Preanesthetic Care

Oral Bromazepam in Premedication. A Comparison with Diazepam

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Forty females undergoing elective gynecologic procedures were divided into two equal groups and received either 10 mg diazepam or 9 mg bromazepam 1½ to 3 hr orally preoperatively. Drugs were given from coded containers, and observers were not aware of the drug given. Observations were made of degrees of sedation, apprehension, presence or absence of dizziness, nausea or vomiting, and cardiovascular effects. Changes were noted before and after premedication and were graded from +5 to −5.

Three diazepam and two bromazepam patients were markedly sedated, and 11 and 16 patients, respectively, were moderately sedated. Apprehension was alleviated in nine diazepam and seven bromazepam patients. No patient complained of dizziness, except for a slight effect in one diazepam patient. One patient in each group was nauseated. No cardiovascular or other changes were noted in 20 diazepam patients and 18 bromazepam patients.

On the basis of the findings, bromazepam has no advantages over diazepam used as an oral premedicant. The greater cost of the former drug does not warrant its use.

Comment: Physicians are constantly bombarded by new drugs that theoretically will perform some task better than a drug in current use. Obviously, diazepam's popularity makes it a suitable target. This neat clinical study would indicate that bromezepam has little to offer the practicing clinician over diazepam premedication except that it costs more.

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Evaluation of the Efficacy of Alka-Seltzer Effervescent in Gastric Acid Neutralization

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Because a commercially available, universally acceptable regimen for decreasing gastric acidity is needed, the authors studied a mixture of sodium and potassium bicarbonate and citric acid (Alka-Seltzer Effervescent).

Two tablets of Alka-Seltzer dissolved in 30 ml of distilled water (pH 6.8) were added in 0.5-ml increments to 30-ml samples of hydrochloric acid (pH range from 1.0 to 2.0), and the change in pH was measured. The antacid buffered from five to 30 times the volume of hydrochloric acid to a pH above 2.5.

Dogs were anesthetized with pentobarbital, 30 mg/kg, and the left lower pulmonary lobe was removed and suspended in an environmentally controlled chamber. The lobe was ventilated at 10 breaths/min with 100% O_2 and a tidal volume of 2 ml/gm of pulmonary lobe. Unoxygenated, heparinized pulmonary blood, 800 ml, was perfused into the pulmonary artery to a final arterial pressure of 15 mm Hg for 30 min, and the lobes were allowed to stabilize. Sodium bicarbonate was added to the perfusate as needed to maintain normal acid-base balance. Two tablets of antacid were dissolved in 30 ml of distilled water for each test. In group 1, 0.2 ml 0.1 N hydrochloric acid (pH 1.0) was instilled into the bronchi; in group 2, 0.2 ml of equal volumes of 0.1 N hydrochloric acid and antacid (pH 5.4) were instilled into the bronchi; and in group 3, 0.2 ml of the antacid (pH 6.8)/gm lobe weight was instilled into the bronchi. Pulmonary arterial, venous, and peak inspiratory pressures and

lobe weight were monitored and blood gases analyzed periodically.

In group 1, lobe weight increased 208%, mean pulmonary arterial and mean peak inspiratory pressures and intrapulmonary shunting increased; after 4 hr, edema fluid was issuing from the airway. In group 2, mean lobe weight increased 53% for the 4 hr, pressures were stable, shunting did not develop, and the lungs appeared normal. In group 3, the lobe weight increased 60% in the first hour and then remained stable. For the 4 hr duration, pressures, shunting, and the appearance of the lung paralleled those in group 2.

Eighty patients between 10 and 71 yr of age admitted for emergency surgery were alternately assigned either to receive no antacid (control) or to receive 30 ml antacid (two tablets dissolved in 30 ml of water) orally 5 to 40 min before anesthetic induction. Time from last oral intake until anesthetic induction was 1 to 8 hr. In both groups, general anesthesia was induced with a rapid-sequence technique. When the endotracheal tube was secured, gastric contents were thoroughly aspirated, and pH and volume were determined.

The gastric pH of 50% of patients in the control group was less than 2.5, and that of all patients receiving antacid was greater than 4.0. The groups did not differ statistically in gastric content volume.

Alka-Seltzer Effervescent tablets in solution orally 5 to 40 min before anesthetic induction effectively buffers gastric juice to values above 2.5 without increasing the volume of gastric contents.

Comment: Plop, plop, fizz, fizz, oh what a relief it is from gastric acidity with speedy Alka-Seltzer Effervescent (Gold). The authors showed that this commercially available form of sodium citrate quickly neutralizes five to 30 times its volume of hydrochloric acid in human subjects (data unfortunately not included in this abstract) and creates little pulmonary damage when instilled into a dog lung model. These results agree with those of other investigators who found sodium citrate to be a rapidly acting antacid, effective for 60 to 180 min (Gibbs et al: Anesthesiology 57:44–46, 1982), and causing minimal lung damage when aspirated (Eyler et al: Anesth Analg 61:288–282, 1982). Clinicians must remain aware of the limitations inherent in nonparticulate antacids: a false sense of security, no protection against solid material aspiration, inability to buffer large gastric volumes, systemic absorption, rebound gastric acidity, and laxative effects. The reviewers concur with the authors' recommendation of preoperative sodium citrate 30 ml prior to emergency surgery for aspiration prophylaxis. Bicitra, another commercially available form of sodium citrate, which has the advantage of not releasing carbon dioxide that could increase intragastric pressure, is employed by the reviewers.

Try it you'll like it!

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The Role of Intraoperative Heparin in Reducing the Incidence of Postoperative Deep Venous Thrombosis

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Deep venous thrombosis (DVT) frequently complicates surgical procedures. Incidence of DVT is reported from 30 to 74%, depending on the center and the surgical procedure investigated. On the basis of a clinical impression that patients undergoing vascular surgery had a lower incidence of DVT than general surgical patients, the authors sought to determine whether a single dose of intraoperative heparin was a possible prophylactic against DVT.

Twenty eight patients, aged 48–82 yr, undergoing elective peripheral vascular operations and free of factors favoring DVT were investigated with radioactive fibrinogen uptake studies of the legs preoperatively, postoperatively, and then for 7 days after surgery. All patients received a single 5,000 unit i.v. dose of heparin during surgery, and no other DVT prophylactic measure was employed. Heparin was reversed in 20 and not reversed in eight patients. Two (7.1%) developed asymptomatic DVT on the 4th and 6th postoperative days. One case each occurred with and without active heparin. No complications related to heparin were noted.

Repeated studies have indicated that patients