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Drugs

PHARMACOLOGY There are two facets to the biochemical and physicochemical aspects of drug actions; the effects of drugs on the body and the effects of the body on drugs. In the past, pharmacology has emphasized the action of drugs on the living organism, but to be effective, a substance must have characteristics that allow it to reach its site of action in adequate concentration and to remain there for a suitable period of time. In order to reach its site of action, a drug must traverse a succession of membranes. For example, a tranquilizer given by mouth must cross the gastrointestinal epithelium, blood-brain barrier, membranes surrounding individual cells, and finally, subcellular boundaries. Even for processes of metabolism and excretion, the ability to cross cellular boundaries is important. It is obviously important that pharmacologists understand how therapeutic agents penetrate body membranes. (*Brodie, B. B.: Physicochemical and Biochemical Aspects of Pharmacology. (1967 Albert Lasker Basic Research Award Lecture), J.A.M.A. 202: 600 (Nov.) 1967.*)

CARBONATED LOCAL ANESTHETICS Local anesthetics usually are administered as water-soluble salts of hydrochloric acid. There are theoretical and experimental reasons for expecting that local anesthetic salts of carbonic acid should have a better clinical performance than the orthodox solutions. Carbonated solutions of lidocaine and prilocaine base in 1 and 2 per cent concentrations have been tested by clinical trial for conduction anesthesia in 602 patients. Quantitative assessment of analgesia was made in 566 of the patients, who received epidural blockade for surgical and obstetrical indications, and a comparison was made with the results in an additional 251 patients who received epidural analgesia with the equivalent hydrochloride solutions. The carbonated solutions were found to be greatly superior to the hydrochloride solutions for conduction blockade. Induction times were shortened by one-third and the intensity of analgesia was increased by one-third. Dose requirements were diminished, and duration of analgesia was prolonged slightly. No untoward effects were encountered in this series. It is concluded that carbonated local anesthetic solutions represent an important technical advance in conduction anesthesia. They are safe and worthy of extended clinical trial for major conduction-anesthetic techniques. (*Bromage, P.: Improved Conduction Blockade in Surgery and Obstetrics: Carbonated Local Anesthetics, Canad. Med. Ass. J. 97: 1377 (Dec.) 1967.*)