New approach for the development and stratification of peripheral stents

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Disclosure

Speaker name:
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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
Company

QMedics AG is a privately held Swiss company founded in 2008. Our main activity was the manufacturing of OEM stent delivery system alongside their balloon dilation catheter.

Since 2016, QMedics became an independent company focusing on the development of its own products portfolio. Our years of experience with production for other companies gave us a broader view to innovate and improve the concept of endovascular implants, particularly stent technology.
Background

- Peripheral artery disease (PAD) is frequent (3-12%).
- Endovascular therapies (Angioplasty, Stenting and Atherectomy) are the Gold-Standard.

Before (A) and after (B) peripheral stenting
Diamantopoulos et al., 2014
Background

Peripheral stent fracture (A) & buckling (B)

Nathan et al., 2017
Background

- 24% of stent fracture at 25 months post-implantation
- 55% in-stent restenosis in the fractured group

Sarkadi et al., 2015

Peripheral stent fracture (A) & buckling (B)

Nathan et al., 2017
Background

Peripheral stent fracture (A) & buckling (B)

Nathan et al., 2017

Two of the contributors are the design and vessel anatomy
QMedics Stents

Back to the basics by implementing anatomical considerations into the design

Klein et al., 2009

Stents properties adapted to specific lesions and vessel behavior

Kasapis & Gurm et al., 2009

TASC classification of femoral popliteal lesions,
QMedics Stents

**The PULL Stent Property**

- Optimal radial compression resistance for **heavily calcified arteries** and difficult to cross lesions
- Adaptation to **axial deformations**

**The FLEX Stent Property**

- Optimal radial compression resistance for **calcified lesions**
- Adaptation to **bending deformations**

Klein et al., 2009

Klein et al., 2009
QMedics Stents

PULL and FLEX stents Ø6mm length 80mm (n=8 stents/group)
QMedics Stents

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Chronic Outward Force

Radial Resistive Force

Competitor 1
ΔCOF: ~ 0.19N/mm
For a Ø6x100mm

ΔCOF: ~ 0.13N/mm

ΔCOF: ~ 0.1N/mm

ΔCOF: ~ 0.09N/mm

Vessel Ø range during leg motion

PULL and FLEX stents Ø6mm length 80mm (n=8 stents/group)
Conclusion

The PULL property is adapted for **heavily calcified lesions**

+++ Radial Resistive Force

The PULL and FLEX properties have a **low COF variation** for a wide $\varnothing$ change

These stents could provide an optimal scaffolding for specific lesions and vessels.
Thank you for your attention
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