DCB setting the stage for standard of care – an evidence-based review

IN.PACT Role in SFA: Critical overview of modern endovascular therapies

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Disclosure

Speaker name:

Frank Vermassen

I have the following potential conflicts of interest to report:

☑ Consulting: Medtronic, Abbott Vascular, Gore, Terumo, Silkroad, Cordis.

☐ Employment in industry

☐ Stockholder of a healthcare company

☐ Owner of a healthcare company

☐ Other(s)

☐ I do not have any potential conflict of interest
SUPERFICIAL FEMORAL

Evidence Based Medicine
Endovascular options in the SFA

- Laser
- Atherectomy
- Drug-eluting stents
- Coated balloons
- Cryoplasty
- Bare metal stents
- Brachytherapy
- Cutting balloon
- Stent-grafts
Endpoints of interest

• **Primary Patency**
  – *Objective metric* to determine whether revascularization technologies fulfill their primary mandate

• **Target Lesion Revascularization**
  – *Clinically relevant* to Patient, Providers and Payers
Primary Patency:

“Freedom from Binary Restenosis or TLR”
(with Duplex derived restenosis based on ≠ PSVRs)

PSVR correlation to angiographically derived 50% DS:

<table>
<thead>
<tr>
<th>Author (year)</th>
<th>Artery analyzed</th>
<th>Native/ stented</th>
<th>Denovo/ restenosis</th>
<th>Application of QVA</th>
<th>PSVR criteria for 50% stenosis</th>
<th>Sens. (%)</th>
<th>Spec. (%)</th>
<th>PPV (%)</th>
<th>NPV (%)</th>
<th>Accura. (%)</th>
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</thead>
<tbody>
<tr>
<td>Polak et al. (1990)</td>
<td>Femoropopliteal</td>
<td>Native</td>
<td>Denovo</td>
<td>No</td>
<td>2</td>
<td>88</td>
<td>95</td>
<td>NR</td>
<td>NR</td>
<td>93</td>
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<tr>
<td>Legemate et al. (1991)</td>
<td>Femoropopliteal</td>
<td>Native</td>
<td>Denovo</td>
<td>No</td>
<td>2.5</td>
<td>65</td>
<td>97</td>
<td>69</td>
<td>96</td>
<td>94</td>
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<tr>
<td>Ranke et al. (1992)</td>
<td>Iliac to femoral</td>
<td>Native</td>
<td>Denovo</td>
<td>No</td>
<td>2.4</td>
<td>87</td>
<td>94</td>
<td>94</td>
<td>88</td>
<td>NR</td>
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<tr>
<td>Leng et al. (1993)</td>
<td>Femoropopliteal</td>
<td>Native</td>
<td>Denovo</td>
<td>No</td>
<td>3</td>
<td>70</td>
<td>96</td>
<td>95</td>
<td>74</td>
<td>NR</td>
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<tr>
<td>Aly et al. (1998)</td>
<td>Femoral</td>
<td>Native</td>
<td>Denovo</td>
<td>No</td>
<td>2</td>
<td>100</td>
<td>99</td>
<td>95</td>
<td>100</td>
<td>NR</td>
</tr>
<tr>
<td>Aly et al. (1998)</td>
<td>Femoropopliteal</td>
<td>Native</td>
<td>Denovo</td>
<td>No</td>
<td>2</td>
<td>95</td>
<td>99</td>
<td>94</td>
<td>99</td>
<td>NR</td>
</tr>
<tr>
<td>Schlager et al. (2007)</td>
<td>Femoropopliteal</td>
<td>Native (97%) and stented (3%)</td>
<td>Denovo and restenosis</td>
<td>No</td>
<td>2.4</td>
<td>81</td>
<td>93</td>
<td>84</td>
<td>91</td>
<td>NR</td>
</tr>
<tr>
<td>Baril et al. (2009)</td>
<td>Femoropopliteal</td>
<td>Stented</td>
<td>Restenosis</td>
<td>No</td>
<td>1.5</td>
<td>93</td>
<td>89</td>
<td>96</td>
<td>81</td>
<td>NR</td>
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<tr>
<td>Present study</td>
<td>Superficial femoral</td>
<td>Stented</td>
<td>Restenosis</td>
<td>Yes</td>
<td>2.85</td>
<td>88</td>
<td>84</td>
<td>85</td>
<td>88</td>
<td>86</td>
</tr>
</tbody>
</table>

