(3) Patients with lithium-induced polyuria should be given fluids parenterally during the night before an operation, when they vomit copiously, or if they are unconscious for several hours.

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POTENCY RATIO BETWEEN OPIOID AGONISTS AND PARTIAL AGONISTS

Sir,—The paper by Klepper and colleagues (1986) again seems to indicate the belief of this group of workers in a fixed potency ratio between opioid agonists and partial agonists, although such a concept is theoretically unlikely (Kay, 1985). Support for a variable potency ratio is apparent in their paper, however, in that nalbuphine in so-called “equipotent” doses smaller than those in the range (8–10 mg) where equipotency has been demonstrated (Beaver and Feise, 1978) produced a greater effect than morphine. This observation correlates with the theoretical prediction based on nalbuphine having a flatter dose–response relation than morphine, as does the observation that doses of nalbuphine in excess of 10 mg produced less effect than “equipotent” doses of morphine. The paper confirms that nalbuphine has a flatter dose–response relation than morphine, and that a ceiling effect, or even reversal of effect, occurs. With non-parallel dose–response relations, any potency ratio between nalbuphine and morphine can only apply at a single dose.

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REFERENCES


Sir,—Dr Kay has previously made the point about fixed potency ratios (Kay, 1985). He is technically correct that, if the dose–effect curves are not parallel, use of a single potency ratio is inaccurate, but it is also true that the term potency is imprecise in a clinical context in which the end-point cannot be measured accurately, such as with an analgesic drug. Nevertheless, a single ratio is an approximation widely used to compare drugs in their clinical dose range. This rarely gives rise to a problem because any inaccuracy is swamped by the biological variation in dose between patients; from studies by patient-controlled analgesia this variation can range up to 10 times. Therefore, our comparison of doses of nalbuphine (4.4–50 mg/70 kg) and morphine (3–17.5 mg/70 kg) covers the range of doses used in clinical practice. Our work confirms that, unlike morphine, nalbuphine with increasing dosage causes limited ventilatory depression. That should be useful information for the clinician, whatever the definition of equipotency.

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