Single long stent vs. overlapping multiple stents in the management of very long coronary lesions: comparison of success rates and one-year clinical outcomes

(1) Tehran Heart Center, Tehran University of Medical Science, Tehran ISLAMIC REPUBLIC OF IRAN (3) Mayo Clinic Hospital, Methodist Campus, Rochester UNITED STATES

AIMS
Different percutaneous coronary intervention (PCI) strategies including using the single long stent (SLS) and overlapping multiple stents (OMS) have been introduced to treat very long coronary lesions (VLCL). However, which of these two strategies provides better clinical outcomes is yet unclear. The aim of this study was to compare procedural and long-term clinical outcomes of SLS versus OMS in patients with VLCL.

METHODS AND RESULTS
In this cohort study, 1709 patients who underwent PCI by new generation of drug eluting stent(s) with length ≥38mm were stratified into SLS [Promus-Resolute-Xience (PRX), (=38 mm), n=1121, 65.59%, BioMime, (≥40mm), n=124, 7.26%] and OMS [(59.4±10.8), n=464, 27.15%] groups and followed for 441±361 days. The study endpoints included both immediate post-PCI outcomes, and major adverse cardiovascular event (MACE), patient-oriented composite endpoint (POCE) and device-oriented composite endpoint (DOCE) at long-term follow-up. TIMI Flow 3 (p=0.296) and residual stenosis (p=0.533) were statistically similar among all groups. A lower level of troponin was observed in BioMime [14.4(11)ng/L].

CONCLUSIONS
In the treatment of VLCL, SLS and OMS had similar clinical outcomes. BioMime ultra-long stents showed comparable results to PRX coronary stents.