

Procedural Sedation in Children— What is Recommended?

Adequate sedation and analgesia are crucial factors in deciding the success of any procedure done in children. Currently, there is no consensus regarding the type of procedure, choice of drug, dosage and giving multiple drugs etc. and hardly any literature covering this important topic is published from India. Sometimes, adequate sedation is not achieved in spite of using full dose and multiple drugs. There is considerable confusion and variation among doctors even from the same hospital. Hospitals with intensive care facility backup can afford to use potent and newer drugs, including anesthetic drugs; but in most of the other places, adequate procedural sedation remains a challenge. All these factors play a key role in causing traumatic and unsuccessful procedures.

What is the general algorithm for procedural sedation in children for simple procedures, which can be universally followed, including resource-limited setups?

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REPLY

Procedural sedation and analgesia (PSA) refers to the pharmacologic technique of managing a child's pain and anxiety in order to successfully perform a diagnostic or therapeutic procedure safely [1].

The sequential approach to PSA includes defining the goal for sedation, performing a pre-sedation health check-up, assigning a qualified person to administer the sedation, choosing the appropriate drug and appropriate monitoring devices, defining the protocol for monitoring during sedation and the discharge criteria. The same should be followed in all settings.

The goals of PSA [2] are: (i) Maintain patient safety, (ii) Minimize discomfort, (iii) Maximize amnesia, (iv) Control behavior and/or movement for the safe completion of the procedure, and (v) Safe discharge.

Pre-sedation evaluation

The important components of this evaluation are: Age

and weight; Relevant diseases and Physical abnormalities; Medication history; Allergies; Vital signs; Relevant systemic examination; Focused evaluation of the airway (tonsillar hypertrophy, abnormal anatomy e.g., short neck); Fasting status.

Fasting status: The American Society of Anesthesiologists (ASA) recommendations for fasting prior to procedural sedation are commonly followed, which are as follows (3): 2 hours fasting for clear fluids, 4 hours for breast milk, and 6 hours for solid foods, formula, or milk other than human milk.

Informed consent: An informed consent should be obtained from the primary caregiver before sedating the child. The components of informed consent include details of the procedure being performed, specific medications that will be administered, and potential adverse effects.

Personnel

Apart from minimal sedation, all other levels of sedation ideally require at least two trained healthcare professionals [4]. One person is responsible for administering sedation and carrying out the procedure (primary practitioner), while the other person's (assistant) responsibility is to monitor appropriate physiologic parameters and to assist in any supportive or resuscitation measures, if required. The primary practitioner should preferably possess advanced pediatric airway skills and the assistant should be capable of providing pediatric basic life support.

Choice of Drugs

The choice of drugs (**Table I**) for procedural sedation depends various factors like: type of the procedure, target level of sedation, specific patient profile, skill of the practitioner, and contraindication and side effect profile.

Sedation for non-painful procedures: Imaging studies constitute the most common non-painful procedures for which children undergo sedation. The chosen agent or agents should have a quick onset of action, should maintain airway reflexes, and have limited impact on breathing and hemodynamic stability. Analgesia is not necessary for these procedures. Common options for non-painful procedures include sedatives such as midazolam and triclofos. One may also consider using non-pharmacologic approaches.