Succinylcholine: Recovery Before Desaturation?

Because succinylcholine (SCh) paralysis is short-lived, some speculate that recovery of spontaneous breathing occurs before serious hypoxemia develops. To test this theory, researchers pre-oxygenated 12 healthy volunteers with 100 percent oxygen for 3 minutes and then administered 5 mg/kg of thiopental and 1 mg/kg of SCh intravenously. Oxygen saturation (SAT) was continuously monitored, but no airway or ventilation assistance was given unless SAT fell below 80 percent.

SAT was maintained above 95 percent throughout the period of apnea in 6 subjects and above 80 percent in 8. Of the 4 subjects whose SAT was below 80 percent, 1 required chin lift only, but 3 required chin lift plus assisted ventilation. Mean apnea duration was 5.2 minutes and was significantly longer in those whose SAT fell below 80 percent than in those whose SAT remained higher (7.0 vs. 4.1 minutes). Seven subjects experienced some degree of awareness during the protocol.

Comment: This study supports earlier work demonstrating that after SCh is given, significant hemoglobin oxygen desaturation occurs before the recovery of sufficient muscular activity to support respiration. Rescue strategies, including simple bag mask ventilation, must be used if SCh-assisted intubation fails.

— RM Walls, MD

Published in Journal Watch Emergency Medicine June 21, 2001

CITATION(S):