Local Anesthetics Administered Topically: Sterile or Not?

To the Editor—It has long been a practice to administer local anesthetics topically to the larynx and trachea. This practice is based on studies that have shown attenuation of the tachycardic and hypertensive response to laryngoscopy and intubation. Use of sterile ampules of topical anesthetics should prevent bacterial contamination. However, the cost of such an ampule is $0.40 per ml.

In our institution, we use a solution of tetracaine HCl 1%, which is prepared in our hospital pharmacy in a sealed 30-ml bottle. Each bottle is labeled with both a lot number and expiration date (1 yr). The cost of this bulk preparation is $0.02 per ml. We were concerned about the sterility and thus patient safety in using this preparation, particularly in bottles that had been opened and restored under nonrefrigerated conditions. Using sterile technique, we sampled all opened tetracaine HCl bottles found on the anesthesia carts during an unannounced early morning visit (n = 14). Although selection of the bottles was random, we found that there was approximately equal distribution in number between those recently opened and those that had been in use for up to 3 weeks. We also sampled unopened bottles (n = 4) and sterile water bottles (n = 3). There was no bacterial growth in any of our various culture broths after 2 weeks of incubation. Moreover, even introduction of Staphylococcus aureus, Pseudomonas aeruginosa, and Escherichia coli into separate aliquots of tetracaine HCl 1% solution did not allow bacterial growth. Thus, this solution possesses a bactericidal quality most likely due to the acidic nature of the solution (pH = 6).

It would appear that this cost-containment technique is safe in that it does not put patients at greater risk of iatrogenically introduced infection.

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REFERENCES

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