safety and efficacy of antegrade approach in BTK interventions.
Background
Hypothesis

More technically demanding antegrade access (AA) by experienced operators, shows no difference in complications compared to the conventional retrograde access (RA) in treatment of PVD.
Methods

- Retrospective Study Design
  - Chart review
- Tertiary care, single-center, single-operator setting
- 108 patients over a 1 year
  - June 2013-June 2014
  - 63 AA & 45 RA
- Statistical analysis
  - Pearson chi-square (via SPSS)
Methods

- Main outcomes assessed:
  - hematoma,
  - perforation,
  - aneurysm,
  - pseudo-aneurysm,
  - acute stent thrombosis,
  - required blood transfusion,
  - acute kidney injury,
  - surgical intervention
## Demographics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>64-72 years</td>
<td></td>
</tr>
<tr>
<td><strong>Diabetes</strong></td>
<td>44</td>
<td>40.7%</td>
</tr>
<tr>
<td><strong>Coronary Artery Disease</strong></td>
<td>47</td>
<td>43.5%</td>
</tr>
<tr>
<td><strong>Hypertension</strong></td>
<td>83</td>
<td>76.8%</td>
</tr>
<tr>
<td><strong>PVD</strong></td>
<td>91</td>
<td>84.2%</td>
</tr>
<tr>
<td><strong>Hyperlipidemia</strong></td>
<td>46</td>
<td>42.5%</td>
</tr>
<tr>
<td><strong>Hx TIA / CVA</strong></td>
<td>6</td>
<td>5.5%</td>
</tr>
<tr>
<td><strong>Congestive Heart Failure</strong></td>
<td>14</td>
<td>12.9%</td>
</tr>
<tr>
<td><strong>Previous LE stents</strong></td>
<td>30</td>
<td>27.8%</td>
</tr>
<tr>
<td><strong>Previous Fem-bypass</strong></td>
<td>6</td>
<td>5.5%</td>
</tr>
<tr>
<td><strong>Smoker</strong></td>
<td>26</td>
<td>24.1%</td>
</tr>
</tbody>
</table>
## Results

<table>
<thead>
<tr>
<th>COMPLICATION</th>
<th>Retrograde</th>
<th></th>
<th>Antegrade</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>percent</td>
<td>N</td>
<td>percent</td>
</tr>
<tr>
<td>None</td>
<td>40</td>
<td>37.0%</td>
<td>55</td>
<td>50.9%</td>
</tr>
<tr>
<td>Hematoma</td>
<td>1</td>
<td>0.01%</td>
<td>2</td>
<td>0.02%</td>
</tr>
<tr>
<td>Perforation</td>
<td>1</td>
<td>0.01%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Aneurysm</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.01%</td>
</tr>
<tr>
<td>Thrombosis</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.01%</td>
</tr>
<tr>
<td>Blood Transfusion required</td>
<td>3</td>
<td>0.03%</td>
<td>4</td>
<td>0.04%</td>
</tr>
</tbody>
</table>

Overall outcome: $p = 0.055$
Results

In our population:

- Trend towards more AA in patients with type II DM
  - n = 31; p value=0.034

- Trend towards more AA in Hypertensive patients
  - n = 44; p value=0.041
Limitations

- Retrospective study;
- No long term outcome data
- No standard profile/technique
- Sheath size
- Number of patients
Conclusions

- In our small study there was no difference seen in complications ($p=0.055$) of percutaneous intervention performed via AA versus RA
- Potential complications of antegrade access can be more serious
- In the hands of experienced operators, antegrade access can be performed safely and provide more options for BTK intervention
Thank you!!
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