

Abstract number: Euro17A-OP1151

Abstract type: Oral Presentation

Reference: This abstract was presented at EuroPCR 2017, 16-19 May 2017, Paris

Link: <https://abstractbook.pcronline.com/export/pdf/id/1151>

Published on: 16 May 2017

OCT and histopathological pre-clinical evaluation of an enhanced polytetrafluoroethylene-covered stent in a peripheral swine animal model: addressing the anatomical challenges of the lower limb stenting procedure

TELLEZ A.(1), BUSZMAN P.P.(2), DILLON K.N.(1), BRADY D.(1), FERNANDEZ C.A.(2), MICHALAK M.(2), CURADO L.(3), CORDEIRO E.(3), MOREIRA A.(3), BUSZMAN P.E.(2), ROUSSELLE S.(1), MILEWSKI K.(2)

(1) Alizee Pathology, Thurmont UNITED STATES(2) Center for Cardiovascular Research and Development of American Heart of Poland, Katowice POLAND(3) Scitech Medical, Sao Paulo BRAZIL

THEME: Peripheral Interventions

TOPIC(S): Below the knee, Iliac / Femoral / Popliteal, Other peripheral interventions

AIMS

We aim to evaluate the performance and vascular response of a novel, high flexibility, high biocompatibility peripheral covered stent in a porcine restenosis model.

METHODS AND RESULTS

Six domestic swine were included in this study (45 ± 1 kg). Based on angiographic QVA, the superficial femoral arteries were randomized for either the implantation of a Solaris (Scitech, Sao Paulo, Brazil) or Fluency (Bard, Tempe, AZ) 40 mm long stent grafts with 110% overstretch. Subsequently, animals were followed for 30 days. At terminal imaging, all stents were evaluated with optical coherence tomography (OCT), explanted and subjected to stent integrity analysis and histopathological evaluation. A total of 11 stents were evaluated (Solaris n=6, Fluency n=5). Solaris stent demonstrated improved deliverability when compared to the reference stent graft. At 30 days, OCT revealed a similar stent area for both groups (Solaris 25.8 ± 4.7 vs Fluency 24.7 ± 5 mm²; $p=0.7$). There was a trend toward higher lumen area in the Solaris stent (18 ± 4.2 mm vs Fluency 13.9 ± 3.4 mm²; $p=0.11$) as a consequence the neointimal hyperplasia was lower as expressed as lower percentage stenosis in the study group (Solaris 31.9 ± 7 vs Fluency $44.8 \pm 6\%$; p). The integrity analysis of the stents via radiographs revealed no fractures in any stent from either group. The results of the histopathological evaluation will be presented in the meeting.

CONCLUSIONS

The Solaris PTFE-covered peripheral stent demonstrated a resistance to fracture with increased flexibility and navigability and better conformability to artery curvature. The release system allowed for an accurate geographical delivery and the components of the device produced a lower OCT morphometrically-assessed neointimal response when compared to the control group.