those who did not get PS, which seems to supports the stricter enforcement of the guidelines.

PO-0738 PROLONGED RESPIRATORY SUPPORT FOR EXTREME PRETERM BABIES: HHFNC OR NCPAP?

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Background and aims While the HHFNC therapy is increasingly being utilised for non-invasive respiratory support in preterm babies its utility has not been explored in babies requiring prolonged support.

We carried out this study to compare the effectiveness of HHFNC therapy with nCPAP in babies requiring prolonged respiratory support.

Design/methods This was a retrospective study of babies less than 32 weeks gestation or 1500 gram requiring prolonged respiratory care. In order to be eligible for inclusion, the baby should have come off nCPAP successfully to low flow oxygen and needed non-invasive breathing support using nCPAP or HHFNC.

Results Complete data was available for 44 babies. Babies in HHFNC group spent significantly longer time on respiratory support. There was no difference in BPD and other complications of prematurity between two study groups (Table 2)

Conclusion HHFNC therapy is comparable to nCPAP but probably at the expense of prolonged duration of respiratory support.

Abstract PO-0738 Table 1 Respiratory parameters – Median (IQR)

	nCPAP (n = 22)	HHFNC (n = 20)	p-value
Initial MV (hours)	132 (84–222)	84 (60–135)	0.06
Initial CPAP (hours)	108 (60–156)	60 (36–114)	0.11
Post weaning CPAP+HHFNC (hours)	312 (150–510)	636 (372–768)	**0.003**
Low flow/Oxygen therapy (hours)	684 (396–1014)	552 (366–888)	0.6

Abstract PO-0738 Table 2

	nCPAP (n = 22)	HHFNC (n = 20)	p value
Broncho-pulmonary-Dysplasia	14 (64%)	16 (80%)	0.24
NEC ≥2a	4 (18%)	3 (15%)	0.78
IVH ¾	0 (0%)	1 (5%)	0.28
ROP stage 2 or more	9 (41%)	4 (20%)	0.14
Change in weight z score – mean (SD)	-1.11 (0.83)	-0.82(0.89)	0.23

PO-0739 AN UNUSUAL CASE OF NEONATAL RESPIRATORY DISTRESS : CASE REPORT

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Background Neurenteric cysts are the association of an endodermal cyst with a vertebral dysplasia. This congenital malformation can be asymptomatic or manifest itself through respiratory signs due to airway compression.

Case report A male newborn, from normal vaginal delivery at 40 weeks of gestation, weighing 4000 g with Apgar score of 8 and 9 at 1 and 5 min was referred to the neonate intensive care unit. The clinical findings showed tachypnea, mild intercostals retraction and there was diminished air-entry on the right side. The chest X-ray showed vertebral anomalies in the midthoracic region, there was an hydric opacity occupying the 2:3 of the right side with deviation of the mediastinum to the left side. The CT scan of the chest revealed butterfly and hemi-vertebrae of the upper thorax. There was a large posterior mediastinal cystic mass partitioned by multiple septa on the inferior right side. On fifth day, the patient underwent a right thoracotomy. A large cystic mass attached to the oesophagus wall was exised, Histopathology favours the diagnosis of neurenteric cyst. Postoperatively outcomes were poor, the operation was complicated by bilateral chylothorax diagnosed on 10 th post-operative day and increasing oxygen needs. The newborn died on the 16 th postoperative day in a severe sepsis.

Conlusion Antenatal diagnosis of this malformation is not easy but possible. In post-natal, the radiological approach based on chest x-ray and CT scan, is helpful for establishing the diagnosis and lead to a prompt curative surgery.

PO-0740 WITHDRAWN

PO-0741 CROSSOVER TRIAL COMPARING HIGH-FREQUENCY OSCILLATORY VENTILATION VERSUS VOLUME GUARANTEE PLUS HIGH-FREQUENCY OSCILLATORY VENTILATION: A PRELIMINARY REPORT

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Background High frequency oscillatory ventilation (HFOV) theorically limits baro/volutrauma using subdeadspace volumes but lack of direct control over tidal volume resulting in fluctuating PCO2 level. Volume guarantee plus high-frequency oscillatory ventilation (HFOV+VG) is a new ventilation mode allows the clinician to set a mean tidal volume to be delivered.

Method The randomised, crossover study was conducted at the Neonatal Intensive Care Unit (NICU) at Dokuz Eylul University Hospital in Izmir, Turkey after approval of the local Ethics Committee. Inborn infants at less than 32 weeks of gestation with respiratory distress syndrome (RDS) were enrolled in the study if they required mechanical ventilation. All enrolled infants were received surfactant treatment (200 mg/kg, Curosurf®, Chiesi, Italy) in the delivery room or in the NICU, depending on where endotracheal intubation was performed and ventilated using the Assist Control (A/C) with VG mode (VN500, Draeger, Lubeck, Germany). Patients were randomised to receive either HFOV +VG or HFOV as the initial ventilator mode and were treated for 2 h with the first mode of ventilation. At the end of the initial 2 h patients were then crossed over to the other mode of ventilation for 2 h. There was 15 min "washout" period between the changes in the ventilator modes. HFOV was performed with "optimum volume strategy". Ventilation started at a frequency of

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10 Hz and the amplitude set at equal to the MAP value at the beginning, was increased, if necessary, until the infant's chest was seen to be "bouncing". In the HFOV+VG mode, the VThf was set at 2 ml/kg initially on the basis of our clinical experience. The Amplitude limit was set at 15–20% above the average amplitude needed to achieve the target VTHf. Moreover during each 2 h observation period, the following variables were continuously display at 5-min intervals: FiO2, MAP, VThf, Carbon dioxide diffusion co efficiency (DCO2), Amplitude (DeltaPhf), from the ventilator records and heart rate, mean blood pressure, SpO2 from the standard cardiorespiratory monitor.

