Increased Cost of Ketorolac versus Morphine Sulfate

To the Editor—A recent paper suggests that ketorolac in children provides analgesia similar to that provided by morphine but with less emesis. Thus, the authors conclude that, “Ketorolac is a useful alternative to morphine for providing prophylactic analgesia in children undergoing elective operations.”

A very important facet of this study was not touched upon. At present, the cost of drugs used by anesthesiologists is often not taken into account, and should be, especially when new agents are used. The wholesale cost of ketorolac 50 mg in our area is $6.84, whereas the cost of morphine is $0.88 for a 10-mg tubex. These are hospital costs; the charge to the patient will be much greater. Is it worth the added cost for an anesthesiologist to use this new drug (ketorolac), which does not provide better analgesia than morphine?

MAURICE LIPPMANN, M.D.
Professor of Anesthesiology

In Reply—Lipmann and Ginsburg question whether the additional cost of ketorolac contraindicates its use as an alternative to morphine during general anesthesia. Although we agree that the cost of a drug should be one of the factors to be considered in making a decision regarding analgesic therapy, it should by no means be the only criterion. While providing comparable postoperative analgesia to morphine (0.1 mg/kg), ketorolac (0.9 mg/kg) was associated with significantly less emesis in our pediatric population. In performing their cost–benefit analysis, Lipmann and Ginsburg need to include the cost of treating postoperative side effects such as emesis (e.g., antiemetic drugs, additional time in the postanesthesia care unit).

The average wholesale price for a 2-ml ampule of metoclopramide is $1.50 and for a 1-ml ampule of droperidol is $3.54. Although the recovery room stay was similar in the two treatment groups for our inpatient pediatric population, studies involving outpatients have demonstrated that nausea and vomiting contribute to prolonged time to ambulation and discharge. These factors can contribute to significantly higher recovery room costs. For patients with a history of motion sickness, postoperative nausea and vomiting, or other opioid-related side effects, the additional cost of ketorolac may be money well spent.

As stated in our manuscript, “Ketorolac is a useful alternative to morphine for providing prophylactic analgesia in children undergoing elective operations.” If it decreases the requirement for postoperative antiemetic therapy and shortens the hospital stay, it would also prove to be cost-effective.


In the current medical environment in which we practice, the cost-effectiveness of new drugs is being more closely scrutinized. However, the analysis offered by Lipmann and Ginsburg may lead to misleading conclusions. The costs of treating drug-related side effects should also be included in the analysis.

MENHROOFE F. WATCHA, M.D.
PAUL F. WHITE, PH.D., M.D., F.F.A.R.A.C.S.
M. BARRY JONES, M.D.
C. SCHWEIGER, M.S.
Department of Anesthesiology
Washington University School of Medicine
St. Louis Children’s Hospital
P. O. Box 14871
400 South Kingshighway
St. Louis, Missouri 63178

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