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**The utilization of automated ST segment analysis in the determination of myocardial ischemia** 351
*By Ian Hewer, CRNA, MA, MS*
Barbara Drew, RN, PhD
Karyn Karp, CRNA, MS
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Perioperative cardiac mobility is a recognized complication of anesthesia and surgery. In this original research, the authors assess the utility of ST segment technology in the early postoperative period for patients undergoing vascular, abdominal, or thoracic surgery.

**Anesthesia providers’ interventions during cataract extraction under monitored anesthesia care** 357
*By Shannon L. Pecka, CRNA, MSN*
Franklin Dexter, MD, PhD
Cataract surgery is the most commonly performed surgical procedure for Medicare recipients, and it has been a focus of the Health Care Financing Administration’s efforts to reduce costs. The goal of this study was to describe interventions of anesthesia providers during cataract extraction after the placement of a retrobulbar block. A retrospective review of 600 cases of cataract extractions under monitored anesthesia care was conducted.

**The effect of acrylic nails on the measurement of oxygen saturation as determined by pulse oximetry** 361
*By Stephanie M. Peters, CRNA, MSN*
This study investigates the effect of unpolished acrylic nails on the measurement of oxygen saturation as determined by pulse oximetry. The author reports that the study showed no significant difference in the measurements of oxygen saturation with natural nails versus unpolished acrylic nails.

**The laryngeal mask airway and the emergency airway** 364
*By Patricia L. Stanwood, CRNA, MNA*
The laryngeal mask airway (LMA) is an important new tool for managing the emergency airway. This review article explores the role of the LMA in the patient with (1) the emergency airway, a situation in which a normal airway must be controlled, or (2) the difficult airway which requires more vigilance in the operating room.

**AANA Journal Course: Update for nurse anesthetists—Improving the safety of subarachnoid and epidural blocks—Part A** 371
*By Michael A. Fiedler, CRNA, MS*
This is Part A of a two-part AANA Journal Course. In this course, which deals with the safety of subarachnoid and epidural blocks, the author describes the epidural test dose, hypotension, subdural injection, apnea, bradycardia, cardiac arrest, monitoring and vigilance, and neural injury. Part B, which will be published in October 1997, will present the effectiveness of spinal and epidural blocks.

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† ZEMURON™ is not recommended for rapid-sequence induction in cesarean section patients.
‡ Clinically significant changes in heart rate or blood pressure unlikely; heart rate changes (≥30%) occurred in 0% to 2% of geriatric and other adult patients. Tachycardia (≥30%) occurred in 12 of 127 children. Since ZEMURON™ may be associated with increased pulmonary vascular resistance, caution is appropriate in patients with pulmonary hypertension or valvular heart disease.
§ Signs of histamine release were observed in 0.8% of 1137 patients in clinical trials.

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Indications and Uses
ZEMURON (rocuronium bromide) injection is a nondepolarizing neuromuscular blocking drug with a rapid onset and offset of action that is useful in patients as an adjunct to general anesthesia to facilitate both rapid sequence and routine tracheal intuba-
tion, and to provide skeletal muscle relaxation during surgery or mechanical ventilation.

Warnings
ZEMURON (rocuronium bromide) administration should be considered in patients known to have hypersensitivity to rocuronium bromide.

In patients with myasthenia gravis or myasthenic (Eaton-Lambert) syndrome, small doses of nondepolar-
ing agents or advanced or advanced agents may have a prolonged post-twitch recovery time. In such patients, a peripheral nerve stimulator and use of a small test dose may be of value in monitoring the response to administration of maintenance doses of ZEMURON. ZEMURON, which has an acid pH, should not be mixed with alkaline solutions (e.g., barbiturate solutions) in the same syringe or administered simultaneously during intravenous infusion through the same needle.

Prescribing Information
Long-term use in I.C.U.: ZEMURON (rocuronium bromide) injection has not been studied for long-term use in the I.C.U. As with other nondepolarizing neuromuscular blocking drugs, apparent tolerance to ZEMURON (rocuronium bromide) injection is minimal. While the mechanism for de-
velopment of this resistance is not known, receptor up-regulation may be a contributing factor. It is STRON-
GLY RECOMMENDED that close administration and monitoring be maintained. A VITAL RECORD OF ADMINISTRATION AND RECOVERY WITH THE HELP OF A NERVE STIMULATOR, ADDITIONAL DOSSES OF ZEMURON OR ANY OTHER NONDEPOLARIZING BLOCKING AGENTS SHOULD NOT BE GIVEN UNTIL THE CURRENT INJECTION OF ZEMURON IS COMPLETE.

Indications and Usage
The use of ZEMURON (rocuronium bromide) injection in patients with myasthenia gravis or myasthenic (Eaton-Lambert) syndrome requires close monitoring of neuromuscular function. ZEMURON should only be used in this setting if, in the opinion of the prescribing physician, the specific advantages of the drug outweigh the risk.

Labor and Delivery
The use of ZEMURON (rocuronium bromide) injection in cesarean section has been studied in a limited number of patients. ZEMURON is not recommended for rapid sequence induction in cesarean section patients (see Clinical Trials subsection of CLINICAL PHARMACOLOGY). However, the use of ZEMURON (rocuronium bromide) by the I.V. route should be used with caution in patients with clinically significant hepatic disease. ZEMURON 0.6 mg/kg has been administered safely in patients with a history of hepatic disease, and has been used in patients with self-limiting isoflurane anesthesia. After ZEMURON 0.6 mg/kg, the median (range) duration of 60 (35-156) minutes was moderately prolonged compared to 42 minutes in patients with normal hepatic function. The median recovery of 80% to 90% twitch height at 50 minutes was prolonged compared to 20 minutes in patients with normal hepatic function. Four of eight patients with cirrhosis, who received ZEMURON 0.6 mg/kg under opioid/nitrous oxide/oxygen anesthesia, did not achieve complete block. Duration will be prolonged in these cases. The use of doses higher than 0.6 mg/kg has not been studied.

