
Sanjay Misra, MD FAHA, FSIR
Mayo Clinic School of Medicine
Professor of Radiology
Division of Vascular and Interventional Radiology
Rochester, MN
misra.sanjay@mayo.edu
Disclosures:

- Research grants: NIH HL98967 (PI:SM), HL109192 (co-I), HL88476 (site PI), SIR Foundation Grant, Howard Hughes Medical Institute
- DSMB: Flexstent
What is the Unmet Clinical Need?

- HD access morbidity costs more than 1 Billion USD
- 40% HD grafts in US are PTFE
- PTFE grafts are more prone to stenosis, thrombosis, and infection than AVF
- Approximately 60% of AVFs are not usable at 6-months
- Exact etiology for HD vascular access failure is unknown
ePTFE Graft

Vein
Histology
Patency of HD Grafts:

Loss of Primary Unassisted Graft Patency (%)

- Placebo
- ERDP-aspirin

No. at Risk

<table>
<thead>
<tr>
<th>Group</th>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERDP-aspirin</td>
<td>321</td>
<td>236</td>
<td>171</td>
<td>146</td>
<td>108</td>
<td>88</td>
<td>69</td>
</tr>
<tr>
<td>Placebo</td>
<td>328</td>
<td>236</td>
<td>162</td>
<td>119</td>
<td>94</td>
<td>74</td>
<td>56</td>
</tr>
</tbody>
</table>
A

Primary Patency of Treatment Area (%)

Stent graft

Balloon angioplasty

P = 0.003

Days after Initial Procedure
BRAVO I: A pilot study of vascular brachytherapy in polytetrafluoroethylene dialysis access grafts

S Misra¹, R Bonan², T Pfleiderer³ and P Roy-Chaudhury⁴ for the BRAVO I Investigators

¹Department of Radiology, Cardiology and Surgery, Mayo Clinic, Rochester, Minnesota, Minnesota, USA; ²Department of Cardiology, Montreal Heart Institute, Montreal, Canada; ³Renal Care Associates, Morton, Illinois, USA and ⁴Division of Nephrology, University of Cincinnati, Cincinnati, Ohio, USA

Figure 1 | Target lesion primary patency rate. Note the significant improvement with vascular brachytherapy.
Future:

- Durability
- Patency
- Other applications: small diameter grafts