The impact of diabetes mellitus on early and late mortality and major adverse cardiac events after percutaneous coronary intervention with drug-eluting stents

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Background: Diabetics generally have worse outcomes following percutaneous coronary intervention (PCI). The introduction of drug-eluting stents (DES) has reduced the rate of restenosis, but the effect on major adverse cardiac events (MACE) is unclear.

Methods: We analysed 5,068 patients who underwent PCI from the Melbourne Interventional Group (MIG) registry. Diabetics comprised 23% of the patient group.

Results: Diabetics were more likely to be older and have hypertension, dyslipidaemia, previous MI, and be treated with a small (<2.5mm) stent (all p<0.0001). Non-diabetics were more likely to be current smokers and present with a ST-elevation MI (both p<0.0001). Diabetics had greater DES use (68.1% vs. 47.1%, p<0.0001). Thirty-day follow-up demonstrated that mortality and MACE were significantly higher in diabetics (3.2% vs. 1.6%, p<0.001; and 7.4% vs. 5.9%, p<0.05, respectively). Twelve-month follow-up demonstrated that DES use reduced target-lesion revascularization in diabetics (4.3% vs. 10.8% for bare-metal stenting, p=0.01), and that target-lesion revascularization was similar in diabetics and non-diabetics (6.5% vs. 5.3%, p=0.29). Despite this, there was excess mortality (6.6% vs. 3.6%, p=0.002) and MACE (18.1% vs. 13.8%, p=0.01) amongst diabetics at 12 months. Logistic regression revealed that the strongest predictors of MACE at 12 month were the presence of diabetes (OR 1.5; 95% CI 1.2-2.0) and the absence of a DES (OR 1.6; 1.2-2.1).

Conclusions: Despite the frequent utilization of DES in diabetic patients undergoing PCI, and the attendant reduction in the need for repeat revascularization, diabetics continue to have excess mortality and MACE at 12 months.