Risks for Peri-Intubation Cardiac Arrest


In a retrospective analysis, patients in shock were at higher risk for peri-intubation cardiac arrest, which usually had an initial rhythm of pulseless electrical activity.

Peri-intubation hypotension and even cardiac arrest are concerns in patients undergoing emergency resuscitation. To determine the incidence of peri-intubation cardiac arrest and factors associated with it, researchers retrospectively analyzed records for 410 adult patients who underwent rapid sequence intubation (RSI) at a single urban emergency department during 2007.

Peri-intubation cardiac arrest (defined as occurring within 60 minutes after initiation of airway management) was documented on the standardized data collection tool in 17 patients (4.2%), at a median 6 minutes after intubation. Nearly two thirds of cardiac arrests occurred within 10 minutes. Pulseless electrical activity was the initial arrest rhythm in most cases. Arrest was more common in patients with pre-intubation hypotension (12% vs. 3%) and in those with pre-intubation oxygen saturation (<92%).

In multivariate logistic regression analysis, higher pre-RSI shock index and body weight were independently associated with peri-intubation cardiac arrest. Although more than half of patients were initially resuscitated, peri-intubation cardiac arrest portended a 14-fold increase in the odds of in-hospital death.

Comment: The association of peri-intubation cardiac arrest with higher pre-intubation shock index, and the finding that nearly all cardiac arrest patients had pulseless electrical activity, highlights the precarious state of hypotensive critically ill patients, especially those with higher body mass index. We are subjecting these fragile patients to a combination of induction agents, airway manipulation, and, especially, positive pressure ventilation. The take-home message? Intubate earlier, if possible, before the patient deteriorates; optimize hemodynamic parameters with pressors, fluids, or blood; and carefully control mechanical ventilation to minimize ventilation pressures.

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