LUTONIX AV Clinical Trial

A Prospective, Global, Multicenter, Randomized, Controlled Study Comparing LUTONIX® 035 AV Drug Coated Balloon PTA Catheter vs. Standard Balloon PTA Catheter for the Treatment of Dysfunctional AV Fistulae

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AV IDE Protocol CL0023-01
Disclosure

Speaker name:
Scott O. Trerotola, MD

I have the following potential conflicts of interest to report:

- [X] Consulting
- [ ] Employment in industry
- [ ] Stockholder of a healthcare company
- [ ] Owner of a healthcare company
- [X] Other(s)

- [ ] I do not have any potential conflict of interest
Conflicts of Interest

- Paid consultant for the following companies:
  - Bard Peripheral Vascular
  - LUTONIX
  - WL Gore
  - B Braun
  - Teleflex
  - Medcomp
  - Cook

- Royalties
  - Cook
  - Teleflex
# Lutonix AV Clinical Trial

<table>
<thead>
<tr>
<th><strong>Study Design</strong></th>
<th><strong>Prospective, Global, Multicenter, Randomized, Safety and Effectiveness</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective</strong></td>
<td><strong>To assess the safety and effectiveness of the LUTONIX® 035 AV Drug Coated Balloon PTA Catheter in the treatment of dysfunctional AV fistulae</strong></td>
</tr>
<tr>
<td><strong>Number of patients/sites</strong></td>
<td><strong>285 randomized subjects at 23 clinical sites</strong></td>
</tr>
<tr>
<td><strong>Primary effectiveness endpoint</strong></td>
<td><strong>Target Lesion Primary Patency (TLPP) - 6 months</strong></td>
</tr>
<tr>
<td><strong>Primary safety endpoint</strong></td>
<td><strong>Freedom from any serious adverse event(s) involving the AV access circuit through 30 days</strong></td>
</tr>
<tr>
<td><strong>Follow up</strong></td>
<td><strong>1, 3, 6, 9, 12, 18, 24 month visits</strong></td>
</tr>
</tbody>
</table>
| **Status**                | **First Subject: June 2015**  
**Enrollment Completion: March 2016** |
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Key Inclusion Criteria

**CLINICAL**
- Male or non-pregnant female ≥21 years old
- Upper extremity AV fistula w/clinical, physiological, or hemodynamic abnormality
- Fistula created ≥30 days
  - 1+ hemodialysis session
  - 2 needles
  - Catheter removed ≥30 days

**ANGIOGRAPHIC**
- Length ≤10 cm
- ≥50% stenosis
- Successful pre-dilation
- Diameter 4-12 mm
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Key Exclusion Criteria

**CLINICAL**
- Lower extremity access
- Central veins
- Thrombosed access

**ANGIOGRAPHIC**
- >2 Lesions in circuit
- Secondary non-target lesion that cannot be successfully treated
- Central veins as a secondary lesion, which is clinically significant
- Bare or covered stent in target or secondary non-target lesions
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Inclusion Criteria

Axillosubclavian Junction

Fistula Anastomosis

Image courtesy of Bard: illustration by Paul Schiffmacher
Study Design

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Non-target lesion treated (if needed)
Residual stenosis ≤30%

Pre-Dilation with PTA

Pre-dilation lesion(s) treatment area criteria

Residual stenosis ≥30%

No enrollment in study
Further treatment per standard practice

Residual stenosis ≤30%
Completely efface waist
No clinical significant dissection/extraavasation

Randomization (1:1)
Enrollment in study

Treatment with Lutonix DCB (TEST)
≥ 1:1 Pre-Dil and test balloon sizing

Follow-up: 1,3,6,9,12,18 and 24 months; unscheduled visits

Treatment with Standard PTA (CONTROL)
≥ 1:1 Pre-Dil and control balloon sizing
# Demographics

<table>
<thead>
<tr>
<th></th>
<th>DCB (n=141)</th>
<th>PTA (n=144)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age</td>
<td>63.6</td>
<td>61.0</td>
</tr>
<tr>
<td>Male (%)</td>
<td>61.7%</td>
<td>59.0%</td>
</tr>
<tr>
<td>Hypertension (%)</td>
<td>94.3%</td>
<td>98.6%</td>
</tr>
<tr>
<td>Diabetes mellitus (%)</td>
<td>58.2%</td>
<td>65.3%</td>
</tr>
<tr>
<td>Dyslipidemia (%)</td>
<td>60.3%</td>
<td>58.3%</td>
</tr>
<tr>
<td>Current smoking (%)</td>
<td>13.5%</td>
<td>14.6%</td>
</tr>
<tr>
<td>Peripheral arterial disease (%)</td>
<td>9.9%</td>
<td>18.1%</td>
</tr>
<tr>
<td>Coronary artery disease (%)</td>
<td>30.5%</td>
<td>27.8%</td>
</tr>
</tbody>
</table>
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Treated Fistula Locations

