Arterial remodeling post DCB: Positive or dangerous?

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Disclosure

Speaker name: Ulrich Beschorner

I have the following potential conflicts of interest to report:

- Consulting/ honoraria:
  C.R. Bard, J&J Cordis, Medtronic, Biotronik
Paclitaxel can induce adverse vascular pathology and transcriptional responses

Table 2  Comparison of histological findings of cuffed femoral artery segments from 14-day control DEC, SEC and PEC (14 days normal cuff plus 14 days DEC)

<table>
<thead>
<tr>
<th></th>
<th>TUNEL+ cells (%)</th>
<th>SMC content (%)</th>
<th>Collagen content (%)</th>
<th>IEL disruption</th>
<th>Medial macrophage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Media</td>
<td>Intima</td>
<td>Media</td>
<td>Intima</td>
<td>Media</td>
</tr>
<tr>
<td>Control DEC</td>
<td>0.27 (0.24)</td>
<td>0.39 (0.24)</td>
<td>25.2 (2.3)</td>
<td>30.8 (2.7)</td>
<td>28.3 (4.9)</td>
</tr>
<tr>
<td>1% SEC</td>
<td>1.99 (0.68)</td>
<td>0.58 (0.24)</td>
<td>27.5 (2.7)</td>
<td>28.0 (1.1)</td>
<td>24.0 (3.4)</td>
</tr>
<tr>
<td>2.5% SEC</td>
<td>1.78 (0.77)</td>
<td>0.42 (0.21)</td>
<td>16.9 (2.9)</td>
<td>21.8 (2.8)</td>
<td>24.0 (3.1)</td>
</tr>
<tr>
<td>1% PEC</td>
<td>0.84 (0.79)</td>
<td>0.95 (0.56)</td>
<td>2.6 (0.9)</td>
<td>10.3 (1.7)</td>
<td>18.6 (1.4)</td>
</tr>
<tr>
<td>2.5% PEC</td>
<td>19.2 (5.7)*‡‡§‡</td>
<td>3.1 (3.08)</td>
<td>3.8 (0.9)*‡‡§</td>
<td>9.4 (3.1)*‡‡</td>
<td>12.7 (2.0)*‡‡</td>
</tr>
</tbody>
</table>

Values are mean (SEM); n=8/group.

DEC, drug-eluting cuff; IEL, internal elastic lamina; PEC, paclitaxel-eluting cuff; SEC, sirolimus-eluting cuff; SMC, smooth muscle cell.

*p<0.05 vs control DEC; †p<0.05 vs 1% SEC; ‡p<0.05 vs 2.5% SEC; §p<0.05 vs 1% PEC.

|IEL disruption was quantified as the number of broken IEL for each cuffed artery segment; medial macrophage content was assessed with a 1–3 score.

Pires et al. Heart, 2007
Late lumen enlargement after DCB in the coronaries


Bernardo Cortese et al. JCIN 2015;8:2003-2009

Late lumen enlargement after DCB in peripheral arteries

Scheinert, CIRSE, 2016

Werk et al., Circinterventions 2012
Clinical case, 76 y female

SFA-CTO recanalization with DCB (Impact) 2011
still patent 2016

Focal dilatation without aneurysmatic deformation
Can DCB cause dangerous aneurysms?

Only 3 cases in retrospective evaluation of 380 DCB PCI with FU-angio

No accumulated cases within all published studies so far

Combination of DCB with adjunctive therapies?

Kleber, Schulz et. al, Eurointervention 2013
DCB+Supera
Clinical case, 68 y male

2013 Severe claudication right calf

Duplex: Long occlusion SFA and APOP
Clinical case, 71 y male

Situation after ISR-treatment with DCB 2011 and 2015

Stents partially exposed
Clinical case, 78 y female

SFA recanalization with DCB and Stenting 2013 (Impact, Everflex)
Reocclusions 2014 and 2015

Stents partially exposed after local lysis

Treatment with VIABAHN
Clinical case, 77 y male

6 month FU
Clinical case, 48 y male

FU
Arterial remodeling post DCB: Positive or dangerous?

Positive in most of the cases!

We should consider that:
- Remodeling could lead to undersized stents
- We still have to learn about potential risks of DAART
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