

Procedure Standard

Less Invasive Surfactant Administration – LISA

1. Aims

- Surfactant administration during spontaneous breathing
- Stress reduction
- Optimized thermal management

2. Inclusion Criteria

- $\geq 25+0 - 33+6$ weeks of gestation
- ≥ 700 g birth weight
- Spontaneous breathing after 10–15 minutes under CPAP
- $\text{FiO}_2 > 0.4$, or $\text{FiO}_2 > 0.3$ and dyspnea
- $\text{SpO}_2 \geq 90\%$, max. $\text{FiO}_2 0.7$

3. Preparation (see checklists)

- Thermal management (doors closed)
- Resuscitation unit (Fig. 1A)
- Plastic sheet
- Hygiene measures: always: mouth guard, sterile gloves for intubation; for ≤ 28 weeks gestation: additional gown).
- Caffeine citrate 20 mg/kg body weight as a short infusion over 5 min.
- CPAP 8 L/min. Flow, PEEP 10 cmH₂O
- Set FiO_2 0.21–0.3
- Preparation of LISA table (Fig. 1B)
- Mononasal CPAP: shorten tube to 10 cm (sterile) (Fig. 1C)

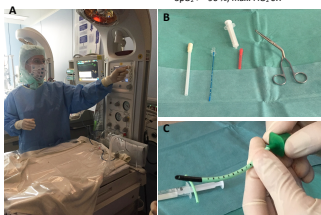
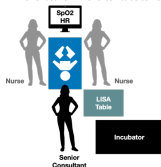


Figure 1: A: Preparation of resuscitation unit (nursing team). B: Preparation of sterile LISA material (physician team). C: Shorten tube to 10 cm (physician team).



4. Team Briefing

- Medical history
- Patient information
- Expected risks
- Precise allocation of tasks (Fig. 2)
- Plan alternative(s) to LISA procedure

Figure 2: Distribution of tasks

Optimal timing of LISA



What happens next?

- Gastric tube (~minute 30)
- Binasal CPAP (~minute 35)
- Transfer to the incubator (~minute 40)
- Contact with parents (~minute 50)
- Transport to the NICU (~minute 60)

NICU

- Chest radiography
- Early tCO_2/tO_2 monitoring
- blood gas analysis

Abortion criteria

- Apnea > 30 sec.
- Desaturation < 50% for > 30 sec.
- Bradycardia < 80/min. for > 30 sec.
- $\text{FiO}_2 > 0.7$
- No safe laryngoscopy possible
- Difficulty with LISA catheter placement
- Clinical discretion of the senior consultant