

## Editorial Views

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### *Rational Choice of Preoperative Medication:*

#### *The Emperor's New Clothes?*

THE INTRODUCTION to the paper by Forrest *et al.*, "Subjective Responses to Six Common Preoperative Medications," includes a quote from Beecher, "Empirical procedures firmly entrenched in the habits of good doctors seem to have a vigor and life, not to say immortality of their own."

Since there is no general agreement or specific indication directing choices of preoperative medications, sedatives, narcotics, potentiating agents, tranquilizers or vagolytic agents are administered to patients awaiting surgical operations. These choices are usually based on clinical experience, previous teaching, and the development of a favorite routine, and justified after the fact by the anesthesiologist's impression of ease of intraoperative management, effective management of postoperative pain, and relative freedom from postoperative discomfort due to nausea and vomiting.

The use of general anesthetics for safe, effective abolition of pain incidental to surgical operations is now so commonplace that we rarely stop to reconsider the epoch-making events occurring between 1842 and 1847 that resulted in the widespread use of diethyl ether anesthesia. Concomitant with the development of ether anesthesia was early recognition that ether caused delirium and stimulation of bronchial secretions, and stimulated the flow of saliva during induction and recovery. Additionally, postoperative nausea and vomiting caused problems, as did agitation, cough suppression and delayed return of consciousness. Morphine, introduced as a premedicant, was thought to possess definite advantages, for instance, relief of pain, decreased anxiety and hence, less struggle, excitement and delirium in stage 2 of ether induction. In this way, the onset of anesthesia was made smoother and more rapid. As a result of the decrease of reflex

excitability, less ether was needed, widening the margin of safety and decreasing its complications. Atropine was introduced early to prevent excessive salivary and bronchial secretions. Soon thereafter, circa 1915, barbiturates were employed prior to inhalation anesthesia to provide "basal anesthesia" as a preanesthetic substitute for morphine, and to provide specific protection from toxic reactions to local anesthetics. With the advent of halothane and the newer inhalation anesthetics and the advent of newer techniques such as neuroleptanalgesia, there has been a marked decline in the use of ether. Despite the fact that the original indications for premedication to avoid problems caused by ether have declined with the decreasing frequency of ether administration, premedication is still with us. Indeed, if not having survived the decline in indications, having vigorously grown as if having a life and immortality of its own.

Examination of the results of the study by Forrest *et al.* is instructive, raises some critical questions about preoperative medication choices, and reminds one of the children's fairy tale, "The Emperor's New Clothes." Is the emperor indeed wearing new clothes, or through force of habit are we conditioned to observe them even in their absence?

In Forrest's study, anesthesiologists rated the percentage of patients in each study group as satisfactory for ease of induction: for pentobarbital, 50 mg, somewhat better than 150 mg but not distinguishable from placebo. Similarly, diazepam, 5 mg, was worse than placebo; 10 mg, the same as placebo; 15 mg, somewhat better than placebo. Hydroxyzine, 50 mg, was as good as diazepam, 15 mg, but in higher doses dropped back to placebo response levels. Morphine and meperidine did not differ from placebo. Anesthesiologists were then asked to rate the adequacy of medication for

all 17 treatments, with exactly the same results. Again, anesthesiologists indicated that "placebo was a reasonably satisfactory premedicant."

When rating drugs and doses for production of sleepiness, hydroxyzine, 100 and 150 mg, and meperidine, 100 mg, produced significant differences from placebo within 30 minutes. After one hour, diazepam, 10 and 15 mg, and hydroxyzine, 50, 100, and 150 mg, were significantly different from placebo; however, at one hour, sleepiness resulting from meperidine was not significantly different from that with the placebo.

Perhaps the most interesting finding of the study was the observation that none of the drugs at any dose level had a significant effect relative to placebo upon the patient's reporting of apprehension. Apprehension increased in the operating suite, a finding in most patients receiving non-placebo drugs. Nurse observers rated hydroxyzine, 100 and 150 mg, as significantly decreasing apprehension at both the half-hour and the one-hour observation periods. However, from a statistical point of view, valid assays were not performed in the apprehension group. The criteria for validity of assays usually include: significant common slope of dose-response curves of the dosages of drugs tested, non-significant non-parallelism of the dose-response curves of the drugs being tested for significance, and the significance of the difference between placebo and the pooled responses to active treatments. Thus, while it is tempting to conclude that no drug treatment decreases apprehension significantly, one must also be concerned with a possible lack of sensitivity of Forrest's methods for demonstrating

changes in apprehension or anxiety. Despite this problem, the nagging question remains that of the disparity between the patient's reporting and observer's reporting of the subjective effects of the medication studied.

While we strongly agree with Forrest and associates' cautious disclaimer that further studies are needed to confirm or deny the efficacies of these agents, both singly and especially in the combinations typically used, methodologic refinements for both objective and subjective responses to drugs to decrease anxiety or apprehension seem to be of prior concern. From the data of the present study, one would have to develop some apprehension of his own that even when combinations of drugs are used, there still might be significant disparity between what was happening to the patient and what we *thought* was happening to the patient as a result of our choice of preoperative medications.

If we are to resolve the question of whether the emperor is wearing clothes, one would like to think that we could come to some agreement as to what we mean by apprehension and, if it exists, how we measure it reliably enough to demonstrate that we have effectively diminished it by premedication.

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