Results The mean gestational age was 28,2 (24–32) week and the mean gestational weight was 1087 (704–1960) gr. There was no significant difference in the mean PCO2, FiO2, DeltaPhf, MAP, VTHf, DCO2, Minute ventilation (MVe), Dynamic compliance (CDyn), Resistance (R). Hypocarbia event (PCO2 <40 mmHg) occurred eleven (%36) sample during HFOV+VG period against seven sample (%23) during HFOV period but not statistical significant.

Conclusion This preliminary result demonstrated that VG option, when combined with HFOV, a stable and feasible ventilation mode for neonatal patients and can achieve equivalent gas exchange After a careful analysis of the results, a set VTHf of 1,5 ml/kg seems to be successful achieving equivalent gas exchange using lover airway pressure.

PO-0742 HYPOTHERMIA A RISK FACTOR FOR RESPIRATORY DISTRESS SYNDROME IN PREMATURE INFANTS?

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Background Hypothermia isgenerally thought to be a risk factor of respiratory distress syndrome (RDS) in premature infants. However, previous studies have primarilyinvestigated the association between hypothermia and death.

Aim To investigate the association between body temperature and severe RDS.

Methods The study population consists of all infants born before 32 weeks of gestationand admitted to the neonatal intensive care unit (NICU), Aalborg UniversityHospital, Denmark April 1997 and December 2011. Rectal temperature was measuredat admission. Severe RDS was defined as the need for surfactant treatment or death within the first 3 days of life in premature infants bornbefore 32 weeks gestation. Data are provided bynational registries and will be analysed by logistic regression while adjusting formarkers of infection, gestational age, time from delivery to admission, asphyxiaand a proxy variable for fetal growth restriction.

Results Preliminary results from 593 infants show that64% (n = 381) had hypothermia (< 36.5°C), 33% (n = 197) had arectal temperature within the normal range (36.5°C - 37.5°C)and 3% (n = 15) had hyperthermia (> 37.5°C). The unadjusted odds for need for surfactantif hypothermic were almost twice the odds in normothermic newborns at admission (OR 1.92 95% CI: 1.34; 2.76). Further analyses are ongoing and refined resultswill be presented.

Conclusions In very preterm neonates the unadjusted odds of severe RDS was almosttwo times higher if they had hypothermia at admission compared to those withnormotermia.

PO-0743 USE OF A NEW-GENERATION ELECTRONIC MICROPUMP NEBULISER TO DELIVER BUDESONIDE IN CHRONIC LUNG DISEASE: A FEASIBLE ALTERNATIVE TO SYSTEMIC DEXAMETHASONE?

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Background and aim Inhaled corticosteroids reduce lung inflammation in chronic lung disease (CLD) and may be safer than systemic dexamethasone treatment, but evidence of better efficacy is lacking. State-of-the-art aerosol delivery systems may permit enhanced alveolar steroid delivery compared with traditional metered-dose inhalers/spacers or jet nebulisers. We evaluated a new-generation electronic micropump vibrating-mesh nebuliser for topical airways delivery of budesonide in infants with severe CLD requiring nasal high-flow respiratory support.

Methods We reviewed our units' clinical experience of delivering budesonide via the Vapotherm ventilation circuit to infants with established CLD using the Aeroneb Pro-X (Aerogen, Ireland) nebuliser.

Results 7 babies with severe CLD received nebulised budesonide since 2013. Median (range) birth gestational age was 26.9 (23.1–27.7) weeks, birthweight 720 (490–850) g. Nebulisation commenced at age 62 (29–104) days postnatal, by which time 6 babies had accumulated 33 (10–49) days' systemic dexamethasone. Initial budesonide dosage was 0.5 mg/dose administered 2–4 times/day. Duration of nebulisation prior to discharge/back transfer was 55 (9–69) days. Nebulisation permitted successful weaning from dexamethasone within 8 (0–20) days in 6 babies and obviated the need for systemic dexamethasone in another. After starting nebulisation, no baby needed a subsequent oral dexamethasone course before discharge/back transfer.

Conclusion Use of a new-generation electronic micropump nebuliser for topical airways budesonide delivery to nasal high-flow dependent infants is feasible and may avoid the need for systemic dexamethasone. The comparative safety and efficacy of this new technology for steroid delivery to ventilatory support-dependent CLD babies should now be formally examined in clinical trials.

PO-0744 GENOME-WIDE ASSOCIATION STUDY OF BRONCHOPULMONARY DYSPLASIA

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Background and aims Bronchopulmonary dysplasia (BPD) is the most common chronic disease associated with very preterm birth. BPD has a significant genetic background but the predisposing genes are insufficiently known. The aim is to find genetic factors that predispose to moderate-severe BPD using a hypothesis-free, genome-wide approach.

Methods The study populations included preterm infants (gestational age <31 weeks) born during 1997–2013 in Oulu

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