

DOWNSTREAM CORONARY EFFECTS OF DRUG ELUTING STENTS: UNINTENDED THERAPEUTIC TARGET?

ACC Poster Contributions

Georgia World Congress Center, Hall B5

Monday, March 15, 2010, 3:30 p.m.-4:30 p.m.

Session Title: Vascular Biology/Atherosclerosis/Thrombosis/Endothelium

Abstract Category: Vascular Biology/Atherosclerosis/Thrombosis/Endothelium

Presentation Number: 1221-357

Authors: George Cater, Ganesh P. Devendra, Mehdi Shishehbor, Steven E. Nissen, Stephen G. Ellis, Richard A. Krasuski, The Cleveland Clinic, Cleveland, OH

Background: Drug eluting stents (DES) target local endothelial trauma and prevent in-stent restenosis. Downstream (paracrine) effects of DES have not been previously examined. To study this we compared downstream lesion development in patients receiving either DES or bare-metal stents (BMS).

Methods: A large single-center interventional database was utilized to identify patients undergoing initial PCI with implantation of a single stent in a proximal coronary artery with no initial downstream disease who returned for subsequent intervention. In these 463 patients, a non-intervened control vessel was also identified. Endpoint was defined as the angiographic identification of a de-novo stenosis in the downstream vessel within 12 months of initial PCI.

Results: Among the 342 BMS patients and 121 DES patients, 68 lesions were identified in the target vessels compared to 32 lesions in the control (p<0.001). There was lesser likelihood of lesions downstream to DES (13% vs. 32%, p= 0.005). No difference in downstream lesions was seen in the respective control vessels (8% vs. 16%, p=0.20). Using a multivariable hazards model, only use of DES predicted freedom from downstream stenosis (HR: 0.38, 95%CI: 0.18-0.72, p=0.002).

Conclusions: Patients receiving DES are less likely to develop downstream lesions compared to BMS, suggesting downstream drug delivery. Control vessels were not affected suggesting limited systemic delivery. The use of a stent for paracrine drug delivery deserves further study.

