Evaluation of the stability and efficacy of a propofol-rocuronium mixture

To the Editor:

Alternative strategies to reduce the onset time of non-depolarizing muscle relaxants, such as priming,¹ administering large doses² and using the timing principle^{3,4} have not been completely successful. We have used a propofol-rocuronium mixture for the rapid induction of anesthesia. First however, we tested whether a propofol-rocuronium mixture is stable.

UV spectra were obtained on a Shimadzu UV 2100 sec spectrophotometer (10 mg·100 mL⁻¹ in acetonitrile). A model 600 Waters pump was connected to a 200 µL loop injector and a µBondapak CN column (150 mm × 3.9 mm internal diameter; Waters assoc. Milford, MA, USA). Model 481 Waters UV detector and Unicam ProGC Data Station were used. Compounds were detected at 220 nm. The peak height was used for quantitation. The mobile phase was acetonitrile-water (60:40, v/v). The flow rate, injection volume and detector response were 0.7 mL·min⁻¹, 5 µL and 15 µL and 100 mV, respectively.

High pressure liquid chromatography (HPLC) method: standard stock solutions were freshly prepared with acetonitrile including 60 µg·mL⁻¹ rocuronium bromide and 100 µg·mL⁻¹ propofol. The external standard solutions were prepared with acetonitrile at a concentration of 60 µg·mL⁻¹ for rocuronium bromide and at a concentration of 100 µg·mL⁻¹ for propofol.

Standard propofol peak height with a standard deviation of 0.38 and standard rocuronium bromide peak height with a standard deviation of 0.25 were established. Peak heights of propofol and rocuronium bromide in propofol-rocuronium bromide (5:3) stock solutions were determined at zero, two, four, six, 18, 24, 48 and 72 hr, respectively, in comparison to peak heights of the freshly prepared external standards at the same concentration level. We conclude that a 5:3 mixture of propofol and rocuronium bromide was stable up to 48 hr after mixing. Propofol concentration in the mixtures stored at ambient temperature showed degradation 72 hr after mixing. Propofol concentration in mixtures stored at 37°C showed degradation four hours after mixing.

After Ethic's Committee approval and patient written informed consent, 35 patients, ASA class I-II, undergoing elective surgery were included in this study. All patients received fentanyl 1 µg·kg⁻¹ followed by three minutes of preoxygenation. Anesthesia was then induced with the propofol (2 mg·kg⁻¹) - rocuro-

nium (0.6 mg·kg⁻¹) mixture *iv* over 30 sec. All patients were intubated on the first attempt. The intubating conditions were evaluated using a score described by Viby-Mogensen.⁵ Intubating conditions at 60 sec were determined as excellent in 26 patients and good in nine patients. We have not determined any adverse effect of this mixture.

We concluded that anesthesia induction with a propofol-rocuronium mixture provides excellent or good intubating conditions at 60 sec. It could be an effective and alternative technique for rapid induction of anesthesia.

Saffet Karaca MD
Ziya Salihoglu MD
Arzu Duran MSc
Sevim Rollas PhD
Istanbul, Turkey

References

- 1 Mehta MP, Choi WW, Gergis SD, Sokoll MD, Adolphson AJ. Facilitation of rapid endotracheal intubations with divided doses of nondepolarizing neuromuscular blocking drugs. *Anesthesiology* 1985; 62: 392-5.
- 2 Ginsberg B, Glass PS, Quill T, Shafron D, Ossey KD. Onset and duration of neuromuscular blockade following high-dose vecuronium administration. *Anesthesiology* 1989; 71: 201-5.
- 3 Culling RD, Middaugh RE, Menk EJ. Rapid tracheal intubation with vecuronium: the timing principle. *J Clin Anesth* 1989; 1: 422-5.
- 4 Koh KF, Chen FG. Rapid tracheal intubation with atracurium: the timing principle. Report of investigation. *Can J Anaesth* 1994; 41: 688-93.
- 5 Viby-Mogensen J, Engbaek J, Eriksson LI, et al. Good clinical research practice (GCRP) in pharmacodynamic studies of neuromuscular blocking agents. *Acta Anaesthesiol Scand* 1996; 40: 59-74.

Streptococcal meningitis after spinal anesthesia: report of a case

To the Editor:

A 66 yr-old male underwent uneventful spinal anesthesia for right inguinal herniorrhaphy. He had been taking medication for coronary arterial disease and hypertension.

During induction of spinal anesthesia the puncture site was found to be normal and sterilized with Povidon iodine (PI; Merkez Laboratuvarlari Ilac San, Istanbul, Turkey). A sterile dressing pack and disposable needles