

Study compares outcomes for different methods of drug-releasing stent implantation

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Myeong-Ki Hong, M.D., Ph.D., of the Yonsei University College of Medicine, Seoul, Korea and colleagues randomly assigned 1,400 patients with long coronary lesions to receive intravascular ultrasound-guided (n = 700) or angiography-guided (n = 700) everolimus-eluting stent implantation. This *JAMA* study is being released to coincide with its presentation at the American Heart Association's Scientific Sessions 2015.

Even though recent guidelines recommend the use of intravascular ultrasound (IVUS) to optimize stent implantation for select [patients](#), the effect of IVUS-guided drug-eluting (releasing) stent implantation on [clinical outcomes](#) remains uncertain because of the limited number of properly powered randomized trials.

For this trial, one-year follow-up was complete in 1,323 patients (94.5 percent). Major adverse cardiac events (including [cardiac death](#), target lesion-related [heart attack](#), or ischemia-driven target lesion revascularization) at 1 year occurred in 39 patients (5.8 percent) undergoing angiography-guided and in 19 patients (2.9 percent) undergoing IVUS-guided stent implantation (a 2.9 percent absolute reduction and 48 percent relative reduction). The difference was driven by a lower risk of ischemia-driven target lesion revascularization in patients undergoing IVUS-guided (17 [2.5 percent]) compared with angiography-guided (33 [5 percent]) stent implantation.

Cardiac death and target lesion-related heart attack were not significantly different between the 2 groups. For cardiac death, there were 3 patients (0.4 percent) in the IVUS-guided group and 5 patients (0.7 percent) in the angiography-guided group. Target lesion-related heart attack occurred in 1 patient in the angiography-guided stent

implantation group.

"Our findings suggest better clinical outcomes for major adverse cardiac events with IVUS-guided stent implantation compared with angiography-guided [stent implantation](#), particularly for diffuse long lesions," the authors write.

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