Primary Patency Reporting: Kaplan-Meier

- Primary Patency: a protocol driven check at a pre-defined timepoint and time-interval (e.g. 1-year ± 30-day)
- Survival estimates from loss of Primary Patency can be misleading if assessed at 360-day in Trials with a 360±XX diagnostic window, as an amount of patients (and events) may be missed
Key Appraisal Criteria: Clinical Evidence

Quality, Rigor and Transparency

- Randomized and single-arm
- Multicenter
- Adequate sample size and power
- Independent clinical event adjudication
- Independent corelab
- External monitoring
- Clinicaltrial.gov

Key Appraisal Criteria: Clinical Evidence

Clinical and anatomical drivers of outcomes

- Rutherford Class
- Diabetes
- Lesion length / TASC type
- % Occlusions
- Ca++
### Key Evidence

11 multicenter independently adjudicated fem-pop endovascular trials (3300+ patients) reporting Primary Patency survival estimates

<table>
<thead>
<tr>
<th>Treatment Type</th>
<th>Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bare Metal Stents</strong></td>
<td>STROLL, RESILIENT, SUPERB, COMPLETE SE, DURABILITY I, DURABILITY II</td>
</tr>
<tr>
<td><strong>Drug Eluting Stents</strong></td>
<td>ZILVER PTX</td>
</tr>
<tr>
<td><strong>Drug Coated Balloons</strong></td>
<td>IN.PACT SFA, LEVANT 2</td>
</tr>
<tr>
<td><strong>Atherectomy</strong></td>
<td>DEFINITIVE LE</td>
</tr>
<tr>
<td><strong>Covered Stents</strong></td>
<td>VIASTAR</td>
</tr>
</tbody>
</table>

Key Evidence: Patient Profiles

Baseline clinical and anatomical characteristics

~44% Diabetics, ~63% RC≥3, ~6.3 cm lesion length, ~28% CTOs, ~30% Ca++

Note: calcium is not assessed in the same way in all studies

Key Evidence: 12-month Outcomes

No DCB Class Effect

Duplex derived Primary Patency based on PSVR ≤2.4 (†) or PSVR ≤2.0 (‡)

IN.PACT SFA: Primary Patency

IN.PACT Admiral has among the highest reported primary patency rate of available SFA technologies, while minimizing the use of permanent implants.
IN.PACT SFA: Clinically-Driven TLR

IN.PACT Admiral has the lowest reported reintervention rate at 1 year of available SFA technologies.

<table>
<thead>
<tr>
<th></th>
<th>IN.PACT</th>
<th>PTA</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD-TLR</td>
<td>2.4%</td>
<td>20.6%</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Time after Index Procedure (days)

Freedom from Clinically-Driven TLR

[Graph showing comparison between IN.PACT and PTA over time]
IN.PACT SFA: Clinically-Driven TLR

IN.PACT Admiral has the lowest reported reintervention rate at 1 year of available SFA technologies.

Weighted Average of 12-Month Reported CD-TLR Rates

<table>
<thead>
<tr>
<th>Procedure</th>
<th>12-Month Reported CD-TLR Rates (Weighted Average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTA</td>
<td>26.4%</td>
</tr>
<tr>
<td>BMS</td>
<td>14.3%</td>
</tr>
<tr>
<td>DES</td>
<td>10.2%</td>
</tr>
<tr>
<td>IN.PACT SFA</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

7. Tepe, G Charing Cross Symposium 2014; London, UK
Conclusions

• Drug Elution key to inhibit restenosis
• Based on latest evidence, candidates for endovascular revascularization of SFA TASC A-B and C without heavy calcium are offered the lowest chance of reintervention with IN.PACT DCB
• Further extensive evidence is forthcoming (IN.PACT GLOBAL) to clarify role of DCB in real world, TASC C-D lesions
• Stents are still likely needed in very calcified lesions and as an essential tool for provisional use in flow-limiting dissections or suboptimal angioplasty
• Each DCB has to stand on the merits of its data. No class effect can be appealed upon.
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