Objectives To compare the clinical outcomes of CABG and PCI with drug-eluting stent (DES) among patients with 2-vessel or 3-vessel coronary artery disease and CKD.

Methods Between January 2005 and June 2006, patients undergoing CABG or PCI with DES for treatment of 2-vessel or 3-vessel coronary disease were evaluated for renal function by eGFR calculated using modified MDRD equation. Patients undergoing incomplete revascularisation with PCI were excluded. CKD was defined as eGFR < 60 ml/min. All the participants were followed up for 2 yrs. The primary end point of follow-up was the composite of all-cause death, non-fatal myocardial infarction (MI), or cerebrovascular events (CVE). The second end point was repeat revascularisation.

Results After the exclusion of patients undergoing incomplete revascularisation with PCI, 409 patients received complete revascularisation for treatment with 2-vessel disease and 415 with 3-vessel disease were evaluated. In the 2-vessel population, the incidence of primary end point and second end point were both very similar in patients receiving DES and CABG (primary end point: 9.3% vs 8.2%, p=0.753; second end point: 6.1% vs 3.1%, p=0.253). In the 3-vessel population, there was also no significant difference in the frequency of primary end point (11.4% vs 10.5%, p=0.774) between DES (n=167) and CABG groups (n=248). However, patients receiving DES still experienced significantly higher rate of repeat revascularisation as compared with patients who underwent CABG during 2-year follow-up (10.2% vs 4.4%, p=0.022). Multivariate Cox regression analysis of long-term outcome showed that the choice of revascularisation strategy were not an independent predictor of repeat revascularization in patients with 2-vessel disease (HR 1.52, 95% CI 0.53 to 3.98, p=0.367). However, PCI with DES was independently associated with higher risk of repeat revascularisation in patients with 3-vessel disease compared with CABG (HR 2.32, 95% CI 1.57 to 3.73, p=0.024).

Conclusion Compared with CABG, PCI with drug-eluting stent showed similar incidence of death, MI or cerebrovascular events in patients with multivessel disease and CKD, but is associated with increased repeat revascularisation in 3-vessel population, even after complete revascularisation.

**Conclusion**

CKD is significantly associated with increased incidence of 1-year definite or probable stent thrombosis in patients undergoing PCI with DES.