CABG surgery and stents provide similar protection against major cardiovascular events

A Korean study has found that CABG surgery and stents provide similar protection against death, myocardial infarction and stroke in patients with coronary artery disease. Patients with stents, however, have a higher rate of target-vessel revascularization than those who undergo grafting.

Seung *et al.* treated 2,240 patients with unprotected left main coronary artery disease by either CABG surgery or percutaneous coronary intervention (PCI)—1,138 underwent CABG and 1,102 underwent PCI, of whom 318 received bare-metal stents and 784 received drug-eluting stents. Median follow-up was 1,017 days in the PCI group and 1,152 days in the CABG group. Propensity score analysis of patient characteristics provided 542 matched pairs for analysis.

For the overall matched cohort, the risk of death associated with PCI was similar to that associated with CABG surgery (hazard ratio [HR] 1.18, 95% CI 0.77–1.80). The risk of the composite end point of death, Q-wave myocardial infarction or stroke was also similar in the two groups (HR associated with PCI 1.10, 95% CI 0.75–1.62). For the 396 matched pairs in which the PCI patient received a drug-eluting stent, however, a trend towards a higher risk with PCI was observed (HR 1.36, 95% CI 0.80–2.30 for death, and HR 1.40, 95% CI 0.88–2.22 for the composite end point). The risk of target-vessel revascularization was higher in the PCI group than in the CABG surgery group (HR 4.76, 95% CI 2.80–8.11), although drug-eluting stents reduced the risk of revascularization (HR 5.96, 95% CI 2.51–14.10 vs HR 10.70, 95% CI 3.80–29.90 for bare-metal stents).

Original article Seung KB *et al.* (2008) Stents versus coronary-artery bypass grafting for left main coronary artery disease. *N Engl J Med* **358:** 1781–1792

Spot protein:creatinine ratio for detection of proteinuria in pregnant women

A 24 h urine collection is the standard test by which proteinuria is assessed. This test can produce misleading results, however, especially during pregnancy, in part because of the difficulty associated with sample collection. The spot protein:creatinine ratio is an alternative test that is often used to assess proteinuria, but its efficacy in detecting proteinuria in pregnant women is unknown. This test could be especially useful in the evaluation of pre-eclampsia, as the condition is characterized by hypertension and proteinuria.

Côté *et al*. conducted a literature review of 13 studies in which the spot protein:creatinine ratio was used to asses proteinuria (≥0.3 g/day) in pregnant women with hypertension. In all, eight different cut-off points for determination of proteinuria were used (median 24 mg/mmol, range 17–57 mg/mmol). Of these studies, nine had sufficient data to calculate diagnostic accuracy with a cut-off point of 30 mg/mmol, as is recommended by published guidelines. In this subgroup of studies, the sensitivity and specificity of the test were 83.6% (95% CI 77.5–89.7%) and 76.3% (95% CI 72.6–80.0%), respectively. The negative likelihood ratio was fair to good (median 0.21, 95% CI 0.13–0.31), suggesting that a spot protein:creatinine ratio of <30 mg/mmol is an appropriate threshold for ruling out proteinuria.

The authors conclude that the spot protein:creatinine ratio is a time-efficient and convenient tool to aid in the diagnosis of pre-eclampsia in pregnant women with hypertension.

Original article Côté AM *et al.* (2008) Diagnostic accuracy of urinary spot protein:creatinine ratio for proteinuria in hypertensive pregnant women: systematic review. *BMJ* **336:** 1003–1006

Cytochrome P450 mutation reduces effectiveness of clopidogrel

The *CYP2C19* 681G>A polymorphism (*CYP2C19*2*), a loss-of-function mutation in cytochrome P450—the enzyme that converts the prodrug clopidogrel to its active form—has been implicated in the attenuation of the anti-platelet activity of clopidogrel seen in some patients. Results of the EXCELSIOR trial suggest that *CYP2C19*2* is associated with high on-treatment platelet reactivity and might, therefore, increase the risk of poor outcome after percutaneous coronary intervention.

Trenk *et al.* determined the *CYP2C19* genotype of 797 participants in the EXCELSIOR study; 245 (30.7%) were carriers of *CYP2C19*2*. At