

Unfortunately, we were not able to include two of Dr. Lang's references in our article (4), because we could not reference abstracts more than 3 yr old (5,6). His other reference simply states that there were no complaints to the manufacturer of chloroprocaine in Switzerland during the previous 4 yr, and no findings of thrombophlebitis. However, there was no mention of the criteria for thrombophlebitis and whether the investigators actively looked for it.

In summary, chloroprocaine may have a role in IVRA. Until there are further studies of chloroprocaine for IVRA in the literature, we believe that prilocaine is the safest local anesthetic for IVRA.

Cynthia L. Henderson, MD, FRCPC
C. Brian Warriner, MD, FRCPC
James A. McEwen, PhD
Pamela M. Merrick, BSN
Department of Anesthesia
University of British Columbia
Vancouver, BC, Canada V5Z 1M9

References

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2. Pitkanen M, Kytta J, Rosenberg PH. Comparison of 2-chloroprocaine and prilocaine for intravenous regional anaesthesia of the arm: a clinical study. *Anaesthesia* 1993;48:1091-3.
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5. Lang SA, Ha HC. Intravenous regional anesthesia with chloroprocaine does not cause clinically significant thrombophlebitis. *Can J Anaesth* 1989;36:S160-1.
6. Korzeniewski P, Lang SA. Incidence of CNS side effects and thrombophlebitis in intravenous regional anaesthesia with 2-chloroprocaine or xylocaine. *Can J Anaesth* 1991;38:A3.
7. Palas T. 0.5% chloroprocaine for intravenous regional anesthesia. *Reg Anesth* 1996;21:S37.

Does The Choice of Muscle Relaxants Really Affect Postoperative Recovery Time?

To the Editor:

Data published in Ballantyne and Chang's article demonstrate that the length of procedures differed greatly between the short- and intermediate-acting muscle relaxants (169 ± 6.8 min) and the long-acting muscle relaxants (256 ± 16 min) with little, if any, overlap (1). Regression analysis performed under these circumstances requires extrapolation well beyond the range of observation for each group—a well known pitfall in regression analysis, which should be performed only with extreme caution (2).

In addition, no information about the regression model assumed, or the corresponding parameter estimates, is given. Only the adjusted mean recovery times are given. This is especially important because the relationship as presented between length of surgery and recovery time is exponential, not linear.

Furthermore, these huge differences in surgical times probably represent surgical procedures of a significantly higher complexity that result in differences in the entire associated anesthetic plan, not just the choice of muscle relaxants. Are these two groups really comparable? This article may overestimate the effect of pancuronium usage on readiness to discharge.

David Bronheim, MD
Mark Abel, MD
Carol Bodian, PhD
Department of Anesthesiology
Mount Sinai Medical Center
New York, NY 10029

References

1. Ballantyne JC, Chang Y. The impact of choice of muscle relaxant on postoperative recovery time: a retrospective study. *Anesth Analg* 1997;85:476-82.
2. Neter J, Wasserman W. *Applied linear statistical models*. Homewood, IL: Richard D. Irwin Inc, 1974.

In Response:

In our article (1), we reported the mean and standard error of the mean for length of surgery and recovery time. Although the re-reported mean length of surgery using long-acting muscle relaxants was longer than that using

short- and intermediate-acting muscle relaxants, there was actually considerable overlap between the two groups, with the short- and intermediate-acting muscle relaxants ranging from 45 to 780 min, and the long-acting muscle relaxants ranging from 73 to 820 min. For the sake of simplicity, we chose not to include details of all the regression models we explored. We presented linear models comparing the recovery time associated with the two muscle relaxant groups, controlling for different confounders. By plotting the length of surgery and recovery time on a logarithmic scale, we could have misled readers about our choice of regression model. However, there was a strong linear relationship between the length of recovery time and the length of surgery ($r = 0.31$ with $P < 0.001$). The issues of problems with extrapolation mentioned by Bronheim et al. are not relevant to our data and analyses because we did not extrapolate.

Jane C. Ballantyne, FRCA
YuChiao Chang, PhD
Department of Anesthesia and Critical Care
Massachusetts General Hospital
Boston, MA 02114

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The Changing Role of Monitored Anesthesia Care in the Ambulatory Setting

To the Editor:

Two recent articles (1, 2) suggest that anesthesiologists are at risk of abandoning a fundamental goal, to prevent human suffering. Markey et al. (1) compared two formulations of hyperbaric lidocaine for spinal anesthesia without commenting on the fact that nearly half of the patients in the study required supplemental injections of local anesthetics. A better conclusion from this series of cases would be that epinephrine should be added to or bupivacaine substituted for the spinal anesthesia (or a catheter epidural should perhaps be used in the first place). The same plan of withholding treatment until patients complain underlies "titration" of sedatives and analgesics as advocated by Sá Rêgo et al. (2) in their review article on monitored anesthesia care.

Artful practitioners can almost eliminate patients' pain and recall of their suffering during monitored anesthesia care or with a failing regional anesthetic, but not completely, at least not if titration is used. Even if the result is judged satisfactory, it is usually not the best we could do for the patient. Shielding patients from all pain seems a more worthy and humanitarian aim than regulating the dose of pain to acceptable levels compatible with institutional goals for early discharge and lower costs.

Frank L. Murphy, MD
Department of Anesthesia
Hospital of the University of Pennsylvania
Philadelphia, PA 19104

References

1. Markey JR, Montague R, Winnie AP. A comparative efficacy study of hyperbaric 5% lidocaine and 1.5% lidocaine for spinal anesthesia. *Anesth Analg* 1997;85:1105-7.
2. Sa Rêgo MM, Watcha M, White PF. The changing role of monitored anesthesia care in the ambulatory setting. *Anesth Analg* 1997;85:1020-36.

In Response:

Although we agree with Dr. Murphy's statement that a fundamental goal of anesthesia is to prevent pain and suffering, his suggestion that this goal has been abandoned whenever sensation begins to return during spinal anesthesia before the completion of surgery, is both naive and untrue. It is true that at our institution (as at most teaching institutions), the majority of surgical procedures (particularly herniorrhaphies and other minor procedures) are performed by residents in training, albeit under supervision; therefore, the incidence of the surgery outlasting a regional anesthetic is certainly greater than that in private practice, in which surgery is performed by experienced surgeons. However, in every instance in our study, when sensation began to return, surgery was interrupted and complete analgesia was restored by a supplemental block with bupivacaine. In no case was a patient allowed to suffer while the surgical procedure was completed.