Does celecoxib have pre-emptive analgesic effect after Caesarean section surgery?

Editor—The addition of non-steroidal anti-inflammatory drugs (NSAIDs) to a postoperative Caesarean analgesic regimen could improve postoperative pain and reduce opioid analgesic requirements.¹ The potential maternal side-effects (e.g. antiplatelet and gastrointestinal) and effects on breast-feeding infants raise concerns about their use in the postoperative Caesarean delivery setting.² Cyclooxygenase-2-specific inhibitors (COX-2 inhibitors) are effective postoperative analgesics, decreasing pain scores and analgesic consumption after surgery.³ COX-2 inhibitors are, thus, potentially attractive alternatives for post-Caesarean use because they have less platelet inhibition compared with NSAIDs.³ As both rofecoxib and valdecoxib were removed from the market because of potential myocardial and stroke risks, celecoxib remains the only available COX-2 inhibitor. The pre-emptive analgesic efficacy of COX-2 inhibitors after Caesarean section setting has not been evaluated.

We have conducted a randomized, double-blind, placebo-controlled study to evaluate the analgesic efficacy of administering celecoxib, either before or after operation in 60 women undergoing Caesarean delivery under spinal anaesthesia in Kaohsiung Municipal Min-Sheng Hospital and E-DA Hospital/I-Shou University, Taiwan. The patients were allocated to three groups by random numbers. Patients in the preoperative group received celecoxib 400 mg 30 min before anaesthesia and a placebo tablet after wound closure (preop celecoxib group). Patients in the postoperative group received a placebo tablet 30 min before anaesthesia and celecoxib 400 mg after wound closure (postop celecoxib group) and patients in the control group received a placebo tablet 30 min before anaesthesia and after wound closure (control group). Wound closure completion was considered as time 0. Patient characteristics, ephedrine dose, and duration of surgery were similar for the three groups. Total morphine consumption for the 24 h after surgery was significantly reduced in both the preop [13 (6.2) mg] and the postop celecoxib groups [12 (5.4) mg] compared with the control group [27 (7.2) mg] (P<0.05). Between 3 and 24 h after surgery, the patient-controlled analgesia morphine dose was also significantly reduced in the preop and postop celecoxib groups compared with the control group (P<0.05). The time to first analgesic demand was significantly later (P<0.05) in the preop but not in the postop celecoxib groups in comparison with the control group [421 (92) min, 334 (56) vs 261 (46) min]. Between 3 and 24 h after surgery, visual analogue scale pain scores during movement at 6 and 12 h after surgery were statistically lower in both celecoxib groups. No patient had severe sedation. No patient required bladder catheterization. The incidence of moderate sedation, moderate bladder dysfunction, and nausea and vomiting was similar for all groups. In summary, administration of celecoxib before Caesarean section did not provide pre-emptive analgesia. There was a trend towards improved analgesia immediately after surgery with preoperative celecoxib administration. Perioperative celecoxib administration improved postoperative analgesia during the first 24 h, without increasing adverse effects.

NSAIDs have been shown to improve postoperative pain relief in Caesarean section.⁴ Studies comparing COX-2 inhibitors with NSAIDs demonstrated similar analgesic efficacies and opioid-sparing after surgery in non-obstetrical settings.⁵ Although we compared celecoxib with placebo and did not compare celecoxib with NSAIDs, celecoxib does not provide clinically significant pre-emptive analgesia after Caesarean section. However, it improves postoperative analgesia, reduces morphine required by patients, and does not increase adverse effects. The reduced potential risk of haemorrhage in the mother and the breast-feeding infant with COX-2 inhibitors compared with NSAIDs is, theoretically, an advantage in obstetric patients.⁶ In addition, COX-2 inhibitors should be safe during breast-feeding, as there is minimal drug transfer to the infant.⁷

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Statins and sepsis

Editor—We congratulate Gao and colleagues1 on the timely review of the place of statin therapy in sepsis. We agree that further prospective clinical research is required to evaluate the potential benefits and limitations of statin use in patients with sepsis and that must specifically address both current statin users and patients not taking statin therapy.

Stopping established statin therapy in patients with acute coronary disease,2 recent major vascular surgery,3 or recent stroke4 has been suggested to be associated with worse outcomes. This has not been specifically assessed in patients with sepsis, although a retrospective study5 in patients with bacteraemia showed continuing statin use after bacteraemia was associated with significantly reduced mortality. These findings suggest that stopping concurrent statin therapy in sepsis (as recommended by current prescribing guidelines) may be associated with increased mortality. These findings require further evaluation in an appropriate prospective randomized trial.

Although the available evidence suggests that the potential for statins as adjuvant therapy in sepsis should be tested, we believe that an international multicentre trial with mortality as an endpoint would be premature. Preliminary data on absorption, pharmacokinetics, physiological effects, and possible adverse effects in critically ill patients with sepsis are required.

With the support of the Australian and New Zealand Intensive Care (ANZIC) Clinical Trials Group and the ANZIC Research Centre, we have commenced an Australian National Health and Medical Research Council (NHMRC)-funded multicentre phase II trial in 2007. The STATInS trial (ACTRN 1260700028404) (www.anzctr.org.au/trial_view.aspx?ID=81692) is a phase II, randomized, placebo-controlled study of the safety, pharmacokinetics, and effect on inflammatory marker levels of atorvastatin in intensive care patients with severe sepsis. This trial is currently underway in more than 14 intensive care units in Australia and New Zealand and we hope the results will provide a platform to plan future trials examining mortality as an endpoint.

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A wireless remote controlled infusion pump for anaesthesia during magnetic resonance imaging

Editor—The use of ferromagnetic devices in magnetic resonance imaging (MRI) suites represents a life-threatening hazard for patients and healthcare providers.1,2 In the past, the lack of compatible infusion pumps has led to the use of conventional pumps, placed outside the MRI scanner with long tubing for drug delivery.3,4 These long infusion lines can be trapped in the closed door3 and cause false flow rates.5 The MRidiumTM (Iradimed Corp, USA) is a new MRI-compatible infusion pump with a wireless