Economic Analysis of Anesthetic Drug Use

To the Editor:—Congratulations to Lubarsky et al.1 on an excellent economic analysis of anesthetic drug use. It is important that anesthesiologists rigorously examine their practices from an economic perspective and make adjustments accordingly. I appreciate the tremendous amount of work it takes implementing practice guidelines and believe that they can ultimately improve care. However, I do not agree with the author's conclusions that their practice guidelines, i.e., using less costly drugs with less favorable pharmacologic profiles as some more expensive drugs, saved money and had no adverse effect on outcome.

The authors state that their drug costs decreased from $56 per case to $32 per case by implementing these guidelines. They considered this significant and extrapolated it to a potential savings of 1 billion dollars nationwide. They also found a statistically significant increase of 3 min in emergency time (end of surgery to postanesthesia care unit [PACU] admission). They dismissed this increase as clinically insignificant. However, this 3-min difference is not trivial. Dexter and Macario2 found that operating room (OR) time costs $8.13/min, half of which is a variable cost. If one includes this added cost in the anesthetic costs of phase II of their study (3 min × $8.13/min) this equals $24.39 plus $32 for drugs or a total cost of $56.39 per case. If the added OR time costs are considered, anesthetic drug costs are no different after implementation of their guidelines.

The authors state that 3 min does not matter because it would not always mean overtime pay, and so on. At Stanford University, nurses are sent home when the work is done. So at our institution, time matters for all cases. At Duke University, the extra time may not matter on every case, but some days that increased time will likely increase overtime. Additionally, if one extrapolates this 3-min difference per case nationwide (as the authors did for cost differences), this would add up to thousands of hours, and it is not just the patients' time or OR time. It is surgeons' time, nurses' time, anesthesiologists' time, and so on. Drug cost savings are significant, but time also has monetary value.

The authors also stated that pulmonary complications and the need for postoperative mechanical ventilation were not different before and after implementation of their guidelines. However, they stated in the discussion that there was one case of prolonged mechanical ventilation resulting from pancuronium administration. This was dismissed as unimportant. Was it unimportant to the patient? If I was going to have surgery and if I knew that I had a 1 in 871 chance of requiring postoperative ventilation because my muscle relaxant might not wear off in time, I would pay $18 extra for a vial of vecuronium. Also, the risk of respiratory compromise in the PACU as a result of residual muscle relaxation from pancuronium cannot be ignored.3,4

The authors did not examine all the costs associated with their change in practice, and they did not assess some very important outcome variables (or rather these variables were beyond the scope and power of their study). I want to make it clear that I am not pointing out these problems to criticize this excellent study, but rather to highlight the editorial comment of Drs. Fisher and Macario.5 Outcome studies documenting the advantages of more expensive drugs need to be done to justify their continued use. I encourage investigators to measure all the "costs." It is important to not only include the financial costs but the "other" costs (e.g., time not paid for, patient suffering, rare complications, and so on) as well.6

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References


(Accepted for publication July 29, 1997.)

Anesthesiology, V 87, No 6, Dec 1997