

TABLE 1. Rate Constants and Distribution Volumes

| | k ₁₂ (min) | k ₁₃ (min) | k ₂₁ (min) | k ₃₁ (min) | k ₁₀ (min) | V _{2a} l/kg | V _{3a} l/kg |
|-------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------|-------------------------|
| Pancuronium | 0.092 | 0.042 | 0.086 | 0.015 | 0.036 | 0.050 | 0.156 |
| Vecuronium | 0.607 | 0.085 | 0.305 | 0.024 | 0.116 | 0.056 | 0.157 |

Values are means.

(rather than injection of a drug bolus) by the technique of Loo and Riegelman.² Characterization of the distribution phase by this approach is not different from that obtained following the iv bolus techniques. Realizing that

the accurate determination of a rapidly occurring event such as distribution of pancuronium is difficult, even if very frequent sampling were performed, we have attached minimal significance to this variable in the interpretation of our results.

Dr. Norman also requested that we provide additional pharmacokinetic data so that he can predict the concentrations of these drugs by using various methods of administration. Values for distribution volumes at steady state and intercompartmental rate constants are shown in table 1.

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2. Loo JCK, Riegelman S: Assessment of pharmacokinetic constants from postinfusion blood curves obtained after IV infusion. *J Pharm Sci* 59:53-55, 1970

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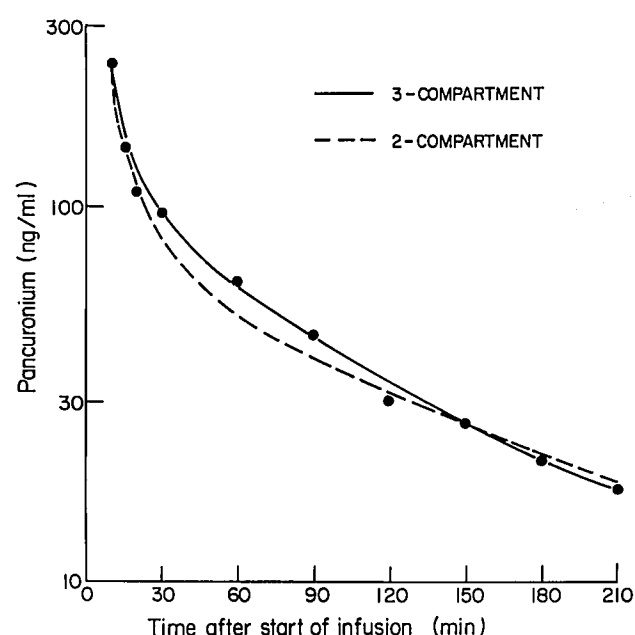


FIG. 1. Pharmacokinetic data for pancuronium. Pancuronium, 25 μ g/kg, was administered by infusion during the first 10 min. Circles represent measured concentrations of pancuronium. The dashed line represents the fitted function determined using the two-compartment pharmacokinetic model. The solid line represents the fitted function determined using the three-compartment pharmacokinetic model.

An Effective Way to Disseminate Protocols for Managing Malignant Hyperthermia

To the Editor:—Despite the increasing awareness of malignant hyperthermia as a life-threatening pharmacogenetic complication of anesthesia, there are still cases in which delayed or inappropriate treatment leads to an

adverse outcome. The ASA and MHAUS both have published protocols for emergency treatment and referral that can be posted in anesthetizing locations throughout the hospital.

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| <p style="text-align: center;">MH PROTOCOL</p> <p style="text-align: center;">NO</p> <p style="text-align: center;">PRESSORS DIGOXIN CALCIUM LIDOCAINE</p> <p style="text-align: center;">BE PREPARED</p> <p style="text-align: center;">NO TRANSFER UNTIL STABLE HAVE HELP, ICU CONSULT MONITOR FOR LATE Cx</p> <p style="text-align: center;">BEWARE</p> <p style="text-align: center;">CNS, RENAL, K⁺ CV-CHF, DIC RHABDOMYOLYSIS MUSCLE WEAKNESS RELAPSE POST-OP FAMILY RISK</p> <p style="text-align: center;">REFERRAL</p> <hr style="border: 2px solid black;"/> <p style="text-align: center;">MHAUS (203) 655-3007 UNC (919) 966-5136</p> | <p style="text-align: center;">MALIGNANT HYPERTHERMIA CRISIS PROTOCOL</p> <p style="text-align: center;">FIRST</p> <p style="text-align: center;">AIRWAY → TUBE STOP → ANESTHETICS</p> <p style="text-align: center;">100% O₂ I FLOW I VENT ≥ 3 × VE</p> <p style="text-align: center;">NaHCO → pH 7.3</p> <p style="text-align: center;">MONITOR</p> <p style="text-align: center;">(ABG, Lytes) EKG, A-LINE, CVP, TEMP, URINE</p> <p style="text-align: center;">TREAT</p> <p style="text-align: center;">V-ARRYTHMIAS: PROCAINAMIDE 1-2 mg/kg HYPERTHERMIA: COLD SALINE IV-NG-BLADDER-CHEST-ABD. SURFACE COOLING-ICE</p> <p style="text-align: center;">DANTROLENE Na: 1-3 mg/Kg-REPEAT 1 mg/Kg-IV q 15 minutes UNTIL STABLE ABG/TEMP (up to 10 mg/Kg)</p> <p style="text-align: center;">HYPERKALEMIA: D₅W-1AMP, 10u REG, INSULIN</p> <p style="text-align: center;">URINE: DIURESE-MANNITOL/LASIX IV VOLUME I</p> |
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FIG. 1. Malignant Hyperthermia Protocol Card.

We have found that these posters and other similar forms are difficult to maintain in the working environment of a busy operating room. Consequently, we have designed a laminated, wallet-sized card that is convenient to carry and that can be taped to the working surface of the anesthesia machine under clear plastic tape. These cards are immediately available during every anesthetic and do not interfere with machine operation or sterilization protocols. The cards will be available to physicians and nurse anesthetists in the state of North Carolina and have emergency phone numbers for Medic Alert, MHAUS, and the University of North Carolina, where 24-hour emergency consultation is available.

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Use of a Thiopental-Lidocaine Combination for Elective Cardioversion

To the Editor:—A variety of intravenous (iv) anesthetics have been recommended to rapidly achieve the "light" level of anesthesia required for cardioversion. The most commonly used drugs, thiopental and diazepam, are associated with high incidences of cardiorespiratory depression¹ and recall,² respectively. Theoretically, the use of a combination of thiopental and lidocaine for elec-

tive cardioversion might enhance cardiorespiratory stability, decrease recall, and shorten recovery time as a result of lidocaine's ability to decrease the anesthetic requirement.³ In addition, the antiarrhythmic properties of lidocaine might be advantageous in this setting.

In 10 ASA II-IV patients (aged 42-73 yr) undergoing elective DC cardioversion, thiopental, 50-150 mg iv, was