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- 1 Herwaldt LA, Smith SD, Carter CD. Infection control in the outpatient setting. *Infect Control Hosp Epidemiol* 1998; 19: 41-74.

Combined general/epidural anaesthesia

To the Editor:

Dr. Bromage and Dr. Garnett have raised relevant questions about studies investigating the role of "continuous neural blockade on the attenuation of harmful reflex responses to major surgery."^{1,2} To determine if continuous afferent neural blockade is beneficial beyond the accentuation of postoperative analgesia, investigators must ensure that such neural blockade is present throughout the investigation as pointed out by Dr. Bromage. Dr. Garnett seems to agree although he disagrees with the methodology used to "confirm" that a sensory block is "present and adequate." Dr. Garnett takes the position that "non-response" of patients to surgical stimuli with combined general anaesthesia/epidural anaesthesia and adequate epidural analgesia postoperatively imply that the desired segmental afferent neural blockade is present. This is not true!³ As Dr. Garnett points out, adequate epidural analgesia with the use of local anaesthetic/opioid combinations is not necessarily dependent on the demonstration of segmental sensory blockade by conventional means (e.g. pin prick, cold). If sensory blockade may result in a given outcome it is incumbent to define what is meant and to demonstrate that that has been accomplished. If one is only interested in analgesia the issue may be irrelevant! In fairness to Dr. Garnett's inference about "differential neural blockade" investigators may conclude that sufficient sensory blockade to achieve the surrogate endpoint of "stress relief" cannot be reliably or safely achieved. However, that does not excuse them from properly designing the study to answer the question that is being asked!

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REFERENCES

- 1 Bromage PR. Combined epidural/general anaesthesia and postoperative outcome (Letter). *Can J Anaesth* 1997; 44: 1319-20.
- 2 Garnett RL. Reply to Dr. Bromage. *Can J Anaesth* 1997; 44: 1320.
- 3 Bromage PR. 50 years on the wrong side of the reflex arc (Editorial). *Reg Anesth* 1996; 21(Suppl 6): 1-4.

REPLY:

Thank you for allowing me to reply to concerns raised by Dr. Lang which are similar to those of Bromage and Carli *et al.*^{1,2} Our study was to determine if combined epidural/general anaesthesia and epidural analgesia reduced the incidence of perioperative myocardial ischaemia when compared with general anaesthesia and iv analgesia.³ We had predicted a 50% reduction in ischaemia which did not occur.

We did not document the upper level of sensory block pre-induction. We ensured that a block was present and then proceeded with surgery. Our premise was that if the patient did not respond to incision and dissection, adequate sensory block was present. No epidural patient required either an epidural bolus or deepening of general anaesthesia at the time of incision. However, the level of block may change at any time during or after the surgery. Therefore, a confirmed level at 0800 may not be the same level at 0900, 1100, or tomorrow. Unless you can control the level of sensory blockade throughout the perioperative period, one initial reading does not guarantee clinical success or study design.

In spite of our failure to demonstrate less myocardial ischaemia, we continue to use epidurals and have done > 1,000 aortic cases using this method. The inability to show better outcomes may be because our indicators are too crude. One can easily pick out the patient who has a functioning epidural catheter. Our cerebral computer is better than any study design.

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- 2 Carli F, Klubien K, Baker C. Combined epidural/general anaesthesia (Letter). *Can J Anaesth* 1997; 44: 452-3.
- 3 Garnett RL, MacIntyre A, Lindsay P, *et al.* Perioperative ischaemia in aortic surgery: combined epidural/general anaesthesia and epidural analgesia vs general anaesthesia and i.v. analgesia. *Can J Anaesth* 1996; 43: 769-77.

Propofol toxicity following hypoxia in children

To the Editor:

Propofol has proved to be a very useful anaesthetic agent in infants and children, even below the age of three years. However, low dose infusion of propofol for sedation in acute care units has been associated with several deaths.¹