Epidurals and clopidogrel in peripheral vascular surgery

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Epidural analgesia and anaesthesia is widely used in patients undergoing peripheral vascular surgery, including lower limb revascularization. The use of clopidogrel, an antiplatelet agent, is becoming more common in this patient group; a number will be taking the drug preoperatively. The benefits of epidural use have to be carefully evaluated against risk of the rare, but serious, complication of vertebral canal (spinal or epidural) haematoma.

Clopidogrel is a thienopyridine antiplatelet drug, which is a non-competitive antagonist of the platelet adenosine diphosphate receptor (Kam and Nethery, 2003). Clopidogrel is used alone, or in combination with aspirin, to prevent recurrent ischaemic events in patients with unstable angina and thrombosis after intravascular stent procedures. Platelet function is deranged for 7 days after stopping clopidogrel.

EPIDURAL ANALGESIA SHOULD BE USED

Patients undergoing peripheral vascular surgery generally have significant co-morbidity, e.g. ischaemic heart disease, diabetes, cerebrovascular disease or smoking-related lung disease. Epidural analgesia and anaesthesia are associated with reduced morbidity, particularly thromboembolism and pneumonia. Avoidance of general anaesthesia and reduced intravenous opioid use may allow more rapid postoperative recovery.

A large randomized controlled trial of 915 'high risk' patients undergoing major abdominal surgery (the MASTER trial) demonstrated a reduction in respiratory failure and superior pain relief in those receiving epidurals (Rigg et al, 2003). The respiratory benefits of epidurals have also been confirmed by a meta-analysis (Ballantyne et al, 1998).

There is evidence that epidural anaesthesia improves the success of the graft in patients undergoing lower extremity vascular surgery (Christopherson et al, 1993). Of 100 patients randomized to receive either epidural or general anaesthesia, the epidural group had a lower rate of re-operation for graft occlusion.

EPIDURAL ANALGESIA SHOULD BE AVOIDED

Despite the specific benefits described in the studies above, epidural analgesia has not been shown to improve other adverse outcomes or mortality, and most of these studies are not confined to peripheral vascular surgery but include many surgical procedures.

The major concern of epidural use, in patients taking clopidogrel, is the risk of vertebral canal haematoma at insertion or removal. This is rare – a review of the literature (1995–2001) found 60 cases of spinal haematoma; most (40) of these were spontaneous, while 20 cases followed epidural or spinal blockade (Tyagi and Bhattacharya, 2002). Anticoagulant therapy was an associated factor in 11/20 of the cases following central neuraxial blockade, but only one of these was associated with an antiplatelet agent – aspirin. The incidence of vertebral canal haematoma in patients with normal coagulation is estimated at <1:150 000 for epidurals and 1:220 000 for spinals.

It would be helpful to have a monitor of platelet function to determine the safety of epidural insertion in patients taking antiplatelet drugs. At present, tests available to the anaesthetist include platelet count (which doesn't necessarily reflect function), bleeding time, and near-patient tests, e.g. the platelet function analyser. None of these tests answer the anaesthetist's question: 'Is it safe to put an epidural in this patient?'

CONCLUSION

The decision as to whether to insert an epidural in peripheral vascular surgery patients taking clopidogrel must consider the risk/benefit ratio for each patient. The risk of vertebral canal haematoma in this group is unknown. However, for patients receiving more than one antiplatelet agent, e.g. clopidogrel and aspirin, the risks of haematoma following epidural may be greater. A clearer picture of the safety of epidural use with clopidogrel will only emerge with time. Unless complications are carefully reported, this will remain an anaesthetic dilemma. HM

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