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Long-term clinical outcomes of drug-eluting stents in diabetic patients with small vessels compared to larger vessel - up to 7 years clinical follow-up

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Objectives: To analyze the effectiveness of Drug-eluting stents (DES) in small vessels in patients with non-insulin-dependent (NIDDM) and insulin-dependent diabetes mellitus (IDDM).

Background: Several randomized trials have shown DES to significantly reduce the angiographic and clinical events in diabetic patients. However, there is insufficient data on similar outcomes in diabetics with small vessels.

Methods: We studied 258 consecutive diabetic patients (173 NIDDM and 85 IDDM) who underwent coronary stenting with DES, divided into 2 cohorts: Group A (vessels < 2.7 mm): 163 patients, and Group B (vessels ≥ 2.7 mm): 95 patients. We analyzed the major adverse cardiac events (MACE) [death, nonfatal myocardial infarction MI, and target lesion revascularization TVR] over a mean follow-up of 48.4 +/-14.8 months (maximum 84 months).

Results: Group A patients had: smaller reference diameter (2.4 ± 0.31 versus 3.14 ± 0.2 mm, $p=0.0001$), longer lesions (19.3 ± 9.5 versus 16.7 ± 7.1 mm, $p=0.023$), more complex lesions: (B2/C) (80.7 versus 52.6%, $p<0.033$), bifurcation lesions (25.8 versus 11.6%, $p=0.007$), diffuse disease (42.9 versus 26.3%, $p=0.008$), multivessel (32.5 versus 18.9%, $p=0.019$), eccentric lesions (57.1 versus 43.2%, $p=0.031$), more stents implanted (1.99 ± 1.6 versus 1.7 ± 1.3 , $p<0.0001$), and more overlapping stents (29.4 versus 13.7%, $p=0.004$). During the follow-up, both groups had overall similar MACE (10.4 versus 11.6%, $p=0.9$) with insignificant higher restenosis (9.2 versus 8.4%, $p=0.832$) and TVR (7.4 versus 6.3%, $p=0.75$) in Group A. There was no difference in death ($p=0.111$) or MI ($p=0.858$). Both groups had similar stent thrombosis rate (1.2 versus 1.1%, $p=0.899$), angina events (10.4 versus 16.8%, $p=0.137$), abnormal stress Thallium (14.1 versus 14.7%, $p=0.890$), and hospital days (2.91 versus 3.57, $p=0.886$).

Conclusion: Despite complex angiographic characteristics, the use of DES in diabetic patients with small vessel showed favorable clinical outcomes and similar low TVR compared to those with large vessel.

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