Rocuronium Intubation with the Timing Principle: Better Than Succinylcholine?

Succinylcholine (SCh) is the neuromuscular blocking agent of choice for rapid sequence intubation (RSI) in the ED, but it has side effects. Investigators from Switzerland and Boston compared succinylcholine with rocuronium given by a "timing" method in 45 ASA class I or II patients undergoing elective general anesthesia. All patients were premedicated with midazolam (1 to 3 mg) and fentanyl (1 µg/kg).

Investigators randomized patients to rocuronium (0.6 mg/kg IV) or vecuronium (0.01 mg/kg IV). Patients given rocuronium also received thiopental (4 to 6 mg/kg IV) at the first sign of muscle weakness (usually ptosis), and were further randomized to intubation 45 or 60 seconds later. Patients receiving vecuronium received thiopental and SCh (1.5 mg/kg) 3 minutes after the vecuronium, and intubation was attempted 60 seconds later. Intubating conditions were good or excellent in all patients.

None of the patients interviewed 4 to 24 hours later reported weakness or shortness of breath before induction. Only one SCh patient reported myalgia. Three rocuronium patients experienced pain on injection.

**Comment**: This small study shows that timing the administration of rocuronium and the induction agent may achieve intubating conditions comparable to those achieved with succinylcholine for RSI. It may be possible to identify a standard delay, perhaps 30 seconds, between rocuronium and the induction agent to achieve optimal rapid intubating conditions. Further study is needed to identify possible application to ED RSI.

— RM Walls

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