Vascular responses and drug transfer upon treatment with the Reflow Medical’s Coated Temporary Spur Stent System

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Disclosure

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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
Reflow Medical’s Coated Temporary Spur Stent System

Background

- DES and DEB reduce restenosis but,
- lesion calcification hinders drug up-take
- permanent implants induce foreign body reactions

Aim

- reach penetration in calcified lesions
- increase uptake and retention of the drug deep in the diseased artery walls
- avoid permanent implants

Methods

Deployment of self-expanding stent system that contains radially outwards series of spurs
ReFlow Medical’s Coated Temporary Spur Stent System: Design

Spur System

Coated Spur

Drug

Treatment

Artery with plaque

ReFlow Drug Coated spur released

Post-dilated: drug transfer promoted by penetration of spikes through plaque

Retracted: drug in the vessel wall
Reflow Medical’s Coated Temporary Spur Stent System: Neointimal model

Porcine vessel overstretch plus ReFlow temporary stent versus permanent stent

Implantation of permanent stent induces neointimal proliferation
4 weeks post procedure
Reflow Medical’s Coated Temporary Spur Stent System: Coating transfer in porcine arteries

Spur coated with paclitaxel and nile red (just as experimental marker)

Spur system enables the transfer of coating to the vessel wall
Reflow Medical’s Coated Temporary Spur Stent System in Porcine Model

Conclusion

• No detectable damage in vascular morphology after 4-weeks
• No neointimal thickening as with a permanent stent
• Spikes promote drug coating transfer deep into the vessel wall

Next Steps

➢ Investigation on the effect of antiproliferative coating on neointimal proliferation