Dose of intrathecal diamorphine for Caesarean section and position for spinal insertion

Editor—Dr Saravanan and colleagues suggest that 0.4 mg is the optimum dose of intrathecal diamorphine for Caesarean section.1 Although not necessarily disagreeing with this conclusion, I would like to draw attention to the potential influence of patient position at insertion of the spinal on intraoperative anaesthesia and postoperative analgesia.

Skipton and colleagues2 found a mean time to first analgesia of 14 h with diamorphine 0.3 mg when the spinal was placed with the woman in the lateral position. This compares favourably with a mean time to first analgesia of 11.5 h with diamorphine 0.5 mg1 and median of 2.7 h with diamorphine 0.375 mg,3 in two studies using the sitting position for spinal insertion. In a randomized study using a standard spinal dose, Stoneham and colleagues4 found that the duration of postoperative analgesia was longer when a modified lateral (Oxford) position was used rather than the sitting position.

We have data from a prospective audit in our hospital on 768 women presenting for elective Caesarean section who had a successful spinal block with heavy bupivacaine 0.5% (usually 2.5 ml) and spinal diamorphine 0.3 mg, inserted in the lateral position. There was a requirement for intraoperative analgesic supplements with opioid or nitrous oxide in 13 women (1.7%), and general anaesthesia was provided for two women (0.3%) who had prolonged operations. This is comparable with Saravanan’s audit figure using a 0.4 mg dose.

I would like to suggest that further research is needed into the interaction of the dose of intrathecal opioid and the position of the patient for insertion of a spinal anaesthetic at Caesarean section.

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Editor—We congratulate Dr Saravanan and colleagues on a clearly written and well presented paper.1 The authors clearly demonstrated the ED₉₅ of intrathecal diamorphine in parturients. However, we must disagree with the implication that 0.4 mg is the optimum dose of intrathecal diamorphine. They demonstrated a significant increase in nausea and vomiting with increasing diamorphine dose. At a dose of diamorphine 0.4 mg, although only three out of 48 patients required supplementary alfentanil, 26 out of 50 patients vomited.1 Nausea and vomiting are distressing to patients, increase stress on the wound, cause dehydration and electrolyte imbalance, delay time to re-establishment of diet, lengthen stay in hospital, and increase nursing workload.5 Given the lengths to which we as a profession go to reduce and treat postoperative nausea and vomiting we would argue that such a high incidence is a good reason not to use this dose. A smaller dose of diamorphine with its higher risk of requiring supplementation may be preferable.

We understand the medicolegal concerns cited by the authors and suggest that perhaps a carefully documented specific discussion with parturients regarding block failure, potential for supplementation, or conversion to general anaesthesia would be appropriate.

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Editor—We appreciate the interest shown in our study by Dr Kinsella. It was clear to us that we were not getting the best from our intrathecal opioid, and this triggered our study. Over the past 10 yr, the mean weight of women presenting for elective Caesarean section has increased by 1 kg yr⁻¹, and our mean operating time has extended to 60 min. These two factors are the major influence on our approach to regional block. We have no difficulty in accepting that different circumstances have their own requirements. With regard to times to first analgesia, whether a woman takes her diclofenac tablet in the recovery room, or later on the postnatal ward, is not regarded as a major issue by either of us. This is not the case with discomfort during surgery.

We were not sure where the criticism of our incidence of nausea and vomiting was going to come from, but it was expected. Dr Barrett and colleagues should appreciate that we failed to demonstrate a significant difference in the incidence of nausea and vomiting between diamorphine 0.3 mg and 0.4 mg. A significant reduction will require a still smaller dose of opioid.

Since this study, we have introduced prophylactic phenylephrine before delivery,6 and cyclizine after,7 into our protocol. The audit is not complete, but early analysis suggests that our current incidence of postoperative nausea and vomiting in the first 24 h is now <10%. Intraoperative supplementation is <5%, and shortly we hope to be able to announce that our incidence of nausea and vomiting is in the same range. Conversion to general anaesthesia is required in ~0.2% of patients, but we do mention to them that this is a possibility. This has been a very satisfying study for us because it has directed improvements in performance in two different areas of our practice.

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6 Mercier F, Riley E, Frederickson W, Roger-Christoph S, Benhamou D, Cohen S. Phenylephrine added to ephedrine infusion during spinal anaesthesia for elective Caesarean section. Anesthesiology 2001; 95: 668–74


DOI: 10.1093/bja/aeh519