

## GLOSSARY

## MYOCARDIAL BLUSH

An indicator of myocardial perfusion (0, no myocardial blush; 1, minimal myocardial blush; 2, moderate myocardial blush; 3 normal myocardial blush)

than single-chamber pacemakers (7.8% versus 3.5%,  $P < 0.001$ ). The authors conclude that in elderly patients with high-grade atrioventricular block, the mode of cardiac pacing does not seem to affect rates of death from all causes in the first 5 years following device implantation. When selecting the pacing mode, the occasional need to upgrade to a dual-chamber system because of intolerance to single-chamber ventricular pacing must be weighed against the increased risk of complications with dual-chamber implants.

Claire Braybrook

**Original article** Toff WD *et al.* (2005) Single-chamber versus dual-chamber pacing for high-grade atrioventricular block. *N Engl J Med* 353: 145–155

## Improved myocardial reperfusion with X-Sizer® thrombectomy

Percutaneous coronary intervention (PCI) with stenting is the conventional method for treating acute myocardial infarction and can restore normal epicardial flow. Optimal myocardial tissue reperfusion can be limited by thrombus and plaque embolization during PCI. Few studies have tested the safety and efficacy of mechanical devices for thrombectomy before PCI, leading Lefèvre *et al.* to conduct a prospective, randomized, multicenter trial to assess performance of the X-Sizer® device (EndiCOR Medical Inc., San Clemente, CA, USA). Patients with acute myocardial infarction within the previous 12 h underwent either thrombectomy before PCI with stenting ( $n = 100$ ) or PCI with stenting alone ( $n = 101$ ). The magnitude of increase in ST-segment resolution before and 1 h after treatment was used as a marker for myocardial reperfusion and the primary end point.

In 87% of patients, the X-Sizer® device removed the thrombus either completely or partially. At 1 month and 6 months' follow-up, there was no significant difference in MYOCARDIAL BLUSH grade or incidence of major adverse cardiac and cerebral events between the two treatment groups, but ST-segment resolution was greater in patients who underwent thrombectomy ( $8.5 \pm 10.1$  mm versus  $6.8 \pm 9.3$  mm;  $P = 0.003$ ) and the risk of distal embolization was reduced (2.1% versus 10%;  $P = 0.033$ ). No serious device-related adverse effects were reported.

In conclusion, thrombectomy with the X-Sizer® prior to PCI can improve myocardial reperfusion in acute myocardial infarction patients. Larger clinical trials are needed to assess long-term clinical outcomes and alternative mechanical or pharmacologic treatments.

Rachael Williams

**Original article** Lefèvre T *et al.* (2005) X-Sizer for thrombectomy in acute myocardial infarction improves ST-segment resolution. *J Am Coll Cardiol* 46: 246–252

## New study allays concerns about increased thrombogenicity with drug-eluting stents

Use of the direct thrombin inhibitor bivalirudin, as procedural anticoagulation therapy in patients undergoing percutaneous coronary intervention (PCI) with bare-metal stents, is associated with a lower rate of hemorrhagic complications than that seen with unfractionated heparin. In the light of concerns about the increased risk of thrombosis observed following implantation of drug-eluting stents, Dangas *et al.* have assessed the safety and efficacy of PCI with sirolimus-eluting stents (SESs) and bivalirudin for procedural anticoagulation.

This prospective study was carried out in nine US hospitals and evaluated 1,182 otherwise unselected patients at least 18 years old, who had one or more lesions requiring PCI with an SES. At 30 days, the incidence of major adverse cardiac events (7.1%) was similar to that reported in previous trials of SESs. There was also a low rate of both major and minor in-hospital bleeding complications. Stent thrombosis occurred in 0.6% of patients, which is comparable to thrombosis rates of 0.4% and 1.1% reported in other trials with SESs.

This study shows that bivalirudin can be safely used as an anticoagulant with sirolimus-eluting stents in patients undergoing PCI, and is associated with low rates of major adverse cardiac events, stent thrombosis and in-hospital bleeding complications.

Claire Braybrook

**Original article** Dangas G *et al.* (2005) Effectiveness of the concomitant use of bivalirudin and drug-eluting stents (from the prospective, multicenter bivalirudin and drug-eluting stents [ADEST] study). *Am J Cardiol* [doi:10.1016/j.amjcard.2005.04.039]