Adverse Reactions
Read Failures: Due to the limited role of the kidney in the excretion of ZEMURON (rocuronium bromide) Injection, usual dosing guidelines should be adequate. ZEMURON 0.6 mg/kg has been evaluated in three studies in normal volunteers (n=6) for renal insufficiency, and showed complete recovery by 24 hours. Read failure was not observed for a 10-minute test in patients with normal renal function.

Drug Interactions: Drug interactions have been observed when other nondepolarizing neuromuscular blocking drugs, including succinylcholine, are administered after a 1 mg/kg dose of succinylcholine when Ti 0 return to 75% of control was 36 minutes in normal patients (see Pharmacokinetics subsection of CLINICAL PHARMACOLOGY). A significant prolongation of neuromuscular blockade was observed in patients with cirrhosis compared to normal patients. The mechanism for this resistance is not known, receptor up-regulation may be a contributing factor (see INDICATIONS AND USAGE).

Pediatric Use: The use of ZEMURON (rocuronium bromide) injection in children less than 3 months of age has not been studied. See Clinical Pharmacology subsection of CLINICAL PHARMACOLOGY and Use in infants and children 3 months to 14 years of age.

Adverse Reactions
Clinical studies in the U.S. (n=1,137) and Europe (n=1,394) totaled 2,531 patients. Prolonged neuromuscular blockade is associated with nondepolarizing blockers as a class. Prolonged neuromuscular blockade (0.6 mg/kg) occurred in 150 patients (15% of the total). The median duration of 0.6 mg/kg ZEMURON (rocuronium bromide) injection in patients 67 years old with hepatic dysfunction who had received gentamicin before surgery. The patients exposed in the U.S. clinical studies provided the basis for calculating the following incidence data. The following adverse reactions were experienced in greater than 1% of patients and were considered drug-related in the clinical trials: There are no adequate and well-controlled studies in pregnant women. ZEMURON should be used during pregnancy only if the potential benefit justifies the possible risk to the fetus. Antagonism may be delayed in the presence of debilitation, carcinomatosis, and concomitant use of cerebrovascular disease, hypertension, hypotension, and other cardiovascular disorders. The following adverse reactions have been reported in patients administered ZEMURON injection (all patients judged by investigators during the clinical trials to have a possible causal relationship): Adverse reactions in greater than 1% of patients Probable or Related/Unlikely — NONE

Adverse experiences in less than 1% of patients Probable Related or Relationship Unknown

Cardiovascular: arrhythmia, abnormal electrocardiogram, tachycardia

Diabetes: hyperglycemia, nausea

Respiratory: bradypnea, wheezing, or, rarely, hiccup

Skin and Appendages: rash, injection site edema, pruritus

In the European studies, the most commonly reported adverse experiences were transient hypotension (24% for ZEMURON, 25% for control). The incidence of hypotension was statistically different between the groups. However, in the U.S. studies in heart rate and blood pressure were determined differently from the U.S. studies in which changes in cardiac-vascular and respiratory function were examined. The drug was not associated with any adverse event that could be attributed to the drug. The incidence of anticholinergic effects was not observed in the clinical trials is of diminished magnitude and duration of neuromuscular block should be considered a potential adverse reaction. ANTAGONISM (SUCH AS NEOSTIGMINE) SHOULD NOT BE ADMINISTERED PRIOR TO THE DEMONSTRATION OF SOME SPONTANEOUS RECOVERY FROM NEUROMUSCULAR BLOCKADE. THE USE OF A NERVE STIMULATOR TO DOCUMENT RECOVERY AND ANTAGONISM OF NEUROMUSCULAR BLOCKADE IS RECOMMENDED.

Antagonism of Neuromuscular Blockade
Patients should be evaluated for adequate clinical evidence of antagonism, e.g., 5 sec head lift, adequate spontaneous ventilation, and upper airway maintenance. Ventilation must be supported until no longer required.

Antagonism may be delayed in the presence of debilitation, carcinomatosis, and concomitant use of certain broad spectrum antibiotics, or anesthetic agents and other drugs which enhance neuromuscular blockade.

Improved antagonism of neuromuscular blockade can be facilitated by administration of an anti-cholinesterase agent (e.g., neostigmine in conjunction with an appropriate anti-cholinergic agent (see Antagonism of Neuromuscular Blockade).
The fifth AANA Journal Fellowship Program will be held at the AANA Foundation Learning Center in the AANA Building on October 11-12, 1997. Fifteen individuals will be selected for participation in this invitational weekend program (all day Saturday and Sunday until noon).

Each participant will have their travel expenses and two nights' lodging reimbursed in conjunction with the AANA/AANA Publishing, Inc. travel policy. A working group dinner will be hosted Saturday evening. This and all other meals will be included in the program.

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Featured Speaker

Elizabeth M. Tornquist, MA, is the primary fellowship facilitator. A lecturer in the School of Nursing and the School of Public Health at the University of North Carolina at Chapel Hill, Ms. Tornquist has authored and coauthored numerous articles on writing and nursing research, as well as books on the subjects of nursing research; elder care; and how to think, read, and write effectively. She is a graduate of Duke University, Durham, North Carolina, and she received her master's degree in English from the University of Chicago.

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4. A copy of the applicant's AANA Membership card.

Don't Miss the Deadline

Applications should be postmarked by August 20, 1997. Applicants will be notified of their acceptance by September 10. Please send your application to:
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