of 956 calcified plaques were identified in a group of 217 participants with detectable coronary artery calcium. The calcium concentration, Agatston score, calcified volume and mineral mass of individual plaques was measured in each subject. Subsequent data analysis revealed that calcium concentrations of plaques were independent of the patient's age and sex, and were associated with the stage of plaque formation. Among a subgroup of 125 subjects with multiple (≥3) calcified plaques, calcium concentration was heterogeneous within subjects, and the degree of heterogeneity was independent of age, sex and plaque number.

If confirmed in larger studies, these findings indicate that calcium concentration measurements for individual calcified plaques could be a useful additional marker to global scores in the assessment of plaque burden and coronary event risk.

Claire Braybrook

Original article Moselewski *et al.* (2005) Calcium concentration of individual coronary calcified plaques as measured by multidetector row computed tomography *Circulation* **111:** 3236–3241

Novel drug-eluting stent system prevents restenosis

Drug-eluting stents (DESs) have been shown to reduce the incidence of in-stent restenosis significantly compared with conventional bare-metal stents. Restenosis remains significant in patients at high risk for this occurrence, however, and there are concerns that the use of fixed drugs and doses in different patient subgroups could reduce the efficacy of DESs, while the use of polymer coatings could increase late complications. The Munich-based ISAR PROJECT tested a novel DES system that allows the physician to choose a patient-specific drug and dose, and permits a polymer-free stent coating to be used.

In this prospective, nonrandomized, open-label dose-finding study, 602 patients with angina pectoris or ischemia brought on by exercise received either a microporous bare-metal stent without a drug coating or a DES, coated with 0.5, 1.0, or 2.0% rapamycin solution. Use of multiple rapamycin-eluting stents at equal dosages was permitted, to cover long or multiple lesions. The study found that significant reductions were achieved both in the rate of angiographic in-segment restenosis (defined as ≥50%) at a median of 198 days ($P = 0.024$) and in the need for target-lesion revascularization at 1-year follow-up ($P = 0.006$) with increasing doses of rapamycin when compared with bare-metal stents.

The authors conclude that this DES system is safe and feasible, and that assigning patient-specific rapamycin doses aids the prevention of restenosis. A larger, randomized, trial is needed to investigate fully the efficacy of rapamycin-eluting stents.

Pippa Murdie

Original article Hausleiter J *et al.* (2005) Prevention of restenosis by a novel drug-eluting stent system with a dose-adjustable, polymer-free, on-site stent coating. *Eur Heart J* **26:** 1475–1481

GLOSSARY

ISAR PROJECT
Individualized drug-eluting Stent system to Abrogate Restenosis, which enables patient-specific selection of stent coating and drug dose

Endovascular versus open repair for abdominal aortic aneurysm: EVAR trial 1

Midterm results from a randomized controlled trial show that endovascular aneurysm repair (EVAR) has a better aneurysm-related survival rate compared with open repair, but is more expensive and leads to more postoperative complications.

EVAR is known to a have a lower 30-day operative mortality rate compared with open repair for management of patients with large abdominal aortic aneurysms, but the long-term outcomes of EVAR are uncertain. The EVAR trial 1 compared EVAR and open repair in terms of mortality, durability, health-related quality of life and hospital costs. In all, 34 UK hospitals proficient in the EVAR technique participated in the study. They recruited 1082 patients aged 60 years or older who had aneurysms of at least 5.5 cm in diameter. Patients deemed fit for either EVAR or elective open repair were included in the trial, with 543 randomized to EVAR and 539 to open repair. The primary endpoint was all-cause mortality and secondary endpoints were aneurysm-related mortality, health-related quality of life, hospital costs and postoperative complications. After 4 years, all-cause mortality rates were about 28% for both EVAR and open repair groups. Aneurysm-related deaths were 3% lower in the EVAR group, but postoperative complications and reinterventions were 32% more frequent compared with open repair, and this could lead to greater hospital costs.