Conclusions: In this in-first-in-human feasibility study, the theoretical concerns of higher-frequency IVUS were not documented in clinical settings, demonstrating a comparable ability of 60MHz imaging in measurements of diseased coronary arteries as compared with conventional 40MHz imaging.

Corresponding IVUS images obtained at 40MHz (left) and 60MHz (right). A dissection starting at 5 o’clock and extending counterclockwise can be easily detected in the 60MHz IVUS image but cannot be well appreciated in the 40MHz IVUS image.

TCT-290
Vascular tissue reaction to acute malapposition in human coronary arteries: sequential assessment with optical coherence tomography
Juan Luis Gutierrez-Chico1, Joanna Wyckzynkowska2, Karel Koch3, Jacques Koolen4, Carlo Di Mario5, Stephan Windecker6, Gerrit Anne Van Es7, Peter Juni8, Evelyn Regar9, Patrick Serruys10
1.09 – 1.74). Acute ISA size (estimated as ISA volume or maximal ISA distance per strut) was tested for a combined-model approach using cross-validation.

Results: Thin regions were present in 70/901 (7.8%) sections and thick regions were present in 120/901 (13.3%) sections. The algorithm classified thin and thick fibrous cap regions with an AUC of 0.78 (95% CI0.72-0.85). Very good reproducibility for separate catheter acquisitions was demonstrated: correlation coefficients of 0.96 for thin regions and 0.92 for thick regions. A retrospective analysis of fibrous cap thickness conducted in clinical NIRS scans containing LCPs, shows applicability of the technique to in vivo images.

Conclusions: This novel catheter-based NIRS system already in clinical use to identify LCPs in patients, accurately and reproducibly classified fibrous caps overlaying LCP through blood in coronary autopsy specimens. Assessment of fibrous cap thickness may be of value in management of patients with coronary artery disease and development of anti-athero drugs.

TCT-292
Evaluation of Neointimal Healing and Late luminal Loss of Endothelial Progenitor Cell Capturing Sirolimus-Eluting (COMBO) Stent by Optical Coherence Tomography: the EGO-COMBO Study
Stephen Wai Luen Lee1, Simon CC Lam1, Kelvin KW Chan1, Frankie CC Tam1, Michael KL Wong1, Anthony YT Wong1, Arthur SY Yung1, Shun Ling Kong2, Raymond HW Chan2, Rosana Mehraz2, Akiko Maehara2
1. Queen Mary Hospital, University of Hong Kong, Hong Kong, 2. Mount Sinai School of Medicine, USA, 3. Cardiovascular Research Foundation, NY, USA

Background: After the first-in-man REMEDIE Study report, the dual therapy COMBO Stent (OrbusNeich Medical, FL, USA) was further evaluated for its in-vivo pro-healing benefit and neointimal suppression as a DES in this Study.

Methods: In this prospective, single center study, 61 patients treated by COMBO Stent (9 months DAPT) were randomly assigned to 4 monthly groups (2nd to 5th month, 1:2:2:1 ratio). OCT was performed sequentially 3 times at baseline PCI, early follow-up and 4 months post PCI, and late follow-up.

Conclusions: The COMBO stent is the first DES with a healing profile established (rapid event adjudication, core lab. QCA & OCT analyses were undertaken by Cardiovascular Research Foundation, NY.

Results: 61 patients (32% DM) received 88 COMBO stents. From 2nd to 5th month group, covered struts % increased significantly from 77.2%, 82.2%, 91.5% to 98.1% (100% coverage at 150 days; refer to Figure). At 9 months, mean OCT neointimal thickness was 0.135mm and area 1.259 mm2, with a corresponding QCA late loss of 0.31mm. At 9-month FU, 1 patient had non-ischemic angiographic stenosis treated by simple ballooning; otherwise no other MACE (restenosis nor stent thrombosis) was recorded to date, totaling a MACE rate of only 1.6% (1/61) throughout a mean FU period of 508 days. Final core lab. results are pending.

Conclusions: The COMBO stent is the first DES with a healing profile established (rapid strut coverage). The promising outcomes after almost 18 months FU appeared to support the benefits of the dual therapy approach.