

# Efficacy of percutaneous coronary intervention in diabetic patients — local results with global impact

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**Introduction:** Diabetes mellitus is combined with high risk for the development of coronary artery disease (CAD). Revascularization in diabetic patients is challenged by a more diffuse atherosclerotic coronary disease, a higher propensity to develop re-stenosis and unremitting atherosclerotic progression causing new stenosis.

**The goal:** To assess efficacy, safety and long-term survival of diabetic patients with multivessel CAD treated with percutaneous coronary intervention (PCI) and drug-eluting stent implantation (DES).

**Patients and Methods:** We included 28 patients with stable/unstable angina or non-ST segment elevation myocardial infarction (age 66±15) and with basal characteristics and inherent risk comorbidities as stated in **Table 1**. After the coronarography was done and multivessel CAD was confirmed (significant stenosis in more than 2 epicardial vessels and/or stenosis of the left main coronary artery) patients were offered, regarding optimal evidence-based medical possibilities, surgical revascularization or PCI. The latter ones entered the PCI arm of the study and were treated with PCI using DES. After the patients underwent coronarography,

SYNTAX score was calculated which classifies patients into low, medium and high SYNTAX score group (SYNTAX score <22, 23-32 and >33). Following PCI, all the patients were treated by using optimal medical therapy (**Table 2**). The patients were subjected to secondary coronarography after one year of follow-up or earlier based on clinical indication.

**Results:** After the median follow-up of 3.4 years, we found that the highest incidence of major adverse cardiac and cerebrovascular event (MACCE) was observed in high SYNTAX score group (100%) as opposed to absence of MACCE in the low SYNTAX score group (**Table 3**). The need for repeated revascularization was 14.3% and the overall registered primary outcome prevalence (composite of death, myocardial infarction and stroke) was 21.4%. None of the patients had stroke and the incidence of myocardial infarction was 14.2% (all observed in high SYNTAX score group).

**Conclusion:** The results of our study are comparable to the results of large randomized clinical trials conducted worldwide which studied the efficacy of PCI in multivessel disease as well as compared PCI strategy with surgical revascularization. Therefore, we find that these results indicate the possibilities of implementing and performing "state-of-the-art" cardiovascular procedures even in somewhat small clinical centers as ours whilst obtaining results comparable to the ones achieved in large global centers.

**KEYWORDS:** diabetes, multivessel coronary artery disease, drug-eluting stent.

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**Table 1.** Baseline characteristics, comorbidities and calculated SYNTAX score in the group of patients treated with percutaneous coronary intervention and drug-eluting stent implantation.

Characteristic	DID-DES
No. of patients	28
Age	66±15
Male	57%
Hemoglobin A1c	8.0±1.8
Current smoker	21%
Hypertension	71%
Hyperlipidemia	64%
SYNTAX	28±10

DID-DES = Coronary procedures and Interventions in Diabetics — DES implantation

**Table 2.** Percentage of patients receiving optimal medications after percutaneous coronary intervention.

Medication	DID-DES
Aspirin	100%
Thienopyridine	100%
Statin	93%
Beta blocker	86%
ACE inhibitor	89%

DID-DES = Coronary proceDures and Inter-ventions in Diabetics — DES implantation

**Table 3.** Final results after median follow-up of 3.4 years.

OUTCOME	DID-DES
Primary outcome (Death/Stroke/MI)	21.4% (8 pts)
Myocardial infarction	14.2% (4 pts)
Stroke	0% (0 pts)
Repeat revascula- rization	14.3% (4 pts)

DID-DES = Coronary proceDures and Inter-ventions in Diabetics — DES implantation

## Literature

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