Lunch symposium: Drug-coated balloons for peripheral interventions: a 360° virtual reality experience Discussion Forum Wednesday **12:35**

LEGDEB and REFLOW data encouraging for LEGFLOW® – the new kid on the block

Preliminary results suggest that the LEGFLOW® drug-coated balloon (DCB) is a valid and effective alternative for the treatment of femoropopliteal lesions, according to 12-month data from the LEGDEB trial and six-month data from the REFLOW trial, presented for the first time yesterday.

Speaking to a packed hall at the CARDIONOVUM-sponsored lunchtime symposium, Eric Ducasse (Bordeaux, France), Marc Bosiers (Dendermonde, Belgium), Enrico Maria Marone (Pavia, Italy) and Koen Deloose (Dendermonde) shared their expertise on 'Drug-coated balloons for peripheral interventions: a 360°experience'.

Co-chairing the symposium were Peter Goverde (Antwerp, Belgium) and Dirk Scheinert (Leipzig, Germany). During their opening address, they drew attention to the fact that earlier in the day Dr Eugenio Stabile (Naples, Italy) presented, for the first time, the one-year LEGDEB results of the real word registry. These results showed that in a real-world population with SFA, LEGFLOW achieved favorable outcomes, that is 100% procedural and technical success rates; 83.3% freedom from TLR (target lesion revascularisation) at 12 months, in a population with worse clinical status than in most clinical trials.

Adding to a growing evidence base for LEGFLOW®, a paclitaxel (PTX)-coating balloon, Professor Bosiers reported the eagerly awaited results of REFLOW's interim analysis of the first 65 patients at six-months follow-up.

Commenting on the significance of LEGFLOW® and the latest results, Professor Bosiers pointed out that for years the gold standard treatment for long and complex femoropopliteal lesions had been bypass surgery. "DCBs have revolutionised the way we can treat those lesions endovascularly," he said. "The preliminary REFLOW results show that with the newest generation DCB from CARDIONOVUM, we now may have a non-invasive way to treat these complex lesions successfully."

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Globally, over 200 million people suffer from peripheral artery disease, and as atherosclerotic risk factors increase, and the population ages, prevalence is likely to rise further requiring yet more sophisticated techniques and equipment.

In response to this growing need, some high-performing DCBs are already available on the market. Such DCBs have a stable coat¬ing matrix and have well-controlled, efficient drug transfer to the ves¬sel wall. These features make them well placed to respond to the latest trends for drug-coated technologies and less metal implantation to overcome in-stent restenosis (ISR) treatment, including in longer and more complex superficial femoral artery (SFA) lesions. The LEGFLOW® PTX-coated peripheral balloon fits this mould.

"It is going to be an exciting session," said Dr Scheinert, introducing the symposium on LEGFLOW®. "We'll discuss DCB technology for peripheral interventions but within a very special set up – with an esteemed faculty of speakers. Beside the lectures, we have a unique presentation of the recorded cases with a 360°experience."

LEGFLOW demonstrates consistent predictable drug delivery to target lesions and has the lowest PTX wash-off rates (<0.2%) currently available via laboratory tests under simulated blood conditions. It also satisfies three important requirements from a DCB: the balloon platform, the stability of the coat¬ing matrix, and drug-tissue transfer and residency. The balloon tracks well, is highly pushable, has outstanding deliverability and is available up to 200 mm length. The balloon platform is also designed to allow high, homogeneous inflation pressures that ensures good vessel wall apposition and is particularly suitable to break, score, and sculpt heavily calcified plaques.

REFLOW

The prospective, multi¬-centre, physician-sponsored REFLOW study includes 120 patients, and evaluates the performance of LEGFLOW® for the treatment of long femoropopliteal lesions (TASC C&D lesions) with duplex ultrasound. Main inclusion criteria are Rutherford classification 2-5, de novo lesion, and a total target lesion length greater than 150 mm. The primary endpoint is primary patency at 12 months, with patency at six months being a secondary endpoint. Target lesion revascularisation (TLR) was assessed at six and 12 months.

