Multivariable modeling demonstrated
Arthroscopy (vs. arthroty)
Staphylococcus remain associated with worse outcomes (OR 0.3)
Among Staphylococcus cases, receipt of rifampin independently associated with benefit (OR 4.5)

INTRODUCTION
• Prosthetic joint infection (PJI): morbidity and costly.
• Debridement, antibiotics, and implant retention (DAIR) is an alternative to exchange procedures for PJI.
• Lower rate of microbiologic cure
• Potentially less morbidity (less surgery, short recovery) and preserved joint function
• There is great variation in success rates, in small published series of the DAIR approach

OBJECTIVES
• To examine our institutional experience with DAIR for TKA PJI
• To elucidate critical variables influencing DAIR success rates among our patients with TKA PJI

METHODS
• Retrospective cohort study
• Data Source: Hospital for Special Surgery (HSS) Infection Database
• All arthroplasties infections between 9/2007-9/2013
• Inclusion: TKA PJI treated with initial I&D and 2-year follow-up
• Exclusion: Age <18, alternative diagnosis reached
• Primary outcome = prosthesis retention for 2 years from initial debridement
• Data collection: Demographic, surgical, microbiological, pharmacy, comorbidities
• Analysis:
  • Mann-Whitney U tests for continuous variables
  • Chi-square tests for categorical values.
  • Multivariable logistic regression

RESULTS
Table 1. Summary of Patient Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Age at I&amp;D (n=146)</th>
<th>Sex</th>
<th>Sex</th>
<th>Age at I&amp;D</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>73 (49.3)</td>
<td>79 (54.5)</td>
<td>79 (54.5)</td>
<td>54 (37.4)</td>
<td>54 (37.4)</td>
</tr>
<tr>
<td>Linear exchange</td>
<td>No</td>
<td>47 (32.4)</td>
<td>24 (16.6)</td>
<td>23 (16.6)</td>
<td>21 (14.9)</td>
</tr>
<tr>
<td>Liner exchange</td>
<td>Yes</td>
<td>63 (43.2)</td>
<td>66 (45.1)</td>
<td>63 (43.2)</td>
<td>67 (46.4)</td>
</tr>
<tr>
<td>Age of prosthesis</td>
<td>&lt; 90 days</td>
<td>49 (33.6)</td>
<td>53 (36.3)</td>
<td>65 (44.7)</td>
<td>61 (43.4)</td>
</tr>
<tr>
<td>Staphylococcus</td>
<td>Yes</td>
<td>64 (44.1)</td>
<td>70 (47.4)</td>
<td>31 (21.4)</td>
<td>31 (21.4)</td>
</tr>
<tr>
<td>Microbiology</td>
<td>Single microbe</td>
<td>52 (35.3)</td>
<td>42 (29.2)</td>
<td>52 (35.3)</td>
<td>42 (30.3)</td>
</tr>
<tr>
<td>Obesity</td>
<td>No</td>
<td>66 (45.5)</td>
<td>73 (50.3)</td>
<td>73 (50.3)</td>
<td>73 (50.3)</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>63 (43.2)</td>
<td>67 (46.4)</td>
<td>63 (43.2)</td>
<td>63 (43.2)</td>
</tr>
</tbody>
</table>

RESULTS (continued)
Among this cohort of 146 infected TKAs treated with DAIR, we found:
• 64% likelihood of retention at 2 years
• Rare progression to major complications of arthrodesis or amputation
• No worse outcomes with measured comorbid illnesses
• Arthroscopic I&D independently associated with poor outcomes: arthroscopy is not an adequate substitute for open arthrothry
• Staphylococcus infections are associated with markedly worse outcomes
• Rifampin markedly increases the odds of prosthetic retention in staphylococcal PJI
• Further plans in this project include collection of:
  • 5 year follow-up data
  • Data on receipt and type of chronic suppressive antibiotic

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