Upper arm
DCB: 61.7% / PTA: 73.4%

Antecubital fossa
DCB: 5.0% / PTA: 4.9%

Forearm
DCB: 33.3% / PTA: 21.7%

Image courtesy of Bard: illustration by Paul Schiffmacher
## Treated Vessel Locations

<table>
<thead>
<tr>
<th></th>
<th>DCB (n=141)</th>
<th>PTA (n=144)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subclavian vein (%)</td>
<td>0.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Brachial vein (%)</td>
<td>0.7%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Cephalic vein (%)</td>
<td>68.8%</td>
<td>67.4%</td>
</tr>
<tr>
<td>Basilic vein (%)</td>
<td>25.5%</td>
<td>28.5%</td>
</tr>
<tr>
<td>Median cubital vein (%)</td>
<td>1.4%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Other (%)</td>
<td>2.8%</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

Image courtesy of Bard: illustration by Paul Schiffmacher
# Lutonix AV Clinical Trial
## Target Lesion Locations

<table>
<thead>
<tr>
<th>Location</th>
<th>DCB (n=141)</th>
<th>PTA (n=144)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anastomotic (%)</td>
<td>4.3%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Cephalic arch (%)</td>
<td>18.7%</td>
<td>22.5%</td>
</tr>
<tr>
<td>In cannulation zone (%)</td>
<td>4.3%</td>
<td>9.9%</td>
</tr>
<tr>
<td>Inflow (%)</td>
<td>33.8%</td>
<td>29.6%</td>
</tr>
<tr>
<td>Outflow (%)</td>
<td>24.5%</td>
<td>22.5%</td>
</tr>
<tr>
<td>Swing point (%)</td>
<td>14.4%</td>
<td>12.0%</td>
</tr>
</tbody>
</table>

*Image courtesy of Bard: illustration by Paul Schiffmacher*
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Lesion Characteristics

<table>
<thead>
<tr>
<th></th>
<th>DCB (n=141)</th>
<th>PTA (n=144)</th>
</tr>
</thead>
<tbody>
<tr>
<td>De novo, (%)</td>
<td>30.5%</td>
<td>27.1%</td>
</tr>
<tr>
<td>Tandem, (%)</td>
<td>2.8%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Target lesion length, mm (mean ± SD)</td>
<td>28.4 ± 15.09</td>
<td>29.5 ± 18.69</td>
</tr>
</tbody>
</table>
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Primary Safety at 240 Days

95% CI of the rate and the rate difference at each time point were calculated based on normal approximation and one-sided p-value is from test for non-inferiority, with 10% as non-inferiority margin.

Data shown are interim, site reported and subject to change.
Target Lesion Primary Patency (TLPP) ends with a clinically driven re-intervention of the target lesion or access thrombosis.

95% CI of the rate and rate difference at each time point were calculated based on normal approximation using Greenwood formula variance estimators. Log-Rank Test was used to compare the two treatment curves between Day 0-240 and one-sided p-value was provided.

Data shown are interim, site reported and subject to change.
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Number of Interventions Required to Maintain TLP at 240 Days

<table>
<thead>
<tr>
<th></th>
<th>LTX DCB (n=141)</th>
<th>Standard PTA (n=144)</th>
<th>P-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of interventions</td>
<td>66</td>
<td>94</td>
<td>0.024</td>
</tr>
<tr>
<td>n</td>
<td>141</td>
<td>144</td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>0.47 (0.732)</td>
<td>0.65 (0.805)</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Min – Max</td>
<td>0 - 3</td>
<td>0 - 4</td>
<td></td>
</tr>
</tbody>
</table>

*Two-sided P-value
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Summary

• First in fistula trial designed to incorporate a wide variety of lesions/fistula types

• 240 day results demonstrated:
  • Safety outcomes non-inferior to PTA
  • Target lesion primary patency
    • 61.6% DCB vs. 49.4% PTA (Δ 12.2% p = 0.02)*
  • 29.8% fewer interventions required to maintain TLP in DCB arm

*one-sided P-value
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