

# Drug-eluting stents are preferred therapy for revascularization of chronic total occlusions

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A systematic review of medical evidence has determined drug-eluting stents (DES) outperform bare metal stents (BMS) for revascularization of chronic total occlusions. Researchers found coated stents reduce restenosis and target revascularization, offering a safe approach with similar adverse events as BMS. Full findings are available in the February issue of *Catheterization and Cardiovascular Interventions*, a journal published by Wiley-Blackwell on behalf of The Society for Cardiovascular Angiography and Interventions.

Medical evidence maintains that chronic total occlusions (CTOs)-with routinely low procedural success and high incidence of target vessel failure-represent the most challenging type of coronary lesion in interventional cardiology. While specialized guidewires and advanced techniques have improved CTO angioplasty, high rates of restenosis and reocclusion remain a challenge.

To determine the performance of DES implantation in CTOs, Emmanouil Brilakis, MD, PhD, FSCAI-of VA North Texas Healthcare System and the University of Texas Southwestern Medical Center in Dallas-and colleagues performed a systematic review of medical literature published in online databases (PubMed, EMBASE, Cochrane Library) and cardiology societies' websites. The researchers found 17 published studies that reported outcomes for sirolimus- or paclitaxel-eluting stents and BMS implantation for coronary occlusions.

"Our findings confirm that treatment of total coronary occlusions with DES is associated with significant reductions in angiographic and clinical restenosis, compared with BMS," said Dr. Brilakis. Analysis of angiographic outcomes in the studies revealed less restenosis with DES implantation compared to BMS (odds ratio - 0.15). At 6 to 12 months, target lesion and vessel revascularization were also consistently lower among DES-treated

patients (odds ratio of 0.13 and 0.18, respectively). In a 19-month follow-up period the cumulative incidence of mortality, heart attack, or stent thrombosis was similar between DES and BMS in all studies.

Dr. Brilakis concluded, "The consistency and magnitude of treatment effect in the individual studies and meta-analysis establish DES as the standard therapy for CTO [revascularization](#). Large, prospective trials that offer additional information on the role of DES in CTO, and determine if second generation DES could provide even more favorable outcomes are needed." Currently, three such studies are underway in the Netherlands, Spain, and the U.S. which will provide further medical evidence on the use of DES in treating total occlusions.

**More information:** "Use of Drug-Eluting Stents for Chronic Total Occlusions: A Systematic Review and Meta-analysis." Bilal Saeed, David E. Kandzari, Pierfrancesco Agostoni, William L. Lombardi, Bavana V. Rangan, Subhash Banerjee, and Emmanouil S. Brilakis. *Catheterization and Cardiovascular Interventions*; Published Online: June 14, 2010 ( [DOI:10.1002/ccd.22690](https://doi.org/10.1002/ccd.22690) ); Print Issue Date: February 2011.

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