Comment: These authors have attempted to coorrelate an increase in plasma osmolality with failure to resuscitate 12 patients who had cardiac arrest. They attribute the hyperosmolar state to the administration of sodium bicarbonate. The reader may come away with the impression that sodium bicarbonate should not be used in the post-arrest state since it will produce hyperosmolality and death. Unfortunately, the authors do not report the osmolality present in the plasma of patients who suffered cardiac arrest and subsequently were successfully resuscitated, with or without the concurrent use of sodium bicarbonate. In order to reach any definitive conclusions on the advisability of using sodium bicarbonate, I believe such a control would be indicated. At any rate, the advice to give an initial injection of only 44 mEq. of sodium bicarbonate in the immediate treatment of cardiac arrest and then judge further bicarbonate administration on the basis of measurements of blood pH and P_{CO_2} is quite sound. The fact that routine use of sodium bicarbonate "by the clock" during effective cardiac compression can produce significant metabolic alkalosis is well recognized and is best avoided.

Jerome H. Modell, M.D.

SIX POTENT ANALGESIC DRUGS: A DOUBLE-BLIND STUDY IN POST-OPERATIVE PAIN

E. H. D'A. BANISTER

Winford Orthopaedic Hospital, Winford, England

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A total of 572 patients undergoing routine orthopedic surgery were given standard premedicant drugs, not including antiemetics, and were anesthetized with 1 of 2 regimes: thiopental-nitrous oxide-halothane with spontaneous respiration, or thiopental-nitrous oxide-relaxant with IPPV. In the recovery room, when the patients complained of pain, each was given a test drug from 2 ml. coded ampoules. The volume of drug was based on body weight. Neither the administrator of the drug nor the assessor of its effects knew the contents of the ampoules. The code was broken at the end of the test period. The 2 ml. ampoule contained 1 of the following drugs: papaveretum 20 mg., meperidine 100 mg., levorphanol 2 mg., phenoperidine 1 mg., pentazocine 60 mg. or piritramide 15 mg.

Pain was assessed on a 5 point scale (none, mild, moderate, severe, very severe), the presence of 5 side effects (restlessness, vomiting or nausea, drowsiness, euphoria and dizziness), and the effects on blood pressure.

No assessment was possible with respect to drug effect and a specific type of operation. Patients who had received IPPV during anesthesia perceived pain significantly later (69 versus 55 minutes) than those whose ventilation had been

spontaneous. The level of pain experienced was usually more severe with longer operative procedures.

Meperidine, papaveretum and pentazocine were superior in pain relief to levorphanol. Phenoperidine and piritramide were not significantly superior to levorphanol. Pentazocine and meperidine were associated with the fewest blood pressure alterations, and phenoperidine with the most. Pentazocine and meperidine produced the highest incidence of sedation. Restlessness, vomiting, euphoria and dizziness were noted in 8 per cent of all patients, but no drug was more commonly involved than another.

Overall, the study indicates that meperidine is the best drug for postoperative analgesia because it is associated wth a high incidence of pain relief and sedation, while producing minimal side effects.

Comment: The authors point out that pain was perceived significantly later in patients receiving IPPV. Yet this technique was reserved for "those undergoing major procedures." Perhaps the delayed onset of pain was the result of analgesic anesthetic levels from the longer procedures, which resulted in greater body uptake. The patients who had minor procedures of short duration certainly would eliminate their anesthetic sooner and therefore perceive pain earlier.

It would have been interesting to see CO_2 response curves in conjunction with this study. Those drugs rated best in pain relief also had the highest incidence of drowsiness. The price for better pain relief may be more respiratory depression.

Gordon D. Larcom, Jr., M.D.