Results from 65 patients out the 101 recruited were included in the interim analysis. Mean procedure time was 49 minutes, mean lesion length was 218 mm, and bail-out stenting was performed in 20% of patients. Professor Bosiers reported that six-month primary patency was 84.1%, and six-month freedom from TLR was 88.9%.

Switching to a live recording of a procedure, Professor Marone treated the audience to a 360° virtual reality recording of a 69-year-old woman undergoing recanalisation of the popliteal artery using LEGFLOW®. "You can move your head and look around the theatre, watching the operator or the screen, or monitor the physiology. It's totally different to any previous experience. It's like being in the room with me operating," he told *LINC Today* ahead of the meeting.

Professor Marone explained why he was particularly fond of LEGFLOW®. "I don't need to rush to reach the target lesion since paclitaxel leakage is minimised," he said. Like some operators, he has chosen to perform the procedure without predilatation, in order to minimise dissection issues, procedure time and procedure cost. This is off-label for the device and is not recommended by the manufacturer.

"LEGFLOW® has different characteristics to other DCBs because of the coating, so I did not have to predilate due to the new matrix," explained Professor Marone. "It's cheaper and faster with LEGFLOW® because I use one balloon, not two."

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Professor Ducasse shared his understanding and experience of the value of using SAFEPAX® balloon. First generation DCBs showed promising results but most patients were only claudicants and several technical issues were raised, especially the fact that not all DCB's are equal, remarked Professor Ducasse. "Indeed, current DCB technology requires the drug to be loaded in a crystalline form and same concentrations of paclitaxel do not always lead to the same effects due to inconsistent formulation, drug coating and elution excipients" he said.

Older DCBs mostly used highly hydrophilic drug excipients, lead to a highly unstable surface coating, responsible for insufficient drug adherence in the dry state, drug loss to the subsequent folding process, undesired peaks in drug uptake, wash-off during catheter advancement and crystallization of large particles responsible for capillary bed embolization with unknown consequences on wound healing, he added. "Hence, application of DCBs in small-calibre vessels demonstrated a safety signal in critical limb ischemia (CLI) patients driven by a higher rate of limb amputations."

With SAFEPAX® technology, nanocrystalline non-visible PTX (0.1µm) particles are embedded into a homogenous and stable surface coating, rending the use of extra DCB protection and insertion tools unnecessary, and providing maximum protection from downstream microembolisation effects. These developments make LEGFLOW® the third generation of DCBs, and a valuable treatment option for SFA, popliteal and BTK arteries.

Remaining with the topic of microembolisation, Dr Deloose turned to how to protect patients to the potential risk of microembolisation in patients with chronic limb ischaemia (CLI). He remarked that a DCB coating must deliver large quantities of drug within a few seconds, and that therapeutic levels of the drug should be maintained for at least four weeks. Noting that paclitaxel embolisation occurs with all DCBs, he pointed out that the degree of embolisation varies with the device. He added that some differences in embolisation do not manifest clinically in claudicants, but may be an issue in patients with tissue loss. He reinforced that downstream particulates of different DCBs are a real phenomenon linked to coating stability.

Dr Deloose highlighted that downstream particles of paclitaxel is a real phenomenon but with very clear differences between different brands. "The impact as mass and toxic effects of large paclitaxel particles downstream on wound healing in CLI patients with poor distal vessel run-off is still unknown."

"With a third generation DCB, like the LEGFLOW®, with homogeneous PTX release and efficient SAFEPAX mediated vessel uptake, physicians are feeling more comfortable in treating CLI patients," he asserted.

Finally, during his summing up, Professor Goverde said that: "CARDIONOVUM DCBs are being studied in highly challenging populations, in lesions other studies have avoided. We have seen at LINC 2018 consistent high rates of patency. LEGFLOW is the new kid on the block."