Saemund and Dalenius reported five cases of nodal rhythm directly related to the injection of pancuronium 0.1 mg kg⁻¹. We, too, have witnessed several examples of transient nodal rhythm after the administration of pancuronium and not infrequently this rhythm disturbance has been accompanied by a decrease in arterial pressure. Recent reviews (Prys-Roberts, 1981) emphasize the potential deleterious effects of this rhythm disturbance in patients suffering from hypertension and coronary artery heart disease and we have demonstrated severe deterioration of circulation during an episode of nodal rhythm even in an apparently healthy patient (Heinonen, Salmenperä and Takkunen, 1981a) Although atrioventricular dissociation has been observed in a considerable proportion of cases during the onset of pancuronium block also (Haldemann and Schaer, 1972), a re-evaluation of the frequency of nodal rhythm in association with various neuromuscular blocking drugs may be indicated.

REFERENCES


ANTAGONISM OF KETAMINE BY 4-AMINOPYRIDINE AND PHYSOSTIGMINE

Sir,—I have read with interest the correspondence from Tung, Figallo and Brandom (1981) and Rupreht (1981), regarding 4-aminopyridine (4-AP) reversal of ketamine-diazepam anaesthesia I entirely agree with Tung’s statement that ‘the efficacy of 4-aminopyridine in antagonizing the anaesthetic effect of ketamine may be because of the antagonistic effects on prejunctional acetylcholine release in the c.n.s. in a manner similar to that in motor nerve terminals’; and I may add, from my own research on the effect of 4-AP on Maccacus rhesus monkeys (Martinez-Aguirre and Crul, 1979) and from other unpublished data, it is tempting to postulate that 4-AP might additionally displace ketamine from its c.n.s. receptors by competing with it. This may be a result of their structure-activity relationship, causing a sudden, brief increment in plasma ketamine concentration, as opposed to the control series.

With respect to Rupreht’s comments that “no reliable treatment has been suggested for 4-AP overdose”, I would like to recall that 4-AP is a known convulsant drug at doses greater than 1 mg kg⁻¹ i.v. Our previous work on 4-AP (Martinez-Aguirre, 1980, Martinez-Aguirre, Kaufman and Paz-Alvarez, 1980, Martinez-Aguirre, Wikinski and Bravo, 1980) indicates that 4-AP is an effective reversal agent for ketamine-diazepam anaesthesia in children. 0.3 mg kg⁻¹ i.v. being the least active dose, and 1.0 mg kg⁻¹ i.v. the most active dose. This latter dose has been shown to produce fine muscle tremors or movements in some patients, so that our recommended dose for reversal of ketamine-benzodiazepam anaesthesia is 0.6 mg kg⁻¹ i.v. We have observed two cases of inadvertent overdose of 4-AP (1.2 and 1.7 mg kg⁻¹ i.v.), respectively, with the occurrence of generalized convulsions, which began with spasms of the facial muscles. They were quickly prevented by the i.v. administration of diazepam 0.2 mg kg⁻¹ in one patient and of midazolam (Ro 21-3981) 0.15 mg kg⁻¹ in the other; both patients received oxygen via a face mask. At no time was there evidence of acute respiratory insufficiency.

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REFERENCES


POSITIVE END-EXPIRATORY PRESSURE AND AIR EMBOLISM IN THE SITTING POSITION

Sir,—We read with interest the paper by Campkin (1981) on posture and ventilation during posterior fossa and cervical operations and agree with the author’s view of the benefits of controlled hyperventilation and the sitting position. Hewer and Logue (1962) and Lee, Lichtmann and Weinstaeb (1981) advocated the use of positive end-expiratory pressure (PEEP) to reduce the frequency of air embolism. We wish to report our experience on the use of PEEP to prevent air embolism.

Since 1978 we have used PEEP up to 10 cm H₂O in 169 patients, in the sitting position, undergoing infratentorial and cervical surgery. There was accurate monitoring of the heart rate, systemic arterial pressure and e.g., with a catheter in the right atrium for the measurement of central venous pressure, and precordial ultrasonic Doppler transducer. Only one case of air embolism, from a puncture wound of the pin-type head holder device, was detected at the end of the procedure when...