The emergency department wants to use Etomidate for sedation: Should we let them?

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Objectives:
1. Understand the role of anesthesia departments in hospital sedation committees and current national sedation guidelines.
2. Discuss the utility or lack of utility of capnography and the BIS™ monitor for sedation outside of the operating room.
3. Develop a group consensus on the use of Etomidate by non-anesthesiologist for sedation.
4. Build a group consensus on whether and how these should be conducted by non-anesthesiologists.

Stem Case:
As the anesthesia representative to the sedation committee you are approached by the hospitals IRB to review a protocol evaluating the use of Etomidate for Emergency room sedation. In summary, the study is described below:

The authors of the study plan to look at patients aged 1 to 18 years who present to the emergency department (ED) and require a procedure of short duration for which procedural sedation is necessary. Such procedures will include: acute closed fracture reductions with minimally displaced, angulated fractures; joint reductions; abscess drainages; arthrocentesis; and qualifying lumbar punctures. NPO status will be per ED guidelines (>2 hours). Subjects are to be monitored by pulse oximetry, non-invasive blood pressure, electrocardiogram and nasal capnography. Intravenous access will be achieved prior to sedation. For sedation each subject will be given 0.2mg/kg Etomidate IV and then be allowed to receive up to 2 additional 0.1mg/kg IV dose increments. Additionally, subjects can receive 2mcg/kg fentanyl IV.

Discharge criteria following study are as follows: 1) airway patent with adequate oxygenation; 2) awake and easily aroused, but minimal tactile or vocal stimulation may be necessary; 3) swallowing reflex present demonstrating ability to swallow clear liquids while protecting the airway; 4) pre-sedation level of responsivenes should be achieved. Readiness for discharge will be documented using the Vancouver Sedation Recovery Scale (VSRS).

As a consultant, you are asked to evaluate the safety and merit of this study.
Questions:

1. Discuss the role of the anesthesia department as an institutional “gatekeeper” for the use of sedative agents.
   a. Qualifications of the provider: are all of the physicians trained in ER or are some of the physicians pediatricians. Do they have the same airway management skills?
   b. How do you credential these individuals for deep sedation? (What policies exist for sedation/anesthesia by non-anesthesiologists and do they apply to children).
   c. Should competency be determined by the anesthesiologists?
   d. Does simulation play a role in competency?
   e. Who is responsible for managing the airway? (Nurse or ER physician)?
   f. How should these providers be trained to be able to recognize and manage a difficult airway or provide sedation in children with complex medical problems (ASA PS III or greater).

2. NPO status
   a. Is 2 hours (for solids and liquids) sufficient for procedural sedation?
   b. What is an acceptable NPO status and does waiting make any difference on outcome?
   c. Does your department have any jurisdiction over this area?

3. Standard of care for monitoring children in the ER
   a. What do the published guidelines state?
   b. According to some of the ER literature capnography is not routinely utilized. When should capnography be required when administering sedation?

4. Can the individual performing an invasive procedure also be responsible for administration of sedation?

5. Resuscitative care
   a. Is there immediate availability of resuscitative drugs?
   b. Availability of reversal agents/emergency airway equipment (including the use of LMAs).

6. BIST™ guided sedation outside of the operating room.
   a. Is this a valid technique in children?
   b. Is this a useful technique in children?
   c. Would use of this provide a false sense of security to providers?

7. Etomidate as a sedative agent.
   a. Evaluate the use of etomidate as a sedative agent.
   b. Would propofol or ketamine a better choice than etomidate?
   c. Is there any role for benzodiazepines?
   d. What about opioids?

8. Discuss a design for a protocol using Etomidate in an emergency room setting.
   a. Is it possible to make this study safe?
   b. Does this protocol require the presence of an anesthesiologist or assigned designee?
References:


