

Anesthesiology

79:628, 1993

© 1993 American Society of Anesthesiologists, Inc.

J. B. Lippincott Company, Philadelphia

Unattended Continuous Infusion of Fentanyl for Postoperative Pain Management

To the Editor:—Transdermal fentanyl ("fentanyl patch") is being used for chronic and acute pain management. For postoperative pain management, a fentanyl patch is placed at the onset of surgery. Plasma levels of fentanyl delivered *via* the patch reach a maximum steady-state concentration in approximately 8 h and are similar to equivalent intravenous doses of fentanyl.¹ Even though it is an "off-label" use, studies have shown that transdermal fentanyl is both safe and effective for postoperative pain management.^{2,3}

Usually, when a surgeon requests an analgesic to be given by an anesthesiologist, the drug and dose are recorded in the anesthesia record and the drug effect is dissipated by the time the patient leaves the postanesthesia care unit (PACU). This is not the case with the fentanyl patch, in which peak steady-state levels may not be reached until sometime after discharge from the PACU and the duration of action may be up to 72 h. Because of the delayed onset and prolonged duration of action, we have discovered a twofold problem with using the fentanyl patch for postoperative pain relief.

First, because the fentanyl patch was placed by the anesthesiologist and noted only in the anesthesia record, nurses or pharmacists on the wards were often unaware the patch had been placed. We retrospectively reviewed the records of 27 patients who had a fentanyl patch applied intraoperatively over a 2-month period. We found that ward nurses were unaware of the fentanyl patch for up to 24 h after surgery in seven patients (26%). Most often, the patch was discovered the following morning when the patient received a bath while in bed. The pharmacy, which is responsible for documenting all drugs delivered to each patient, did not have the "fentanyl infusion" recorded for 8 of the 27 patients (30%) until the day after patch placement.

Second, the surgeon would write the standard orders for postoperative pain medication in addition to the continuous "fentanyl infusion." This may have resulted in a higher-than-expected rate of adverse drug reactions related to postoperative pain control medications. In 15% of the patients (4 of 27), severe hypotension (2 patients) or significant hypotension (2 patients) occurred. Thirteen other patients (48%) had adverse reactions thought to be secondary to opioid administration, such as pruritis, nausea, vomiting, and/or dizziness. One of the severe problems and three of the more minor

problems occurred in patients in which both pharmacy and nursing staff were initially unaware that the patient had a fentanyl patch. Since other analgesics, including morphine, meperidine, and ketorolac, also were administered in varying amounts to all patients, it is impossible to completely attribute the adverse drug reactions to the fentanyl patch. However, it would seem likely that awareness of a "continuous infusion" of a potent opioid would temper the administration of other analgesics and, it is hoped, minimize complications.

In summary, it is important for anesthesiologists to remember that some drugs they administer intraoperatively may have long-lasting effects, and communication is essential for good patient care, both in and out of the operating room.

Eugene Y. Cheng, M.D.

Nordeana Nimphius, M.S.

Department of Anesthesiology
Medical College of Wisconsin
9200 West Wisconsin Avenue
Milwaukee, Wisconsin 53226

Kris Hoepfl, R.Ph.

Pharmacy Department
Froedtert Memorial Lutheran Hospital
9200 West Wisconsin Avenue
Milwaukee, Wisconsin 53226

References

1. Calis KA, Kohler DR, Corso DM: Transdermally administered fentanyl for pain management. *Clin Pharm* 11:22-36, 1992
2. Latasch L, Luders S: Transdermal fentanyl against postoperative pain. *Acta Anaesthesiol Belg* 40:113-119, 1989
3. Caplan RA, Ready LB, Oden RV, Matsen FA III, Nessly ML, Olsson GL: Transdermal fentanyl for postoperative pain management: A double-blind placebo study. *JAMA* 261:1036-1039, 1989

(Accepted for publication June 14, 1993.)