

Newborn Critical Care Center (NCCC) Clinical Guidelines

Neonatal Intubation with Premedication

INTRODUCTION

Endotracheal intubation should be performed in a controlled environment with appropriate preparation whenever the patient's status permits to prevent traumatic injury to the airway. Intubation without pre-medication has been associated with significant side effects including pain, hypoxia and hemodynamic changes.

Benefits of pre-medication for non-emergent intubation:

- Decreased pain
- Fewer number of attempts to complete the intubation and minimize airway trauma associated with multiple attempts
- Higher success rates for inexperienced personnel
- Decreased hypoxia and hemodynamic effects (bradycardia, increased intracranial pressure, risk of IVH, systemic and pulmonary hypertension)

The effects of pre-medication are maximized when the full complement drugs are used together than when any one of the three is used independently (see below for recommendations).

DEFINITION OF NON-EMERGENT INTUBATION

- Intubations that do not occur in the delivery room
- Time to obtain and/or administer medications will not compromise the infant
- Intravenous access is available (or can be obtained within a reasonable period of time)

PROCEDURE

1. **Order medications:** In EPIC choose the "Neonatal Procedure Focused" order set, then choose "Premedications" under "Endotracheal Intubation."
2. Perform timeout prior to administration of medications.
3. Medication doses should be calculated and checked by two nurses.
4. Medications given by IV push **will be given in the presence of a medical provider.**

DRUGS <i>(GIVE IN THE ORDER LISTED)</i>	DOSE	ROUTE	ONSET (MINUTES)	DURATION
Atropine	0.02 mg/kg	IV push	1-2 minutes	2-4 hours
Fentanyl	2 mcg/kg	IV over 5 min	1-2 minutes	30-60 minutes
Rocuronium <i>* Paralytics should never be administered alone</i>	0.5 mg/kg	IV push	0.2 - 2 minutes <i>* May be repeated if not effective in 1.5 – 2 minutes</i>	30-40 minutes

5. Intubation should be attempted when cessation of spontaneous movement is noted and laxity of the jaw is determined. (Refer to [NCCC Intubation Guidelines](#))
6. Respiratory therapy is expected to be present for the entire procedure as well as additional providers to attempt intubation if necessary.

POST-PROCEDURE

After the ETT has been secured, the patient will continue to be closely monitored and vital signs recorded. The provider should insure that there is sufficient support immediately after intubation to achieve the desired level of minute ventilation. As the effects of medication diminish, it may be appropriate to reduce this level of support.

References:

1. Hatch, L.D., Grubb, P. H., Lea, A.S., Walsh, W.F., Markham, M.H., Maynard, P. O. Whitney, G.M. Stark, A.R., & Ely, W. Interventions to Improve Patient Safety During Intubation in the Neonatal Intensive Care Unit. Pediatrics (2016) Oct 138(4):
2. Muniraman, HK., Yaari J., Hand, I. [Premedication Use Before Nonemergent Intubation in the Newborn Infant](#). Am J Perinatol 2015; 32:821–824.
3. Le, CN, Garey DM, Leone, TA, Goodmar, JK, Rich, W. and Finer, N. [Impact of premedication on neonatal intubations by pediatric and neonatal trainees](#). Journal of Perinatology (2014) 34, 458–460
4. Allen, KA. Premedication for Neonatal Intubation: Which Medications are recommended and why? Advances in Neonatal Care (2012) 12(2):107-111.