Pretreatment in rapid sequence intubation: Indicated or contraindicated?

To the Editors: In response to Kuzak and associates' Original Research article on the use of lidocaine and fentanyl premedication for neuroprotective rapid sequence intubation (RSI) in the emergency department (ED),[1] it is well known that laryngoscopy and intubation is very stimulating and can lead to significant activation of the sympathetic nervous system and a resultant rise in intracranial pressure. This knowledge has resulted in the common use of pretreatment agents to blunt this "pressor" response.

It is, however, important to realize that the majority of these data have been gathered in the setting of "stable" patients in the non-emergent setting.[2] Many, if not most, emergency patients requiring intubation have borderline physiologic reserve and are often compensating through catecholamine release. Although lidocaine has not been shown to threaten hemodynamics, it has also not been shown to provide clinical benefit.[3] Other pretreatment agents are sympatholytic and have the potential to cause premature homodynamic decompensation even before the induction agent is given. Rapid sequence *induction* (an anesthesiology term) describes intubation for the purpose of providing an anesthetic and has to be differentiated from rapid sequence *intubation*, where an anesthetic is being given to facilitate intubation.[4] Both terms describe a core procedure that use an induction agent followed by a neuromuscular blocking agent. However, the indications for use and patient population are very different.

The 2 most common potentially life-threatening complications related to ED intubation are hypoxia and hypotension. Transient hypertension is of unknown clinical significance and would often be welcome in the ED patient population requiring acute airway management. In contrast, hypotension during the resuscitation phase can be devastating in the acute head or heart patient.[5] Unfortunately, post-RSI hypotension is still occurring with alarming frequency.[6] This may be a marker of a "sick" ED patient population, but also may represent dosing inexperience. The AIME (Airway Interventions & Managament in Emergencies) program instructor group was relieved to read that these pretreatment agents are not being routinely used. The message in our program is clear: keep it simple, facilitate intubation and avoid hypoxia and hypotension.

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[The authors respond:]

We thank Drs. Kovacs, MacQuarrie and Campbell for their response on behalf of the AIME Instructors to our study evaluating the use of pretreatment for neuroprotective rapid sequence intubation (RSI) in the emergency department (ED).[1] We agree that every attempt should be made to avoid hypoxia and hypotension in all patients undergoing intubation in the ED, and agree that in some scenarios the simplest approach is the best. However, we were disappointed to hear the opinion that pretreatment is contraindicated, and were further disappointed to hear that the findings of our study that pretreatment drugs were not being routinely used were welcomed by the AIME group.

Clearly there is a lack of evidence involving hard end points demonstrating improved clinical outcomes when pretreatment is administered, and further research is necessary in this area. That said, we disagree with the conclusion of the AIME Instructors that pretreatment is therefore contraindicated in patients undergoing neuroprotective RSI in the ED. Although the issue requires further study we suspect that this opinion is not shared by the majority of emergency medicine clinicians who, rather than discard the use of potentially beneficial treatment agents, carefully consider the selective use of pretreatment in patients who may benefit from this intervention. The 2006 edition of *Rosen's Emergency Medicine* textbook makes the following statement regarding this issue:

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