Abstracts

Methods A survey was designed and sent by email to neonatal units which were applying nCPAP. The survey collected information about the devices, the indications of use and the ventilatory parameters used when delivering nasal ventilation over 2010. It was also questioned whether a guideline was followed.

Results 87 out of 115 questionnaires were answered and returned (75.6%). All the surveyed units used nCPAP and the most frequent indications were: apnoea treatment (87/87; 100%) and respiratory distress before surfactant therapy (85/8; 97.7%). 71 units used nIPPV (81.6%) in order to succeed in extubation (66/71; 92.9%) and for treatment of apnoeas (63/71; 88.7%). Most of the units used variable flow devices to deliver nCPAP (64/87; 73.5%) and nIPPV (48/71; 67.6%). 72 units (82.7%) followed national guidelines at the time of starting non invasive ventilation. The most used interface was short binaural prongs (59/87; 66.6%).

Conclusion Both nCPAP and nIPPV are significantly used in Spanish neonatal units following the recommendations of the available national guidelines.

1802 RANDOMISED TRIAL OF SINGLE NASAL PRONG OR FACE MASK FOR RESPIRATORY SUPPORT FOR PRETERM INFANTS IN DELIVERY ROOM (ISRCTN95601709)

doi:10.1136/archdischild-2012-302724.1802

Background ILCOR recommends that newborns with inadequate breathing or HR < 100 bpm be given respiratory support via a face mask in the delivery room (DR); however, it may be more effective if given to preterm infants via a single nasal prong (AKA short nasal tube, nasopharyngeal tube).

Aims To determine whether giving respiratory support to preterm infants via a nasal prong rather than a face mask result in fewer face masks being intubated in the DR.

Methods Normally formed infants < 31 weeks are eligible for inclusion. Randomisation is stratified by gestational age (< 28 weeks, 28–30) and allocation is concealed in sealed opaque envelopes. With parental consent, infants are randomised just prior to delivery to single nasal prong (ETT shortened to 5cm) or face mask (Fisher & Paykel, Auckland NZ). Infants who have apnoea, respiratory distress and/or a HR < 100 bpm receive respiratory support with a mask and are intubated in the DR for apnoea and/or bradycardia despite PPV, not for surfactant administration. All other aspects of treatment in the DR and NICU are the same for both groups. Relevant secondary outcomes are recorded.

Results Since enrollment began (19.07.2010), 121 infants have been recruited and had the primary outcome determined. We expect the primary outcome will be determinable for the total sample of 142 infants by August 2012.

Conclusions This randomised trial will provide valuable information about the preferred interface to use when giving respiratory support to newborn preterm infants in the DR.

1803 DOES VOLUME OF THE MASK VARY AND INFLUENCE MEASUREMENTS DURING NEONATAL RESUSCITATION?

doi:10.1136/archdischild-2012-302724.1803

Background Respiratory function monitoring (RFM) could improve the efficiency of mask ventilation in preterm infants at birth. However, dead space of a mask could vary, depending on rate of pressurization and variation in hand hold, influencing measurements.

Aim To investigate whether mask volume varies during mask ventilation and influences measured tidal volumes and calculated mask leak.

Methods Thirty caregivers of the neonatal unit were asked to mask-ventilate a leak free manikin with pressures 25/5cm H2O and a gas flow rate of 6 and 10 L/min. A Laerdal 0/1 mask (40 mL) was glued leak free on the face in the right position but the participant was unaware why the mask position was fixed. The participant was told that mask hold, not positioning, was tested and that it was still possible to have leak. Tidal volumes were measured using a RFM.

Results Tidal volume (Vt) increased from 8.05 mL (0.76) at 6 L/min to 8.76 mL (0.75) at 10 L/min (p<0.01) and expired tidal volume (Vr) from 8.15 mL (0.81) at 6 L/min to 8.85 mL (0.75) at 10 L/min (p<0.001). Median (IQR) leak was –0.90 (–3.90–1.40) % with 6 L/min and did not increase with 10 L/min (–0.62 (–3.43–1.80) %; ns) Coefficient of variance showed good to acceptable agreement for all results.

Conclusion During mask ventilation there is very little variation in mask volume which does not influence respiratory function monitoring.

1804 WHICH MUSICAL TUNE IMPROVES SYNCHRONIZATION OF RESPIRATORY SUPPORT DURING SIMULATED CARDIOPULMONARY RESUSCITATION OF NEONATES?

doi:10.1136/archdischild-2012-302724.1804

Background ILCOR recommends that newborns with inadequate breathing or HR < 100 bpm be given respiratory support via a face mask in the delivery room (DR); however, it may be more effective if given to preterm infants via a single nasal prong (AKA short nasal tube, nasopharyngeal tube).

Aim To determine whether giving respiratory support to preterm infants via a nasal prong rather than a face mask result in fewer face masks being intubated in the DR.

Methods Normally formed infants < 31 weeks are eligible for inclusion. Randomisation is stratified by gestational age (< 28 weeks, 28–30) and allocation is concealed in sealed opaque envelopes. With parental consent, infants are randomised just prior to delivery to single nasal prong (ETT shortened to 5cm) or face mask (Fisher & Paykel, Auckland NZ). Infants who have apnoea, respiratory distress and/or a HR < 100 bpm receive respiratory support with a mask and are intubated in the DR for apnoea and/or bradycardia despite PPV, not for surfactant administration. All other aspects of treatment in the DR and NICU are the same for both groups. Relevant secondary outcomes are recorded.

Results Since enrollment began (19.07.2010), 121 infants have been recruited and had the primary outcome determined. We expect the primary outcome will be determinable for the total sample of 142 infants by August 2012.

Conclusions This randomised trial will provide valuable information about the preferred interface to use when giving respiratory support to newborn preterm infants in the DR.

1803 DOES VOLUME OF THE MASK VARY AND INFLUENCE MEASUREMENTS DURING NEONATAL RESUSCITATION?

doi:10.1136/archdischild-2012-302724.1803

Background Respiratory function monitoring (RFM) could improve the efficiency of mask ventilation in preterm infants at birth. However, dead space of a mask could vary, depending on rate of pressurization and variation in hand hold, influencing measurements.

Aim To investigate whether mask volume varies during mask ventilation and influences measured tidal volumes and calculated mask leak.

Methods Thirty caregivers of the neonatal unit were asked to mask-ventilate a leak free manikin with pressures 25/5 cm H2O and a gas flow rate of 6 and 10 L/min. A Laerdal 0/1 mask (40 mL) was glued leak free on the face in the right position but the participant was unaware why the mask position was fixed. The participant was told that mask hold, not positioning, was tested and that it was still possible to have leak. Tidal volumes were measured using a RFM.

Results Tidal volume (Vt) increased from 8.05 mL (0.76) at 6 L/min to 8.76 mL (0.75) at 10 L/min (p<0.01) and expired tidal volume (Vr) from 8.15 mL (0.81) at 6 L/min to 8.85 mL (0.75) at 10 L/min (p<0.001). Median (IQR) leak was –0.90 (–3.90–1.40) % with 6 L/min and did not increase with 10 L/min (–0.62 (–3.43–1.80) %; ns) Coefficient of variance showed good to acceptable agreement for all results.

Conclusion During mask ventilation there is very little variation in mask volume which does not influence respiratory function monitoring.

1804 WHICH MUSICAL TUNE IMPROVES SYNCHRONIZATION OF RESPIRATORY SUPPORT DURING SIMULATED CARDIOPULMONARY RESUSCITATION OF NEONATES?