Breastfeeding success after laryngeal mask airway resuscitation

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Abstract
Background. Positive pressure resuscitation by laryngeal mask airway (LMA) may expose the neonate to gas leak and gastric air insufflation, influencing postnatal gastrointestinal adaptation and breastfeeding success.
Methods. Term neonates admitted to regular nursery of the Department of Pediatrics of Padua University (Italy), from January 2005 to December 2005, after positive pressure resuscitation by LMA (Group A, 50) were compared with neonates who required positive pressure resuscitation by endotracheal tube (ETT) (Group B, 13) and to non resuscitated control neonates, matched for gestational age, (Group C, 100).
Results. Gestational age and birth weight were comparable among Group A, B, and C neonates. In addition, their ages at the first feeding and those of the first meconium emission were comparable. Diversely, LMA- and ETT-resuscitated neonates presented a reduced exclusive breastfeeding rate at discharge and an increased hypoglycemia occurrence during postnatal adaptation. Moreover, ETT-resuscitated neonates presented a lower Apgar’s score at 1 min, a significant increased regurgitation rate, and a delayed urine emission in comparison to LMA-resuscitated neonates.
Conclusion. LMA- and ETT-positive pressure resuscitation impair postnatal gastrointestinal adaptation and breastfeeding success at discharge with equal frequency and to similar degree in term neonates. Regurgitation reflex is instead, enhanced after ETT-resuscitation.

Keywords: Breastfeeding, laryngeal mask airway, resuscitation

Introduction
The laryngeal mask airway (LMA), developed by Brain in 1981 [1], is a supraglottic device included in the International Guidelines for neonatal Resuscitation since 2000 [2] and demonstrated to be effective for airway management in the delivery room positive pressure ventilation (PPV) resuscitation [3–5].

The LMA results to be less invasive to the respiratory tract because it avoids laryngoscopy and all of its related adverse effects [6,7]. In particular, tracheal oedema, caused by endotracheal intubation, is avoided by using the LMA [8]. However, the LMA cuff forms a low pressure seal against the larynx, the maximum seal pressure varying from 20 to 25 cm H2O [1,9–11]. This is relevant, considering that during the first breaths at birth, or for specific neonatal pulmonary diseases, the pressures required to achieve effective ventilation can be also higher. Thus, the PPV resuscitation by LMA may expose the neonate to gas leak and gastric air insufflation, in a critical time to initiate breastfeeding practices to guarantee adequate fluid and calories intake during postnatal adaptation [12].

In this study, we addressed these issues, comparing postnatal gastrointestinal adaptation, breastfeeding practices, and metabolic disturbances after PPV resuscitation, using either the LMA or the endotracheal tube (ETT), in a recent cohort of term infants admitted to regular nursery.

Patients and methods
All newborns delivered at term, afferent to the regular nursery of the Department of Pediatrics (III