Drugs

DIAZEPAM FOR CARDIOVERSION Diazepam was administered in 5-mg increments every three to five minutes until slurring of speech occurred, at which time cardioversion was performed. The total dose of diazepam ranged from five to 30 mg. Response during cardioversion varied from a twitch to subsequent recollection of a loud outcry. Amnesia was inadequate in three patients. Most patients were alert in 30 minutes or less and vital signs were not affected significantly. Slowing of respiration and Cheyne-Stokes respiration occurred in two chronically-debilitated patients with chronic obstructive pulmonary disease who received five and 15 mg diazepam, respectively. No respiratory assistance was required. The only patient complaint reported was burning along the course of the vein when the drug was administered too rapidly. (*Henrix, G. H.: Intravenous Use of Diazepam in Cardioversion, Southern Med. J. 62: 483 (April) 1969.*)

NARCOTICS The administration of morphine to healthy volunteers and to patients with myocardial infarction was associated with increases in deadspace:tidal-volume ratio (V_D/V_T), increases in alveolar:arterial oxygen-tension difference (A-a gradient) and decreases in blood pressure. The administration of the analgesic pentazocine to a healthy volunteer and to patients with myocardial infarction was associated with increases in blood pressure and decreases in V_D/V_T and A-a gradient. Pentazocine seems preferable to morphine for relieving pain after myocardial infarction. (*Lal, S., and others: Cardiovascular and Respiratory Effects of Morphine and Pentazocine in Patients with Myocardial Infarction, Lancet 1: 379 (Feb.) 1969.*)

INTRACRANIAL PRESSURE Halothane, trichloroethylene, and methoxyflurane produced greater increases in intracranial pressure in patients with intracranial space-occupying lesions than in patients with normal cerebrospinal fluid pathways. Blood pressure was reduced and cerebral perfusion decreased strikingly. The increased intracranial pressure would be expected to accentuate internal brain hernias and, if the skull were opened, to result in difficult operating conditions and external herniation of the brain. (*Jennett, W. B., and others: Effect of Anaesthesia on Intracranial Pressure in Patients with Space-occupying Lesions, Lancet 1: 61 (Jan.) 1969.*)

HALOTHANE HEPATOTOXICITY The effects of halothane and surgical operation on hepatic function were investigated in dogs. Two hours of halothane anesthesia did not cause hepatic damage, but identical anesthesia combined with cholecystectomy resulted in significant increases of BSP retention, which returned to normal on the third postoperative day. No change in hepatic perfusion was found. Under the conditions of these experiments, surgical trauma and not halothane was responsible for the postoperative changes in hepatic function. (*Jakab, T., and others: Experimental Investigations on the Hepatotoxic Effect of Halothane, Der Anaesthesist 18: 85 (March) 1969.*)

ANALYSIS OF ANESTHETIC CONCENTRATIONS Concentration analysis of alveolar gas samples through the use of a thermal conductivity detector was highly reproducible, with coefficients of variation of 1.3 per cent in ether, 1.8 per cent in N_2O, 0.5 per cent in CO_2 and 1.4 per cent in O_2. Measurements of ether in blood (10 μl), following its direct injection into a flame ionization detector, yielded a coefficient of variation of 3.1 per cent. Measurements of N_2O and CO_2 in blood,

using a thermal conductivity detector, yielded coefficients of variation of 3.5 per cent in N_2O and 2.1 per cent in O_2. (*Oyama, T., Matsumoto, F., and Kamada, M.: Quantitative Determination of Anesthesia Agents: Ether, Nitrous Oxide, Carbon Dioxide and Oxygen in Alveolar Air and Blood, Jap. J. Anesth. 18: 109 (Feb.) 1969.*)

INTRABILIARY PRESSURE Neuroleptanalgesia causes an increase in the tonus of the sphincter of Oddi. It is safe for use in patients with hepatic disease but should be avoided in patients undergoing surgical operations involving the biliary system. (*Uray, E., and Kosa, S.: Effect of Neuroleptanalgesia on Biliary Pressure, Der Anaesthesist 18: 74 (March) 1969.*)

INTRAOCULAR PRESSURE Intraocular pressure was found to be decreased in 30 patients undergoing ophthalmic surgery with neuroleptanalgesia. Therefore, neuroleptanalgesia is recommended for ophthalmic surgical operations, particularly for patients with increased intraocular pressure. (*Sarmany, B. J.: Further Investigations of the Effect of Anesthetics on Intraocular Pressure with Special Reference to Neuroleptanalgesia, Der Anaesthesist 18: 72 (March) 1969.*)

DIGITALIS There was no consistent relationship between the inotropic and the dromotropic (A-V blocking) effects of the digitalis glycoside acetylstrophanthidin (A-S) in dogs. Myocardial contractile force (CF) was measured with a right ventricular strain gauge. A-V blocking ability was assessed by determining the ventricular rate during artificial atrial pacing. Autonomic influences profoundly affected both inotropic and dromotropic actions of digitalis. Contrary to prevailing opinion, parasympathetic blockade with atropine did not alter the A-V blockade induced by digitalis. The beta-stimulation-induced increase in ventricular rate produced by isoproterenol was attenuated by digitalis. At low doses isoproterenol and digitalis increased CF in an additive manner. Digitalis did not further increase CF after large doses of isoproterenol, but isoproterenol increased the CF irrespective of the dose of digitalis, indicating that isoproterenol had a much more potent inotropic action. Beta blockade with MJ-1999 (Sotolol), a drug with few quinidine-like properties, did not alter the positive inotropic effect of digitalis. MJ-1999 elicited profound bradycardia (decrease in V-R), which was unaffected by subsequent administration of digitalis. There are several clinical implications to this study. If beta stimulation were high initially but then diminished during digitalization, there would be little change in CF but a marked increase in A-V blockade. Conversely, if the initial beta activity was low but increased during digitalization, there would be a marked increase in CF with little change in A-V conduction. (*Ogden, P. L., and others: The Relationship Between the Inotropic and Dromotropic Effects of Digitalis: The Modulation of these Effects by Autonomic Influences, Amer. Heart J. 77: 479 (May) 1969.*)

BLOOD LEVELS OF PENTAZOCINE A spectrophotofluorometric method for the quantitative determination of pentazocine levels in human plasma is described. Following intramuscular and oral administration, plasma levels of pentazocine coincided closely with onset, duration, and intensity of analgesia, as well as with other pharmacologic effects. The mean peak plasma level after 45 mg/70 kg intramuscularly was 0.14 μg/ml. The mean peak plasma level after 75 mg orally was 0.16 μg/ml, but as much as 25 per cent represented products of biotransformation. The plasma half-life is about two hours after intravenous or intramuscular ad-