Caution against using cyclo-oxygenase 2 inhibitors for pain after cardiac surgery

Patients receiving CYCLO-OXYGENASE 2 (COX2) INHIBITORS following coronary-artery bypass grafting (CABG) are at increased risk from serious adverse effects, such as myocardial infarction, cardiac arrest, stroke and pulmonary embolism, according to a recent double-blind, international study. Such concerns had been raised previously, but had not been proven statistically significant until now.

Patients who had undergone CABG with cardiopulmonary bypass were grouped according to risk strata and geographic location, and randomized to receive multiple doses of valdecoxib (Bextra®; Pfizer Ltd, Walton-on-the-Hill, UK) and its intravenous prodrug parecoxib (Dynastat®; Pfizer Ltd) ($n = 550$), placebo and oral valdecoxib ($n = 560$) or placebo alone ($n = 600$) over a 10-day postoperative period. Standard opioids were available to all patients.

During the 30-day follow-up period, the frequency of adverse cardiovascular, renal, gastrointestinal and surgical-wound-related complications was significantly higher for patients that received COX2 inhibitors (7.4%) compared with the group given placebo only (4.0%, $P = 0.02$). Separate analyses of event subtypes showed that this difference was primarily due to a significantly greater frequency of cardiovascular events in the parecoxib plus valdecoxib cohort.

The association between serious thromboembolic events and COX2 inhibition might be a function of the drugs interfering with production of the vasodilator PROSTACYCLIN. The investigators recommend that COX2 inhibitors should no longer be used in patients recovering from CABG, and suggest avoiding administration of drugs of this class to any person undergoing a vascular procedure for atherosclerotic disease.

Rachael Williams

Original article Nussmeier NA *et al.* (2005) Complications of the COX-2 inhibitors parecoxib and valdecoxib after cardiac surgery. *N Engl J Med* **352:** 1081–1091

Cost-effectiveness of sirolimus-eluting stents compared with bare-metal stents

Sirolimus-eluting stents are proven to provide clinical benefits for patients undergoing percutaneous coronary intervention, but are more costly than bare-metal stents. A group from the Netherlands has evaluated whether the lower reintervention rates observed in recipients of sirolimus-eluting stents balance the higher initial cost of treatment.

van Hout and colleagues analyzed data from the RAVEL multicenter randomized double-blind trial, comparing the incidence of major adverse cardiac events (all-cause death, nonfatal myocardial infarction, and surgical or percutaneous target lesion revascularization) in 238 patients receiving either sirolimus-eluting or bare-metal stents for treatment of single native *de novo* coronary lesions. Use of a sirolimus-eluting stent increased the cost of the initial procedure by €1,286 (~US$1607) compared with bare-metal stents; however, after 1 year, the additional cost was reduced to €54 (~$67), as a result of the reduced need for repeat revascularizations.

Since the RAVEL study included a follow-up angiogram at 5–7 months, which is not routine practice, the analysis was adjusted using subgroup data from the BENESTENT II trial, which compared costs of stenting with and without angiographic follow-up. The adjusted additional 1-year cost of using a sirolimus-eluting stent without routine angiographic follow-up was €166 (~$207).

The authors note that actual costs will vary between centers, and that cost-effectiveness is strongly dependent on the relative price difference between the two types of stent, which differs between countries. They also suggest that these estimates might not apply to patient groups with a higher risk of reintervention, or more complex lesions.

Caroline Barranco

Original article van Hout BA *et al.* (2005) One year cost effectiveness of sirolimus eluting stents compared with bare metal stents in the treatment of single native *de novo* coronary lesions: an analysis from the RAVEL trial. *Heart* **91:** 507–512

GLOSSARY

CYCLO-OXYGENASE 2 (COX2) INHIBITORS
Nonsteroidal anti-inflammatory drugs that inhibit cyclo-oxygenase 2 (COX2) and therefore production of its metabolite prostaglandin

PROSTACYCLIN
A prostaglandin that inhibits platelet aggregation and causes an increase in the internal diameter blood vessels, resulting in increased blood flow