Under What Conditions Should DEBs Be Used Preferentially:
Diabetics, Calcified Lesions, Extensive Foot Necrosis: What Does It Take To Make DEBs Work Optimally

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I have nothing to disclose

Where do I use DCB in BTK

To be efficacious, DCB should provide adequate paclitaxel amount to vessel wall

Technical aspects of the procedure and Device

- Lesion aggressive pre-dilatation and vessel preparation
- Time of “floating balloon”
- Inflation duration (>2 min)
- DCB only after optimal angioplasty

Balloon sizing and length
Baseline TA and TP long occlusions

**DEB 3X120**

**DEB 2.5X120**

**POBA 3X200**

**1-YEAR POST**

**POBA**

**Deb 3x120**

**Deb 2.5x120**

**Calcium Barrier limit penetration of the drug into the media/adventitia**

**Crack calcification before DCB use**

- High pressure NC ball
- Scoring balloons
- Debugging devices
- Atherectomy
  - Directional
  - Orbital
  - Laser
- Lithoplasty

**Efficacy of DCB in Calcified lesions**

**Lesion preparation to DEB:**

**Lesson learned from the The IDEAS RCT**

- 50 patients, 25(25 lesions) DCB, 25(30 lesions) DES
- Mean lesion length: 148±56 DCB vs 127±46 DES p=0.1
- CTO: 3/25(12%) DCB vs 7/30(23%) DES
- DCB inflation time 1 min

**Single Patient same limb: DEB vs PTA**

- Baseline TA and TP long occlusions
- **POST 1-YEAR**

**Single patient different limb, same vessel, same lesion: DEB**

- **Baseline**
- **POST 5-year**

**Single patient different limb, same vessel, same lesion: PTA**

- **Baseline**
- **POST 5-month**

**suboptimal result after PTA+DCB**

**Dissection vs residual stenosis**

**50 patients, 25(25 lesions) DCB, 25(30 lesions) DES**

**Mean lesion length: 148±56 DCB vs 127±46 DES p=0.1**

**CTO: 3/25(12%) DCB vs 7/30(23%) DES**

**DCB inflation time 1 min**

**DES: 1.35±0.2**

**DEB: 1.15±0.3**

**P value 0.6**

**DES: 3.6±1.5**

**DEB: 4.3±1.6**

**P value 0.16**
Tibioperoneal Trunk occlusion

Baseline

3.0x80mm DCB

Post DCB

12-months

High residual stenosis after undersized DCB low LLL may catch restenosis on follow-up

BASELINE

POST DCB 2.5x80mm

12 MONTHS

12 MONTHS

Tibioperoneal Trunk occlusion

Baseline

DCB 3.0x120mm

Post DCB

12-month

DCB in Calcified Lesion

0.5x120mm DCB

Still waste on the balloon

Not fully expanded

Development

Orbital Atherectomy+ DCB:

Primary lesion treatment with an orbital atherectomy system enhances paclitaxel deposition in calcified peripheral arteries

DIAMONDBACK 360°

Five fresh human limbs

SFA-POP-Tibial calcified artery G35 segments vs control segments

Infused with Radiolabeled 14C or
Fluorescent paclitaxel

Paclitaxel deposition

Paclitaxel deeper diffusion

Lithoplasty

Electromechanical Lithotripsy

Breaks both superficial and deep calcium

No damage to surrounding tissue

Electrodes are built directly into the center of the balloon

No physical movement of the device in the vessel.

POBA or DEB ultimate the procedure after calcium barrier has been ruptured.
Conclusion

❖ Drug Eluting Balloon Technology will represent the fundamental tool to treat crural vessels.
❖ The technique to learn is how to get the best from balloon angioplasty (aggressive predilatation, good sizing, inflation rime) because DCB should be applied after optimal angiographic result.
❖ Possible combination of DCB with other devices, aimed to solve the problem of calcification, may increase patency even in complex scenarios.