Patient demographics, procedural outcomes, complications, lengths of stay, and hospital economic data were recorded.

Results: A total of 85 patients were treated. 43 underwent EKOS thrombolysis and 42 had non-EKOS thrombolysis. Both treatment groups had similar comorbidities and prior vascular procedures. Total treatment times for the EKOS group were 21.2 hours versus 56.5 hours for the non-EKOS patients (p < 0.001). The EKOS group had a higher complete thrombus dissolution rate (95.3% vs 66.7%, p=0.002) and a lower thirty day amputation rate (19.5% vs 42.9%, p=0.04). There was a significantly higher bleeding rate in the non-EKOS group (23.8% vs 4.7%, p=0.026). Length of stay on the vascular service favored the EKOS group (5.7 vs 8.3 days, p=0.027). Total procedural costs were similar for both groups ($18,270 for EKOS vs $16,650 for non-EKOS, p=0.366).

Conclusions: Ultrasound-accelerated arterial thrombolysis had shorter treatment times, higher complete thrombus dissolution rates, lower amputation and bleeding rates, and shorter lengths of stay than patients who underwent traditional catheter-directed thrombolysis. Despite the favorable clinical outcome for EKOS, total procedural costs remained similar.

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RR21.

Early (30 Day) Vein Remodeling is Predictive of Mid-Term Graft Patency Following Lower Extremity Bypass

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Objectives: Successful adaptation of a vein graft to an arterial environment is incompletely understood. We sought to investigate whether early vein graft remodeling is predictive of subsequent patency.

Methods: A prospective longitudinal study of patients undergoing LEB with autologous vein (n=98). Preoperative blood samples were drawn for biomarkers. At the bypass operation, a 5 cm index segment of the graft was registered for serial lumen diameter measurements (1, 3, 6, 9, and 12 months) using duplex ultrasound.

Results: Index segment lumen diameter at 1 month was predictive of primary graft patency (p=0.013, Cox model) with a median follow-up of 28 months. Percent change in vein diameter from 0-1 month showed a trend of positive correlation with primary graft patency (p=0.1). On multivariate regression, larger initial vein diameter (p<0.001), baseline high-sensitivity C-reactive protein (hsCRP) level (p=0.007) and non-white race (p=0.035) were negatively correlated with 0-1 month graft remodeling, while statin use (p=0.049) was positively correlated with remodeling. Similarly, initial diameter (p<0.001), hsCRP (p=0.03) and non-white race were negatively correlated with diameter achieved at 1 month.

Conclusions: Early remodeling of the arterialized vein, measured from a representative mid-graft segment, appears to predict mid-term bypass graft patency. In addition to baseline diameter, race, inflammation (hsCRP) and statin use are associated with early adaptive remodeling, but the mechanism for these observations are not understood.

Index segment diameter at 1 month (by quartiles).

<table>
<thead>
<tr>
<th>Quartile</th>
<th>1 month diameter (mg/L)</th>
<th>hCRP change 0-1 months</th>
<th>Primary patency rate at 2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.37 (0.34-0.39)</td>
<td>11%</td>
<td>3.6 (1.2-25.8)</td>
</tr>
<tr>
<td>2</td>
<td>0.43 (0.41-0.44)</td>
<td>13%</td>
<td>5.1 (1.2-19.3)</td>
</tr>
<tr>
<td>3</td>
<td>0.47 (0.47-0.5)</td>
<td>18%</td>
<td>3.3 (1.8-5.5)</td>
</tr>
<tr>
<td>4</td>
<td>0.59 (0.54-0.65)</td>
<td>45%</td>
<td>2.9 (1.2-4.6)</td>
</tr>
</tbody>
</table>

All values are median (IQR).

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RR22.

Comprehensive Evaluation of Arterial Lesion Characteristics and Their Impact on Long-Term Patency after Endovascular Intervention: The Creation of a Novel Lesion Severity Score For Arterial Lesions

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Objectives: To develop a lesion severity score (LSS) for arterial occlusive lesions that can be used to characterize lesions for comparison and predict effectiveness of intervention.

Methods: Prospective data assessment with patency determined by clinical and duplex criteria from 2005-2009. Variables evaluated by Cox Regression (CR). CR coefficients and Hazard Ratio used to derive risk factor scores; these were summed to create a LSS. Correlation between LSS and patency performed with Kaplan-Meier and CR.

Results: 1848 lesions were treated in 1049 patients. 44 variables were examined; statistically significant factors were included in the final model (Table 1). Outcome worsened with increasing LSS (Table 2).