3. Foldes FF (1984) Rapid tracheal intubation with non-depolarizing neuromuscular blocking drugs: the priming principle. Br J Anaesth 56:663
4. Foldes FF (1985) The priming principle. In: Agoston, Bergmann, Schwarz, Steinbereithn er (eds) Muscle relaxants—therapeutic margins. Verlag Wilhelm Maudrich, Wien-München-Bern, pp 113–120
5. Schwarz S, Ilias W, Lackner F, Mayrhofer O, Foldes FF (1985) Rapid tracheal intubation with vecuronium: the priming principle. Anesthesiology 62:388–391
6. Foldes FF, Nagashima H, Kornak PH (1993) Effect of priming. Anaesth Pharm Rev 1:49–56
7. Rorvik K, Husby P, Gramstad L, Vamnes JS, Bitsch-Larsen L, Koller ME (1988) Comparison of large dose of vecuronium with pancuronium for prolonged neuromuscular blockade. Br J Anaesth 61:180–185
8. Pelikan EW, Tether JE, Unna KR (1953) Sensitivity of myasthenia gravis patients to d-tubocurarine and decamethonium. Neurology 3:284–296

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Rapid opioid detoxification under general anesthesia

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To the editor: Rapid opioid detoxification is a new approach for the treatment of the opioid addict. Originally developed by Legerda at CITA (*C*enter for *I*nvestigation and *T*reatment of *A*ddiction) [1], this new method of opiate detoxification under the CITA protocol became available for the first time in the United States at the Metropolitan Hospital Center in New York.

Traditionally, detoxification of the opioid-dependent patient has been accomplished slowly over a period of a week or more by transferring the addict to an equipotent dose of methadone, then decreasing the methadone dose gradually. Methadone decreases the discomfort of withdrawal but makes the period of withdrawal much longer [2,3]. The rapid detoxification method was developed to minimize this period of discomfort. In Metropolitan Hospital, this detoxification takes only 24 h under the CITA protocol.

Rapid antagonism of opioids by naloxone or naltrexone results in severe withdrawal symptoms [2,4]. The withdrawal syndrome is minimized by the CITA protocol using general anesthesia in an intensive care unit setting. The anesthesiologist is best suited to manage this detoxification, because it requires the skills of screening patients for general anesthesia, cardiovascular and respiratory monitoring, and pain management, as well as the ability to manage the accompanying withdrawal symptoms.

In the Metropolitan Hospital Center, board-certified anesthesiologists care for these patients during the entire detoxification period. Space in the recovery room has been specifically designated for this program, with four anesthesia machines, monitors, and a trained nursing staff with experience in both psychiatry and critical care.

Liver function tests, ECG, chest X-ray, and psychiatric evaluation are performed on all patients before admission. The patient comes to the hospital on the morning of the detoxification. Because of the effect of opioids on gastric emptying, the patients are regarded as having a full stomach, and therefore intubation is mandatory. A light plane of general anesthesia is induced, which does not completely mask the physiological response to opioid withdrawal. The withdrawal symptoms may be shortened or diminished under general anesthesia. It has been previously reported that during deep barbiturate anesthesia, administration of 10 mg naloxone to an opioid addict produces no significant changes in the hemodynamic parameters of heart rate, mean arterial pressure, cardiac index, or peripheral vascular resistance, or in oxygen saturation [5]. We use clonidine to blunt the cardiovascular effects and to make awakening as comfortable as possible [3,4].

Premedication is started with clonidine, titrated to heart rate and blood pressure to the lower margin of the normal range. Then induction is performed with propofol. After intubation, continuous infusion of propofol is maintained. Naltrexone is given incrementally to antagonize opioids. It produces withdrawal symptoms, such as piloerection, pupillary dilatation, and myoclonus. The withdrawal syndrome itself is of very short duration, and the antagonizing opiate cycle is repeated until the disappearance of the withdrawal symptoms with naloxone. This naloxone challenge test is performed before waking the patient to prove that there is no more opioids in the patient's body.

Since the start of this method on August 26, 1996, 85 patients have been treated. The results to date have been very promising. All patients have passed the naloxone challenge test and awaken without a craving for narcotics. However, the standard of success in addiction therapy is a drug-free interval of 6 months. This population will be carefully reevaluated after this period to assess the success of the method.

References

1. Legarda JJ, Gossop M (1994) A 24-h inpatient detoxification treatment for heroin addicts: a preliminary investigation. Drug Alcohol Depend 35:91–93
2. Kurland AA, McCarbe L (1976) Rapid detoxification of the narcotic addict with naloxone hydrochloride. A preliminary report. J Clin Pharmacol 16:66–74
3. Kosten TR (1990) Current pharmacotherapies for opioid dependence. Psychopharmacol Bull 26:69–74
4. Riordan CE, Kleber HD (1980) Rapid detoxification with clonidine and naltrexone. Lancet 1980:i:1079–1080
5. Presslich O, Loimer N, Lenz K, Schmid R (1989) Opiate detoxification under general anesthesia by large doses of naloxone. Clin Toxicol 27:263–270

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