UCDAVIS HEALTH | CHILDREN'S HOSPITAL

Surfactant Administration via Supraglottic Airway

SALSA Protocol

Eligibility Criteria

- Infants **>30w0d** and **>1500 g** and **<48 hours old**
- Infants on CPAP with FiO2 requirement >30% to maintain saturations >90% SpO2 or rising FiO2 requirement after initial admission stabilization.
- Suspected RDS with signs of respiratory distress
- CXR obtained to rule out pneumothorax (make sure to have OG is in place to verify esophageal patency)

Exclusion Criteria

- Suspected or known airway, esophageal or pulmonary anomaly
- Infants with persistent apnea
- Concern for pneumothorax
- Severe acidosis (pH<7.15) or evolving shock

Use caution in the setting of meconium aspiration and/or HIE.

Supplies (See Figure 1, below)

- iGel supraglottic airway (LMA) size 1*
- Double swivel elbow connector
- Multi-access catheter
- Colormetric CO2 detector
- Syringe for surfactant, with dose drawn up
- T-piece resuscitator, set to appropriate PIP and PEEP (use 20/5 if on PEEP 5, ok to individualize based on patient's settings).

- Emergency Equipment:
    - Suction catheter, wall suction
    - Appropriately sized face mask
    - Airway box, in case procedure is converted to intubation

Surfactant (Poractant alfa/Curosurf)

- Initial dose: 2.5 mL/kg
- Repeat dose (after 12 hours from the first dose): 1.25 mL/kg

Pre-medication

- Atropine (0.02 mg/kg/dose), IV
- Oral/buccal 24% sucrose (Sweet ease)
- Routine use of sedatives is not recommended
- Calculate rapid onset paralytic dose but do NOT draw up or administer unless necessary to treat laryngospasm (i.e., rocuronium dose 0.6 mg/kg IV via rapid push)

Preparation for SALSA

- Confirm the infant has an orogastric (OG) or nasogastric (NG) tube and functioning IV catheter in place
- Prioritize non-pharmacologic approaches to analgesia such as swaddling (while maintaining visualization of the chest) and sucrose solution. Use atropine to blunt reflex bradycardia.
- Position infant supine, with the body straight, a shoulder roll in place, and head midline in the “sniffing” position **with CPAP/NIPPV in place,** similar to positioning for intubation or LISA.
- Aspirate stomach contents, and remove OG/NG
- Attach CO2 detector and swivel connector to T-piece resuscitator (Figure 2)
- Prepare team for procedure, airway provider to perform time-out.

Performing SALSA

- RN administers buccal sucrose
- Place LMA—advance until resistance is met. Connect T-piece (with CO2 detector and swivel connector) to LMA and deliver breaths via T-piece. Use chest rise and color change on CO2 detector to confirm placement.

    - If no color change, adjust LMA depth and re-assess
    - If unable to achieve chest rise/color change, remove and replace
    - Limit to three LMA placement attempts,
- Once placement confirmed, deliver PEEP via LMA
- Attach syringe to MAC, advance MAC to double red line (20cm) at top of swivel (See Figure 3) and deliver surfactant in two aliquots, allowing recovery in between.
- Provide PPV via LMA if oxygen saturation <90% or HR <100.
- Deliver PEEP via LMA for 30 seconds after delivery of final aliquot of surfactant.
- Ensure PEEP is still delivered to nasal CPAP and then remove LMA
- Replace NG/OG and aspirate stomach contents, note amount of surfactant in stomach.
    - Some surfactant, typically <50% of the administered dose, in the stomach is expected. Follow changes in FiO2 as well to determine success of procedure.

Convert SALSA to Endotracheal Intubation if severe bradycardia/desaturation or >3 attempts required.

Do not convert SALSA to LISA.

*If using a different LMA, ie the Air-Q, check that the size is appropriate for the patient. You will need to inflate the LMA cuff, if present. Also, check the depth of insertion of the MAC into the LMA + swivel set-up in order to get the tip of the MAC to just before the distal opening of the LMA.

Figure 1: Materials for SALSA

Materials for SALSA: T-piece resuscitator (A), colorimetric CO2 detector (B), swivel adapter (C), i-gel LMA (D), and multi-access catheter (E).

Figure 2: SALSA administration set-up

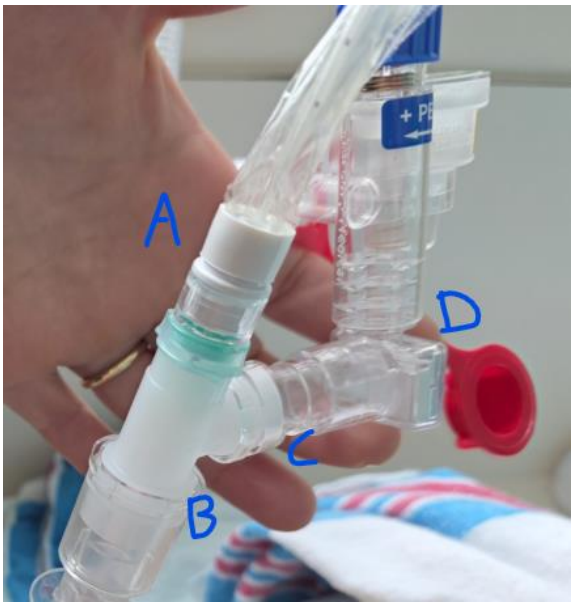

Figure 2: Swivel adapter connected to MAC (A) and site of connection to LMA (B), with CO2 detector connected to swivel (C) and to T-piece (D).

Figure 3: Appropriate catheter depth

Figure 3: Advance MAC until double red line is at top of swivel adapter.

Medical Legal Disclaimer:

Welcome to the UC Davis Health, Department of Pediatrics, Clinical Practice Guidelines Website. All health and health-related information contained within the Site is intended chiefly for use as a resource by the Department's clinical staff and trainees in the course and scope of their approved functions/activities (although it may be accessible by others via the internet). This Site is not intended to be used as a substitute for the exercise of independent professional judgment. These clinical pathways are intended to be a guide for practitioners and may need to be adapted for each specific patient based on the practitioner's professional judgment, consideration of any unique circumstances, the needs of each patient and their family, and/or the availability of various resources at the health care institution where the patient is located. Efforts are made to ensure that the material within this Site is accurate and timely but is provided without warranty for quality or accuracy. The Regents of the University of California; University of California, Davis; University of California, Davis, Health nor any other contributing author is responsible for any errors or omissions in any information provided or the results obtained from the use of such information. Some pages within this Site, for the convenience of users, are linked to or may refer to websites not managed by UC Davis Health. UC Davis Health does not control or take responsibility for the content of these websites, and the views and opinions of the documents in this Site do not imply endorsement or credibility of the service, information or product offered through the linked sites by UC Davis Health. UC Davis Health provides limited personal permission to use the Site. This Site is limited in that you may not:

- Use, download or print material from this site for commercial use such as selling, creating course packets, or posting information on another website.
- Change or delete propriety notices from material downloaded or printed from it. · Post or transmit any unlawful, threatening, libelous, defamatory, obscene, scandalous, inflammatory, pornographic, or profane material, any propriety information belonging to others or any material that could be deemed as or encourage criminal activity, give rise to civil liability, or otherwise violate the law.
- Use the Site in a manner contrary to any applicable law.

You should assume that everything you see or read on this Site is copyrighted by University of California or others unless otherwise noted. You may download information from this Site as long as it is not used for commercial purposes, and you retain the proprietary notices. You may not use, modify, make multiple copies, or distribute or transmit the contents of this Site for public or commercial purposes without the express consent of UC Davis Health.