Percutaneous coronary intervention (PCI) using DES in the setting of myocardial infarction causes a higher incidence of acute incomplete stent apposition (ISA), which may contribute to delayed healing. Guidance with optical coherence tomography (OCT) may lower the incidence of acute ISA and thereby provide better stent coverage. We assess the proportion of uncovered struts 6 months after OCT- versus angio-guided implantation of the Biolimus-eluting Nobori stent (BES) (Terumo) with biodegradable polymer in patients with Non-ST segment elevation myocardial infarction.

Methods: The OCTACS trial enrolled 100 patients. After obtaining an optimal angiographic result, patients were randomized 1:1 to either (1) OCT- or (2) angio-guided PCI. OCT was performed in both groups, and the operator was blinded to the OCT imaging in group 2. OCT-criteria indicating further intervention in group 1 were: Stent under expansion, acute ISA, significant edge dissection and/or significant residual stenosis. If criteria were met, additional balloon dilation(s) and/or stenting was performed followed by a final OCT. Primary endpoint is difference in proportion of uncovered struts at 6 months.

Results: Baseline characteristics were balanced between the OCT- vs. the angio-guided group, including mean age (61.8±9.4 years vs. 62.6±11.0 years, p=0.68, respectively). Further intervention was done in 46% of the OCT-guided patients, and maximal balloon pressures were significantly higher (16.8±5.9 atm. vs. 15.0±2.6 atm., p<0.05), and procedure- and fluoro times were substantially longer (46.0 (16.0-125.0) min. vs. 34.0 (17.0-99.0) min., p=0.05 and 11.8±7.2 min vs. 8.4±3.9 min., p<0.05, respectively). Six months difference in proportion of uncovered struts and dynamic ISA patterns will be presented at TCT 2014.

Conclusions: OCT guided BES implantation might contribute to better stent coverage by reducing the incidence of acute ISA.