What's the Optimal Dose of Succinylcholine?

Succinylcholine (SCh)-induced paralysis persists long enough to cause significant oxyhemoglobin desaturation before the patient resumes spontaneous ventilation; thus, doses lower than 1.0 mg/kg might be desirable to reduce the duration of action. In this prospective, randomized, controlled, double-blind study from Saudi Arabia, the authors evaluated intubating conditions after various doses of SCh were given to 200 patients undergoing elective anesthesia with fentanyl (2 µg/kg) and propofol (2 mg/kg). When patients became unconscious, they were given saline placebo or SCh at a dose of 0.3, 0.5, or 1.0 mg/kg. Sixty seconds later, an anesthesiologist blinded to group assignment attempted attempted intubation.

Acceptable intubating conditions (defined as vocal cords fully open, no vigorous limb movement, and no sustained [>10 s] coughing) were achieved in 92%, 94%, and 98% of patients who received 0.3, 0.5, and 1.0 mg/kg of SCh, and in 32% of patients who received saline. The difference was statistically significant ($P<0.05$) for all 3 SCh groups versus the control group, but not among the SCh groups. The calculated doses of SCh that were needed to provide acceptable intubating conditions in 90% and 95% of patients were 0.24 mg/kg and 0.56 mg/kg, respectively.

**Comment:** Wait! Don't reduce your intubating dose of SCh based on this study. The authors and an editorialist point out that in an emergency, excellent, not just acceptable, intubating conditions may be required. Also, the half-life of SCh is less than one minute, so doubling the dose extends the duration by only about one minute (i.e., one half-life). In the emergency department, rapid, consistent intubation is much more important than duration of action, so stick with the widely recommended ED rapid-sequence intubation dose of 1.5 mg/kg. As a side note, this is another in a long series of studies showing that intubation with deep anesthesia but without paralysis produces unacceptable intubating conditions in most cases (almost 70% in this study).

— Ron M. Walls, MD, FRCPC, FACEP

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