Correspondence

IV fentanyl PCA during labour

To the Editor:

The clinical report by Rosaeg *et al.*¹ identifies correctly the usefulness of intravenous PCA with fentanyl for the provision of analgesia during labour when epidural analgesia is contraindicated. The authors report that during the accelerated first stage of labour (7–10 hr after the start of PCA fentanyl), coinciding with the augmentation of labour with intravenous oxytocin, the patient had inadequate pain relief and lost confidence in the ability of the PCA pump (and perhaps the anaesthetist supervising the PCA) to give her satisfactory analgesia. They do not mention any alterations made to the programming of the PCA pump in response to the obvious inadequacy of the current parameters. In fact, the analgesic demand histograms and the text suggest that this state was allowed to continue for several hours.

If this patient had been considered an appropriate candidate for and had received epidural analgesia with inadequate pain relief in the late first stage of labour, would the authors have intervened or allowed her pain to continue unabated? We assume they would offer a "top-up," increase the continuous infusion, or replace the epidural catheter if appropriate. Why then should they treat a patient receiving *iv* PCA differently?

The pharmacodynamic variability in analgesic requirements during labour is marked. Analgesic requirements will almost certainly increase as the intensity and severity of painful stimuli (contractions) increase when the parturient enters the late first stage of labour. If *iv* PAC therapy is to be effective, it is important that the nurse assess the patient's response to the analgesic regimen, and the pump's memory (answered vs. unanswered demands) be reviewed at frequent intervals. The physician supervising the *iv* PCA therapy must be prepared to make appropriate changes as required. The use of empirically derived "cookbook recipes" without appropriate follow-up or intervention is unacceptable.

In our experience with the use of *iv* PCA for labour analgesia, we have found it is often necessary to alter one or all of the programming variables which include the background infusion, the amount of the bolus dose, the duration of the lockout interval, or even provide an additional loading dose to optimize analgesia.

IV PCA is an innovative analgesic system that is useful for relieving pain in labour. In selected cases, it has been

demonstrated to be safe and effective. However, to use PCA successfully in the labouring parturient, the anaesthetist should be familiar with the concept and principles of PCA and its practical applications.

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REFERENCE

- 1 Rosaeg OP, Kitts JB, Koren G, Byford LJ. Maternal and fetal effects of intravenous patient-controlled fentanyl analgesia during labour in a thrombocytopenic parturient. *Can J Anaesth* 1992; 39: 277–81.

REPLY

In their letter, Drs. Gavelin and Janzen expressed concern at the apparent lack of satisfactory analgesia during the first stage of labour, and questioned why we might treat a parturient receiving *iv* PCA fentanyl differently from a patient receiving epidural analgesia for labour. There are several reasons. It is reported that epidural analgesia is both safe and efficacious when administered to control labour pain. The literature does not contain publications which document the safety or efficacy of *iv* PCA fentanyl when administered to control labour pain.¹ Our literature search provided a single case report, where the parturient received a total dose of 400 µg of fentanyl during labour.² In the management of our patient, we approached a total dose of 1.0 mg fentanyl. Due to the lack of data determining maternal and fetal safety with *iv* PCA fentanyl during labour and without additional monitoring precautions we were reluctant to provide unlimited drug to achieve "satisfactory analgesia." In addition, most anaesthetists have a wealth of experience in providing epidural analgesia while very few have any experience with *iv* PCA fentanyl during labour. Finally, comparing the efficacy of epidural local anaesthetics for pain relief during labour with *iv* PCA fentanyl during labour is unrealistic. Epidural local anaesthetics are successful in abolishing labour pain in most cases, while *iv* PCA fentanyl, even in appropriate doses, is unlikely to provide similar pain relief.

We agree with Drs. Gavelin and Janzen that the pharmacodynamic variability in analgesic requirements during labour is marked. The advantage of *iv* PCA is to allow the patient to achieve an analgesic serum concentration level that is specific to the individual. The very concept of PCA allows titration of drug to individual requirements which is contradictory to a "cook-book recipe" approach.

We emphasized in our report that further objective data from controlled clinical studies are required to document safety (maternal and fetal) and efficacy of *iv* PCA fentanyl when administered during labour. Although Drs. Gavelin and Janzen state that they optimize analgesia by changing the various pump