# Results from host-reduce-polytech-ACS trial reported

19 October 2020

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A randomized clinical trial found that drug-eluting stents (DES) with durable polymers are non-inferior to DES with biodegradable polymers in patients with acute coronary syndrome (ACS).

Findings were reported today at TCT Connect, the 32nd annual scientific symposium of the Cardiovascular Research Foundation (CRF). TCT is the world's premier educational meeting specializing in interventional cardiovascular medicine.

Newer drug-eluting stents (DES) have significantly improved outcomes among patients undergoing percutaneous coronary intervention (PCI). However, the polymers used in first-generation DES were blamed as the cause of a chronic inflammatory response that leads to stent-oriented adverse clinical outcomes, such as stent thrombosis. Biocompatible durable polymers and biodegradable polymers (which dissolve over time) were developed to help mitigate this adverse effect.

The comparison of these two polymer technologies in patients with ACS, who have a heightened risk of thrombosis and delayed vascular healing after PCI, has not been previously examined in a large-scale randomized trial. The aim of the HOST-REDUCE-POLYTECH-ACS trial was to investigate the efficacy and safety of a durable polymer DES versus a biodegradable polymer DES in patients with ACS undergoing PCI. Patients with a culprit lesion in a native coronary artery or a graft vessel with significant stenosis eligible for stent implantation were randomized in a 1:1 fashion to durable polymer or biodegradable polymer DES.

The primary endpoint was a patient-oriented composite outcome (POCO), defined as a composite of all-cause death, nonfatal myocardial infarction, stent thrombosis, and any repeat revascularization, at 12 months. The key secondary endpoint was a device-oriented composite endpoint (DOCO), a composite of cardiac death, target vessel myocardial infarction, or target lesion revascularization.

In this investigator-initiated, randomized, open-label, multicenter trial, a total of 3,413 ACS patients with 4,713 lesions were enrolled from 35 centers and were randomized to the durable polymer DES group (1,713 patients, 2,367 lesions) or the absorbable polymer DES group (1,700 patients, 2,346 lesions).

The rate of POCO was 5.2% in the durable polymer DES compared to 6.4% in the biodegradable polymer DES group (HR 0.81, 95% CI 0.61-1.08, p=0.146). The rate of DOCO was slightly higher in the biodegradable polymer group (2.6% vs. 3.9% HR 0.67, 95% CI 0.46-0.98, p=0.038).

"In ACS patients who had a significant coronary

stenosis and were eligible for stent implantation, durable polymer DES was non-inferior to biodegradable polymer DES, in terms of one-year patient oriented composite outcomes," said Hyo-Soo Kim, MD, Ph.D. Dr. Kim is Director, Coronary Intervention and Transcatheter Aortic Valve Implantation, and Professor, Department of Internal Medicine at Seoul National University Hospital. "Regarding the device oriented composite outcome, we observed a sign of higher clinical events in the biodegradable polymer DES. More research is needed to assess the effect of polymer technology on clinical outcomes greater than one-year post PCI."

Provided by Cardiovascular Research Foundation