The WIFI Grading System For CLTI Is Meaningful: WIFI Scores Correlate Well With The Risks Of Amputation And Death Following Treatment

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The Society for Vascular Surgery Lower Extremity Threatened Limb Classification System: Risk stratification based on Wound, Ischemia, and Foot Infection (WIFI)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Ischemia</th>
<th>Foot Infection</th>
<th>Ulcer Status</th>
<th>ABI</th>
<th>Wound Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
<td>None</td>
<td>&gt; 0.80</td>
<td>None</td>
<td>Uninfected</td>
</tr>
<tr>
<td>1</td>
<td>Small, Shallow</td>
<td>None</td>
<td>0.6-0.79</td>
<td>Mild</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Deep</td>
<td>Limited to digits</td>
<td>0.4-0.59</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Extensive</td>
<td>Extensive</td>
<td>&lt; 0.39</td>
<td>Severe</td>
<td></td>
</tr>
</tbody>
</table>

Objectives
• Evaluate predictive ability of WIFI classification system following any first time lower extremity revascularization for CLTI – Bypass or Angioplasty
• Find most useful scoring method based on WIFI components

Methods
• All BIDMC patients undergoing first-time lower extremity procedure for CLTI
• January 2005 – October 2014

Patient Classification
• SVS WIFI Clinical Stages (1-4)
• novel Composite WIFI score (1-3, 4-6, 7-9)
• novel Mean WIFI score (0-3)
  – Major amputation
  – Mortality
  – RAS events (Re-intervention, Amputation, Stenosis)
• Cox regression models and Kaplan-Meier survival estimates

Disclosures
Abbott, Cook, Endologix, Medtronic, Philips
BIDMC 2005-2014

1,148 First-time revascularization for CLI

564 (50%) PTA/S
564 (50%) Bypass

468 (41%) Tissue Loss
88 (10%) Rest Pain
443 (77%) Tissue Loss
191 (23%) Rest Pain

Clinical Stage Amputation Risk

WIfI Composite: 1 + 3 + 0 = 4
WIfI Mean: \( \frac{1 + 3 + 0}{3} = 1.3 \)

WIfI Components

Wound: 19%
Ischemia: 23%
Foot Infection: 52%

WIfI Distribution

WIfI Clinical Stage 1-Year Amputation Rate

<table>
<thead>
<tr>
<th>Clinical Stage</th>
<th>1-Year Amputation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>8%</td>
</tr>
<tr>
<td>Clinical Stage 1 (n=10)</td>
<td>0%</td>
</tr>
<tr>
<td>Clinical Stage 2 (n=252)</td>
<td>5%</td>
</tr>
<tr>
<td>Clinical Stage 3 (n=499)</td>
<td>6%</td>
</tr>
<tr>
<td>Clinical Stage 4 (n=500)</td>
<td>20%</td>
</tr>
</tbody>
</table>

No difference for Bypass vs PTA
Conclusions

• Mills et al. WIfI clinical stage works in CLI patients undergoing revascularization
  – Stage 4 associated with 20% 1-year amputation rate

• Novel composite and mean scores are easier to use, accommodate missing data, better predict amputation, and also predict RAS events and mortality

• WIfI system useful in two ways:
  – Prognostication for CLI patients in clinical practice
  – Comparison of revascularization studies with disparate populations