

Anesthesiology
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Narcotic Anesthesia: Do the Benefits Justify the Cost?

To the Editor:—In the last two decades many have been persuaded of the alleged superiority of narcotic-based anesthesia. The advantages of the newest drug, whether real, created, or imagined, always seem to represent an improvement over what had been previously available.

Before the beginning of that era, morphine and meperidine were used as supplements to other agents, sparingly and in relatively small dosages.¹ Then, contrary to what was previously accepted, it was shown that patients could tolerate large doses of morphine² as long as adequate ventilation was maintained and plenty of blood volume expander was administered to compensate for the decrease in peripheral vascular resistance. Subsequently, fentanyl was introduced as being more potent, of shorter duration, and capable of "suppressing the stress response."³

Meanwhile, off and on various analgesics with agonist-antagonist properties have been introduced into the market, with more or less relative success, depending almost entirely on the insistence of the manufacturer.

The latest of the potent analgesics, sufentanil, is said to be everything that the other drugs are supposed to be plus being even more potent; in addition, it abolishes the "stress response" and, by virtue of its special pharmacokinetic disposition, is supposed to vanish from the body sooner.⁴

A scrutiny into the actual costs of these parenteral drugs, as our hospital buys them from the distributors, revealed an interesting trend and an apparent unexpected upset of that trend, with the latest medication. Moreover these costs are magnified by the customary addition of an arbitrary "surcharge" for the handling of controlled substances.

When we compared the cost of conventional equipotent doses of morphine and meperidine with other drugs, it was not surprising that the direct cost of some of these analgesics to the patient vary in direct proportion to their date of introduction. There was a reasonable difference that could, to a degree, be accepted, even if reasoning was difficult. As seen in figure 1, the price of pentazocine, pantopon, butorphanol, nalbuphine, and fentanyl steadily increased at an approximate rate of 15–25%.

Suddenly, a marked and unproportional increase occurred with sufentanil. I am uncertain that the latter is 3.2 times "better"* or safer than fentanyl; but without

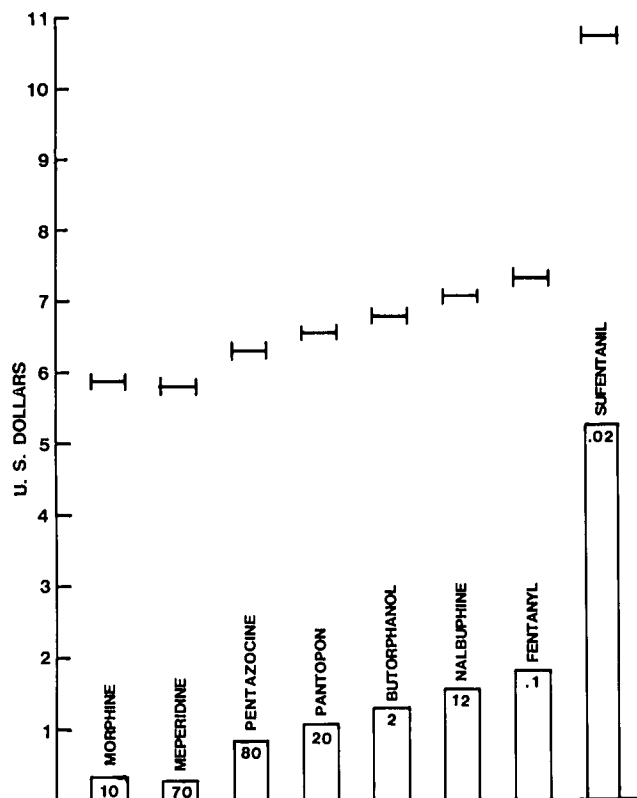


FIG. 1. The cost of analgesic drugs for the hospital is represented by the height of the bars, reflecting equipotent dosages as shown by the numbers contained within the bars. The horizontal lines, above each column, represent the total costs for each drug, when \$5.50 hospital surcharge is added.

doubt it is not 10–11 times better and safer than morphine and meperidine. It is difficult to justify this sudden high cost, particularly if magnified by the "hospital handling charge" of \$5.50 every time one of these drug's container (ampule) is opened. Butorphanol and nalbuphine do not need to be "controlled," nevertheless, many hospitals still charge for their "handling."

Furthermore, if one decides to use the narcotic-antagonist naloxone to reverse some of the agonists' residual effects⁵, an ampule of 0.4 mg at a cost of \$4.25 would have to be attached to the patient's bill.

Considering these facts, we can no longer ignore the cost differences in our decision-making process. Things being equal, one wonders if in healthy patients undergoing routine surgical procedures, in the hands of a capable anesthetist, the least costly medication would not be as effective as the most costly.

* Better, a term used in the clinical sense indicating definite advantages for patient and anesthesiologist alike.

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Ear Wax and the Otolaryngologist

To the Editor:—I believe I have found one of the causes for the occasional breakdown in communication between the anesthesiologist and the surgeon. I have been asked to remove ear wax from the external ear canal of anesthesiologists on so many occasions that I have become convinced that this is an occupational hazard of their profession. It would seem that wearing the molded ear piece that connects to the stethoscope leads to a build-up of ear wax in the same manner that we see in some patients who wear hearing aids. This ear wax tends to be hard wax that is firmly impacted deep in the external ear canal.

Any anesthesiologist who notes unilateral decrease in hearing or ear discomfort probably has ear wax build-up and should consult an otolaryngologist to get the ear wax removed.

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Comparing Direct and Indirect Arterial Blood Pressures

To the Editor:—I recently completed a study similar to that reported by Nystrom *et al.*,¹ comparing direct radial artery blood pressure with indirect brachial pressure by

Dinamap 1846 Vital Signs Monitor®. This study differed from Nystrom's in two important respects. Measurements were made simultaneously rather than in series by using

TABLE 1. Intraarterial Minus Dinamap® Blood Pressure

Range (mmHg)	Systolic	Diastolic	Mean
≤60		-16.6 ± 1.4* (62)	
61-80		-5.5 ± 0.5* (312)	-14.6 ± 1.9* (34)
81-100		-4.3 ± 0.8* (160)	-5.1 ± 0.8* (156)
101-120	-0.8 ± 3.7 (10)	-5.0 ± 1.4* (24)	1.1 ± 0.6* (257)
121-140	2.9 ± 1.4* (64)		6.3 ± 1.1* (87)
141-160	12.6 ± 0.9* (144)		8.1 ± 2.2* (24)
161-180	20.0 ± 0.9* (145)		
181-200	22.0 ± 0.9* (103)		
201-220	30.2 ± 1.9* (55)		
221-240	40.2 ± 4.9* (22)		
241-260	53.3 ± 4.8* (13)		
≥261	72.5 ± 12.5 (2)		

Mean ± SEM, number of comparisons in parentheses.

* Significantly different by paired *t* test (*P* < 0.001).