Is there a clinical class effect of drug-coated balloons in peripheral arteries?

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Disclosure

Speaker name: Marianne Brodmann

I have the following potential conflicts of interest to report:

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

- [ ] I do not have any potential conflict of interest
## >12 (!) SFA-DCB Players in EU

<table>
<thead>
<tr>
<th>Manufacturer</th>
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<th>Drug</th>
<th>Dose (μg/mm²)</th>
<th>Excipient</th>
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<td>Cook</td>
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DCB SFA Technologies

Same Drug, Similar Mode of Action, Different Technologies:

- Different Dose ($2.0 \div 3.5 \mu g/mm^2$)
- Different Drug Formulation (crystal vs. amorphous vs. hybrid)
- Different Excipients (or no-excipient)
- Different Surface Energies
- Different Coating Methods
- Different usage method per IFU (i.e. with or w/out protective sheath)

- ………………………..
all DCBs passed «Proof-of-Concept» Test

6-month LLL from 7 Trials / 6 DCB Technologies

<table>
<thead>
<tr>
<th>DCB Technology</th>
<th>Drug Delivery</th>
<th>Lesion Length (cm)</th>
<th>% Occlusions</th>
<th>TH</th>
<th>FEMPAC</th>
<th>LEVANT I</th>
<th>BIOLUX</th>
<th>PACIFIER</th>
<th>ADVANCE PTX</th>
<th>ILLUMENATE FIH</th>
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<tr>
<td>Paccocath</td>
<td>PTX 3 µg/mm² + Ultravist</td>
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<td>1.00</td>
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<td>0.90</td>
<td>0.54</td>
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<tr>
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<td>PTX 2 µg/mm² + Polysorbate &amp; Sorbitol</td>
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<td>Passeo 18 Lux</td>
<td>PTX 3.0 µg/mm² + BTHC</td>
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Class Effect? NO! just a signal of ~ consistent biologic response

6. D.Scheinert – LINC 2013 oral presentation
What is «Class Effect»?

1. A proven uniform performance across a device category

2. “Proven”? an Evidence driven attribute

3. How to measure “Performance” in the absence of head-to-head DCB trials? Take the right metric from the right trials
“Proven” Performance

• **Metric**: Primary Patency
  – measurable, (most) objective Endpoint in Device Trials
  – Corelab adjudicated
  – better if at ≥ 2 year evaluation

• **Trials**: look for essential Quality criteria
  – at least multicenter with independent Corelab and CEC adjudication
### 3 DCB with sound, comprehensive Clinical Programs

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#### 3 DCB with 2-year Core lab adjudicated Primary Patency

- ✓ same definition (PSVR ≤2.4)
- ✓ same KM reporting method
- ✓ same Duplex Core laboratory
Primary Patency defined as freedom from clinically driven TLR and restenosis as determined by a duplex ultrasonography derived PSVR of ≤2.4

- J.Laird et al. Sustained Durability of Treatment Effect Using a Drug-Coated Balloon for Femoropopliteal Lesions: 24-Month Results of IN.PACT SFA J Am Coll Cardiol. 2015
DCB trials with 2-year Core lab adjudicated Primary Patency

Levant 2 (Lutonix)
476-Patient, multicenter Randomized Trial

Primary patency defined as absence of restenosis (defined by DUS PSVR ≥2.5) & freedom from TLR

- K.Rosenfield TCT 2014 oral presentation
- SVS 2015
Primary Patency defined as freedom from clinically-driven TLR and Duplex stenosis >50% (PSVR≥2.5)

1. KM Survival estimates at upper bound of follow-up intervals = 87.7% (day 390) and 80.3% (day 760)

Role of Large scale Registries

- Designed and powered to:
  - unveil DCB performance within the broad PAD spectrum
  - detect potential rare events
- Critical to confirm each DCB’s Efficacy and Safety
- Important to inform the decision whether a DCB class effect exists or not
DCB Class Effect? NO

“...not all DCB are created equal, a ‘class effect’ cannot be anticipated as the results obtained with different DCB are not uniform...”

Drug-coated balloon treatment for lower extremity vascular disease intervention: an international positioning document

Bernardo Cortese¹, Juan F. Granada², Bruno Scheller³, Peter A. Schneider⁴, Gunnar Tepe⁵, Dierk Scheinert⁶, Lawrence Garcia⁷, Eugenio Stabile⁸, Fernando Alfonso⁹, Gary Ansel¹⁰, and Thomas Zeller¹¹*
DCB Class Effect? NO

Likelihood of Class Effect is likely inversely proportional to the number of tech / pharma components characterizing a device category.

Class Effect? YES
- 1. NP / RBP
- 2. Compliance
- 1. Radial Force
- 2. M:A ratio
- 3. Strut Thickness
- 4. Surface Polishing
- 5. Fish-scaling
- 6. Fatigue Resistance

Class Effect? ??

Class Effect? NO!
- 1. Drug
- 2. Dose
- 3. Excipient
- 4. Surface Energy
- 5. Drug Formulation
- 6. Coating Technology

PTA
~ number of Device-specific Tech & Pharma features per device category

BMS

DCB

N of device-specific features
DCB Class Effect? NO

• Clinical Results appraisal is two-step: 1) Quality of Evidence, 2) Quality of Outcomes

• 3 DCBs deserve attention based on the quality of their trials and trial programs

• 2 DCBs deserve adoption based on the quality of such trial’s results

• No Class effect: each DCB stands on the quality of its own evidence and associated outcomes
Is there a clinical class effect of drug-coated balloons in peripheral arteries?

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